

**COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office**

STATEMENT OF LEGAL AND FACTUAL BASIS

O-N Minerals (Chemstone) Company
Frederick County, Virginia
Permit No. VRO80504

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, O-N Minerals (Chemstone) Company has applied for a renewal of its Title V Operating Permit for its lime manufacturing facility located in Frederick County, Virginia. The Department has reviewed the application and has prepared a Title V Operating Permit.

Engineer/Permit Contact: _____ Date: 01/16/08 _____

Air Permit Manager: _____ Date: 01/23/08 _____

Deputy Regional Director: _____ Date: 01/23/08 _____

FACILITY INFORMATION

Permittee

O-N Minerals (Chemstone) Company
P.O. Box 71
Strasburg, Virginia 22657

Facility

O-N Minerals (Chemstone) Company
1.0 mile east of U.S. 11 on State Route 672
Clear Brook, Virginia

Plant ID No. 51-069-0034

SOURCE DESCRIPTION

NAICS Code: 327410 – Lime Manufacturing

O-N Minerals (Chemstone) Company owns and operates a limestone quarry, limestone products plant, and lime manufacturing facility located 1.0 mile east of U.S. 11 on State Route 672 in Clear Brook, Frederick County, Virginia. The basic processes at this facility in Frederick County are: (1) quarrying raw limestone, (2) preparing limestone for the kiln by crushing and sizing, (3) calcining the limestone through a rotary lime kiln and (4) miscellaneous crushing, transfer, storage, handling and loadout operations for the manufactured lime.

The facility is a Title V major source of sulfur dioxide (SO₂), nitrogen oxides (NO_x) and hydrogen chloride (HCl). This source is located in an attainment area for all pollutants and is a PSD major source. The facility is currently operating under a minor new source review (NSR) permit issued on January 22, 2003. Also, a State Operating Permit (SOP) was issued on February 9, 2005 to implement the Reasonably Available Control Technology (RACT) requirements for NO_x in the Western Virginia Emissions Control Area from the rotary lime kiln at the facility.

COMPLIANCE STATUS

The facility was last inspected on July 26, 2007. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

CHANGES SINCE INITIAL PERMIT

The existing Title V permit for the facility was issued on November 30, 2001 and expired on November 30, 2006.

Since the initial Title V permit was issued on November 30, 2001, the permit was modified two times to reflect changes at the facility, as detailed below:

Date	Permit action	Reason for action
March 14, 2003	Minor Modification	<ul style="list-style-type: none"> - Update facility's new Responsible Official - Change the language of two Monitoring and Recordkeeping conditions
March 10, 2005	Significant Modification	<ul style="list-style-type: none"> - Incorporate applicable requirements from a minor NSR permit, dated January 22, 2003, to install and operate one 24" x 200' Hoover belt conveyor (MP-BC-14)

CHANGES TO EXISTING TITLE V PERMIT

The following are changes to the existing Title V permit since the issuance of the Title V permit significant modification on March 10, 2005. Please note that the condition number is from the proposed Title V permit.

- Cover Page: Change the name for the permittee and the facility. The name of the permittee and facility was changed from Global Stone Chemstone Corporation to O-N Minerals (Chemstone) Corporation.

- Section I: Change the name for the facility and permittee. The name of the permittee and facility was changed from Global Stone Chemstone Corporation to O-N Minerals (Chemstone) Corporation.

- Section II: The description of the size/rated capacity of several emission units have been revised for clarification. The emission unit description of LS-C (Jeffery Crusher) has been updated to indicate that this equipment is listed as a hammermill in the 1/22/03 minor NSR permit. The kiln feed bin (FB22606) and the weigh belt feeder (WF2207) are listed as separate emission units under the rotary lime kiln system. During the original issuance of a minor NSR permit for the rotary kiln (10/13/98), the rotary kiln was permitted with associated conveyors, silos and handling equipment. In the existing Title V permit, the kiln feed bin (FB22606) and the weigh belt feeder (WF2207) are not identified separately.

- Section III: The periodic monitoring requirements for conducting visible emissions

evaluations have been revised to include a tiered approach. If four consecutive weeks pass with no visible emissions having been observed from given equipment, then the visible emission inspections for that equipment may be reduced to monthly. The permittee is still required to perform daily inspections of the wet suppression system.

Section IV: Include the requirements contained in 40 CFR Part 63 Subpart AAAAA, for the rotary lime kiln (LP-RK-1), kiln feed bin (FB22606) and the weigh belt feeder (WF2207).

Incorporate the permit conditions from the State Operating Permit (SOP) dated February 9, 2005 (Conditions IV.A.2, 20, 34, 35 and 36). Details for this change are provided below in the Emission Unit Applicable Requirements section for the Rotary Lime Kiln.

Requirements for COMS moved from Limitations (IV.A) section to Monitoring (IV.B) section.

Include the Fabric Filter Compliance Assurance Monitoring (CAM) Plan for following fabric filters: LP-DC-2533, LP-DC-2525 and LP-DC-2341. The CAM plan is listed in Attachment A to the permit.

Periodic monitoring requirements for several fabric filters not subject to Compliance Assurance Monitoring (CAM) Plan have been updated.

Periodic monitoring requirements for several emission units (not controlled by any control device) have been updated.

Performance testing for PM, PM-10, SO₂, NO_x and CO from the rotary lime kiln is included.

Section V: Incorporate the permit conditions from the minor NSR permit dated January 22, 2003 (Conditions V.A.5, 11 and 12) for the hammermill. The permittee notified DEQ by letter dated September 28, 2006 that the hammermill listed in 1/22/03 minor NSR permit is the same as the Jeffery Crusher (LS-C) listed in the TV permit.

Removal of the visible emissions limit for the fabric filter (LP-DC-2425) as the emission limit for this fabric filter is already included in Section IV (Condition IV.A.28).

Include the Fabric Filter Compliance Assurance Monitoring (CAM) Plan for following fabric filters: LP-DC-2532, LS-DC-1 and LS-DC-2. The

CAM plan is listed in Attachment A of the permit.

Periodic monitoring requirements for emission units not controlled by any control device are updated.

Removal of the annual internal inspection on several fabric filters as these requirements are included in Section IV (Condition IV.B.15) or included in CAM plan.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

Equipment to be operated consists of:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Aggregate and Precalcination Limestone (Main Plant)							
MP-CR-1	-	Primary Crusher (1961) Jaw Crusher – 42” x 48”	500 tons/hr	Wet Suppression	-	PM PM-10	NA
MP-SC-1	-	Screening (1961) No. 1 Screen – Tyler F-900	500 tons/hr	Wet Suppression	-	PM PM-10	NA
MP-CR-2	-	Secondary Crusher (1961) Allis Chalmers 16-50 Gyratory Crusher	500 tons/hr	Wet Suppression	-	PM PM-10	NA
MP-SC-2	-	Screening (1961) No. 2 Screen – Tyler F-800	500 tons/hr	Wet Suppression	-	PM PM-10	NA
MP-SC-3	-	Screening (1961) No. 3 Screen – Tyler F-800	500 tons/hr	Wet Suppression	-	PM PM-10	NA
MP-BC-14	-	Material Conveyance Hoover Belt Conveyor – 24” x 200’ (2003)	150 tons/hr	Wet suppression system	-	PM PM-10	1/22/03

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
MP-BC	-	Material Conveyance Conveyor No.: 2, 3, 4, 7, 8, 9, 11, 12, and 13 (1961)	500 tons/hr	Wet Suppression	-	PM PM-10	NA
MP-SB	-	Eight Storage Bins (1961)	(4) 60 ton bins (4) 40 ton bins	Wet Suppression	-	PM PM-10	NA
Rotary Lime Kiln Calcination System							
LP-RK-1	LP-EP-1	F. L. Smidth Rotary Lime Kiln (350' long) Constructed in April 1996, capable of being fired by coal, natural gas, or distillate oil (1998)	41.66 tons/hr (limestone)	Amerex Industries Baghouse Model RB 14-288-D6 (4 module)	LP-BH-2405, 2406, 2407 and 2408	PM PM-10	1/22/03
FB22606	LP-EP-4	Kiln Feed Bin (limestone) (1996)	400 tons (limestone)	Amerex Industries Baghouse Model RP-10.5-30 D4	LP-DC-2204	PM PM-10	1/22/03
WF2207	-	Weigh Belt Feeder (limestone) (1996)	42 tons/hr	-	-	-	1/22/03
LP-SC-1	-	Screening Scalping Screen No. 1(1998)	1,000 tons/day (limestone)	-	-	PM PM-10	1/22/03

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
LP-SC-2	LP-EP-5	Screening (1996) Scalping Screen No. 2	500 tons/day (limestone)	Amerex Industries Baghouse Model 10.5-110 D4	LP-DC-2533	PM PM-10	1/22/03
LP-SC-3	LP-EP-3	Screening (1996) Scalping Screen No. 3	500 tons/day (limestone)	Amerex Industries Baghouse Model RP-10.5-81 D4	LP-DC-2525	PM PM-10	1/22/03
LP-CM-1	-	Coal Milling (1996) Bituminous Coal Mill	7 tons/hr	Enclosed Process	-	PM PM-10	1/22/03
LP-BC-1,2	-	Material Conveyance – Belt Conveyors 1 and 2 (1996)	1,000 tons/day (limestone) (1) 300 tons/day (lime) (2)	-	-	PM PM-10	1/22/03
LP-BC-3	LP-EP-4	Material Conveyance – Belt Conveyor #3 (1996)	1000 tons/day (limestone)	Amerex Industries Baghouse Model RP-10.5-30 D4	LP-DC-2204	PM PM-10	1/22/03
LP-BC-4	LP-EP-5	Material Conveyance – Belt Conveyor # 4 (1996)	500 tons/day (lime)	Amerex Industries Baghouse Model RP-10.5 – 100 D4	LP-DC-2533	PM PM-10	1/22/03
LP-BC-5	LP-EP-5	Material Conveyance – Belt Conveyor # 5 (1996)	500 tons/day (lime)	Amerex Industries Baghouse Model RP-10.5-110 D4	LP-DC-2533	PM PM-10	1/22/03

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
LP-BC-6	-	Material Conveyance – Belt Conveyor # 6 (1965)	500 tons/day (lime)	-	-	PM PM-10	1/22/03
LP-BC-7	-	Material Conveyance – Belt Conveyor # 7 (1965)	500 tons/day (lime)	-	-	PM PM-10	1/22/03
LP-BC-8	VDC-2	Material Conveyance – Belt Conveyor # 8 (1965)	500 tons/day (lime)	Sly MP403	LS-DC-2	PM PM-10	1/22/03
LP-BC-9	LP-EP-3	Material Conveyance – Belt Conveyor # 9 (1996)	500 tons/day (lime)	Amerex Industries Baghouse Model RP-10.5-81 D4	LP-DC-2525	PM PM-10	1/22/03
LP-BC-10,10A	LP-EP-8	Material Conveyance (coal) Belt Conveyor # 10 (1996)	150 tons/hr (coal)	Amerex Industries Baghouse Model RP-10.5-42 D4	LP-DC-2106	PM PM-10	1/22/03
LP-BC-11	LP-EP-6	Material Conveyance (lime) Belt Conveyor # 11 (1996)	500 tons/day (lime)	Amerex Industries Baghouse Model RP-10.5-49 D4	LP-DC-2532	PM PM-10	1/22/03
LP-BC-12	LP-EP-6 and VDC-1	Material Conveyance (lime) Belt Conveyor # 12 (1996)	500 tons/day (lime)	Amerex Industries Baghouse Model RP-10.5-81 D4 and Sly STJ 1511-10IP	LP-DC-2341 and LS-DC-1	PM PM-10	1/22/03

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
LP-BC-14	LP-EP-6	Material Conveyance (lime) Belt Conveyor # 14 (1996)	500 tons/day (lime)	Amerex Industries Baghouse Model RP-10.5-49 D4	LP-DC-2532	PM PM-10	1/22/03
LP-BC-15	LP-EP-6	Material Conveyance (lime) Belt Conveyor # 15 (1996)	500 tons/day (lime)	Amerex Industries Baghouse Model RP-10.5-49 D4	LP-DC-2532	PM PM-10	1/22/03
LP-SW/PC	LP-EP-9	Material Conveyance – Screw Conveyors & Pneumatic Conveyance System Screw Conveyors # 1, 2, 3 and 4 & Pneumatic Conveyance System (1996)	-	Amerex Industries Baghouse Model RV-10.5-20 D4	LP-DC-2425	PM PM-10	1/22/03
Lime Finishing and Loadout Process							
LP-SB-1 East & West	LP-EP-8	Two Lime Storage Bins (1996)	2,000 tons each	Loading: Amerex Industries, Baghouse Model RP-10.5-81 D4, Unloading: Amerex Industries Baghouses Model RP-10.5-49 D4 and Amerex Industries Model RP-10.5-49 D4	Loading : LP-DC-2525 Unloading: LP-DC-2532 and LP-DC-2341	PM PM-10	1/22/03

