COMMONWEALTH of VIRGINIA

PREVENTION OF SIGNIFICANT DETERIORATION PERMIT
STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

This permit includes designated equipment subject to New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants.

This permit supersedes your permit dated January 5, 2012.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

O-N Minerals (Chemstone) Company
P.O. Box 71
Strasburg, Virginia 22657
Registration No.: 80504
Plant ID No.: 51-069-0034

is authorized to modify and operate

a lime manufacturing facility

located at

508 Quarry Lane
Frederick County, Virginia 22624

in accordance with the Conditions of this permit.

Approved on *April 22, 2014*

Amy T. Owens

Regional Director, Valley Region

Permit consists of 49 pages.
Permit Conditions 1 to 128.
Source Testing Report Format, 1 page.

PERMIT CONDITIONS - the regulatory reference or authority for each condition is listed in parentheses ( ) after each condition.

INTRODUCTION

This permit approval is based on the permit application dated September 24, 2013, including supplemental information dated September 25, 2013, October 3, 2013, November 5, 2013, November 25, 2013, April 4, 2014, and April 14, 2014. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action. In addition, this facility may be subject to additional applicable requirements not listed in this permit.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-10-20 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. The regulatory reference or authority for each condition is listed in parentheses () after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from DEQ will either be in writing or by personal contact.

The availability of information submitted to DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

PROCESS REQUIREMENTS

1. **Equipment List –** Equipment at this facility consists of the following:

Equipment to be constructed			
Ref. No.	**Equipment Description**	**Rated Capacity**	**Federal Requirements**
Vertical Kiln Lime Calcination System			
LP-VK-1	Qualical Parallel Flow Regenerative Lime Kiln	22 tons lime/hour (528 tons lime/day)	40 CFR 63 Subpart AAAAA
LP-VK-2	Qualical Parallel Flow Regenerative Lime Kiln	22 tons lime/hour (528 tons lime/day)	40 CFR 63 Subpart AAAAA

Aggregate and Precalcination Limestone (Main Plant)			
BC-129	Belt Conveyor	75 tons limestone/hr	40 CFR 60 Subpart OOO
BC-200	Belt Conveyor	400 tons limestone/hr	40 CFR 60 Subpart OOO
BC-220	Belt Conveyor	240 tons limestone/hr	40 CFR 60 Subpart OOO
BC-230	Belt Conveyor	160 tons limestone/hr	40 CFR 60 Subpart OOO
BC-320	Belt Conveyor	150 tons limestone/hr	40 CFR 60 Subpart OOO 40 CFR 63 Subpart AAAAA
BC-344	Belt Conveyor	200 tons limestone/hr	40 CFR 60 Subpart OOO 40 CFR 63 Subpart AAAAA
BC-346	Belt Conveyor	200 tons limestone/hr	40 CFR 60 Subpart OOO 40 CFR 63 Subpart AAAAA
BC-900	Belt Conveyor	75 tons limestone/hr	40 CFR 60 Subpart OOO
BC-901	Belt Conveyor	300 tons limestone/hr	40 CFR 60 Subpart OOO
BC-902	Belt Conveyor	1,500 tons limestone/hr	40 CFR 60 Subpart OOO
BC-903	Belt Conveyor	1,500 tons limestone/hr	40 CFR 60 Subpart OOO
BC-904	Belt Conveyor	1,500 tons limestone/hr	40 CFR 60 Subpart OOO
BC-905	Belt Conveyor	800 tons limestone/hr	40 CFR 60 Subpart OOO
BC-906	Belt Conveyor	800 tons limestone/hr	40 CFR 60 Subpart OOO
BC-915	Belt Conveyor	1,500 tons limestone/hr	40 CFR 60 Subpart OOO
HOP-900	Dump Hopper	150 tons	40 CFR 60 Subpart OOO
LB-332	Storage Bin	120 tons	40 CFR 60 Subpart OOO 40 CFR 63 Subpart AAAAA
LB-334	Storage Bin	120 tons	40 CFR 60 Subpart OOO 40 CFR 63 Subpart AAAAA
LB-900	Surge Bin	1 ton	40 CFR 60 Subpart OOO
RC-110	Roller Crusher	500 tons limestone/hr	40 CFR 60 Subpart OOO
CR-900	Primary Jaw Crusher	1,500 tons limestone/hr	40 CFR 60 Subpart OOO
SN-120	Screen	400 tons	40 CFR 60 Subpart OOO

		limestone/hr	
SN-210	Screen	400 tons limestone/hr	40 CFR 60 Subpart OOO
SN-330	Screen	297 tons limestone/hr	40 CFR 60 Subpart OOO 40 CFR 63 Subpart AAAAA
SN-900	Screen	500 tons limestone/hr	40 CFR 60 Subpart OOO
SK-350	Skip Hoist	200 tons limestone/hr	40 CFR 60 Subpart OOO 40 CFR 63 Subpart AAAAA
SK-360	Skip Hoist	200 tons limestone/hr	40 CFR 60 Subpart OOO 40 CFR 63 Subpart AAAAA
LS-901	Loadout Spout (Reject Stone)	150 tons limestone/hr	40 CFR 60 Subpart OOO
Lime Finishing and Loadout Process			
BC-500	Belt Conveyor	100 tons lime/hr	--
BC-525	Belt Conveyor	100 tons lime/hr	--
BC-533	Belt Conveyor	100 tons lime/hr	--
BC-570	Belt Conveyor	100 tons lime/hr	--
BC-914	Belt Conveyor	325 tons lime/hr	--
BC-917	Belt Conveyor	100 tons lime/hr	--
BE-901	Bucket Elevator	100 tons lime/hr	--
BE-902	Bucket Elevator	100 tons lime/hr	--
CR-901	HSI Lime Crusher	100 tons lime/hr	--
LB-902	Reject Lime Bin	280 tons	--
LB-904	Loadout Weigh Bin	120 tons	--
LS-902	Loadout Spout	150 tons lime/hr	--
LS-900	Loadout Spout (Reject Lime)	150 tons lime/hr	--
LB-2303	Lime Storage Silo	2,200 tons	--
LB-2304	Lime Storage Silo	2,200 tons	--
RC-545	Roller Crusher	200 tons lime/hr	--
RU-900	Railcar Unloader	100 tons lime/hr 400tons solid fuel/hr	--
SN-901	Screen	200 tons lime/hr	--
SN-902	Two-Deck Screen	200 tons lime/hr	--
LB-903	Reject Stone Fines Bin	65 tons	--
BC-912	Belt Conveyor	325 tons lime/hr	--
BC-913	Belt Conveyor	325 tons lime/hr	--
LB-905	VKD Weigh Bin	1,800 lbs	
LB-906	VKD Weigh Bin	1,800 lbs	
Solid Fuel Handling Equipment			
CFR-615	Dynamic Classifier	7 tonshr	--
SC-903	Screw Conveyor	7 tonshr	--

BC-916	Belt Conveyor	400 tonshr	--
DB-1	Pressurized Dosing Bin	7 tonshr	--
DB-2	Pressurized Dosing Bin	7 tons/hr	--
LB-901	Solid Fuel Bin	50 tons	--
HR-610	Natural gas-fired solid fuel dryer	3.5 MMBtu/hr	--
Emergency Generator			
EG-2	Diesel Emergency Generator (Caterpillar, 2013)	200 HP	40 CFR 60 Subpart IIII, 40 CFR 63, Subpart ZZZZ

Existing equipment to be modified			
New Ref. No. (former RN)	**Equipment Description**	**Rated Capacity**	**Federal Requirements**
Aggregate and Precalcination Limestone (Main Plant)			
BC-3 (MP-BC-3)	Belt Conveyor	500 tons limestone/hr	40 CFR 60 Subpart OOO
BC-9 (MP-BC-9)	Belt Conveyor	400 tons limestone/hr	40 CFR 60 Subpart OOO
BC-130 (MP-BC-14)	24” x 200’ Hoover Belt Conveyor	80 tons limestone/hr	40 CFR 60 Subpart OOO
BC-327 (LP-BC-3)	Belt Conveyor	1,000 tons limestone/day	40 CFR 60 Subpart OOO 40 CFR 63 Subpart AAAAA
Lime Finishing and Loadout Process			
BC-2513 (LP-BC-5)	Belt Conveyor	500 tons/day (lime)	--
BC-6 (LP-BC-6)	Belt Conveyor	500 tons/day (lime)	--
BC-7 (LP-BC-7)	Belt Conveyor	500 tons/day (lime)	--
BC-8 (LP-BC-8)	Belt Conveyor	500 tons/day (lime)	--
BC-2514 (LP-BC-9)	Belt Conveyor	500 tons/day (lime)	--
BC-2313 (LP-BC-11)	Belt Conveyor	500 tons/day (lime)	--
BC-2342 (LP-BC-12)	Belt Conveyor	500 tons/day (lime)	--
LB-2301 (LP-SB-1 East)	Lime Storage Silo	2,200 tons	--

LB-2302 (LP-SB-1 West)	Lime Storage Silo	2,200 tons	--
Solid Fuel Handling Equipment			
ML-900 (LP-CM-1)	Solid Fuel Milling	7 tons/hr	--
BC-2105	Belt Conveyor	100 tons/hr	--
BC-2505	Belt Conveyor	100 tons/hr	--
LB-907	Solid Fuel Bin	85 tons	--

Existing equipment that will not be modified			
Ref. No.	**Equipment Description**	**Rated Capacity**	**Federal Requirements**
Lime Finishing and Loadout Process			
LP-SB-3 North & South	Two Lime Storage Bins	600 tons (each)	--
LS-C	Jeffery Crusher (30 Flextooth)	50 tons/hr	--
LS-S	Midwestern Screen (MEV 510-5)	60 tons/hr	--
LS-CB-1	36” Belt Conveyor	150 tons/hr	--
LS-CB-2	24” Belt Conveyor	150 tons/hr	--
LS-CB-3	24” Belt Conveyor	150 tons/hr	--
LS-SS-1	Storage Silo	30 tons	--
LS-SS-2 LS-SS-3 LS-SS-4 LS-SS-5 LS-SS-6	Storage Silos	165 tons (each)	--
LS-CB-4	36” Belt Conveyor	200 tons/hr	--
LS-CB-5	36” Belt Conveyor	200 tons/hr	--
LS-CB-6	36” Belt Conveyor	200 tons/hr	--
LS-CB-7	24” Belt Conveyor	50 tons/hr	--
SC-2	16” Screw Conveyor	150 tons/hr	--
LS-1 LS-2 LS-3	Three 12” Diameter Bayshore Loadout Spouts	200 tons/hr each	--

Specifications included in the permit under this Condition are for informational purposes only and do not form enforceable terms or conditions of the permit.
(9 VAC 5-80-1100 and 9 VAC 5-80-1605 A)

PREVENTION OF SIGNIFICANT DETERIORATION PERMIT

This section (Conditions 2 through 112) establishes conditions pursuant to 9 VAC 5-80-1605 *et seq*. These conditions are federally enforceable under the federal Clean Air Act. Additional Source Wide Conditions are contained in Conditions 119 through 128.

VERTICAL LIME KILNS - PROCESS REQUIREMENTS

2. **Emission Controls: Nitrogen Oxides** - Nitrogen oxides (NO_x) emissions from each vertical kiln (Ref. LP-VK-1 and LP-VK-2) shall be controlled by good combustion practices.
(9 VAC 5-50-280 and 9 VAC 5-80-1705)

3. **Emission Controls: Carbon Monoxide** – Carbon monoxide (CO) emissions from each vertical kiln (Ref. LP-VK-1 and LP-VK-2) shall be controlled by good combustion practices.
(9 VAC 5-50-280 and 9 VAC 5-80-1705)

4. **Emission Controls: Carbon Dioxide** – Carbon dioxide (CO_2) emissions from each vertical kiln (Ref. LP-VK-1 and LP-VK-2) shall be controlled by good combustion practices, including the optimization of combustion air and flue gas to maximize combustion efficiency.
(9 VAC 5-50-280 and 9 VAC 5-80-1705)

5. **Emission Controls: Sulfur Dioxide** – Sulfur dioxide (SO_2) emissions from each vertical kiln (Ref. LP-VK-1 and LP-VK-2) shall be controlled by inherent dry scrubbing.
(9 VAC 5-50-280 and 9 VAC 5-80-1705)

6. **Emission Controls: Particulate Matter** - Particulate emissions from each vertical kiln (Ref. LP-VK-1 and LP-VK-2) shall be controlled by individual fabric filter baghouses (Ref. DC-VK-1 and DC-VK-2). Each fabric filter baghouse shall be provided with adequate access for inspection.
(9 VAC 5-50-280 and 9 VAC 5-80-1705)

VERTICAL LIME KILNS - MONITORING

7. **COMS** – The permittee shall install, calibrate, maintain, and operate a Continuous Opacity Monitoring System (COMS) to monitor and record the opacity from each vertical kiln (Ref. LP-VK-1 and LP-VK-2), in accordance with 40 CFR Part 63, Subpart A (General Provisions) and Performance Specification (PS)-1 of Appendix B to 40 CFR Part 60.
(9 VAC 5-50-40 and 40 CFR 63.7113(g))

8. **CEMS –** A continuous emission monitoring system (CEMS) shall be installed to measure and record the emissions of SO_2 in pounds per hour from each vertical kiln (Ref. LP-VK-1 and LP-VK-2). The CEMS for SO_2 shall be installed, calibrated, maintained, and

operated according to the requirements of 9 VAC 5-50-40 and 40 CFR 60.13.
(9 VAC 5-50-40)

9. **CEMS Performance Evaluations –** Performance evaluations of the CEMS for SO_2 shall be conducted in accordance with 9 VAC 5-50-40 and shall take place during the performance tests required by Conditions 32 and 34 or within 30 days thereafter. One copy of the performance evaluation report shall be submitted to the DEQ within 45 days of the evaluation. The continuous monitoring systems shall be installed and operational prior to conducting initial performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation and calibration of the device. A 30-day notification, prior to the demonstration of the continuous monitoring system's performance, and subsequent notifications shall be submitted to DEQ.
(9 VAC 5-50-40)

10. **CEMS Quality Control Program –** A CEMS quality control program which is equivalent to the requirements of 40 CFR 60.13 and 40 CFR 60, Appendix F shall be implemented for the CEMS.
(9 VAC 5-50-40)

11. **Monitoring Devices** For emission units subject to 40 CFR 63, Subpart AAAAA (as identified in Condition 1), the permittee must install, operate, and maintain each continuous parameter monitoring system (CPMS) according to the Operation, Maintenance, and Monitoring (OM&M) plan required by 40 CFR 63.7100(d) and 63.7113 (a)(1) through (a) (5).
(9 VAC 5-50-40)

12. **Combustion Monitoring Plan** – The permittee shall prepare and implement for each kiln (Ref. LP-VK-1 and LP-VK-2) a written combustion monitoring plan. The permittee shall submit the plan to DEQ for review and approval at least 90 days prior to the start-up of each kiln. Any subsequent changes to the plan must be submitted to DEQ for review and approval. Pending approval by DEQ of an initial or amended plan, the permittee shall comply with the provisions of the submitted plan. The plan shall contain the following information:

    a. Process and control device parameters to be monitored to determine compliance with NO_x, CO, and SO_2 emission limits and good combustion practices, along with established operating limits or ranges, as applicable, for each kiln (Ref. LP-VK-1 and LP-VK-2).

    b. A monitoring schedule for each kiln (Ref. LP-VK-1 and LP-VK-2).

    c. Procedures for the proper operation and maintenance of each kiln (Ref. LP-VK-1 and LP-VK-2) and each air pollution control device used to meet the applicable emission limitations in Conditions 24, 25, 26, and 27.

d. Procedures for the proper installation, operation, and maintenance of monitoring devices or systems used to determine compliance or good combustion practices, including:

i. Calibration and certification of accuracy of each monitoring device;

ii. Performance and equipment specifications for the sample interface, parametric signal analyzer, and the data collection and reduction systems;

iii. Ongoing operation and maintenance procedures; and

iv. Ongoing data quality assurance procedures.

e. Procedures for monitoring process parameters indicative of good combustion practices and control device parameters indicative of proper control device operation.

f. Corrective actions to be taken when process or operating parameters or add-on control device parameters deviate from the values identified in Condition 12a.

g. A maintenance schedule for each kiln (Ref. LP-VK-1 and LP-VK-2) and control device that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.

(9 VAC 5-50-280 and 9 VAC 5-80-1705)

13. **Monitoring Plan: Fuel Efficiency** - The permittee shall install, operate, and maintain instrumentation to continuously monitor the fuel consumption and lime production for each vertical kiln (Ref. LP-VK-1 and LP-VK-2). The instruments to monitor the fuel consumption and lime production from each vertical kiln (Ref. LP-VK-1 and LP-VK-2) shall be installed, maintained, and operated in accordance with manufacturers' specification. The same plant instruments used to monitor fuel consumption and lime production for accounting purposes shall be used in the monitoring of these parameters that are used to verify compliance with the fuel efficiency limitation in Condition 28. (9 VAC 5-50-20)

14. **Monitoring Devices: Baghouses** – Each lime kiln baghouse (Ref. DC-VK-1 and DC-VK-2) shall be equipped with a device to continuously measure the differential pressure across the baghouse. Each monitoring device shall be installed, maintained, calibrated, and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the

associated baghouse is operating.
(9 VAC 5-50-20)

15. **Monitoring Device Alarms: Baghouses** – Differential pressure measurements across each lime kiln baghouse (Ref. DC-VK-1 and DC-VK-2) shall be equipped with audible alarms to detect operation outside of the high and low differential pressure levels suggested by the baghouse manufacturer. The alarm shall be set to sound each time the differential pressure falls outside the recommended range. Corrective action shall be taken each time the alarm is activated, such that the baghouse is returned to its recommended differential pressure range. The alarm system shall be configured and tested in accordance with approved procedures which shall include, as a minimum, common industry practices. The alarm system shall be in operation when any baghouse is operating.
(9 VAC 5-50-20)

16. **Monitoring Device Observation: Baghouses** - The devices used to continuously measure the differential pressure across each baghouse (Ref. DC-VK-1 and DC-VK-2) shall be observed by the permittee not less than once per week of operation. If during the observation the differential pressure is not within the manufacturer's recommended range, timely corrective action shall be taken such that the baghouse resumes proper operation. The permittee shall continuously record measurements from the control equipment monitoring devices.
(9 VAC 5-50-20)

17. **Monitoring Devices/Observations** – Process parameters indicative of good combustion practices for each kiln (Ref. LP-VK-1 and LP-VK-2) shall be monitored in accordance with the combustion monitoring plan required by Condition 12.
(9 VAC 5-50-20)

VERTICAL LIME KILNS - OPERATING/ EMISSION LIMITATIONS

18. **Feed Monitoring Devices** – Each lime kiln (Ref. LP-VK-1 and LP-VK-2) shall be equipped with a device for measuring the feed rate of limestone. Each measuring device used must be accurate to within plus or minus five percent of the mass rate over its operating range.
(9 VAC 5-50-280 and 40 CFR 63.7112)

19. **Production and Throughput** - The annual production of lime from each of the lime kilns (Ref. LP-VK-1 and LP-VK-2) shall not exceed 157,000 tons per year, calculated monthly as the sum of each consecutive 12-month period. This production is limited to a combined total throughput of 596,600 tons of limestone feed for both kilns per year, calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-1705)

20. **Fuel** - The approved fuels for the lime kilns (Ref. LP-VK-1 and LP-VK-2) are coal,

petroleum coke, and natural gas. Use of a different fuel may require a permit to modify and operate.
(9 VAC 5-80-1705)

21. **Fuel for Cold Startups** – The only approved fuel for cold startups is natural gas. A cold startup of either lime kiln is defined as the use of the startup burners that are located within the kiln's crossover channel when: (i) no fuel has been fired in the kiln within the preceding 72 hours, and (ii) the temperature in the crossover channel is below 1100 degrees Fahrenheit. Once begun, a cold startup ends when: (i) the temperature in the crossover channel exceeds 1100 degrees Fahrenheit; (ii) the start up burners are no longer fired; and (iii) the main burners (lances) begin firing.
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

22. **Fuel Specifications** – The fuels to be burned in the kilns (Ref. LP-VK-1 and LP-VK-2) shall meet the specifications below:

NATURAL GAS:	
Maximum sulfur content:	0.5 gr/100 scf
COAL:	
Minimum heat content per shipment:	5,000 BTU/lb HHV
Minimum average annual heat content:	6,100 BTU/lb HHV
Maximum sulfur content per shipment:	3.0%
PETROLEUM COKE:	
Minimum heat content per shipment:	11,900 BTU/lb HHV
Minimum average annual heat content:	12,100 BTU/lb HHV
Maximum sulfur content per shipment:	7.0%

(9 VAC 5-80-1705 and 9 VAC 5-50-280)

23. **Fuel Certification** – The permittee shall obtain a certification from the fuel supplier with each shipment of coal and petroleum coke to be burned in the kilns (Ref. LP-VK-1 and LP-VK-2). Each fuel supplier certification shall include the following:

    a. Coal

        i. The name of the fuel supplier;

        ii. The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The certification shall include the name of the

coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);

iii. The date on which the coal was shipped;

iv. The weight of coal delivered in the shipment;

v. The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and

vi. The methods used to determine the properties of the coal.

vii. A statement that the sampling methods comply with ASTM D6883 "Standard Practice for Manual Sampling of Stationary Coal from Railroad Cars, Barges, Trucks, or Stockpiles".

b. Petroleum Coke

i. The name of the fuel supplier;

ii. The location of the coke when the sample was collected for analysis to determine the properties of the coke, specifically including whether the coke was sampled as delivered to the facility or whether the sample was collected from a coke preparation plant, at a coke supplier's facility, or at another location. The certification shall include the name of the coke preparation plant, coke storage facility, or other location where the sample was collected;

iii. The date on which the coke was shipped;

iv. The weight of coke delivered in the shipment;

v. The results of the analysis of the coke from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and

vi. The methods used to determine the properties of the coke.

vii. A statement that the sampling methods comply with ASTM D6883 "Standard Practice for Manual Sampling of Stationary Coal from Railroad Cars, Barges, Trucks, or Stockpiles".