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
LP-SB-2	LP-EP-9	Kiln Dust Bin (1996)	400 tons	Amerex Industries Model RV-10.5-20 DH	LP-DC-2425	PM PM-10	1/22/03
LP-SB-3 North & South	-	Two Lime Storage Bins (1965)	600 tons each	-	-	PM PM-10	1/22/03
LS-C	LP-EP-7	New Lime Loadout Facility (2000) Jeffery Crusher (30 Flextooth) – Hammermill (2000)	50 tons/hr	Amerex Industries Model RP-10.5-49 D4	LP-DC-2532	PM PM-10	1/22/03
LS-S	VDC-1	Midwestern Screen (MEV 510-5) (2000)	150 tons/hr	Sly STF 1511-10IP	LS-DC-1	PM PM-10	1/22/03
LS-CB-1, 2, and 3	VDC-1	Three Belt Conveyors (2000)	150 tons/hr each	Sly STJ 1511-10IP	LS-DC-1	PM PM-10	1/22/03

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
LS-SS-2, 3, 4 and 5	VDC-1	Four Storage Silos (2000)	165 tons each	Sly STJ 1511-10IP	LS-DC-1	PM PM-10	1/22/03
LS-CB-4, 5 and 6	VDC-2	Three Belt Conveyors (2000)	200 tons/hr each	Sly MP403	LS-DC-2	PM PM-10	1/22/03
LS-CB-7	VDC-2	Belt Conveyor (2000)	50 tons/hr	Sly MP403	LS-DC-2	PM PM-10	1/22/03
LS-SS-1	VDC-2	One storage silo (2000)	165 tons	Sly MP403	LS-DC-2	PM PM-10	1/22/03
LS-SS-6	VDC-2	One storage silo (2000)	30 tons	Sly MP403	LS-DC-2	PM PM-10	1/22/03

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
SC-2	VDC-2	Screw conveyor (2000)	150 tons/hr	Sly MP403	LS-DC-2	PM PM-10	1/22/03
LS-1, 2 and 3	VDC-2	Three 12" dia. Bayshore Loadout dust controlling spouts (2000)	200 tons/hr each	Sly MP403	LS-DC-2	PM PM-10	1/22/03

* The Size/Rated capacity is provided for informational purposes only and is not an applicable requirement.

EMISSIONS INVENTORY

A copy of the 2006 annual emission update is included in Attachment A. Emissions are summarized in the following tables.

Table I. 2006 Actual Criteria Pollutant Emissions

	Criteria Pollutant Emissions (tons/yr)				
	VOC	CO	SO ₂	PM-10	NO _x
Aggregate and Precalcination Limestone (Main Plant)*	-	-	-	21.15	-
Rotary Kiln Calcination System	1.17	4.10	220.02	1.87	170.28
Lime Finishing and Loadout	-	-	-	0.02	-
Total	1.17	4.10	220.02	23.04	170.28

* Includes fugitive dust sources, i.e. drilling, hauling, and blasting

Table II. 2006 Actual Hazardous Air Pollutant Emissions

Pollutant	Hazardous Air Pollutant Emissions (tons/yr)
Hydrogen Chloride	21.14
Hydrogen Fluoride	2.64

EMISSION UNIT APPLICABLE REQUIREMENTS – Aggregate and Precalcination Limestone (Main Plant)

Limitations

The belt conveyor (MP-BC-14) is subject to 40 CFR 60, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants. The following limitations are state BACT and/or NSPS requirements from the minor NSR permit dated January 22, 2003. Please note that the condition number is from the January 22, 2003 permit; a copy of the permit is enclosed as Attachment B.

Condition 30: Visible emission limit for belt conveyor (MP-BC-14)

The following Virginia Administrative Codes that have specific emission requirements have also been determined to be applicable:

9 VAC 5-50-80, Standard for Visible Emissions – New Sources

Visible emission limit shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity.

9 VAC 5-40-1840, Particulate Standard for Stone Quarrying and Processing Operations.

This requires all crushers to be fitted with liquid sprays or other appropriate systems to limit particulate emissions.

9 VAC 5-40-1840, Particulate Standard for Stone Quarrying and Processing Operations.

This requires all feeders, elevators, conveyors, transfer points, discharge points and loading points to be equipped with collectors, sprays or other means to minimize particulate emissions.

9 VAC 5-40-1840, Particulate Standard for Stone Quarrying and Processing Operations.

This requires that all emissions shall not exceed the limits established by Table 4-14.

9 VAC 5-40-1850, Standard for Visible Emissions for Stone Quarrying and Processing Operations. Visible emission limit shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity.

9 VAC 5-40-1860, Standard for Fugitive/Dust Emissions. The provisions of Article 1 (9 VAC 5-40-60 et. seq.) of 9 VAC 5 Chapter 40 (Emission Standards for Visible Emissions and Fugitive Dust/Emissions, Rule 4-1) apply.

Monitoring and Recordkeeping

The permit requires a wet suppression system or equivalent for dust control. A properly operating wet suppression system can comply with the opacity limits required by this permit. The permit requires the wet suppression spray system to be equipped with pressure gauges to indicate system operating pressures. The permit also requires a daily inspection of the wet suppression spray system to include pumps, pipe system, spray nozzles, and water pressure gauges to ensure proper operation. The permittee is required to keep a record of the inspection results to include: date, time, and name of person performing each inspection; a list of items inspected, pressure gauge reading; and any maintenance or repair performed as a result of the inspection.

All equipment included in this section is required to meet a particulate emission standard based on the Emission Standards for Sand and Gravel Processing Operations and Stone Quarrying and Processing Operations (9 VAC 5-40-1840). This standard is calculated based on the process weight of the material being processed. The belt conveyor (MP-BC-14) is also subject to 40 CFR 60, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants. Predicted emission rate calculations have been performed using emission factors from AP-42 and are included in Attachment D. The predicted emission limits and calculated emission standards are shown in Table III as follows:

Table III. Particulate Emission Limits for Aggregate and Precalcination Operations (Main Plant) When Operating at Maximum Capacity

Emission Unit Description	Emission Unit ID	Rate Capacity (tons/hr)	Predicted Emission Rate* (lbs/hr)	Calculated Emission Standards** (lbs/hr)
Primary Crushing	MP-CR-1	500	0.02	69.0
Screening (Primary & Secondary)	MP-SC-1, MP-SC-2 and MP-SC-3	500	1.1	69.0
Conveyor transfers points	MP-BC-2,3,4,7, 8, 9, 11, 12 ,13 and 14.	500	0.07	69.0
Secondary Crushing	MP-CR-2	500	0.60	69.0

* Based on AP-42 emission factors (See Attachment D)

**Based on Emission Standards for Sand and Gravel Processing Operations and Stone Quarrying and Processing Operations (9 VAC 5-40-1840) , Table 4-14

As long as the particulate emissions are controlled with the wet suppression system, the standards

are easily obtained. Therefore, as long as the wet suppression system is properly maintained and operated, there is little likelihood of the particulate emission standards being violated.

Periodic monitoring for the visible emissions limits includes a visible emissions inspection for each piece of equipment included under the Aggregate and Precalcination Limestone (Main Plant) at least once every week. The inspection will include a minimum of one minute of observation per piece of equipment. If visible emissions are observed, the visible emissions evaluation (VEE) in accordance with EPA Method 9 (40 CFR Part 60, Appendix A) will be conducted, 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 will be conducted for a minimum of six minutes. If the six-minute average exceeds the applicable opacity limit, the observation period will continue for a total of 60 minutes of observation. If four consecutive weeks pass with no visible emissions having been observed from given equipment, then the visible emission inspections for that equipment may be reduced to monthly. The permittee is required to keep a record of the visible emissions inspections results to include: date, time and name of person performing each inspection; whether or not there were any visible emissions; and any maintenance or repairs performed as a result of the inspections.

The permittee is also required to keep records of any VEE's performed, scheduled and non-scheduled maintenance, and annual production of crushed stone from the Jaw Crusher.

Monitoring and recordkeeping requirements for stockpiles and haul roads are included in Section VI – Facility Wide Conditions.

Testing

The permit requires EPA Method 9 testing when visible emissions are observed from the equipment included in the Main Plant. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

No specific reporting has been included in the permit for the Main Plant.

Streamlined Requirements

The following conditions in the minor NSR permit dated January 22, 2003, have not been included in the Title V permit for the reasons provided.

Condition 31: This requirement states that except where the (minor NSR) permit is more

restrictive than the applicable requirement, the Hoover belt conveyor (MP-BC-14) shall be operated in compliance with the requirements of 40 CFR 60, Subpart OOO. This requirement has not been included in the Title V permit since each requirement from 40 CFR 60, Subpart OOO that is more stringent than the permit has already been included in the Title V permit.

Conditions 32 and 33: Initial visible emission evaluation (VEE) requirements for the Hoover belt conveyor (MP-BC-14) are no longer applicable since the VEE was completed on September 11, 2003.

Condition 35: Initial notifications for the Hoover belt conveyor (MP-BC-14) are no longer applicable since written notifications were received for the actual date of installation (May 12, 2003), the actual start-up date (June 18, 2003), and the anticipated date of the VEE (September 11, 2003).

Condition 38: Permit invalidation requirements for the Hoover belt conveyor (MP-BC-14) are no longer applicable since installation was completed.

The 10 percent opacity limit for the belt conveyor is more stringent than the Virginia Administrative Code Standard for visible emissions, 9 VAC 5-50-80. Therefore, only the more stringent opacity limit was included in the permit.

Compliance Assurance Monitoring (CAM)

CAM does not apply to any emission units, as none of these units has an add-on control device.

EMISSION UNIT APPLICABLE REQUIREMENTS – Rotary Lime Kiln Calcination System

Limitations

The rotary lime kiln (LP-RK-1) is subject to 40 CFR 60, Subpart HH - New Source Performance Standards (NSPS) for Lime Manufacturing Plants. The following limitations and/or other applicable requirements are state BACT and/or NSPS requirements from the minor NSR permit dated January 22, 2003. Please note that the condition numbers are from the January 22, 2003 permit; a copy of the permit is enclosed as Attachment B.

Condition 3: Requires particulate emissions from the rotary kiln to be controlled by a four module fabric filter baghouse.

Condition 6: Requires that the annual production of lime not exceed 168,000 tons per year and that the total throughput of limestone not exceed 336,000 tons per year.

Condition 7: Limits types of fuels to be burned in the rotary kiln.

Condition 8: Limits sulfur content for distillate oil.

Condition 9: Limits content of sulfur and ash in the coal to be burned in the rotary kiln.

Condition 10: Requires that fuel supplier certifications be supplied with each shipment of distillate oil.

Condition 11: Emission limits for operating the lime kiln.

Condition 12: Visible emission limit for fabric filter baghouse controlling rotary kiln system.

Condition 13: Fugitive visible emission limit for the rotary lime kiln.

Condition 43: Requires the development of a maintenance schedule, inventory of spare parts, written operating procedures, and training for operators.

The rotary lime kiln (LP-RK-1), kiln feed bin (FB22606) and the weigh belt feeder (WF2207) are subject to 40 CFR 63 Subpart AAAAA for lime manufacturing plants. The following limitations and/or other applicable requirements are derived from 40 CFR Part 63 Subpart AAAAA. Please note that the condition numbers are from the draft TV permit.

Condition IV.A.18: PM emission limits from the rotary lime kiln in pounds per ton of stone feed.

Condition IV.A.19: PM emission limits from the kiln feed bin stack.

Condition IV.A.23: Visible emission limit for the fabric filter controlling kiln feed bin (FB22606).

Condition IV.A.24: Visible emission limit for the weigh belt feeder (WF2207).