Fuel sampling and analysis, independent of that used for certification, as may be

periodically required or conducted by DEQ may be used to determine compliance with the fuel specifications stipulated in Condition 22. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.
(9 VAC 5-80-1705)

24. **Short-Term Emission Limits** – Particulate Matter (PM) emissions from each lime kiln (Ref. LP-VK-1 and LP-VK-2)) shall not exceed 0.08 pounds per ton of stone feed (lb/tsf), which is equivalent to 0.010 gr/dscf when firing solid fuel, or 0.009 gr/dscf when firing natural gas. PM-10 emissions from each lime kiln shall not exceed 0.010 gr/dscf (filterable) when firing solid fuel, or 0.009 gr/dscf when firing natural gas. PM-2.5 emissions from each kiln shall not exceed 0.004 gr/dscf (filterable) when firing solid fuel or natural gas.
(9 VAC 5-50-280, 9 VAC 5-80-1705, and 40 CFR 63.7090 (a))

25. **Short-Term Emission Limits** - Emissions from the operation of each lime kiln (Ref. LP-VK-1 and LP-VK-2) while burning only natural gas shall not exceed the following limits:

Pollutant	Short-term emission limit (lb/hr)	Short-term emission limit (lb/ton lime)
PM-10 (filterable and condensable)	6.84	0.31
PM-2.5 (filterable and condensable)	5.50	0.25
Sulfur dioxide	1.32	0.06
Oxides of nitrogen (as NO_2)	22.83	1.04
Carbon monoxide	28.77	1.31

Short-term emission limits represent averages for a three-hour sampling period except for sulfur dioxide, nitrogen oxides, and carbon monoxide, which shall be calculated as a one-hour average.

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these limits may be determined as stated in Conditions 19, 20, 22, 32, 34, and 35.

This permit may be changed, in accordance with 9 VAC 5-80-1925, to reduce these emission limits based on results from stack testing as required in Conditions 32, 34, and 35.

(9 VAC 5-80-1705 and 9 VAC 5-50-280)

26. **Short-Term Emission Limits** - Emissions from the operation of each lime kiln (Ref. LP-

VK-1 and LP-VK-2) while burning coal or petroleum coke shall not exceed the following limits:

Pollutant	Short-term emission limits (lb/hr)	Short-term emission limits (lb/ton lime)
PM-10 (filterable and condensable)	7.16	0.33
PM-2.5 (filterable and condensable)	5.50	0.25
Sulfur dioxide	28.60	1.30
Oxides of nitrogen (as NO_2)	46.95	2.13
Carbon monoxide	66.00	3.00

Short-term emission limits represent averages for a three-hour sampling period except for sulfur dioxide, nitrogen oxides, and carbon monoxide, which shall be calculated as a one-hour average.

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these limits may be determined as stated in Conditions 19, 20, 22, 32, 34, and 35.

This permit may be changed, in accordance with 9 VAC 5-80-1925, to reduce these emission limits based on results from stack testing as required in Conditions 32, 34, and 35.

(9 VAC 5-80-1705 and 9 VAC 5-50-280)

27. **Annual Emission Limits** – Emissions from the operation of each of the lime kilns (Ref. LP-VK-1 and LP-VK-2) shall not exceed the limits specified below:

Pollutant	Annual Emissions (tons)
Total PM (filterable only)	11.3
PM-10 (filterable and condensable)	25.6
PM-2.5 (filterable and condensable)	19.9
Sulfur Dioxide	102.2
Oxides of Nitrogen (as NO_2)	167.5

Carbon Monoxide	238.3
Greenhouse Gases (expressed as CO_2e)	181,005

This permit may be changed, in accordance with 9 VAC 5-80-1925, to reduce these emission limits based on results from stack testing as required in Conditions 32, 34, and 35.

Annual emission limits are derived from the estimated overall emission contribution from operating limits, including periods of startup and shutdown. Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these limits may be determined as stated in Conditions 19, 20, 22, 32, 34, and 35.
(9 VAC 5-50-280 and 9 VAC 5-80-1705)

28. **Emission Limits: Greenhouse Gases** – Each lime kiln (Ref. LP-VK-1 and LP-VK-2) shall not use more than 3.65 MMBtu (HHV) of fuel per ton of lime produced (excluding fuel consumed during startup, shutdown, and malfunction). Heat input per ton of lime produced shall be calculated monthly. Compliance with this heat input limitation shall be calculated using the fuel and product monitoring data collected pursuant to Condition 13 and the fuel supplier data collected pursuant to Condition 23. Exceedance of the operating limits may be considered credible evidence of the exceedance of this heat input limit. Compliance with these limits may be determined as stated in Conditions 22 and 23.
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

29. **Visible Emission Limit** – Visible emissions from each lime kiln baghouse stack (Ref. DCVK-1 and DCVK-2) shall not exceed five percent opacity as determined using EPA Method 9 (40 CFR 60, Appendix A).
(9 VAC 5-50-80)

30. **Requirements by Reference –** Except where this permit is more restrictive than the applicable requirement, the lime kilns (Ref. LP-VK-1 and LP-VK-2) shall be operated in compliance with the requirements of 40 CFR 63, Subpart AAAAA.
(9 VAC 5-60-60)

VERTICAL LIME KILNS - COMPLIANCE DETERMINATION

31. **Initial Stack Test: PM –** Initial performance tests shall be conducted for PM from each lime kiln (Ref. LP-VK-1 and LP-VK-2) to determine compliance with the PM emission limits contained in Condition 24. Separate tests shall be conducted on each kiln firing coal, petroleum coke, and natural gas, with a total of six initial compliance tests required. The tests shall be performed within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of each fuel on each lime kiln (Ref. LP-VK-1 and LP-VK-2). Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 and the test methods and

procedures contained in 40 CFR Part 63, Subpart AAAAA. The details of the tests are to be arranged with DEQ. The permittee shall submit a test protocol at least 60 days prior to testing. One copy of the test results shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30, 9 VAC 5-80-1675, and 40 CFR 63.7112)

32. **Initial Stack Test: Other Pollutants Subject to PSD –** Initial performance tests shall be conducted for PM-10, PM-2.5, NO_x, SO_2, and CO from each lime kiln (Ref. LP-VK-1 and LP-VK-2) to determine compliance with the emission limits contained in Conditions 24, 25, and 26. All stack tests for PM-10 and PM-2.5 shall include both filterable and condensable portions. Separate tests shall be conducted on each kiln firing coal, petroleum coke, and natural gas, with a total of six initial compliance tests required for each pollutant. The tests shall be performed within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of each fuel on each lime kiln (Ref. LP-VK-1 and LP-VK-2). Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30. The details of the tests are to be arranged with DEQ. The permittee shall submit a test protocol at least 60 days prior to testing. One copy of the test results shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30 and 9 VAC 5-80-1675)

33. **Initial Visible Emissions Evaluation** – Visible Emission Evaluations (VEE) in accordance with the 40 CFR Part 60, Appendix A, Method 9, shall be conducted on the baghouse exhaust stack for each lime kiln (Ref. DCVK-1 and DCVK-2), when firing coal and when firing petroleum coke, to determine compliance with the emission limit contained in Condition 29. The four initial VEE tests shall be conducted concurrently with the corresponding stack tests required in Condition 32. Each test shall consist of 30 sets of 24 consecutive observations (at 15-second intervals) to yield 30 six-minute averages. The details of the tests are to be arranged with DEQ. The permittee shall submit a test protocol at least 60 days prior to testing. One copy of the test result shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30 and 9 VAC 5-80-1675)

34. **Continuing Compliance: Stack Tests** – An annual stack test shall be conducted on each lime kiln (Ref. LP-VK-1 and LP-VK-2) for PM, PM-10, PM-2.5, NO_x, SO_2, and CO to demonstrate compliance with the emission limits contained in this permit. All stack tests for PM-10 and PM-2.5 shall include both filterable and condensable portions. Separate tests shall be conducted for coal and petroleum coke for each kiln if both fuels have been used in the kiln since the previous stack test; otherwise, tests shall be conducted only on the fuel actually used since the previous stack test. Each annual stack test shall be conducted no later than 13 months after the previous stack test. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30. For PM, the test methods and procedures must comply with 40 CFR Part 63, Subpart AAAAA. The details of the

tests are to be arranged with DEQ. The permittee shall submit a test protocol at least 30 days prior to testing. Test results shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit. (9 VAC 5-80-1675 and 9 VAC 5-50-30)

35. **Reduced Stack Testing** – If three consecutive annual stack tests conducted in accordance with Conditions 32 and/or 34 demonstrate compliance with the emission limits set forth in Conditions 24, 25, and 26, for any pollutant on either kiln when firing any fuel, then the stack testing frequency required by Condition 34 shall be reduced to every five years for that pollutant for that kiln when firing that fuel. This determination shall be made on a fuel-specific, pollutant-by-pollutant basis for each kiln. Then the permittee shall conduct another stack test for each lime kiln (Ref. LP-VK-1 and LP-VK-2) for each pollutant while firing the specific fuel within 60 months of the date of the third consecutive stack test that shows compliance with the emission limits for that pollutant when firing that fuel or, if a fuel has not been used since the previous stack test, within 60 days of resuming use of that fuel. Thereafter, the permittee must perform stack tests every fifth year but no later than 60 months following the previous stack test. If a stack test shows noncompliance with the emission limits for any pollutant, the permittee shall resume annual stack testing for each affected pollutant for each lime kiln when firing that fuel, until stack tests over three consecutive years show compliance with the applicable emission limits.
(9 VAC 5-80-1675 and 9 VAC 5-50-30)

36. **Continuing Compliance: Visible Emissions Evaluation** – Upon request by DEQ, the permittee shall conduct additional visible emission evaluations from each lime kiln (Ref. LP-VK-1 and LP-VK-2) to demonstrate compliance with the visible emission limits contained in the permit. The details of the tests shall be arranged with DEQ.
(9 VAC 5-80-1675 and 9 VAC 5-50-30)

AGGREGATE AND PRECALICINATION LIMESTONE - PROCESS LIMITATIONS

37. **Emission Controls: Particulate Matter** – Particulate emissions from the following equipment shall be controlled by fabric filter baghouse:

Equipment Reference No.	Control Device Reference No.
BC-327 (belt conveyor)	DC-906
BC-344 (belt conveyor)	
BC-346 (belt conveyor)	
LB-332 (120 ton limestone storage bin)	
LB-334 (120 ton limestone storage bin)	

LB-903 (65 ton reject stone fines bin)	DC-906
SN-330 (screen)	
LS-901 (reject stone loadout spout)	

Each fabric filter shall be provided with adequate access for inspection and shall be in operation when any of the associated equipment is operating.
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

38. **Emission Controls: Particulate Matter –** Particulate emissions from the following equipment shall be controlled by a building enclosure and by wet suppression when necessary: the 150 ton primary dump hopper (HOP-900), the roller crusher (RC-110), three screens (SN-120, -210, and -900), one belt conveyor (BC-3), and one 1 ton surge bin (LB-900).
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

39. **Emission Controls: Particulate Matter –** Particulate emissions from the following equipment shall be controlled by wet suppression when necessary based on weather conditions: the primary crusher (CR-900), nine belt conveyors (BC-129, -200, -220, -230, -900, -902, -903, -904, and -915), two skip hoists (SK-350 and -360), and seven limestone piles (PILE2 through PILE8).
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

40. **Emission Controls: Particulate Matter –** Particulate emissions from the following equipment shall be controlled by constructing the equipment underground: four belt conveyors (BC-320, -901, -905, and -906).
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

41. **Requirements by Reference –** Except where this permit is more restrictive than the applicable requirement, the equipment identified in Condition 1 as being subject to 40 CFR 60, Subpart OOO and/or 40 CFR 63, Subpart AAAAA shall be operated in compliance with the requirements of 40 CFR 60, Subpart OOO and/or 40 CFR 63, Subpart AAAAA, as applicable.
(9 VAC 5-60-60 and 9 VAC 5-50-410)

AGGREGATE AND PRECALICINATION LIMESTONE - OPERATING / EMISSION LIMIATIONS

42. **Throughput** - The annual throughput of limestone for the Aggregate and Precalcination Limestone Handling Equipment, as described in Condition 1, shall not exceed 950,000 tons per year, calculated monthly as the sum of each consecutive 12 month period. This limestone throughput shall be weighed at belt conveyor BC-3.
(9 VAC 5-80-1705)

43. **Process Emission Limits** – Emissions from the operation of the Aggregate and Precalcination Limestone Handling Equipment, as described in Condition 1, that are not controlled by fabric filter DC-906 as described in Condition 37, shall not exceed the following limits:

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tons)
Particulate Matter (PM) (filterable only)	10.38	6.4
PM-10 (filterable only)	4.40	2.5
PM-2.5 (filterable only)	0.93	0.7

These emissions are derived from the estimated overall emission contribution from operating limits. Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 38, 39, 40, and 42.
(9 VAC 5-80-1705)

44. **Process Emission Limits** – Particulate emissions from the fabric filter identified in Condition 37, shall not exceed 0.010 gr/dscf (filterable) for PM/PM-10, and 0.004 gr/dscf (filterable) for PM-2.5.
(9 VAC 5-80-1705, 9 VAC 5-50-280, and 9 VAC 5-50-410)

45. **Process Emission Limits** – Emissions from the dust collector identified below shall not exceed the following annual limits:

Control Device Reference No.	PM (tpy)*	PM-10 (tpy)*	PM-2.5 (tpy)*
DC-906	5.6	5.6	2.3

* Filterable only

These emissions are derived from the estimated overall emission contribution from operating limits. Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 42, 44, 49, 50, and 53.
(9 VAC 5-80-1705)

46. **Visible Emission Limit** – Visible emissions from all Aggregate and Precalcination Limestone Handling Equipment controlled by a fabric filter baghouse (the equipment

identified in Condition 37) shall not exceed seven percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-50-80, 9 VAC 5-50-280, 9 VAC 5-80-1705, 9 VAC 5-50-410, 40 CFR 63, Subpart AAAAA, Table 1, and 40 CFR 60, Subpart OOO, Table 2)

47. **Visible Emission Limit** – Visible emissions from the primary crusher (Ref. CR-900) and secondary crusher (Ref. RC-110) shall not exceed twelve percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-50-80, 9 VAC 5-50-280, 9 VAC 5-80-1705, 9 VAC 5-50-410, and 40 CFR 60, Subpart OOO, Table 3)

48. **Visible Emission Limit –** Visible emissions from screening, stockpiles, hoppers, conveyor and feeder transfers, and fugitive emission sources shall not exceed seven percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-50-80, 9 VAC 5-50-280, 9 VAC 5-80-1705, 9 VAC 5-50-410, and 40 CFR 60, Subpart OOO, Table 2)

AGGREGATE AND PRECALICINATION LIMESTONE - COMPLIANCE DETERMINATION

49. **Initial Stack Test –** An initial performance test shall be conducted for PM from the fabric filter baghouse referenced in Condition 37 to determine compliance with the emission limits specified in Condition 44. The test shall be performed within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 and the test methods and procedures contained in 40 CFR 63, Subpart AAAAA. The details of the tests are to be arranged with DEQ. The permittee shall submit a test protocol at least 60 days prior to testing. One copy of the test results shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30, 9 VAC 5-80-1675, 40 CFR 60.674, and 40 CFR 63.7112)

50. **Initial Stack Test –** Initial performance tests shall be conducted for PM-10 and PM-2.5 from the fabric filter baghouse referenced in Condition 37 to determine compliance with the emission limits specified in Condition 44. The test shall be performed within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30. The details of the tests are to be arranged with DEQ. The permittee shall submit a test protocol at least 60 days before testing. One copy of the test results shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30 and 9 VAC 5-80-1675)

51. **Initial Visible Emissions Evaluation** – Visible Emission Evaluations (VEE) in accordance with the 40 CFR Part 60, Appendix A, Method 9, and the procedures in 40

CFR 63.7112 shall be conducted on the equipment identified in Condition 1 as being subject to 40 CFR 63, Subpart AAAAA, to determine compliance with the opacity limits established in Condition 46. These VEEs shall be conducted concurrently with the initial performance test required by Condition 49.

Each test shall consist of thirty sets of 24 consecutive observations (at 15-second intervals) to yield thirty six-minute averages. The details of the tests are to be arranged with DEQ. The permittee shall submit a test protocol at least fourteen days prior to testing. The evaluation shall be performed and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. One copy of the test results shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30, 9 VAC 5-50-410, 9 VAC 5-80-1675, and 40 CFR 63.7112)

52. **Initial Visible Emissions Evaluation** – Visible Emission Evaluations (VEE) in accordance with the 40 CFR Part 60, Appendix A, Method 9, and the procedures in 40 CFR 60.11 and 60.675 shall be conducted on the equipment identified in Conditions 47 and 48 to determine compliance with the opacity limits established in those Conditions. These VEEs shall be conducted concurrently with the initial performance test required by Condition 50.

Each test shall consist of thirty sets of 24 consecutive observations (at 15-second intervals) to yield thirty six-minute averages. The details of the tests are to be arranged with DEQ. The permittee shall submit a test protocol at least fourteen days prior to testing. The evaluation shall be performed and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. One copy of the test results shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30, 9 VAC 5-50-410, 9 VAC 5-80-1675, and 40 CFR 60.675)

53. **Continuing Compliance: Stack Tests** – Upon request by DEQ, the permittee shall conduct an additional performance test on the fabric filter baghouse referenced in Condition 37 to determine compliance with any of the emission limits specified in Condition 44. The details of the test shall be arranged with DEQ.
(9 VAC 5-80-1675 and 9 VAC 5-50-30)

54. **Continuing Compliance: Visible Emissions Evaluation** – Upon request by DEQ, the permittee shall conduct additional visible emission evaluations from any of the emissions units identified in Conditions 46, 47, and 48 to demonstrate compliance with the visible emission limits contained in those Conditions. Continuing compliance tests shall be conducted in accordance with the requirements specified for the initial VEE tests in Conditions 51 and 52. The details of the tests shall be arranged with DEQ.
(9 VAC 5-80-1675 and 9 VAC 5-50-30)

55. **Continuing Compliance: Visible Emissions Checks –**The permittee shall conduct a visible emissions (VE) check of each piece of equipment identified in Condition 1 as being subject to 40 CFR 63, Subpart AAAAA, in accordance with the following procedures and frequencies:

a. At a minimum of once per month, the permittee shall conduct a one-minute VE check of each emission unit in accordance with 40 CFR 63.7121(e). The check must be conducted while the affected source is in operation;

b. If no VE are observed in six consecutive monthly checks for any emission unit, the permittee may decrease the frequency of VE from monthly to semi-annually for that emission unit. If VE are observed during any semi-annual check, the permittee must resume VE checking of that emission unit on a monthly basis and maintain that schedule until no VE are observed in six consecutive monthly checks;

c. If no VE are observed during the semi-annual check for any emission unit, the permittee may decrease the frequency of VE checking from semi-annually to annually for that emission unit. If VE are observed during any annual check, the permittee must resume VE checking of that emission unit on a monthly basis and maintain that schedule until no VE are observed in six consecutive monthly checks; and

d. If VE are observed during any VE check, the permittee must conduct a six-minute test of opacity in accordance with Method 9 of Appendix A to 40 CFR Part 60. The permittee must begin the Method 9 test within one-hour of any observation of VE and the six-minute opacity reading must not exceed the applicable opacity limit.