Condition IV.A.30: Requirements related to operation and maintenance of the rotary lime kiln (LP-RK-1), kiln feed bin (FB22606) and the weigh belt feeder (WF2207) at all times including periods of startup, shutdown and malfunction.

Condition IV.A.31: Requirements related to implementation of operation, maintenance and monitoring (OM&M) plan.

Condition IV.A.32: Requirements related to implementation of startup, shutdown and malfunctions (SSMP) plan.

40 CFR Subpart 63 Subpart AAAAA provides options for meeting the operating limit for a lime kiln equipped with a fabric filter in Table 2 of the subpart. Chemstone has chosen to comply with the operating limit for lime kilns equipped with a fabric filter by maintaining the fabric filter such that the six-minute average opacity for any six-minute block period does not exceed 15 percent; and complying with the requirements in 40 CFR 63.7113(f) and (g) and Table 5 to the subpart. It should be noted that Chemstone may in the future choose to comply with the operating limit in Table 2 of the Subpart AAAAA through use of any option given in Table 2 of the subpart (such a change would require a modification of the Title V permit).

The following limitations are Reasonably Available Control Technology (RACT) requirements for NO_x in the Western Virginia Emissions Control Area from the State Operating Permit (SOP) dated February 9, 2005. Please note that the condition numbers are from the February 9, 2005 permit; a copy of the permit is enclosed as Attachment C.

Condition 2: Requires NO_x emissions from the rotary kiln to be controlled by proper kiln design and operation.

Condition 3: Emission limits for NO_x from the rotary kiln not to exceed 3.2 lbs per ton of lime produced.

Condition 7: Description of relationship of SOP dated 2/9/05 to other requirements.

Condition 9: Modification regarding SOP dated 2/9/05.

Condition 10: Condition regarding failure to comply with SOP dated 2/9/05.

The following Virginia Administrative Code has been determined to be applicable to the rotary kiln system's associated conveyors, bins, and screens, and the coal mill:

9 VAC 5-40-260, Particulate Standard for General Process Operations. Particulate matter process weight limits apply to the rotary kiln system's associated conveyors, bins, and screens, and the coal mill. For processes with weight rates up to 60,000 lb/hr, the limit is determined by the equation $E = 4.10 P^{0.67}$, where E is the particulate limit in pounds per hour and P is the process weight limit in tons per hour. For weight rates in excess of 60,000 lb/hr, the limit is derived from the equation $E = 55.0 P^{0.11}$, where E is the particulate limit in pounds per hour and P is the process weight limit in tons per hour.

9 VAC 5-50-80, Standard for Visible Emissions – New Sources. Visible emission limit shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity.

9 VAC 5-40-1860, Standard for Fugitive/Dust Emissions. The provisions of Article 1 (9 VAC 5-40-60 et. seq.) of 9 VAC 5 Chapter 40 (Emission Standards for Visible Emissions and Fugitive Dust/Emissions, Rule 4-1) applies to screen LP-SC-1, the coal mill LP-CM-1, conveyors LP-BC-1, 2, 6 and 7.

9 VAC 5-50-90, Standard for Fugitive/Dust Emissions. During the construction or modification of a facility, no owner or other person shall cause or permit any materials or property to be handled, transported, stored, used, constructed, altered, repaired or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne.

Monitoring

Rotary Lime Kiln (LP-RK-1)

The monitoring and recordkeeping requirements in Condition 4 of the minor NSR permit have been modified and incorporated into the Title V permit. These requirements are derived from 40 CFR 60 Subpart HH, Standards of Performance for Lime Manufacturing Plants. In addition to the requirements listed from the new source permit, additional conditions were added to the Title V permit to clarify NSPS requirements. Please note that these condition numbers are from the draft Title V permit.

Condition IV.B.3: Requires that the rotary lime kiln be provided with a Continuous Opacity Monitoring System (COMS) and that the span of that system be set at 40 percent

opacity.

Condition IV.B.4: Requires that the COMS be in continuous operation and shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive six-minute period except during system breakdowns, repairs, calibration checks, and zero and span adjustments required.

Condition IV.B.5: Requires that the permittee shall check the zero (or low-level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts of the COMS at least once daily in accordance with a written procedure.

Condition IV.B.6: Requires that the permittee shall develop procedures including a method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obstruction of the light beam.

Condition IV.B.7: Requires that owners and operators of all continuous monitoring systems for measuring the opacity shall reduce all data to six-minute averages.

The COMS for the rotary lime kiln is also subject to the monitoring requirements specified in 40 CFR 63 Subpart AAAAA. However, as per 40 CFR 63.7113 (g), facilities that operate COMS installed on or before February 6, 2001, may continue to meet the requirements in effect at the time of COMS installation unless specifically required to re-certify the COMS by their permitting authority. The facility installed COMS before February 6, 2001 and operates according to 40 CFR 60 Subpart HH. Hence, the monitoring requirements as described above also satisfy the COMS requirement in 40 CFR 63 Subpart AAAAA.

Also, the following monitoring requirements are derived from 40 CFR Part 63 Subpart AAAAA. Please note that the condition numbers are from the draft TV permit.

Condition IV.B.8: Requires the permittee must install, operate, and maintain each continuous parameter monitoring system (CPMS) according to the OM&M plan required by 40 CFR 63.7100(d) and 63.7113 (a)(1) through (a) (5).

Condition IV.B.9: Requirement related to fabric filter inspection.

Condition IV.B.10: Requirement related to data collection.

A properly operating fabric filter can achieve an outlet concentration of 0.01 gr/dscf. The fabric filter controlling the rotary lime kiln has an exhaust rate of 83,500 cfm. An outlet concentration of 0.01 gr/dscf at 83,500 cfm equals 7.2 lb/hr. The permit emission limits (PM – 4.8 lb/hr and

PM-10 – 4.3 lb/hr) are below the 7.2 lb/hr limit. Therefore, provided the fabric filter is properly maintained, reasonable assurances of compliance are obtained.

In addition to this monitoring, performance testing once per permit term is required for PM, PM-10, SO₂, NO_x and CO. For the purpose of conducting a performance test, the permittee shall install, calibrate, maintain, and operate a device for measuring the mass rate of stone fed to the lime kiln. The measuring device used must be accurate to within + or – 5 percent of the mass rate over its operating range. This will provide reasonable assurance with compliance with the hourly and annual emission limits in the permit.

Actual emissions from the operation of the rotary lime kiln will be calculated using the following equations:

$$E = F \times L$$

Where:

E = Emission Rate (lb/time period)
F = Current DEQ-approved emission factors are based on the most recent stack test and are as follows:

PM = 0.080 lb/ton of lime
PM-10 = 0.032 lb/ton of lime
SO₂ = 3.76 lb/ton of lime
NO_x = 2.91 lb/ton of lime
CO = 0.07 lb/ton of lime
VOC = 0.02 lb/ton of lime

L = Lime produced (ton/time period)

Compliance with the sulfur and ash content limits of the fuels and throughput limit of the kiln will assure reasonable compliance with the emission limits. Performance testing is required for PM, PM-10, SO₂, NO_x and CO.

Fuel supplier certifications provide periodic monitoring of the sulfur and ash content limits of the fuels used in the rotary lime kiln.

Auxiliary Operations (coal processing, screening, and conveying systems)

The kiln feed bin (FB22606) and the weigh belt feeder (WF2207) are not subject to CAM as these emission units are subject to particulate emission standards under 40 CFR 63 Subpart AAAAA for lime manufacturing plants.

The following emission units are subject to CAM (as shown in Table IV) as potential pre-controlled emissions are greater than 100 tpy and these emission units use fabric filters as a control device:

- 8 Belt Conveyors (LP-BC-4, 5, 8, 9, 11, 12, 14 and 15)
- 2 Screens (LP-SC-2 and 3)

The CAM plan for the above emission units are described in next section.

The following emission units are not subject to CAM as potential pre-controlled emissions are less than 100 tpy.

- Belt Conveyors (LP-BC-3, 10, 10A) and LP-SW/PC

The following emission units are not subject to CAM, as none of these units has an add-on control device.

- Scalping Screen # 1 (LP-SC-1), the coal mill (LP-CM-1), and Conveyors # 1, # 2, #6 and # 7 (LP-BC- 1, 2, 6 and 7)

*Table IV. Control Device and Emissions Units at Rotary Kiln Calcination System**

Control Device	Emissions Unit ID	CAM Applicable?
LP-DC-2533	LP-SC-2, LP-BC-4, LP-BC-5	Y
LP-DC-2525	LP-BC-9, LP-SC-3, LP-SB-1 East & West (Loading)	Y
LP-DC-2341	LP-BC-12 and LP-SB-1 East & West (Unloading)	Y
LP-DC-2204**	LP-BC-3, FB22606	N
LP-DC-2106	LP-BC-10 and 10A	N
LP-DC-2425	LP-SW/PC	N
LP-DC-2532***	LS-C, LP-BC-14, LP-BC-11, LP-BC-15	Y
LS-DC-2***	LS-BC-4, 5, 6 and 7, LS-1, 2 and 3, LP-BC-8, LS-SS-1, LS-SS-6, SC-2	Y
No Control Device-	LP-SC-1	N
No Control Device-	LP-CM-1	N

Control Device	Emissions Unit ID	CAM Applicable?
No Control Device-	LP-BC-1, 2, 6 and 7	N

* Some of these control devices are connected to emission units located at the Lime Finishing and Loadout Process.

** This control device is connected to emission unit (FB22606) subject to 40 CFR 63 Subpart AAAAA.

*** This control device will be covered under Lime Finishing and Loadout Process.

Periodic Monitoring for Emission Units not subject to CAM:

The fabric filter (LP-DC-2106) controls particulate emissions from LP-BC-10 and 10A where as the fabric filter (LP-DC-2425) controls particulate emissions from LP-SW/PC. These emission units do not have the potential to emit more than 100 tons per year of particulate matter.

As long as the particulate emissions are vented through a properly operating control device, the particulate standard is easily met. Therefore, as long as the control devices are properly maintained and operated, there is little likelihood of the facility violating the particulate emission standards.

If particulate control devices, such as fabric filters, are operating properly there should be no visible emissions from the units. These devices eliminate the particulate, which are the source of the visible emissions. Therefore, if visible emissions are seen from any of the stacks from LP-DC-2106 or LP-DC-2425, it can be reasonably assumed that there is a problem with one of the control devices. The facility will be required to perform weekly inspections of each fabric filter stack. This inspection will include an observation of the presence of visible emissions. If visible emissions are found, the VEE in accordance with EPA Method 9 (40 CFR Part 60, Appendix A) will be conducted, 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. If four consecutive weeks pass with no visible emissions having been observed from a given fabric filter stack, then the visible emission inspections for that fabric filter stack may be reduced to monthly. As soon as visible emissions are noted during a monthly inspection, the inspection frequency returns to weekly.

Visible emissions have been selected as the indicator because they are indicative of good operation and maintenance of a fabric filter. If the fabric filter is not functioning properly, visible emissions will be present and there is a chance that the facility is not meeting the particulate standards. Therefore, visible emissions are an acceptable performance indicator. The weekly/monthly inspections will also satisfy the periodic monitoring requirement for the visible emission limitation. Frequent checks for visible emissions will limit malfunctions of the control equipment. As long as the control equipment is operating properly, there is little

likelihood of violating the visible emission limitation. The control equipment will limit the amount of particulate that is emitted thereby limiting visible emissions.

Periodic Monitoring for Emission Units with no control device:

- Scalping Screen # 1 (LP-SC-1), the coal mill (LP-CM-1), and Conveyors # 1, # 2, #6 and # 7 (LP-BC- 1, 2, 6 and 7).

The permit requires a wet suppression system or equivalent for dust control. A properly operating wet suppression system can comply with the opacity limits required by this permit. The permit also requires a daily inspection of the wet suppression spray system to include pumps, pipe system, spray nozzles, and water pressure gauges to ensure proper operation. The permittee is required to keep a record of the inspection results to include: date, time, and name of person performing each inspection; a list of items inspected, pressure gauge reading; and any maintenance or repair performed as a result of the inspection.