(9 VAC 5-80-1675 and 40 CFR 63.7120(e))

SOLID FUEL HANDLING - PROCESS LIMITATIONS

56. **Emission Controls** – **Particulate Matter** – Particulate emissions from the following equipment shall be controlled by fabric filter baghouses:

Equipment Reference No.	Control Device Reference No.
HR-610 (solid fuel dryer)	DC-630
CFR-615 (dynamic classifier)	
ML-900 (solid fuel milling)	
SC-903 (screw conveyor)	DC-907

LB-901 (50 ton solid fuel bin)	DC-907
DB-1 (pressurized dosing bin)	
DB-2 (pressurized dosing bin)	
BC-2505 (belt conveyor)	DC-2106
LB-907 (85 ton solid fuel bin)	

Each fabric filter shall be provided with adequate access for inspection and shall be in operation when the associated equipment is operating.
(9 VAC 5-50-280 and 9 VAC 5-80-1705)

SOLID FUEL HANDLING - OPERATING / EMISSION LIMIATIONS

57. **Emission Controls –** Emissions of nitrogen oxides from the natural gas-fired solid fuel dryer (Ref. HR-610) shall be controlled by low-NO_x burners. The low-NO_x burners shall be provided with adequate access for inspection.
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

58. **Fuel –** The approved fuel for the natural gas-fired solid fuel dryer (Ref. HR-610) is natural gas. A change in the fuel may require a permit to modify and operate.
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

59. **Fuel Throughput** – The natural gas-fired solid fuel dryer (Ref. HR-610) shall consume no more than 29,652 million cubic feet (mcf) of natural gas per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-1705)

60. **Throughput –** The throughput of coal and petroleum coke combined shall not exceed 168 tons per day. The throughput of coal and petroleum coke combined shall not exceed 52,560 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. This throughput shall be measured at the weigh belt feeder BF-2109, which precedes the dynamic classifier (Ref. No. CFR-615).
(9 VAC 5-80-1705)

61. **Process Emission Limits** – Particulate emissions from each of the fabric filter baghouses listed in Condition 56, shall not exceed 0.010 gr/dscf (filterable) for PM/PM-10, and

0.004 gr/dscf (filterable) for PM-2.5.
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

62. **Process Emission Limits** – Emissions from each dust collector identified below shall not exceed the following annual limits:

Control Device Reference No.	PM (tpy)*	PM-10 (tpy)*	PM-2.5 (tpy)*
DC-630	3.10	3.10	1.24
DC-907	1.59	1.59	0.63
DC-2106	1.50	1.50	0.60

* Filterable only

These emissions are derived from the estimated overall emission contribution from operating limits. Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 60, 61, 66, and 68.
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

63. **Process Emission Limits** – Emissions from the operation of the natural gas-fired solid fuel dryer (Ref. HR-610) shall not exceed the following limits:

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tons)
Oxides of Nitrogen (as NO_2)	0.17	0.8
Carbon Monoxide	0.29	1.3

These emissions are derived from the estimated overall emission contribution from operating limits. Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 57, 58, and 59.
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

64. **Visible Emission Limit -** Visible emissions from each fabric filter stack and solid fuel handling equipment operations shall not exceed seven percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-50-80, 9 VAC 5-50-280, and 9 VAC 5-80-1705)

65. **Visible Emission Limit -** Visible emissions from the natural gas-fired solid fuel dryer

(Ref. HR-610) shall not exceed five percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-50-80, 9 VAC 5-50-280, and 9 VAC 5-80-1705)

SOLID FUEL HANDLING - COMPLIANCE DETERMINATION

66. **Initial Stack Tests –** Initial performance tests shall be conducted for PM-2.5 from the fabric filter baghouses referenced in Condition 56 to determine compliance with the emission limit for PM-2.5 specified in Condition 61. The tests shall be performed within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30. The details of the tests are to be arranged with DEQ. The permittee shall submit a test protocol at least 60 days prior to testing. One copy of the test results shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30 and 9 VAC 5-80-1675)

67. **Initial Visible Emissions Evaluation** – Visible Emission Evaluations (VEE) in accordance with the 40 CFR Part 60, Appendix A, Method 9, shall be conducted on the equipment identified in Conditions 64 and 65 to determine compliance with the opacity limits established in those Conditions. These VEEs shall be conducted concurrently with the initial performance tests required by Condition 66.

Each test shall consist of ten sets of 24 consecutive observations (at 15-second intervals) to yield ten six-minute averages. The details of the tests are to be arranged with DEQ. The evaluation shall be performed and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. One copy of the test result shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30 and 9 VAC 5-80-1675)

68. **Continuing Compliance: Stack Tests** – Upon request by DEQ, the permittee shall conduct additional performance tests on any of the fabric filter baghouses referenced in Condition 56 to determine compliance with any of the emission limits specified in Condition 61. The details of the test shall be arranged with DEQ.
(9 VAC 5-80-1675 and 9 VAC 5-50-30)

69. **Continuing Compliance: Visible Emissions Evaluation** – Upon request by DEQ, the permittee shall conduct additional visible emission evaluations from any emissions units identified in Conditions 64 and 65 to demonstrate compliance with the visible emission limits contained in those Conditions. The details of the tests shall be arranged with DEQ.
(9 VAC 5-80-1675 and 9 VAC 5-50-30)

LIME FINISHING AND LOADOUT - PROCESS LIMITATIONS

70. **Emission Controls: Particulate Matter** - Particulate matter emissions from the following equipment shall be controlled by fabric filter:

Equipment	Dust Collector / Fabric Filter Reference
BC-7, BC-8, BC-2342, LS-CB-1, LS-CB-2, LS-CB-3 (six belt conveyors)	DC-1
LS-S (Midwestern screen MEV 510-5)	
LS-SS-1 through -6 (six lime storage silos)	
LS-CB-4, LS-CB-5, LS-CB-6, LS-CB-7 (four belt conveyors)	DC-2
LS-1, LS-2, LS-3 (three 12” diameter lime loadout spouts)	
BC-500 (belt conveyor)	DC-410
BC-525, BC-917 (two belt conveyors)	DC-520
BE-901, BE-902 (two bucket elevators)	
CR-901 (HIS lime crusher)	
RC-545 (roller crusher)	
SN-901, SN-902 (screen and two-deck screen)	
BC-533 (belt conveyor)	DC-535
LB-902 (280 ton reject lime bin)	
LS-900 (reject lime loadout spout)	
BC-500, BC-525, BC-535 (three belt conveyors)	DC-555
BC-914 (belt conveyor)	DC-900
LB-904 (120 ton loadout weigh bin)	

LS-902 (loadout spout)	DC-900
BC-2514 (belt conveyor)	DC-2525
LB-2301, LB-2302, LB-2303, LB-2304 (four 2,200 ton lime storage silos)	
BC-912, BC-913, BC-2313 (three belt conveyors)	DC-2532
LS-C (Jeffrey crusher (30 Flextooth))	
BC-570, BC-2513, BC-2514, BC-6 (four belt conveyors)	DC-2533
LP-SB-3 North & South (two 600 ton lime storage bins)	
BC-2313, BC-2342 (two belt conveyors)	DC-2341

Each baghouse shall be provided with adequate access for inspection and shall be in operation when the associated equipment is operating.
(9 VAC 5-50-280 and 9 VAC 5-80-1705)

LIME FINISHING AND LOADOUT - OPERATING / EMISSION LIMITATIONS

71. **Throughput** - The yearly throughput of lime to the Lime Finishing and Loadout Process shall not exceed 471,000 tons, calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-1705)

72. **Process Emission Limits** – Particulate emissions from each of the fabric filter baghouses listed in Condition 70, shall not exceed 0.010 gr/dscf (filterable) for PM/PM-10, and 0.004 gr/dscf (filterable) for PM-2.5.
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

73. **Process Emission Limits** – Emissions from each dust collector identified below shall not exceed the following annual limits:

Control Device Reference No.	PM (tpy)*	PM-10 (tpy)	PM-2.5 (tpy)
DC-1	5.63	5.63	2.25
DC-2	5.63	5.63	2.25
DC-410	3.75	3.75	1.50
DC-520	3.00	3.00	1.20

Control Device Reference No.	PM (tpy)*	PM-10 (tpy)	PM-2.5 (tpy)
DC-535	1.50	1.50	0.60
DC-555	1.88	1.88	0.75
DC-900	0.75	0.75	0.30
DC-2525	0.89	0.89	0.36
DC-2532	0.94	0.94	0.38
DC-2533	2.63	2.63	1.05
DC-2341	1.50	1.50	0.60

* Filterable only

These emissions are derived from the estimated overall emission contribution from operating limits. Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 71, 72, 76, and 78.
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

74. **Visible Emission Limit -** Visible emissions from each of the baghouses listed in Condition 70 shall not exceed seven percent opacity as determined using EPA Method 9 (40 CFR 60, Appendix A)
(9 VAC 5-50-80 and 9 VAC 5-50-280)

75. **Visible Emission Limit** - Visible emissions from any fugitive emission point associated with the Lime Finishing and Loadout Process shall not exceed 10 percent opacity, in accordance with 40 CFR, Part 60, Appendix A, Method 9.
(9 VAC 5-50-80 and 9 VAC 5-50-280)

LIME FINISHING AND LOADOUT - COMPLIANCE DETERMINATION

76. **Initial Stack Tests –** Initial performance tests shall be conducted for PM-2.5 from the fabric filter baghouses referenced in Condition 70 to determine compliance with the emission limit for PM-2.5 specified in Condition 72. The tests shall be performed within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30. The details of the tests are to be arranged with DEQ. The permittee shall submit a test protocol at least 60 days prior to testing. One copy of the test results shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30 and 9 VAC 5-80-1675)

77. **Initial Visible Emissions Evaluation** – Visible Emission Evaluations (VEE) in

accordance with the 40 CFR Part 60, Appendix A, Method 9, shall be conducted on the equipment identified in Conditions 74 and 75 to determine compliance with the opacity limit established in those Conditions. These VEEs shall be conducted concurrently with the initial performance tests required by Condition 76.

Each test shall consist of ten sets of 24 consecutive observations (at 15-second intervals) to yield ten six-minute averages. The details of the tests are to be arranged with DEQ. The evaluation shall be performed and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. One copy of the test result shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30, 9 VAC 5-80-1675 and 9 VAC 5-50-410)

78. **Continuing Compliance – Stack Tests** – Upon request by DEQ, the permittee shall conduct additional performance tests on any of the fabric filter baghouses referenced in Condition 70 to determine compliance with any of the emission limits specified in Condition 72. The details of the test shall be arranged with DEQ.
(9 VAC 5-80-1675 and 9 VAC 5-50-30)

79. **Continuing Compliance - Visible Emissions Evaluation** – Upon request by DEQ, the permittee shall conduct additional visible emission evaluations from any of the emissions units identified in Condition 77 to demonstrate compliance with the visible emission limits contained in the permit. The details of the tests shall be arranged with DEQ.
(9 VAC 5-80-1675 and 9 VAC 5-50-30)

EMERGENCY GENERATOR – PROCESS REQUIREMENTS

80. **Monitoring Devices –** The manufacturer or the permittee shall install a non-resettable hour meter prior to the startup of the emergency generator (Ref. EG-2). The hour meter shall be provided with adequate access for inspection.
(9 VAC 5-50-20 and 40 CFR 60.4209(a))

81. **Maintenance and Operation –** The permittee must maintain and operate the emergency generator (Ref. EG-2) according to the manufacturer's written instructions or procedures developed by the permittee that are approved by the manufacturer, over the entire life of the engine. In addition, the permittee may only change those settings that are approved by the manufacturer.
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

82. **Emissions Testing** - The emergency generator (Ref. EG-2) shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Sampling ports shall be provided when requested at the appropriate locations and safe sampling platforms and access shall be provided.
(9 VAC 5-50-30)

EMERGENCY GENERATOR – OPERATING LIMITATIONS

83. **Fuel** - The approved fuel for the emergency generator (Ref. EG-2) is diesel fuel. A change in the type of fuel used may require a permit to modify and operate. (9 VAC 5-80-1705 and 9 VAC 5-50-280)

84. **Fuel** - The diesel fuel shall meet the ASTM specification for Grade No. 2-D S15 fuel oil, with a maximum sulfur content per shipment of 0.0015% by weight. (9 VAC 5-80-1705 and 9 VAC 5-50-280)

85. **Fuel Certification** - The permittee shall obtain a certification from the fuel supplier with each shipment of diesel fuel. Each fuel supplier certification shall include the following:

    a. The name of the fuel supplier;

    b. The date on which the diesel fuel was received;

    c. The quantity of diesel fuel delivered in the shipment;

    d. A statement that the diesel fuel complies with the American Society for Testing and Materials specification for Grade No. 2-D S15 diesel fuel; and

    e. The sulfur content of the diesel fuel.

    Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by DEQ may be used to determine compliance with the fuel specifications stipulated in Condition 84. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits. (9 VAC 5-80-1705)

86. **Emergency Generator Operation** - The operation of the emergency generator (Ref. EG-2) is limited to emergency situations. Emergency situations include emergency generator use to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility is interrupted. The emergency generator (Ref. EG-2) may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government, the manufacturer, the vendor, or the insurance company associated with the engines. Maintenance checks and readiness testing of this unit is limited to 100 hours per year. The permittee may use the emergency generator (Ref. EG-2) for additional hours for maintenance checks and readiness testing, if the permittee maintains records indicating that Federal, State or local standards require maintenance and testing of the emergency generator (Ref. EG-2) beyond 100 hours per year. (9 VAC 5-80-1705)

87. **Emergency Generator Operation** – The operation of the emergency generator (EG-2) is

limited to 500 hours per year. Annual hours of operation shall be calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-1705)

EMERGENCY GENERATOR – EMISSION LIMITATIONS

88. **Emission Limits** - Emissions from the operation of the emergency generator (Ref. EG-2) shall not exceed the following limits:

Nitrogen Oxides (as NO_2)	1.31 lbs/hr	0.33 tons/yr
Carbon Monoxide	1.15 lbs/hr	0.29 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 83, 84, and 87.
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

89. **Process Emission Limits** - Emissions from the operation of the emergency generator (Ref. EG-2) shall not exceed the following limits:

Non-Methane Hydrocarbons + Nitrogen Oxides	4.0 g/kW-hr
Carbon Monoxide	3.5 g/kW-hr
Particulate Matter (PM)	0.20 g/kW-hr

Compliance with these emission limits may be determined by keeping records of engine manufacture data indicating compliance with these emission limits.
(9 VAC 5-80-1705, 9 VAC 5-50-280, and 40 CFR 60.4202(a)(2))

90. **Visible Emission Limit** - Visible emissions from the emergency generator (Ref. EG-2) shall not exceed 10 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.
(9 VAC 5-50-80 and 9 VAC 5-80-1705)

91. **Requirements by Reference –** Except where this permit is more restrictive than the applicable requirement, the emergency generator (Ref. EG-2) shall be operated in compliance with the requirements of 40 CFR Part 60, Subpart IIII and 40 CFR Part 63, Subpart ZZZZ.
(9 VAC 5-60-60 and 9 VAC 5-50-410)

FACILITY WIDE - OPERATING/EMISSION LIMITATIONS

92. **Paving of Roadways –** Prior to the commercial operation of the vertical kilns (Ref. LP-VK-1 and LP-VK-2), roads and operational areas of the facility subject to high lime product truck traffic shall be paved. The permittee shall submit a paving plan for DEQ approval at least 60 days prior to commencement of paving operations. The paving plan shall, at a minimum, include all areas that were designated as paved in the ambient air quality modeling that was conducted prior to issuance of this permit. The paving plan shall include a description of the paving material to be used and a site map which delineates the areas of the plant site, including access roads, which are subject to truck traffic. The site map shall also designate areas that are either already paved or will be paved as part of the paving plan.
(9 VAC 5-80-1705 and 9 VAC 5-50-280)

93. **Fugitive Dust Emission Controls -** Fugitive emission controls shall include the following, or equivalent, as a minimum:

    a. Dust from drills, shot piles, material handling, screens, crushers, load-outs, and traffic areas shall be controlled by wet suppression or equivalent.

    b. All material being stockpiled shall be kept adequately moist to control dust during storage and handling at all times to minimize emissions.

    c. Dust from haul roads and traffic areas shall be controlled by the application of asphalt, water, suitable chemicals, or equivalent methods approved by DEQ.

    d. Reasonable precautions shall be taken to prevent deposition of dirt on public roads and subsequent dust emissions. Trucks leaving the site shall have their wheels cleaned by use of a wheel washer or equivalent method. Dirt, product, or raw material spilled or tracked onto paved surfaces shall be promptly removed to prevent particulate matter from becoming airborne.

    (9 VAC 5-50-280 and 9 VAC 5-50-90)

94. **Dust Control Plan –** In order to minimize the duration and frequency of excess emissions, the permittee shall develop a Dust Control Plan that outlines the preventative measures to be implemented for fugitive dust control at the facility. The plan shall be submitted in writing for approval by DEQ within no later than 180 days prior to start-up of the first lime kiln (Ref. LP-VK-1 or LP-VK-2) and shall include the following as a minimum:

    a. Identification of the personnel responsible for overseeing fugitive dust control;

    b. Description and the frequency of measures to be taken to prevent excess emissions from drills, shot piles, material handling, and load-outs;

c. Description and the frequency of measures to be taken to prevent excess emissions from storage piles and stockpiling operations;

d. Description and the frequency of measures to be taken to prevent fugitive dust from haul roads and other unpaved surfaces;

e. Description and the frequency of measures to be taken to prevent fugitive dust from conveying or transporting materials;

f. Description and the frequency of measures to be taken to prevent deposition of dirt on paved surfaces within the facility and access roads entering the facility.

(9 VAC 5-50-280 and 9 VAC 5-50-90)

95. **Test/Monitoring Ports** - The permitted facility shall be constructed so as to allow for emissions testing and monitoring upon reasonable notice at any time, using appropriate methods. Sampling ports shall be provided at the appropriate locations and safe sampling platforms and access shall be provided.
(9 VAC 5-50-30)

96. **Maintenance and Operation** - At all times, including periods of startup, shutdown, and malfunction, the permittee must operate and maintain any affected source such as the vertical lime kilns (Ref. LP-VK-1 and LP-VK-2), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that the owner or operator reduce emissions from the affected source to the greatest extent which is consistent with safety and good air pollution control practices. The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require the permittee to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to DEQ which may include, but is not limited to: monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required in Condition 98), review of operation and maintenance records, and inspection of the source.
(9 VAC 5-80-1705, 40 CFR 63.6(e)(1)(i), and 40 CFR 63.7100 (c))

97. **Maintenance and Operation** - The permittee must implement the DEQ approved written operations, maintenance, and monitoring (OM&M) plan for the lime manufacturing plant. Any subsequent changes to the plan must be submitted to DEQ for review and approval. Pending approval by DEQ of an initial or amended plan, the

permittee must comply with the provisions of the submitted plan. Each plan must contain the following information:

a. Process and control device parameters to be monitored to determine compliance, along with established operating limits or ranges, as applicable, for each emission unit.

b. A monitoring schedule for each emission unit that is subject to 40 CFR 63 Subpart AAAAA as identified in Condition 1.

c. Procedures for the proper operation and maintenance of each emission unit and each air pollution control device used to meet the applicable emission limitations and operating limits in Tables 1 and 2 of 40 CFR 63, Subpart AAAAA, respectively.

d. Procedures for the proper installation, operation, and maintenance of monitoring devices or systems used to determine compliance, including:

    i. Calibration and certification of accuracy of each monitoring device.

    ii. Performance and equipment specifications for the sample interface, parametric signal analyzer, and the data collection and reduction systems.

    iii. Ongoing operation and maintenance procedures in accordance with the general requirements of 40 CFR 63.8(c)(1), (3), and (4)(ii).

    iv. Ongoing data quality assurance procedures in accordance with the general requirements of 40 CFR 63.8(d).

e. Procedures for monitoring process and control device parameters.

f. Corrective actions to be taken when process or operating parameters or add-on control device parameters deviate from the operating limits specified in Table 2 of 40 CFR Part 63, Subpart AAAAA, including:

    i. Procedures to determine and record the cause of a deviation or excursion, and the time the deviation or excursion began and ended.

    ii. Procedures for recording the corrective action taken, the time corrective action was initiated, and the time and date the corrective action was completed.

A maintenance schedule for each emission unit and control device that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.
(9 VAC 5-80-1705 and 40 CFR 63.7100 (d))

98. **Maintenance and Operation** – The permittee must develop and implement a written startup, shutdown, and malfunction plan (SSMP) for each vertical kiln (Ref. LP-VK-1 and LP-VK-2) according to the provisions in 40 CFR 63.6(e)(3).
(9 VAC 5-80-1705 and 40 CFR 63.7100 (e))

FACILITY-WIDE - MONITORING

99. **Monitoring Devices** – Each of the fabric filters identified in Conditions 37, 56, and 70 shall be equipped with a device to continuously measure the differential pressure across the fabric filters. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when each fabric filter is operating.
(9 VAC 5-50-20 and 9 VAC 5-80-1705)

100. **Monitoring Device Alarms** – Differential pressure measurements across each fabric filter listed in Conditions 37, 56, and 70 shall be equipped with audible alarms to detect operation outside of the high and low differential pressure levels suggested by the fabric filter manufacturer. The alarm shall be set to sound each time the differential pressure falls outside the recommended range. Corrective action shall be taken each time the alarm is activated, such that the fabric filter is returned to its recommended differential pressure range. The alarm system shall be configured and tested in accordance with approved procedures which shall include, as a minimum, common industry practices. The alarm system shall be in operation when any fabric filter is operating.
(9 VAC 5-50-20)

101. **Monitoring Device Observation** – To ensure good performance, the device(s) used to continuously measure the differential pressure across each fabric filter identified in Conditions 37, 56, and 70 shall be observed by the permittee not less than once per week of operation. The permittee shall continuously record measurements from the control equipment monitoring devices. If during the inspection, the differential pressure is not within the manufacturer’s recommended range, timely corrective action shall be taken such that the fabric filter resumes proper operation.
(9 VAC 5-50-20)

FACILITY-WIDE - CONTINUING COMPLIANCE DETERMINATION

102. **Visible Emissions Inspection: Fabric Filter Baghouses –** The permittee shall conduct a visible emissions inspection of each fabric filter at the facility, except for DC-906 (which

is subject to corresponding requirements pursuant to Condition 55, which are derived from 40 CFR Part 63 Subpart AAAAA), in accordance with the following procedures and frequencies:

a. At a minimum of once per operating week, the permittee shall observe the presence of visible emissions. Each observation period shall be a minimum of one minute. If during the inspection visible emissions are observed, a visible emission evaluation (VEE) shall be conducted in accordance with 40 CFR Part 60, Appendix A, EPA Method 9, unless timely corrective action is initiated within two hours of the visible emissions inspection such that the equipment operates with no visible emissions within 24 hours of the initial observation. The VEE shall be conducted for a minimum of six minutes. If any of the observations exceed the applicable opacity standard for the emissions unit, the VEE shall be conducted for a total of 60 minutes or until an exceedance of the opacity standard for that emission unit has been documented, whichever period is shorter. If visible emissions exceed the limit for that emission unit, then timely corrective action shall be taken such that equipment resumes operation with visible emissions not exceeding the limit for that equipment.

b. All visible emissions inspections shall be performed when the equipment is operating under representative conditions for the day.

c. If visible emissions inspections conducted during four consecutive weeks show no visible emissions, the permittee may reduce the monitoring frequency from weekly to monthly for that emission unit. Anytime the monthly visible emissions inspections show visible emissions, or when requested by DEQ, the monitoring frequency shall be increased to once per operating week for that emission unit.