Periodic monitoring for the visible emissions limits includes a visible emissions inspection for each piece of equipment at least once every week. The inspection will include a minimum of one minute of observation per piece of equipment. If visible emissions are observed, an EPA Method 9 (40 CFR Part 60, Appendix A) will be conducted, 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 will be conducted for a minimum of six minutes. If the six-minute average exceeds the applicable opacity limit, the observation period will continue for a total of 60 minutes of observation. If four consecutive weeks pass with no visible emissions having been observed from a given fabric filter stack, then the visible emission inspections for that fabric filter stack may be reduced to monthly. As soon as visible emissions are noted during a monthly inspection, the inspection frequency returns to weekly. The permittee is required to keep a record of the visible emissions inspections results to include: date, time and name of person performing each inspection; whether or not there were any visible emissions; and any maintenance or repairs performed as a result of the inspections.

The equipment in this section is required to meet a particulate emission standard based on the general process weight rate regulation (9 VAC 5-40-260). This standard is calculated based on the process weight of the material being processed. The resulting particulate emission limits (as calculated at maximum capacity of the equipment) are not very stringent. Emission calculations have been included in Attachment D. The emission limits are as follows:

Table V. Emission Limits for Auxiliary Operations when Operating at Maximum Capacity.

Emission Unit Description	Emission Unit ID	Rate Capacity (tons/hr)	Predicted Emission Rate* (lbs/hr)	Calculated Emission Standards** (lbs/hr)
Coal Mill	LP-CM-1	7	0.038	15.1
Screens	LP-SC-1	41.67	0.092	42.9
Screens	LP-SC-2 and LP-SC-3	20.83	0.005	31.4
Conveyors	LP-BC-1	41.67	0.006	42.9
Conveyors	LP-BC-2	12.5	0.002	22.3
Conveyors	LP-BC-3, LP-SW-1, LP-SW-2, LP-SW-3, and LP-SW-4	41.67	0.001	42.9
Conveyors	LP-BC-4, LP-BC-8, LP-BC-9, LP-BC-11, LP-BC-12, LP-BC-14 and LP-BC-15	20.83	0.001	31.4
Conveyors	LP-BC-5, LP-BC-6 and LP-BC-7	20.83	0.003	31.4
Conveyors	LP-BC-10 and LP-BC-10A	150	0.005	55.4

* Based on AP-42 emission factors (See Attachment D)

**Based on Process Weight Rule (9 VAC 5-40-260). For processes with weight rates up to 60,000 lb/hr, the limit is determined by the equation $E = 4.10 P^{0.67}$, where E is the particulate limit in pounds per hour and P is the process weight limit in tons per hour. For weight rates in excess of 60,000 lb/hr, the limit is derived from the equation $E = 55.0 P^{0.11-40}$, where E is the particulate limit in pounds per hour and P is the process weight limit in tons per hour

Periodic Monitoring for Emission Units –Kiln Feed Bin (FB22606), Weigh Belt Feeder (WF2207) and LP-BC-3

The kiln feed bin (FB22606) and the weigh belt feeder (WF2207) are subject to 40 CFR 63 Subpart AAAAA for lime manufacturing plants. The fabric filter (LP-DC-2204) control particulate emissions from FB22606 and LP-BC-3. There is no control device for WF2207. The following monitoring requirements for FB22606 and WF2207 are derived from 40 CFR Part 63 Subpart AAAAA and satisfies periodic monitoring requirements:

Condition IV.B.9: Annual inspection of the fabric filter (LP-DC-2204).

Condition IV.B.13: Monthly visible emissions check of the weigh belt feeder (WF2207) and the fabric filter (LP-DC-2204).

Since the fabric filter (LP-DC-2204) also controls particulate emissions from LP-BC-3, the above described requirements also satisfy periodic monitoring requirements for LP-BC-3.

Compliance Assurance Monitoring (CAM)

Rotary Lime Kiln

The rotary lime kiln utilizes baghouses (LP-BH-2405-2408) to control particulate emissions. The potential uncontrolled particulate emissions from the rotary lime kiln exceed 100 tpy. Thus, the rotary lime kiln meets the applicability definition for CAM and would be required to submit a CAM plan for particulates. However, the CAM regulations also provide specific exemptions from the regulations. One such exemption is emission limitations in MACT standards proposed after November 15, 1990. The rotary lime kiln is subject to particulate emission standards under 40 CFR 63 Subpart AAAAA for lime manufacturing plants. These Subpart AAAAA standards were promulgated on January 7, 2004. Hence, the rotary lime kiln is exempt from CAM for particulate emissions. Also, the rotary lime kiln is not subject to CAM for any other pollutants as there are no add-on control devices for any other pollutants.

Compliance Assurance Monitoring (CAM) Plan for Fabric Filters(LP-DC-2533, LP-DC-2525, LP-DC-2341)

The Fabric Filter CAM plan for LP-DC-2533, LP-DC-2525 and LP-DC-2341(Attachment F) includes the following:

- Pressure drop was selected as the primary CAM performance indicator. Records of pressure drop and changes in pressure across the filter can be used to indicate needed maintenance or possible increased emissions due to bag deterioration. Pressure drop also can be used for verification of operational status. The device to measure pressure drop must be tested once per year to ensure it is functioning properly.
- Opacity observations or visible emissions have been selected as the second indicator because they are indicative of good operation and maintenance of a fabric filter. If the fabric filter is not functioning properly, visible emissions will be present and there is a chance that the facility is in danger of not meeting the particulate standards. Therefore, visible emissions are an acceptable performance indicator.
- The third indicator is, if visible emissions are observed, a Method 9 VEE is required on

that particular control device.

- The monthly and annual periodic structural inspections of the fabric filters satisfy the fourth CAM indicator for the control equipment. These inspections will alert personnel of bag deterioration and early maintenance requirements necessary to obtain proper control efficiencies.

The permit also establishes thresholds (number of excursions from a performance indicator in a two week period) after which Chemstone is required to develop a CAM Quality Improvement Plan (QIP) according to 40 CFR 64.8.

Recordkeeping

The recordkeeping requirements of Condition 36 of the 1/22/03 minor new source permit have been included. The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include:

- Monthly and annual production of lime, in tons,
- Number of hours of operation of the lime kiln,
- Monthly and annual consumption of limestone, in tons,
- Fabric filter inspection results including the date, time, and name of person performing each inspection; the pressure drop across the fabric filters; whether or not there were visible emissions; and any maintenance or repairs performed as a result of these inspections,
- VEE and stack test results,
- Fuel data analysis records including types of fuel purchased, BTU heat value (coal only), sulfur content, ash content (coal only), and quantity of fuel burned,
- Scheduled and unscheduled maintenance,
- Operator training records including the names of trainees, the dates of training and the nature of training, and
- Documentation of monitoring required by each CAM.

The permit includes requirements to maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan (QIP) required pursuant to

40 CFR 64.8 and any activities undertaken to implement a quality improvement plan (QIP), and other supporting information required to be maintained (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).

The permit also incorporates recordkeeping required by 40 CFR 60 Subpart HH. Quarterly Excess Emissions COMS opacity data from the lime kiln stack are to be recorded in accordance with 40 CFR 60.7(c). In addition, due to the applicability of 40 CFR 60 Subpart A, the permittee must maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility, the air pollution control equipment, or any periods during which the COMS is inoperative.

All recordkeeping requirements per 40 CFR 63 Subpart AAAAA are included in the permit. These include:

- 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).
- The records in 40 CFR 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.
- Records of performance tests, performance evaluations, and opacity and VE observations as required in 40 CFR 63.10(b)(2)(viii).
- Records in 40 CFR 63.6(h)(6) for VE observations.
- 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.
- Records which document the basis for the initial applicability determination as required under 40 CFR 63.7081

Testing

Performance testing once per permit term for the rotary lime kiln is required for PM-10, SO₂, NO_x and CO to demonstrate compliance with the emission limitations contained in Condition IV.A.17. The permittee conducted latest performance testing on November 8, 2006 and March

27, 2007 and demonstrated compliance with the emission limits. The Title V permit requires performance testing of the rotary lime kiln by November 8, 2011 to demonstrate compliance with the emission limitations contained in Condition IV.A.17.

Initial performance testing was required per 40 CFR 63, Subpart AAAAA for PM from the rotary lime kiln (LP-RK-1) and kiln feed bin (FB22606) to demonstrate compliance with the emission limits contained in Conditions IV.A.18 and IV.A.19. The facility conducted these stack tests in November 8, 2006 and demonstrated compliance with these emission limits. Per 40 CFR 63, Subpart AAAAA, the permittee shall conduct subsequent performance tests for PM from the rotary lime kiln (LP-RK-1) and kiln feed bin (FB22606) to demonstrate compliance with the emission limits contained in Conditions IV.A.18 and IV.A.19, respectively. The permittee shall demonstrate the compliance with the PM emission limits contained in Conditions IV.A.17 by the performance test conducted on the rotary lime kiln per 40 CFR 63, Subpart AAAAA. Also, the permittee shall conduct a visible emissions test in accordance with the 40 CFR Part 60 Appendix A on the bin weigh belt feeder (WF2207). The permit requires these performance tests by November 8, 2011.

The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The permit **requires** the permittee to submit Quarterly Excess Emissions Reports in accordance with the format provided in 40 CFR 60.7(c) as required by Condition 37 of the 1/22/03 minor NSR permit and 40 CFR 60 Subpart HH.

The permit also delineates reporting requirements from 40 CFR 63 Subpart AAAAA. These requirements include:

- Submission of compliance report for the affected sources (rotary lime kiln (LP-RK-1), kiln feed bin (FB22606) and the weigh belt feeder (WF2207)) according to the requirements listed in 40 CFR 63.7131
- Semi-annual monitoring report to include all deviations for the affected sources as defined in 40 CFR Part 63, Subpart AAAAA.

The permit also includes a **requirement to submit semi-annual CAM reports**.

Streamlined Requirements

9 VAC 5-40-260, Standard for Particulate Emissions. The rotary lime kiln's particulate emission limit (4.8 lb/hr) is more stringent than the particulate process weight rate limit in 9 VAC 5-40-

260. According to the equation in 9 VAC 5-40-260, the particulate limit is determined by the equation $E = 4.10 P^{0.67}$, where E is the particulate limit in pounds per hour and P is the process weight limit in tons per hour. With the lime kiln having a capacity of 41.6 ton/hr of limestone, that equates to a particulate limit of $E = 4.10 \times (41.6)^{0.67} = 49.9$ lb/hr. Therefore, only the more stringent particulate limit was included in the permit.

9 VAC 5-50-80, Standard for Visible Emissions. The five percent opacity limit for the rotary lime kiln and the 10 percent fugitive dust requirement are both more stringent than the Virginia Administrative Code Standard for visible emissions, 9 VAC 5-50-80. Therefore, only the more stringent opacity limit was included in the permit.

9 VAC 5-40-280, Standard for Sulfur Dioxide. The 121.4 lbs/hr sulfur dioxide emission limit for the rotary lime kiln is more stringent than this requirement. The limit is determined by the equation $S = 2.64K$, where S is the allowable emission of sulfur dioxide expressed in pounds per hour and K is the actual heat input at total capacity expressed in Btu x 10^6 per hour. $S = 2.64 \times 180$ mmBtu/hr = 475.2 lb/hr. Therefore, only the more stringent emission limit was included in the permit.

40 CFR 60.342(a)(1), Standard for Particulate Emissions. The particulate emission limit (4.8 lb/hr) is more stringent than the particulate emission required by 40 CFR 60 Subpart HH. According to 40 CFR 60.342(a)(1), the rotary lime kiln stack shall contain particulate matter less than 0.60 lb/ton of stone fed. The rotary lime kiln has a capacity of 41.6 ton/hr of limestone fed which equates to: $PM = (0.6 \text{ lb/ton}) \times 41.6 \text{ ton/hr} = 24.4$ lb/hr. Therefore, only the more stringent emission limit was included in the permit.

40 CFR 60.342(a)(2), Standard for Visible Emissions. The five percent opacity limit for the rotary lime kiln is more stringent than the federal emission requirement for visible emissions of 15 percent, 40 CFR 60.342(a)(2). Therefore, only the more stringent opacity limit was included in the permit.

40 CFR 60.344 and 40 CFR 60.8, Standard for Conducting Performance Tests. The performance tests required due to these federal standards have already been completed. Therefore, this was streamlined out of the Title V permit.

40 CFR 60.7(a), Standard for Notifications to the Administrator. Notifications regarding construction commencement, anticipated startup, actual startup, physical change, COMS demonstration of performance, anticipated date for conducting opacity observations, and notifications that COMS data will be used to determine compliance with the opacity standards during the performance tests have all been streamlined due to their prior completions.

40 CFR 60.11(a) and 60.11(b), Standard that Compliance be verified through Performance Tests

and Opacity Tests. The performance tests and opacity tests required are already completed. Therefore, these were streamlined out of the Title V permit.

40 CFR 60.11(e)(1), Standard that Opacity Observations be conducted concurrently with the Initial Performance Tests. The performance tests and opacity tests required are already completed. Therefore, these requirements were streamlined out of the Title V permit.

40 CFR 60.11(e)(4), Standard that the Monitoring Data produced during the Initial Performance Tests be recorded. The performance tests and opacity tests required are already completed and the data was recorded. Therefore, these requirements were streamlined out of the Title V permit.

40 CFR 60.11 (e)(5), Standard that COMS data results monitored during the Initial Performance Tests be used to demonstrate compliance. The performance tests and COMS data required are already complete and the data was recorded. Therefore, these requirements were streamlined out of the Title V permit.

40 CFR 60.13 (b) and (c), Standard for the COMS installation. The COMS has already been installed and a performance evaluation of the COMS has already been completed. Therefore, these requirements were streamlined out of the Title V permit.

40 CFR 60.13 (f), Standard for the installation and location of the COMS. The COMS has already been installed. Therefore, this requirement has been streamlined out of the Title V permit.

40 CFR 60.11 (c), Standard that the opacity standards set forth in Subpart A shall apply at all times except during periods of startup, shutdown, malfunction, and as otherwise provided in the applicable standard. The five percent opacity limit for the rotary lime kiln is more stringent than the federal emission requirement for visible emissions of 15 percent, 40 CFR 60.342(a)(2). Therefore, this requirement was also streamlined out of the Title V permit.

40 CFR 60.11 (d), Standard that the air pollution equipment be maintained and operated in a manner consistent with good air pollution control practices. This was streamlined because Condition IV.A.29 of the Title V permit includes the same language.

40 CFR 60.13 (a), Standard that all COMS required under applicable subparts be subject to the provisions of Section 40 CFR 60.13. This was streamlined out of the Title V permit because all of the individual requirements were incorporated into the permit.

40 CFR 63.7090 (b), Standard for Visible Emissions. The five percent opacity limit for the rotary lime kiln is more stringent than the MACT emission requirement for visible emissions of 15 percent, 40 CFR 60.7090(b). Therefore, only the more stringent opacity limit was included in the permit.

40 CFR 60.7110 and 40 CFR 63.7(a) (2), Standard for Conducting Initial Performance Tests. The initial performance tests required due to these federal standards have already been completed. Therefore, this was streamlined out of the Title V permit.

40 CFR 60.7114, Standard for Demonstrating Initial Compliance with the Emission Limitations. These requirements have already been completed. Therefore, this was streamlined out of the Title V permit.

40 CFR 60.7130 (a), (b), (d) and (e)(1), Standard for Notifications Requirements. These requirements have already been completed. Therefore, these requirements were streamlined out of the Title V permit.

The following conditions in the SOP dated February 9, 2005 have been streamlined in the Title V permit for the reasons provided:

Condition 3: This condition is modified to streamline the NO_x emission limits of 60.9 lb/hr as this limit is already in Condition IV.A.17 of the draft Title V Permit. The NO_x emission limit of 3.2 lb per ton of lime produced is included in draft Title V permit in Condition IV.A.20.

Condition 4: Stack testing requirement of NO_x is streamlined as this requirement is already included in Condition IV.E.2.of the draft Title V permit.

Condition 5: This condition is already included in Condition IV.D of the draft Title V permit.

Condition 8: This condition is duplicative of the Condition IX.A. of the draft Title V permit.

Conditions 11, 12 and 13: These conditions are already included in Section IX. General Conditions of the draft Title V permit.

EMISSION UNIT APPLICABLE REQUIREMENTS – Lime Finishing and Loadout Process

Limitations

The following limitations are state BACT requirements from the minor NSR permit dated January 22, 2003. Please note that the conditions numbers are from the January 22, 2003 permit; a copy of the permit is enclosed as Attachment B.

- Conditions 16-20: Require that particulate emissions from the equipment listed in each condition be controlled by a fabric filter baghouse.
- Condition 21: Fugitive dust requirement.
- Condition 22: Production limit of lime from the Jeffery Crusher (hammermill) (LS-C).
- Condition 23: Throughput limit of lime to previously permitted four lime storage silos.
- Condition 24: Throughput limit of lime to lime finishing and loadout equipment: LS-C, LS-S, LS-CB-1 - 7, LS-SS-1 – 6, SC-2 and LS-1 – 3.
- Condition 25: Emission limit of the hammermill (LS-C)
- Condition 26: Emission limit of the following equipment: LS-C, LS-S, LS-CB-1 - 7, LS-SS-1 – 6, SC-2 and LS-1 – 3.
- Condition 27: Visible emission limit of five percent opacity for baghouses.
- Condition 28: Fugitive visible emission limit of 10 percent opacity.
- Condition 43: Develop maintenance schedule and maintain records of scheduled and non-scheduled maintenance, maintain an inventory of spare parts, operating procedures, and train operators in the proper operation of the equipment.

The following Virginia Administrative Code has been determined to be applicable:

9 VAC 5-40-260, Particulate Standard for General Process Operations. For processes with weight rates up to 60,000 lb/hr, the limit is determined by the equation $E = 4.10 P^{0.67}$, where E is the particulate limit in pounds per hour and P is the process weight limit in tons per hour. For weight rates in excess of 60,000 lb/hr, the limit is derived from the equation $E = 55.0 P^{0.11} - 40$, where E is the particulate limit in pounds per hour and P is the process weight limit in tons per hour.

9 VAC 5-50-80, Standard for Visible Emissions. Visible emission limit shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity.

9 VAC 5-50-90, Standard for Fugitive/Dust Emissions. During the construction or modification of a facility, no owner or other person shall cause or permit any materials or property to be handled, transported, stored, used, constructed, altered, repaired or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne.

Monitoring

The permit requires a fabric filter for control of particulate emissions from the majority of the equipment. A properly operating fabric filter can comply with the opacity limits (five percent) and the particulate emission limits.

A properly operating fabric filter can achieve an outlet concentration of 0.01 gr/dscf (a number of NSPS standards which are met by fabric filters are required to achieve concentrations of 0.01 gr/dscf or less). The fabric filters for the hammermill and the lime loadout facility are only required to meet an outlet concentration of 0.022 gr/dscf. Therefore, ensuring the proper operation of the fabric filter baghouses should provide reasonable proof of compliance of the grain loading limits. The five percent opacity limit also ensures that the particulate limits will be met.

The following emission units are also subject to CAM (as shown in Table VI) as potential pre-controlled emissions are greater than 100 tons per year and these emission units use fabric filters as a control device:

- LS-C
- LS-S, LS-SS-1, 2, 3, 4, 5 and 6, LS-CB-1, 2, 3, 4, 5, 6, 7
- LS-1, 2 and 3, LS-SS-1, 2 and 6, SC-2
- LP-SB-1 East & West (Loading)
- LP-SB-1 East & West (Unloading)
- LP-SB-2

The CAM plan for the above emission units are described in next section.

The following emission units are not subject to CAM, as none of these units has an add-on control device.

- LP-SB-3 North & South

*Table VI. Control Device and Emissions Units at Lime Finishing and Loadout Process**

Control Device	Emissions Unit ID	CAM Applicable?
LP-DC-2532	LS-C, LP-BC-14, LP-BC-11, LP-BC-15, LP-SB-1 East & West (Unloading)	Y
LS-DC-1	LS-S, LS-SS-2, 3, 4 and 5, LS-CB-1, 2 and 3, LP-BC-12	Y
LS-DC-2	LS-CB-4, 5, 6 and 7, LS-1, 2 and 3, LP-BC-8, LS-SS-1, LS-SS-6, SC-2	Y
LP-DC-2525**	LP-BC-9, LP-SB-1 East & West (Loading)	Y
LP-DC-2341**	LP-BC-12 and LP-SB-1 East & West (Unloading)	Y
No Control device	LP-SB-3 North & South	N

* Some of these control devices are connected to emission units located at Rotary Lime Kiln System

** These control devices are already covered under Rotary Kiln System

Periodic Monitoring for Emission Units with no control device:

- LP-SB-3 North & South

The permit requires lime storage bins (LP-SB-3 NORTH & SOUTH) to be controlled by the use of an appropriate system which effectively limits the escape of airborne dust. Periodic monitoring for the visible emissions limits includes a visible emissions inspection for each piece of equipment at least once every week. The inspection will include a minimum of one minute of observation per piece of equipment. If visible emissions are observed, an EPA Method 9 (40 CFR Part 60, Appendix A) will be conducted, 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 will be conducted for a minimum of six minutes. If the six-minute average exceeds the applicable opacity limit, the observation period will continue for a total of 60 minutes. The permittee is required to keep a record of the visible emissions inspections results to include: date, time and name of person performing each inspection; whether or not there were any visible emissions; and any maintenance or repairs performed as a result of the inspections.

The lime finishing and loadout equipment are required to meet a particulate emission standard based on the general process weight rate regulation. This standard is calculated based on the process weight of the material being processed. The resulting particulate emission limits (as calculated at maximum capacity of the equipment) are not very stringent. Emission calculations have been included in Attachment D. The emission limits are as follows:

Table VII. Emission Limits for Lime Finishing and Loadout Operations when Operating at Maximum Capacity.

Emission Unit Description	Emission Unit ID	Rate Capacity (tons/hr)	Predicted Emission Rate* (lbs/hr)	Calculated Emission Standards** (lbs/hr)
Secondary Crushing	LS-C	50	0.003	44.6
Screening	LS-S	150	0.038	55.4
Conveyors	LS-CB-1, LS-CB-2 and LS-CB-3	150	0.005	55.4
Conveyors	LS-CB-4, LS-CB-5 and LS-CB-6	200	0.006	58.5
Conveyors	LS-CB-7	50	0.002	44.6
Conveyor	SC-2	150	0.005	55.4

* Based on AP-42 emission factors (See Attachment D)

**Based on Process Weight Rule (9 VAC 5-40-260) For processes with weight rates up to 60,000 lb/hr, the limit is determined by the equation $E = 4.10 P^{0.67}$, where E is the particulate limit in pounds per hour and P is the process weight limit in tons per hour. For weight rates in excess of 60,000 lb/hr, the limit is derived from the equation $E = 55.0 P^{0.11-40}$, where E is the particulate limit in pounds per hour and P is the process weight limit in tons per hour

As long as the particulate emissions are vented through a properly operating control device or controlled by other appropriate systems which effectively limit the escape of airborne dust, the standards are easily obtained. Therefore, as long as the fabric filters and other appropriate systems are properly maintained and operated, there is little likelihood of the particulate emission standards being violated.

Compliance Assurance Monitoring (CAM)

Compliance Assurance Monitoring (CAM) Plan for Fabric Filters (LP-DC-2532, LS-DC-1 and LS-DC-2)

The Fabric Filter CAM plan for LP-DC-2532, LS-DC-1 and LS-DC-2 includes the following:

- Pressure drop was selected as the primary CAM performance indicator. Records of pressure drop and changes in pressure across the filter can be used to indicate needed maintenance or possible increased emissions due to bag deterioration. Pressure drop also can be used for verification of operational status. The device to measure pressure drop must be tested once per year to ensure it is functioning properly.
- Opacity observations or visible emissions have been selected as the second indicator because they are indicative of good operation and maintenance of a fabric filter. If the fabric filter is not functioning properly, visible emissions will be present and there is a chance that the facility is in danger of not meeting the particulate standards. Therefore, visible emissions are an acceptable performance indicator.
- The third indicator is, if visible emissions are observed, a Method 9 VEE is required on that particular control device.
- The monthly and annual periodic structural inspections of the fabric filters satisfy the fourth CAM indicator for the control equipment. These inspections will alert personnel of bag deterioration and early maintenance requirements necessary to obtain proper control efficiencies.

The permit also establishes thresholds (number of excursions from a performance indicator in a two week period) after which Chemstone is required to develop a CAM Quality Improvement Plan (QIP) according to 40 CFR 64.8.

Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by the 1/22/03 minor NSR permit. These records include:

- Monthly and annual throughput of lime, in tons, to the four lime storage silos,
- Monthly and annual throughput of lime, in tons, to the lime loadout facility,
- Monthly and annual production of lime, in tons, from the hammermill,

- Fabric filter inspection results including the date, time, and name of person performing each inspection; the pressure drop across the fabric filters; whether or not there were visible emissions; and any maintenance or repairs performed as a result of these inspections,
- VEE and stack test results,
- Scheduled and unscheduled maintenance,
- Operator training records including the names of trainees, the dates of training and the nature of training, and
- Documentation of monitoring required by each CAM.

The permit includes requirements to maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan (QIP) required pursuant to 40 CFR 64.8 and any activities undertaken to implement a quality improvement plan (QIP), and other supporting information required to be maintained (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).

Testing

The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The permit includes a **requirement to submit semi-annual CAM reports.**

Streamlined Requirements

9 VAC 5-80-50, Standard for Visible Emissions. The five percent opacity limits for the baghouses are more stringent than the Virginia Administrative Code Standard for visible emissions, 9 VAC 5-80-50. Therefore, only the more stringent opacity limit was included in the permit.

The following conditions in the minor NSR permit dated January 22, 2003 have not been included in the Title V permit for the reasons provided.

Condition 15: This requirement is similar to the requirement contained in Condition 20 of the minor NSR permit. The permittee clarified that the Jeffery Crusher and the

hammermill is the same emission unit (LS-C).

EMISSION UNIT APPLICABLE REQUIREMENTS – Facility Wide Conditions – Fugitive Dust sources

Limitations

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-50-80, Standard for Visible Emissions – New Sources. Visible emission limit shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity.

9 VAC 5-50-90, Standard for Fugitive/Dust Emissions. During the construction or modification of a facility, no owner or other person shall cause or permit any materials or property to be handled, transported, stored, used, constructed, altered, repaired or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne.

The following additional requirements have been included to demonstrate compliance with the fugitive dust/emissions requirements:

9 VAC 5-80-110 – Requires the permittee to maintain and implement a Dust Control Plan with good written operating procedures.

Monitoring and Recordkeeping

In lieu of conducting periodic evaluations using EPA Method 9 to demonstrate compliance with the facility's visible emission limit for fugitive dust sources, the permittee shall perform a daily visual survey of the trafficable roads at the facility for sources of excessive emissions. The reason for not requiring EPA method 9 is that there are no stacks for these emission units. The presence of excessive emissions shall require further investigation as to the cause of the emissions and timely corrective action shall be required. All observations and corrective actions taken shall be logged and recorded. These records shall be available on site for inspection by the DEQ and shall be current for the most recent five years.

There is reasonable assurance that violations of the visible emission standards should not occur if the permittee complies with the permit condition to mitigate fugitive dust, implements the operating procedures included in the dust control plan, performs a daily visible emission survey, and conducts timely corrective actions as needed.

Testing

The permit does not require source emission tests. The Department and EPA have the authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

No specific reporting has been included in the permit for the facility wide fugitive dust sources.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day.

STATE ONLY APPLICABLE REQUIREMENTS

None identified by the applicant.

FUTURE APPLICABLE REQUIREMENTS

None.

INAPPLICABLE REQUIREMENTS

The Department has determined that the following requirements are not applicable:

New Source Performance Standard (NSPS) requirements for Coal Preparation Plants in 40 CFR Part 60, Subpart Y are not currently applicable. Plant processes less than 200 tons per day (40 CFR 60.250(a)).

Particulate Standard for Coal Preparation Plants in 9 VAC 5-40-1980 is not applicable. This standard only applies to dryers and pneumatic coal cleaning equipment.

COMPLIANCE PLAN

O-N Minerals Company is currently in compliance with all applicable requirements. No compliance plan was included in the application or in the permit.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Federal Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Table VIII. Insignificant Emission Units

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720B)	Rated Capacity (9 VAC 5-80-720 C)
1	Caterpillar Diesel Generator, Olympian Model CD075	9 VAC 5-80-720 C	NO _x , SO ₂ , PM, CO and VOC	0.24 MMBtu/hr
2	Diesel Tank	9 VAC 5-80-720 C	VOC	4,000 gallons
3	No. 2 Fuel Oil Tank	9 VAC 5-80-720 C	VOC	6,000 gallons
4	No. 2 Fuel Oil Tank	9 VAC 5-80-720 C	VOC	8,000 gallons
5	Gasoline	9 VAC 5-80-720 C	VOC	500 gallons
6	Used Oil	9 VAC 5-80-720 C	VOC	550 gallons
7	Vehicle Fluid Storage tank (11)	9 VAC 5-80-720 C	VOC	All <275 gallons

¹The citation criteria for insignificant activities are as follows:

- 9 VAC 5-80-720 A - Listed Insignificant Activity
- 9 VAC 5-80-720 B - Insignificant due to emission levels
- 9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

A public notice regarding the draft permit was placed in the Winchester Star, Winchester, Virginia, on November 30, 2007. At that time, EPA was sent a copy of the draft permit and statement of basis and notified of the public notice. EPA also began their 45 day concurrent review period on December 1, 2007. West Virginia, Maryland, and Pennsylvania are all affected states and were sent copies of the public notice in letters dated November 30, 2007. All persons on the Title V mailing list were also sent a copy of the public notice on November 30, 2007. Public comments were accepted from December 1, 2007 to December 30, 2007. No comments were received from the public. EPA's 45 day comment period ended on January 15, 2008. No comments were received from the EPA.

ATTACHMENTS

- A. 2006 Emission Inventory
- B. Minor New Source Review Permit dated January 22, 2003
- C. State Operating Permit dated February 9, 2005
- D. Emission Calculation Spreadsheets
- E. Compliance Assurance Monitoring Plan for Fabric Filters (LP-DC-2533, LP-DC-2525, LP-DC-2341, LP-DC-2532, LS-DC-1 and LS-DC-2)

ATTACHMENT A

2006 Emission Inventory



DEQ-VALLEY

APR 16 2007

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TO: _____
FILE: _____

2006 EMISSION STATEMENT

Please correct any errors in the information below (cross out & replace)

FACILITY NAME O-N MINERALS (CHEMSTONE) COMPANY		REGISTRATION # 80504	CONTACT PERSON KARL D. EVERETT PE	
LOCATION 508 Quarry Lane Clearbrook, VA 22624			JURISDICTION Frederick County	
MAILING ADDRESS P.O. Box 219		MAILING CITY AND STATE Clearbrook, VA	ZIPCODE 22624	
PARENT COMPANY (IF APPLICABLE) Oglebay Norton		TELEPHONE NUMBER (540)465-5161	PRIMARY SIC CODE 3274	<i>For Agency Use Only</i>

FACILITY TOTALS (Sum emissions from attached pages)

	ANNUAL		OZONE SEASON
TOTAL VOC EMISSIONS FOR 2006	1.17	TONS/YR	LBS/DAY
TOTAL NO _x EMISSIONS FOR 2006	170.28	TONS/YR	LBS/DAY
TOTAL SO ₂ EMISSIONS FOR 2006	220.02	TONS/YR	NA
TOTAL PM ₁₀ EMISSIONS FOR 2006	21.77	+ 1.27 = TONS/YR	23.04 NA
TOTAL PB EMISSIONS FOR 2006	N/A	TONS/YR	NA
TOTAL TRS EMISSIONS FOR 2006	N/A	TONS/YR	NA
TOTAL TNMOC EMISSIONS FOR 2006	N/A	TONS/YR	NA
TOTAL non-VOC/non-PM ₁₀ HAP EMISSIONS FOR 2006	23.74	TONS/YR	NA
TOTAL CO EMISSIONS FOR 2006	4.1	TONS/YR	NA
TOTAL PM _{2.5} EMISSIONS FOR 2006	N/A	TONS/YR	NA
TOTAL NH ₃ EMISSIONS FOR 2006	N/A	TONS/YR	NA

PLEASE ATTACH "ANNUAL UPDATE" FORM.
PLEASE ATTACH "EMISSION STATEMENT CERTIFICATION" with appropriate signature.

EMISSION STATEMENT FORM INSTRUCTIONS

APPLICABILITY:

Facilities which emit 25 tons of VOC or 25 tons of NOx per year, **and** are located in an emissions control area, are required to submit an emission statement annually. The emission statement must provide VOC and NOx emissions **both** for the calendar year and for a typical day during the ozone season (June through August). The jurisdictions included in the emission control area are: Arlington, Fairfax, Loudoun, Prince William, Stafford, Alexandria, Charles City, Chesterfield, Hanover, Henrico, Hopewell, Richmond city, James City, York, Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, Suffolk, and Virginia Beach.

Facilities required to pay permit fees must submit emission calculations for the pollutants covered by the permit fee program prior to April 15 each year. The emission Statement can be used to fulfill this requirement. Permit fee facilities must submit calendar year emissions for VOC, NOx, SO₂, PM₁₀, PB, TRS, TNMOC, and non-volatile/non-particulate HAPs (see Appendix). **All regulated air pollutant emissions submitted will be used as the basis for permit fees during the next billing cycle.**

Some facilities may be subject to both of the preceding provisions. In this case, one submission can suffice, provided it contains all required information.

The regulatory basis for the above requirements can be found in 9 VAC 5-20-160, 9 VAC 5-20-206, and 9 VAC 5-80-340.

DEFINITIONS:

As used in this document, all terms not defined here shall have the meaning given in the regulations, unless otherwise required by context.

"Actual emissions" means the actual rate of emission of a pollutant from an emission unit for the preceding calendar year or seasonal period. Actual emission estimates shall be adjusted to reflect the effects of process upsets and control equipment downtime and shall follow an emission estimation method acceptable to the Department.

"Control efficiency" means the amount of any given pollutant removed from an air stream by a control device prior to discharge to the ambient air, expressed as a percentage. For certain VOC sources, both the capture and the destruction/collection efficiencies should be used to determine the overall control efficiency.

"Control equipment device code" means the three-digit code, which defines the equipment (such as an incinerator or carbon adsorber), used to reduce, by destruction or removal, the amount of air pollutant in an air stream prior to discharge to the ambient air.

"Design value control efficiency" means the manufacturer's specified design efficiency. This value can be used if no testing has been performed on the control equipment.

"Emission factor" means, an AIRS factor, an AP-42 factor, or other local factor, which has been tested and is recognized as a standard for calculating emissions.

"Fuel Parameter" means the ash or sulfur content of a fuel used in a combustion process expressed as a weight percentage.

"Material balance" means a method of calculating emissions where the difference between the raw materials (or "mass in") and the recovered products (or "mass out") is considered the emissions for a source.

"Ozone season" means that period between June 1 and August 31 of each year during which conditions for photochemical ozone formation are most favorable. Generally, sustained periods of direct sunlight (i.e., long days, small cloud cover) and warm temperatures.

"Ozone season daily thrupt" means the actual or estimated daily fuel, process or solid waste operating rate on an average of the operating days during the ozone season (may be the same as the normal daily rate), expressed in the units of measure appropriate for the particular type of equipment or process involved.

"Point" means a physical emission point or process within a plant that results in pollutant emissions.

"Regulated air pollutants" are defined in 9 VAC 5-80-320 and include VOC, NOx, SO₂, PM₁₀, PB, TRS, TNMOC, and non-volatile/non-particulate HAPs.

"Segment" means components of a point process, such as fuel type that are used in the computation of emissions.

"Stack" means any point in a source designed to emit solids, liquids, or gases into the air, including pipes or ducts.

"Thruput" means the actual or estimated fuel, process, or solid waste operating rate for the calendar year or ozone season, expressed in the units of measure appropriate for the particular type of equipment or process involved.