(9 VAC 5-80-1675 and 9 VAC 5-50-30)

103. **Visible Emissions Inspection: Other Controlled Emission Units –** The permittee shall conduct a visible emissions inspection of each piece of equipment identified in Condition 1 that is not controlled by a fabric filter/baghouse in accordance with the following procedures and frequencies:

a. At a minimum of once per operating week, the permittee shall observe the presence of visible emissions. Each observation period shall be a minimum of one minute. If during the inspection, visible emissions are observed, a visible emission evaluation (VEE) shall be conducted in accordance with 40 CFR Part 60, Appendix A, EPA Method 9, unless timely corrective action is initiated within two hours of the visible emissions inspection such that the equipment operates with no visible emissions within 24 hours of the initial observation. The VEE shall be conducted for a minimum of six minutes. If any of the observations exceed the applicable opacity standard for the emissions unit, the VEE shall be conducted for a total of 60 minutes or until an exceedance of the opacity standard

for that emission unit has been documented, whichever period is shorter. If visible emissions exceed the limit for that emission unit, then timely corrective action shall be taken such that the equipment resumes operation with visible emissions not exceeding the limit for that equipment.

b. All visible emissions inspections shall be performed when the equipment is operating under representative conditions for the day.

c. If visible emissions inspections conducted during four consecutive weeks show no visible emissions, the permittee may reduce the monitoring frequency to monthly for that emission unit. Anytime the monthly visible emissions inspections show visible emissions, or when requested by DEQ, the monitoring frequency shall be increased to once per operating week for that emission unit.

(9 VAC 5-80-1675 and 9 VAC 5-50-30)

104. **Observation of Wet Suppression Systems** – To ensure good performance, the facility shall perform weekly inspections on all wet suppression systems that are used to control fugitive dust at the facility, to ensure that water is flowing to each discharge spray nozzle in each wet suppression system that has operated during that week. The facility shall initiate initial corrective action within 24 hours and complete corrective action as expediently as practical if the owner or operator finds that water is not flowing properly during an inspection of the water spray nozzles. The owner or operator must record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken.
(9 VAC 5-50-410, 9 VAC 5-80-1705, 40 CFR 60.674(b), and 40 CFR 60.676(b))

AMBIENT AIR QUALITY MONITORING

105. **Ambient Air Quality Monitoring –** The permittee shall conduct the ambient air quality monitoring PM-2.5 for at least one year after the second kiln begins normal operation. No later than 180 days prior to startup of the second kiln, the permittee shall submit for approval by DEQ an ambient air quality monitoring protocol and plan, which shall include, at a minimum, the following elements:

a. Description of the site selection process for air quality and meteorological monitors;

b. Description of the location of the monitoring sites (at least two are required);

c. Description of the manufacturer and method of measurement for all monitoring equipment;

d. Description of reporting formats and frequencies;

e. Description of quality assurance and quality control for the monitoring program; and

f. Description of procedures to be followed in the operation of monitoring equipment, data processing, and data validation.

All monitoring and associated tasks shall conform to, at a minimum, the applicable requirements of 40 CFR Parts 50, 53, and 58, and any other requirements specified by DEQ.
(9 VAC 5-80-1985 E and 9 VAC 5-80-1735 B and C)

RECORDS

106. **On Site Records** - The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with DEQ. These records shall include, but are not limited to:

a. The monthly and annual production of lime from each kiln, in tons. The annual throughput shall be calculated monthly as the sum of each consecutive 12-month period.

b. The number of hours of operation of each vertical lime kiln (Ref. LP-VK-1 and LP-VK-2).

c. The monthly and annual consumption of limestone kiln feed, in tons. Monthly consumption shall be calculated from records of each feed rate measuring device. The annual consumption shall be calculated monthly as the sum of each consecutive 12-month period.

d. The monthly and annual throughput of limestone as specified in Condition 42. The annual throughput shall be calculated monthly as the sum of each consecutive 12-month period.

e. Coal shipments purchased, indicating sulfur and ash content per shipment. A copy of the coal purchase agreement which specifies the sulfur content and maximum ash limits shall be maintained with these records.

f. Petroleum coke shipments purchased, indicating sulfur and ash content per shipment. A copy of the petroleum coke purchase agreement which specifies the sulfur content and maximum ash limits shall be maintained with these records.

g. The daily, monthly, and annual throughput of coal and petroleum coke, in

tons. The annual consumption shall be calculated monthly as the sum of each consecutive 12-month period.

h. The monthly and annual throughput of natural gas, in million cubic feet. The annual consumption shall be calculated monthly as the sum of each consecutive 12-month period.

i. All fuel supplier certifications for natural gas, coal, and petroleum coke.

j. Quarterly COMS opacity data from each lime kiln baghouse stack (Ref. DCVK-1 and DCVK-2).

k. All data from the SO_2 CEMS.

l. Results of all performance tests and visible emissions evaluations.

m. Daily wet suppression spray systems results including:

   i. The date, time, and name of person performing each inspection;

   ii. A list of items inspected;

   iii. The pressure gauge reading; and

   iv. Any maintenance or repairs performed as a result of these inspections.

n. Periodic visible emissions inspection results as required by Conditions 55, 102, 103, and 104 including:

   i. The date, time, and name of person performing each inspection;

   ii. Whether or not there were visible emissions;

   iii. Any maintenance or repairs performed as a result of these inspections including the date, time and person performing the repairs; and

   iv. VEE results.

o. The annual throughput of lime, in tons, processed by the Lime Loadout Facility, calculated monthly as the sum of each consecutive 12-month period.

p. A copy of each notification and report that was submitted to comply with

the 40 CFR Part 63, Subpart AAAAA, including all documentation supporting any Initial Notification or Notification of Compliance Status that was submitted, according to the requirements in 40 CFR 63.10(b)(2).

q. The records in 40 CFR 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

r. The time, date, and duration of each startup and shutdown period for each vertical kiln (Ref. LP-VK-1 and LP-VK-2).

s. Records of performance tests, performance evaluations, and opacity and VE observations as required in 40 CFR 63.10(b)(2)(viii).

t. Records in 40 CFR 63.6(h)(6) for VE observations.

u. Records required by Tables 5 and 6 of 40 CFR Part 63, Subpart AAAAA to show continuous compliance with each emission limitation that applies to the facility.

v. Records which document the basis for the initial applicability determination as required under 40 CFR 63.7081.

w. Hours of operation of the emergency generator (EG-2).

x. A copy of the Dust Control Plan required by Condition 94.

y. All other records required by 40 CFR 60, Subpart OOO or 40 CFR 63, Subpart AAAAA that are not described individually in this Condition.

These records shall be available for inspection by DEQ and shall be current for the most recent five years.
(9 VAC 5-50-50)

NOTIFICATIONS

107. **Initial Notifications** - The permittee shall furnish written notification to DEQ:

a. The actual date on which installation of each vertical lime kiln (Ref. LP-VK-1 and LP-VK-2) commences within 30 days after such date.

b. The actual start-up date of each vertical lime kiln (Ref. LP-VK-1 and LP-VK-2) within 15 days after such date.

c. The anticipated date of the initial performance test and visible emission evaluation on each vertical lime kiln (Ref. LP-VK-1 and LP-VK-2), as required

by Conditions 31, 32, and 33, at least sixty days prior to such date.

d. The actual date on which installation of each piece of equipment subject to Subpart OOO (as identified in Condition 1) commences within 30 days after such date.

e. The actual start-up date of each piece of equipment subject to Subpart OOO (as identified in Condition 1) within 15 days after such date.

f. The anticipated date of the initial performance tests and/or initial visible emission evaluation as required by Conditions 49, 50, 51, 52, 66, 67, 76, and 77), postmarked at least seven days prior to such date.

Copies of the written notification referenced in subsections a, b, and c above are to be sent to:

Associate Director
Office of Air Enforcement (3AP10)
U.S. Environmental Protection Agency
Region III
R3_APD_Permits@epa.gov

(9 VAC 5-50-50, 40 CFR 60.675(g), 40 CFR 676(i) and (k), and 40 CFR 61.7130(a))

108. **Subsequent Notifications** - The permittee shall furnish written notification to DEQ and EPA for:

a. The anticipated date of any continuing compliance performance tests and/or visible emission evaluations on either vertical lime kiln (Ref. LP-VK-1 and LP-VK-2), pursuant to Conditions 34 and 36, at least sixty days prior to such date.

b. The anticipated date of any continuing compliance stack tests and/or visible emission evaluations for each piece of equipment subject to Subpart OOO, postmarked at least seven days prior to such date.

(9 VAC 5-50-50, 40 CFR 60.675(g), and 40 CFR 61.7130(a))

REPORTING

109. **Compliance Reports** - The permittee must submit the compliance report for the emission units subject to Subpart AAAAA (as identified in Condition 1) according to the requirements listed below:

a. Each compliance report must cover the semi-annual reporting period from January 1 through June 30 or the semi-annual reporting period from July 1

through December 31.

b. Each compliance report must be postmarked or delivered no later than March 1 or September 1, whichever date is the first date following the end of the semi-annual reporting period.

(9 VAC 5-50-50 and 40 CFR 63.7131(b))

110. **Compliance Reports** - The compliance report required in Condition 109 must contain the information as specified below:

a. Company name and address.

b. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

c. Date of report and beginning and ending dates of the reporting period.

d. If the permittee had a startup, shutdown or malfunction during the reporting period and the permittee took actions consistent with the permittee's SSMP, the compliance report must include the information in 40 CFR 63.10(d)(5)(i).

e. If there were no deviations from any emission limitations (emission limit, operating limit, opacity limit, and VE limit) that apply to the permittee, the compliance report must include a statement that there were no deviations from the emission limitations during the reporting period.

f. If there were no periods during which the Continuous Monitoring Systems (CMS) were out-of-control as specified in 40 CFR 63.8(c)(7), a statement that there were no periods during which the CMS were out-of-control during the reporting period.