2006 EMISSION CALCULATIONS

OPTION I: EMISSION FACTOR METHOD

 REGISTRATION #: 80504

 POINT NO. 20

 SEGMENT NO. 1

 SCC NO. 30502001

	ANNUAL	OZONE SEASON = JUNE, JULY, AUGUST
THRUPUT (with units)	Primary 591,023 Tons	
NO. OPERATING DAYS	days	days
NO. OPERATING HOURS PER DAY	hours	hours
DAILY THRUPUT (with units) = Thruput / days	NA	per day
VOC EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
VOC CONTROL DEVICE CODE ²		
Avg. VOC CONTROL EFFICIENCY ³ = CE	%	%
VOC EMISSIONS ⁴	tons VOC per yr	lbs VOC per day
Nox EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
Nox CONTROL DEVICE CODE ²		
Avg. Nox CONTROL EFFICIENCY ³ = CE	%	%
Nox EMISSIONS ⁴	tons Nox per yr	lbs Nox per day
SO2 EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
SO2 CONTROL DEVICE CODE ²		
Avg. SO2 CONTROL EFFICIENCY ³ = CE	%	%
SO2 EMISSIONS ⁴	tons SO2 per yr	lbs SO2 per day
PM10 EMISSION FACTOR (with units) = EF	0.000036 lbs/ton	
Source of Emission Factor ¹		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
PM10 CONTROL DEVICE CODE ²		
Avg. PM10 CONTROL EFFICIENCY ³ = CE	95%	%
PM10 EMISSIONS ⁴	0.01 tons PM10 per yr	lbs PM10 per day
TRS EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
TRS CONTROL DEVICE CODE ²		
Avg. TRS CONTROL EFFICIENCY ³ = CE	%	%
TRS EMISSIONS ⁴	tons TRS per yr	lbs TRS per day
PB Emission Factor (with units) = EF		
Source of Emission Factor ¹		
PB CONTROL DEVICE CODE ²		
Avg. PB CONTROL EFFICIENCY ³ = CE	%	%
PB EMISSIONS ⁴	tons PB per yr	lbs PB per day

1. AP-42; ST = Stack test; CEMS; F = Federal factor (EPA standard factor from AIRS); O = Other (describe on separate sheet; use subject to DEQ approval)
2. See control device codes listed in Appendix.
3. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
4. ANNUAL EMISSIONS = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100 ; OZONE EMISSIONS = DAILY THRUPUT x EF x FP x (100-CE)/100

2006 EMISSION CALCULATIONS

OPTION I: EMISSION FACTOR METHOD

REGISTRATION #: 80504

POINT NO. 20

SEGMENT NO. 2

SCC NO. 30502002

	ANNUAL	OZONE SEASON = JUNE, JULY, AUGUST
THRUPUT (with units)	Secondary 390,075 Tons	
NO. OPERATING DAYS	days	days
NO. OPERATING HOURS PER DAY	hours	hours
DAILY THRUPUT (with units) = Thruput / days	NA	per day
VOC EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
VOC CONTROL DEVICE CODE ²		
Avg. VOC CONTROL EFFICIENCY ³ = CE	%	%
VOC EMISSIONS ⁴	tons VOC per yr	lbs VOC per day
Nox EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
Nox CONTROL DEVICE CODE ²		
Avg. Nox CONTROL EFFICIENCY ³ = CE	%	%
Nox EMISSIONS ⁴	tons Nox per yr	lbs Nox per day
SO2 EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
SO2 CONTROL DEVICE CODE ²		
Avg. SO2 CONTROL EFFICIENCY ³ = CE	%	%
SO2 EMISSIONS ⁴	tons SO2 per yr	lbs SO2 per day
PM10 EMISSION FACTOR (with units) = EF	0.0006 lbs/ton	
Source of Emission Factor ¹		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
PM10 CONTROL DEVICE CODE ²		
Avg. PM10 CONTROL EFFICIENCY ³ = CE	75%	%
PM10 EMISSIONS ⁴	0.03 tons PM10 per yr	lbs PM10 per day
TRS EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
TRS CONTROL DEVICE CODE ²		
Avg. TRS CONTROL EFFICIENCY ³ = CE	%	%
TRS EMISSIONS ⁴	tons TRS per yr	lbs TRS per day
PB Emission Factor (with units) = EF		
Source of Emission Factor ¹		
PB CONTROL DEVICE CODE ²		
Avg. PB CONTROL EFFICIENCY ³ = CE	%	%
PB EMISSIONS ⁴	tons PB per yr	lbs PB per day

1. AP-42; ST = Stack test; CEMS; F = Federal factor (EPA standard factor from AIRS); O = Other (describe on separate sheet; use subject to DEQ approval)
 2. See control device codes listed in Appendix.
 3. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
 4. ANNUAL EMISSIONS = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100 ; OZONE EMISSIONS = DAILY THRUPUT x EF x FP x (100-CE)/100

2006 EMISSION CALCULATIONS OPTION I: EMISSION FACTOR METHOD

REGISTRATION #: 80504 POINT NO. 20 SEGMENT NO. 2 SCC NO. 30502002

	ANNUAL	OZONE SEASON = JUNE, JULY, AUGUST
THRUPUT (with units)	Handling 738,779 Tons	
NO. OPERATING DAYS	days	days
NO. OPERATING HOURS PER DAY	hours	hours
DAILY THRUPUT (with units) = Thruput / days	NA	
VOC EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
VOC CONTROL DEVICE CODE ²		
Avg. VOC CONTROL EFFICIENCY ³ = CE	%	%
VOC EMISSIONS ⁴	tons VOC per yr	lbs VOC per day
Nox EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
Nox CONTROL DEVICE CODE ²		
Avg. Nox CONTROL EFFICIENCY ³ = CE	%	%
Nox EMISSIONS ⁴	tons Nox per yr	lbs Nox per day
SO2 EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
SO2 CONTROL DEVICE CODE ²		
Avg. SO2 CONTROL EFFICIENCY ³ = CE	%	%
SO2 EMISSIONS ⁴	tons SO2 per yr	lbs SO2 per day
PM10 EMISSION FACTOR (with units) = EF	0.165 Lb/ton	
Source of Emission Factor ¹ AP-42		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
PM10 CONTROL DEVICE CODE ²		
Avg. PM10 CONTROL EFFICIENCY ³ = CE	90%	%
PM10 EMISSIONS ⁴	6.09 tons PM10 per yr	lbs PM10 per day
TRS EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
TRS CONTROL DEVICE CODE ²		
Avg. TRS CONTROL EFFICIENCY ³ = CE	%	%
TRS EMISSIONS ⁴	tons TRS per yr	lbs TRS per day
PB Emission Factor (with units) = EF		
Source of Emission Factor ¹		
PB CONTROL DEVICE CODE ²		
Avg. PB CONTROL EFFICIENCY ³ = CE	%	%
PB EMISSIONS ⁴	tons PB per yr	lbs PB per day

1. AP-42; ST = Stack test; CEMS; F = Federal factor (EPA standard factor from AIRS); O = Other (describe on separate sheet; use subject to DEQ approval)
 2. See control device codes listed in Appendix.
 3. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
 4. ANNUAL EMISSIONS = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; OZONE EMISSIONS = DAILY THRUPUT x EF x FP x (100-CE)/100

2006 EMISSION CALCULATIONS OF SECTION I: EMISSION FACTOR METHOD

REGISTRATION #: 80504

POINT NO. 20

SEGMENT NO. 4

SCC NO. 30502007

	ANNUAL	OZONE SEASON = JUNE, JULY, AUGUST
THRUPUT (with units)	Storage 324,509 Tons	
NO. OPERATING DAYS	days	days
NO. OPERATING HOURS PER DAY	hours	hours
DAILY THRUPUT (with units) = Thruput / days	NA	
VOC EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
VOC CONTROL DEVICE CODE ²		
Avg. VOC CONTROL EFFICIENCY ³ = CE	%	%
VOC EMISSIONS ⁴	tons VOC per yr	lbs VOC per day
Nox EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
Nox CONTROL DEVICE CODE ²		
Avg. Nox CONTROL EFFICIENCY ³ = CE	%	%
Nox EMISSIONS ⁴	tons Nox per yr	lbs Nox per day
SO2 EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
SO2 CONTROL DEVICE CODE ²		
Avg. SO2 CONTROL EFFICIENCY ³ = CE	%	%
SO2 EMISSIONS ⁴	tons SO2 per yr	lbs SO2 per day
PM10 EMISSION FACTOR (with units) = EF	0.0078 lbs/ton	
Source of Emission Factor ¹ DEQ		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
PM10 CONTROL DEVICE CODE ²		
Avg. PM10 CONTROL EFFICIENCY ³ = CE	95%	%
PM10 EMISSIONS ⁴	0.06 tons PM10 per yr	lbs PM10 per day
TRS EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
TRS CONTROL DEVICE CODE ²		
Avg. TRS CONTROL EFFICIENCY ³ = CE	%	%
TRS EMISSIONS ⁴	tons TRS per yr	lbs TRS per day
PB Emission Factor (with units) = EF		
Source of Emission Factor ¹		
PB CONTROL DEVICE CODE ²		
Avg. PB CONTROL EFFICIENCY ³ = CE	%	%
PB EMISSIONS ⁴	tons PB per yr	lbs PB per day

This factor already used in control calculation

should be

324,509 x 0.0078 = 2531

2531.2 / 2000 = 1.2656

(0.0078)

1. AP-42; ST = Stack test; CEMS; F = Federal factor (EPA standard factor from AIRS); O = Other (describe on separate sheet; use subject to DEQ approval)
 2. See control device codes listed in Appendix.
 3. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
 4. ANNUAL EMISSIONS = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; OZONE EMISSIONS = DAILY THRUPUT x EF x FP x (100-CE)/100

2006 EMISSION CALCULATIONS OPTION I: EMISSION FACTOR METHOD

REGISTRATION #: 80504 POINT NO. 20 SEGMENT NO. 5 SCC NO. 30502010

	ANNUAL	OZONE SEASON = JUNE, JULY, AUGUST
THRUPUT (with units)	Drilling 591,023 Tons	
NO. OPERATING DAYS	days	days
NO. OPERATING HOURS PER DAY	hours	hours
DAILY THRUPUT (with units) = Thruput / days	NA	per day
VOC EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
VOC CONTROL DEVICE CODE ²		
Avg. VOC CONTROL EFFICIENCY ³ = CE	%	%
VOC EMISSIONS ⁴	tons VOC per yr	lbs VOC per day
Nox EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
Nox CONTROL DEVICE CODE ²		
Avg. Nox CONTROL EFFICIENCY ³ = CE	%	%
Nox EMISSIONS ⁴	tons Nox per yr	lbs Nox per day
SO2 EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
SO2 CONTROL DEVICE CODE ²		
Avg. SO2 CONTROL EFFICIENCY ³ = CE	%	%
SO2 EMISSIONS ⁴	tons SO2 per yr	lbs SO2 per day
PM10 EMISSION FACTOR (with units) = EF	0.00008 lbs/ton	
Source of Emission Factor ¹ AP-42	11,19.2-2	
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
PM10 CONTROL DEVICE CODE ²		
Avg. PM10 CONTROL EFFICIENCY ³ = CE	%	%
PM10 EMISSIONS ⁴	0.02 tons PM10 per yr	lbs PM10 per day
TRS EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
TRS CONTROL DEVICE CODE ²		
Avg. TRS CONTROL EFFICIENCY ³ = CE	%	%
TRS EMISSIONS ⁴	tons TRS per yr	lbs TRS per day
PB Emission Factor (with units) = EF		
Source of Emission Factor ¹		
PB CONTROL DEVICE CODE ²		
Avg. PB CONTROL EFFICIENCY ³ = CE	%	%
PB EMISSIONS ⁴	tons PB per yr	lbs PB per day

1. AP-42; ST = Stack test; CEMS; F = Federal factor (EPA standard factor from AIRS); O = Other (describe on separate sheet; use subject to DEQ approval)
2. See control device codes listed in Appendix.
3. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
4. ANNUAL EMISSIONS = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; OZONE EMISSIONS = DAILY THRUPUT x EF x FP x (100-CE)/100

2006 EMISSION CALCULATIONS

OPTION I: EMISSION FACTOR METHOD

REGISTRATION #: 80504 POINT NO. 20 SEGMENT NO. 6 SCC NO. 30502011

	ANNUAL	OZONE SEASON = JUNE, JULY, AUGUST
THRUPUT (with units)	V-Miles 64,999	
NO. OPERATING DAYS	days	days
NO. OPERATING HOURS PER DAY	hours	hours
DAILY THRUPUT (with units) = Thruput / days	NA	per day
VOC EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
VOC CONTROL DEVICE CODE ²		
Avg. VOC CONTROL EFFICIENCY ³ = CE	%	%
VOC EMISSIONS ⁴	tons VOC per yr	lbs VOC per day
Nox EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
Nox CONTROL DEVICE CODE ²		
Avg. Nox CONTROL EFFICIENCY ³ = CE	%	%
Nox EMISSIONS ⁴	tons Nox per yr	lbs Nox per day
SO2 EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
SO2 CONTROL DEVICE CODE ²		
Avg. SO2 CONTROL EFFICIENCY ³ = CE	%	%
SO2 EMISSIONS ⁴	tons SO2 per yr	lbs SO2 per day
PM10 EMISSION FACTOR (with units) = EF	0.42 lbs/ton	
Source of Emission Factor ¹ AP-42	13,2,2,2,	
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
PM10 CONTROL DEVICE CODE ²		
Avg. PM10 CONTROL EFFICIENCY ³ = CE	90%	%
PM10 EMISSIONS ⁴	13.65 tons PM10 per yr	lbs PM10 per day
TRS EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
TRS CONTROL DEVICE CODE ²		
Avg. TRS CONTROL EFFICIENCY ³ = CE	%	%
TRS EMISSIONS ⁴	tons TRS per yr	lbs TRS per day
PB Emission Factor (with units) = EF		
Source of Emission Factor ¹		
PB CONTROL DEVICE CODE ²		
Avg. PB CONTROL EFFICIENCY ³ = CE	%	%
PB EMISSIONS ⁴	tons PB per yr	lbs PB per day