(9 VAC 5-50-50 and 40 CFR 63.7131(c))

111. **Reporting** - For each deviation from an emission limitation (emission limit, operating limit, opacity limit, and VE limit) that occurs at a Subpart AAAAA affected source where a CMS is not used to comply with the emission limitations in the 40 CFR Part 63, Subpart AAAAA, the compliance report must contain the information specified in Condition 110 a through d and paragraphs a and b below. The deviations must be reported in accordance with the requirements in 40 CFR 63.10(d).

a. The total operating time of each emission unit during the reporting period.

b. Information on the number, duration, and cause of deviations (including

unknown cause, if applicable), as applicable, and the corrective action taken.

(9 VAC 5-50-50 and 40 CFR 63.7131(d))

112. **Reporting** - For each deviation from an emission limitation (emission limit, operating limit, opacity limit, and VE limit) occurring at an emission unit subject to Subpart AAAAA (as identified in Condition 1) where a CMS is used to comply with the emission limitation in the 40 CFR Part 63, Subpart AAAAA, the compliance report must include the information specified in Condition 110 a through d and paragraphs a. through k. below. This includes periods of startup, shutdown, and malfunction.

a. The date and time that each malfunction started and stopped.

b. The date and time that each CMS was inoperative, except for zero (low-level) and high-level checks.

c. The date, time and duration that each CMS was out-of-control, including the information in 40 CFR 63.8(c)(8).

d. The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

e. A summary of the total duration of the deviations during the reporting period and the total duration as a percent of the total affected source operating time during that reporting period.

f. A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

g. A summary of the total duration of CMS downtime during the reporting period and the total duration of CMS downtime as a percent of the total emission unit operating time during that reporting period.

h. A brief description of the process units.

i. A brief description of the CMS.

j. The date of the latest CMS certification or audits.

k. A brief description of any changes in CMS, processes, or controls since the last reporting period.

(9 VAC 5-50-50 and 40 CFR 63.7131(e))

MINOR NEW SOURCE REVIEW PERMIT

This section (Conditions 113 through 118) establishes conditions pursuant to 9 VAC 5-80-1100 *et seq*. These conditions are federally enforceable under the federal Clean Air Act.

113. **Emission Controls: Volatile Organic Compounds** – Volatile Organic Compound (VOC) emissions from each vertical kiln (Ref. LP-VK-1 and LP-VK-2) shall be controlled by good combustion practices.
(9 VAC 5-50-260 and 9 VAC 5-80-1180)

114. **Emission Limits** - Emissions from the operation of the each lime kiln (Ref. LP-VK-1 and LP-VK-2), while burning any approved fuel, shall not exceed the following limits:

Pollutant	Short-Term Emission Limits (lb/hr)	Short-Term Emission Limits (lb/ton lime)	Annual Emission Limits (tpy)
Volatile organic Compounds (VOC)	3.55	0.16	13.0
Sulfuric Acid Mist (SAM)	0.89 (coke); 0.38 (coal)	0.04 (coke); 0.02 (coal)	3.2

The short-term emission limits represent averages for a three-hour sampling period.

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these limits may be determined as stated in Conditions 19, 20, and 21.

This permit may be changed, in accordance with 9 VAC 5-80-1925, to reduce these emission limits based on results from stack testing as required in Conditions 116 and 117.

(9 VAC 5-80-1180 and 9 VAC 5-50-260)

115. **Combustion Monitoring Plan** – The permittee shall prepare and implement for each kiln (Ref. LP-VK-1 and LP-VK-2) a written combustion monitoring plan for VOC. The permittee shall submit the plan to DEQ, for review and approval within 180 days of start-up of each kiln. Any subsequent changes to the plan must be submitted to DEQ, for review and approval. Pending approval by DEQ of an initial or amended plan, the permittee shall comply with the provisions of the submitted plan. The plan shall contain the following information:

a. Process and control device parameters to be monitored to determine compliance with VOC emission limits and good combustion practices, along with established operating limits or ranges, as applicable, for each kiln (Ref. LP-VK-1 and LP-VK-2).

b. A monitoring schedule for each kiln (Ref. LP-VK-1 and LP-VK-2).

c. Procedures for the proper operation and maintenance of each kiln (Ref. LP-VK-1 and LP-VK-2) necessary to meet the applicable emission limitations in Condition 114.

d. Procedures for the proper installation, operation, and maintenance of monitoring devices or systems used to determine compliance or good combustion practices, including:

i. Calibration and certification of accuracy of each monitoring device;

ii. Performance and equipment specifications for the sample interface, parametric signal analyzer, and the data collection and reduction systems;

iii. Ongoing operation and maintenance procedures; and

iv. Ongoing data quality assurance procedures.

e. Procedures for monitoring process parameters indicative of good combustion practices and control device parameters indicative of proper control device operation.

f. Corrective actions to be taken when process or operating parameters or add-on control device parameters deviate from the values identified in Condition 115a.

g. A maintenance schedule for each kiln (Ref. LP-VK-1 and LP-VK-2) and control device that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.

(9 VAC 5-80-1180)

116. **Initial Stack Test -** Initial performance tests shall be conducted for VOC and SAM from each lime kiln (Ref. LP-VK-1 and LP-VK-2) to determine compliance with the emission limits contained in Condition 114. Separate tests shall be conducted on each kiln firing coal, petroleum coke, and natural gas, with a total of six initial compliance tests required. The tests shall be performed within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. The tests required by this Condition shall be conducted concurrently with the initial performance tests required by Condition 32. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30. The details of the tests are to be arranged with DEQ. The permittee shall submit a test protocol at least

60 days prior to testing. One copy of the test results shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30 and 9 VAC 5-80-1200)

117. **Continuing Compliance: Stack Tests** – Within five years after the initial performance tests completed pursuant to Condition 116, additional performance tests shall be conducted on each lime kiln (Ref. LP-VK-1 and LP-VK-2) for VOC and SAM to demonstrate compliance with the emission limits contained in this permit. Separate tests shall be conducted for coal and petroleum coke for each kiln. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30. The details of the tests are to be arranged with DEQ. The permittee shall submit a test protocol at least 30 days prior to testing. Test results shall be submitted to DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(VAC 5-80-1200 and 9 VAC 5-50-30)

118. **On Site Records** - The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with DEQ. These records shall include, but are not limited to the results of all performance tests conducted pursuant to Conditions 116 and 117. These records shall be available for inspection by DEQ and shall be current for the most recent five years.
(9 VAC 5-50-50)

GENERAL CONDITIONS

119. **Permit Invalidation** - The portions of this permit to modify the lime manufacturing facility, by installing the two vertical lime kilns (LP-VK-1 and LP-VK-2) and the associated equipment in Condition 1, shall become invalid, unless an extension is granted by DEQ, if:

    a. A program of continuous installation is not commenced within 18 months from the date of this permit, or

    b. A program of construction or modification is discontinued for a period of 18 months or more, or is not completed within a reasonable time, except for a DEQ-approved period between phases of the phased construction of a new stationary source or project.

(9 VAC 5-80-1210 and 9 VAC 5-80-1985)

120. **Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:

    a. Knowingly makes material misstatements in the application for this permit

or any amendments to it;

b. Fails to comply with the conditions of this permit;

c. Fails to comply with any emission standards applicable to a permitted emissions unit;

d. Causes emissions from this facility which result in violations of, or interferes with the attainment and maintenance of, any ambient air quality standard;

e. Fails to operate this facility in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect on the date that the application for this permit is submitted;

(9 VAC 5-80-1210 F and 9 VAC 5-80-1985 F)

121. **Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;

b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;

c. To inspect at reasonable times any facility, equipment, or process subject the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and

d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.
(9 VAC 5-170-130, 9 VAC 5-80-1180, and 9 VAC 5-80-1985 E)

122. **Maintenance/Operating Procedures** - At all times, including periods of startup, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions. The permittee shall take the following measures in order to minimize the duration and

frequency of excess emissions, with respect to air pollution control equipment, monitoring devices, and process equipment which affect such emissions:

a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.

b. Maintain an inventory of spare parts.

c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.

d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.
(9 VAC 5-50-20 E, 9 VAC 5-80-1180 D, and 9 VAC 5-80-1985 E)

123. **Record of Malfunctions** – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken and name of person generating the record.
(9 VAC 5-20-180 J, 9 VAC 5-80-1180 D, and 9 VAC 5-80-1985 E)

124. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to DEQ, of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but not later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within 14 days of the discovery. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify DEQ, in writing.
(9 VAC 5-20-180 C, 9 VAC 5-80-1180, and 9 VAC 5-80-1985 E)

125. **Notification for Control Equipment Maintenance** - The permittee shall furnish notification to DEQ, of the intention to shut down or bypass, or both, air pollution control equipment for necessary scheduled maintenance, which results in excess emissions for more than one hour, at least 24 hours prior to the shutdown. The notification shall include, but is not limited to, the following information:

a. Identification of the air pollution control equipment to be taken out of service, as well as its location, and registration number;

b. The expected length of time that the air pollution control equipment will be out of service;

c. The nature and quantity of emissions of air pollutants likely to occur during the shutdown period;

d. Measures that will be taken to minimize the length of the shutdown or to negate the effect of the outage.

(9 VAC 5-20-180 B)

126. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9 VAC 5-20-180 I, 9 VAC 5-80-1180, and 9 VAC 5-80-1985 E)

127. **Change of Ownership** - In the event of any change in control of ownership of the permitted source, the permittee shall notify the succeeding owner of the existence of this permit by letter and send a copy of that letter to DEQ.
(9 VAC 5-80-1240 and 9 VAC 5-80-1975 B)

128. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-170-160)

SOURCE TESTING REPORT FORMAT

Report Cover

1. Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or registration)
3. Test Dates.
4. Tester; name, address and report date

Certification

1. Signed by team leader/certified observer (include certification date)
2. Signed by responsible company official
3. *Signed by reviewer

Copy of approved test protocol

Summary

1. Reason for testing
2. Test dates
3. Identification of unit tested & the maximum rated capacity
4. *For each emission unit, a table showing:
   a. Operating rate
   b. Test Methods
   c. Pollutants tested
   d. Test results for each run and the run average
   e. Pollutant standard or limit
5. Summarized process and control equipment data for each run and the average, as required by the test protocol
6. A statement that test was conducted in accordance with the test protocol or identification & discussion of deviations, including the likely impact on results
7. Any other important information

Source Operation

1. Description of process and control devices
2. Process and control equipment flow diagram
3. Sampling port location and dimensioned cross section Attached protocol includes: sketch of stack (elevation view) showing sampling port locations, upstream and downstream flow disturbances and their distances from ports; and a sketch of stack (plan view) showing sampling ports, ducts entering the stack and stack diameter or dimensions

Test Results

1. Detailed test results for each run
2. *Sample calculations
3. *Description of collected samples, to include audits when applicable

Appendix

1. *Raw production data
2. *Raw field data
3. *Laboratory reports
4. *Chain of custody records for lab samples
5. *Calibration procedures and results
6. Project participants and titles
7. Observers' names (industry and agency)
8. Related correspondence
9. Standard procedures

* Not applicable to visible emission evaluations