1. AP-42; ST = Stack test; CEMS; F = Federal factor (EPA standard factor from AIRS); O = Other (describe on separate sheet; use subject to DEQ approval)
2. See control device codes listed in Appendix.
3. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
4. ANNUAL EMISSIONS = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; OZONE EMISSIONS = DAILY THRUPUT x EF x FP x (100-CE)/100

2006 EMISSION CALCULATIONS

OPTION I: EMISSION FACTOR METHOD

 REGISTRATION #: 80504

 POINT NO. 20

 SEGMENT NO. 7

 SCC NO. 30502009

	ANNUAL	OZONE SEASON = JUNE, JULY, AUGUST
THRUPUT (with units)	Blasting 591,023 Tons	
NO. OPERATING DAYS	days	days
NO. OPERATING HOURS PER DAY	hours	hours
DAILY THRUPUT (with units) = Thruput / days	NA	per day
VOC EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
VOC CONTROL DEVICE CODE ²		
Avg. VOC CONTROL EFFICIENCY ³ = CE	%	%
VOC EMISSIONS ⁴	tons VOC per yr	lbs VOC per day
Nox EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
Nox CONTROL DEVICE CODE ²		
Avg. Nox CONTROL EFFICIENCY ³ = CE	%	%
Nox EMISSIONS ⁴	tons Nox per yr	lbs Nox per day
SO2 EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
SO2 CONTROL DEVICE CODE ²		
Avg. SO2 CONTROL EFFICIENCY ³ = CE	%	%
SO2 EMISSIONS ⁴	tons SO2 per yr	lbs SO2 per day
PM10 EMISSION FACTOR (with units) = EF	0.00002 lbs/ton	
Source of Emission Factor ¹		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
PM10 CONTROL DEVICE CODE ²		
Avg. PM10 CONTROL EFFICIENCY ³ = CE	%	%
PM10 EMISSIONS ⁴	0.01 tons PM10 per yr	lbs PM10 per day
TRS EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
TRS CONTROL DEVICE CODE ²		
Avg. TRS CONTROL EFFICIENCY ³ = CE	%	%
TRS EMISSIONS ⁴	tons TRS per yr	lbs TRS per day
PB Emission Factor (with units) = EF		
Source of Emission Factor ¹		
PB CONTROL DEVICE CODE ²		
Avg. PB CONTROL EFFICIENCY ³ = CE	%	%
PB EMISSIONS ⁴	tons PB per yr	lbs PB per day

1. AP-42; ST = Stack test; CEMS; F = Federal factor (EPA standard factor from AIRS); O = Other (describe on separate sheet; use subject to DEQ approval)

2. See control device codes listed in Appendix.

3. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").

4. ANNUAL EMISSIONS = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; OZONE EMISSIONS = DAILY THRUPUT x EF x FP x (100-CE)/100

2006 EMISSION CALCULATIONS OPTION I: EMISSION FACTOR METHOD

 REGISTRATION #: 80504

 POINT NO. 22 SEGMENT NO. 1

 SCC NO. 30501604

	ANNUAL	OZONE SEASON = JUNE, JULY, AUGUST
THRUPUT (with units)	Rotary Kiln 117,034 Tons	
NO. OPERATING DAYS	days	days
NO. OPERATING HOURS PER DAY	8310	hours
DAILY THRUPUT (with units) = Thruput / days	NA	per day
VOC EMISSION FACTOR (with units) = EF	0.02 lbs/ton of Lime	
Source of Emission Factor ¹ DEQ		
VOC CONTROL DEVICE CODE ²		%
Avg. VOC CONTROL EFFICIENCY ³ = CE	%	%
VOC EMISSIONS ⁴	1.17 tons VOC per yr	lbs VOC per day
NOx EMISSION FACTOR (with units) = EF	2.91 lbs/ton of Lime	
Source of Emission Factor ¹ ST May 2000		
NOx CONTROL DEVICE CODE ²		%
Avg. Nox CONTROL EFFICIENCY ³ = CE	%	%
Nox EMISSIONS ⁴	170.28 tons Nox per yr	lbs Nox per day
SO2 EMISSION FACTOR (with units) = EF	3.76 lbs/ton of Lime	
Source of Emission Factor ¹ ST May 2000		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
SO2 CONTROL DEVICE CODE ²		%
Avg. SO2 CONTROL EFFICIENCY ³ = CE	%	%
SO2 EMISSIONS ⁴	220.02 tons SO2 per yr	lbs SO2 per day
PM10 EMISSION FACTOR (with units) = EF	0.032 lbs/ton of Lime	
Source of Emission Factor ¹ DEQ		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
PM10 CONTROL DEVICE CODE ²		%
Avg. PM10 CONTROL EFFICIENCY ³ = CE	%	%
PM10 EMISSIONS ⁴	1.87 tons PM10 per yr	lbs PM10 per day
CO TRS EMISSION FACTOR (with units) = EF	0.07 lbs/ton of Lime	
Source of Emission Factor ¹		
TRS CONTROL DEVICE CODE ²		%
Avg. TRS CONTROL EFFICIENCY ³ = CE	%	%
CO TRS EMISSIONS ⁴	4.10 tons TRS per yr	lbs TRS per day
PB Emission Factor (with units) = EF		
Source of Emission Factor ¹		
PB CONTROL DEVICE CODE ²		%
Avg. PB CONTROL EFFICIENCY ³ = CE	%	%
PB EMISSIONS ⁴	tons PB per yr	lbs PB per day

1. AP-42; ST = Stack test; CEMS; F = Federal factor (EPA standard factor from AIRS); O = Other (describe on separate sheet; use subject to DEQ approval)

2. See control device codes listed in Appendix.

3. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").

4. ANNUAL EMISSIONS = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; OZONE EMISSIONS = DAILY THRUPUT x EF x FP x (100-CE)/100

2006 EMISSION CALCULATIONS OPTION I: EMISSION FACTOR METHOD

REGISTRATION #: 80504

POINT NO. 22

SEGMENT NO. 2

SCC NO. 39000203

	ANNUAL	OZONE SEASON = JUNE, JULY, AUGUST
THRUPUT (with units)	Coal Used 35,239 Tons	
NO. OPERATING DAYS	days	days
NO. OPERATING HOURS PER DAY	hours	hours
DAILY THRUPUT (with units) = Thruput / days	NA	per day
VOC EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
VOC CONTROL DEVICE CODE ²		
Avg. VOC CONTROL EFFICIENCY ³ = CE	%	%
VOC EMISSIONS ⁴	tons VOC per yr	lbs VOC per day
Nox EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
Nox CONTROL DEVICE CODE ²		
Avg. Nox CONTROL EFFICIENCY ³ = CE	%	%
Nox EMISSIONS ⁴	tons Nox per yr	lbs Nox per day
SO2 EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
SO2 CONTROL DEVICE CODE ²		
Avg. SO2 CONTROL EFFICIENCY ³ = CE	%	%
SO2 EMISSIONS ⁴	tons SO2 per yr	lbs SO2 per day
PM10 EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
PM10 CONTROL DEVICE CODE ²		
Avg. PM10 CONTROL EFFICIENCY ³ = CE	%	%
PM10 EMISSIONS ⁴	tons PM10 per yr	lbs PM10 per day
HCL TRS EMISSION FACTOR (with units) = EF	1.2 Lbs/ton	
Source of Emission Factor ¹		
TRS CONTROL DEVICE CODE ²		
Avg. TRS CONTROL EFFICIENCY ³ = CE	%	%
HCL TRS EMISSIONS ⁴	21.14 / tons TRS per yr	lbs TRS per day
HF PB Emission Factor (with units) = EF	0.15	
Source of Emission Factor ¹		
PB CONTROL DEVICE CODE ²		
Avg. PB CONTROL EFFICIENCY ³ = CE	%	%
HF PB EMISSIONS ⁴	2.64 / tons PB per yr	lbs PB per day

1. AP-42; ST = Stack test; CEMS; F = Federal factor (EPA standard factor from AIRS); O = Other (describe on separate sheet; use subject to DEQ approval)
 2. See control device codes listed in Appendix.
 3. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
 4. ANNUAL EMISSIONS = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100 ; OZONE EMISSIONS = DAILY THRUPUT x EF x FP x (100-CE)/100

2006 EMISSION CALCULATIONS

OPTION I: EMISSION FACTOR METHOD

REGISTRATION #: 80504 POINT NO. 6 SEGMENT NO. 1 SCC NO 10100501

	ANNUAL	OZONE SEASON = JUNE, JULY, AUGUST
THRUPUT (with units)	Emergency Generator 1000 Gal	
NO. OPERATING DAYS	days	days
NO. OPERATING HOURS PER DAY	hours	hours
DAILY THRUPUT (with units) = Thruput / days	NA	per day
VOC EMISSION FACTOR (with units) = EF	0.32 lbs/1000 gallon	
Source of Emission Factor ¹ DEQ		
VOC CONTROL DEVICE CODE ²		%
Avg. VOC CONTROL EFFICIENCY ³ = CE	%	%
VOC EMISSIONS ⁴	0.16 0.00 tons VOC per yr	lbs VOC per day
Nox EMISSION FACTOR (with units) = EF	1.04 lbs/1000 gallon	
Source of Emission Factor ¹ ST Oct 2001		
Nox CONTROL DEVICE CODE ²		%
Avg. Nox CONTROL EFFICIENCY ³ = CE	%	%
Nox EMISSIONS ⁴	0.52 0.00 tons Nox per yr	lbs Nox per day
SO2 EMISSION FACTOR (with units) = EF	0.4 lbs/1000 gallon	
Source of Emission Factor ¹ ST Oct 2001		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
SO2 CONTROL DEVICE CODE ²		%
Avg. SO2 CONTROL EFFICIENCY ³ = CE	%	%
SO2 EMISSIONS ⁴	0.2 0.0 tons SO2 per yr	lbs SO2 per day
PM10 EMISSION FACTOR (with units) = EF	0.425 lbs/1000 gallon	
Source of Emission Factor ¹ ST Oct 2001		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
PM10 CONTROL DEVICE CODE ²		%
Avg. PM10 CONTROL EFFICIENCY ³ = CE	%	%
PM10 EMISSIONS ⁴	0.2 0.00 tons PM10 per yr	lbs PM10 per day
TRS EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
TRS CONTROL DEVICE CODE ²		%
Avg. TRS CONTROL EFFICIENCY ³ = CE	%	%
TRS EMISSIONS ⁴		lbs TRS per day
PB Emission Factor (with units) = EF		
Source of Emission Factor ¹		
PB CONTROL DEVICE CODE ²		%
Avg. PB CONTROL EFFICIENCY ³ = CE	%	%
PB EMISSIONS ⁴		tons PB per yr lbs PB per day

1. AP-42; ST = Stack test; CEMS; F = Federal factor (EPA standard factor from AIRS); O = Other (describe on separate sheet; use subject to DEQ approval)

2. See control device codes listed in Appendix.

3. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").

4. ANNUAL EMISSIONS = DAILY THRUPUT x EF x FP x (100-CE)/100; OZONE EMISSIONS = DAILY THRUPUT x EF x FP x (100-CE)/100

2006 EMISSION CALCULATIONS OPTION I: EMISSION FACTOR METHOD

REGISTRATION #: 80504 POINT NO. 40 SEGMENT NO. 1 SCC NO. 30502006

	ANNUAL	OZONE SEASON = JUNE, JULY, AUGUST
THRUPUT (with units)	Lime Loadout 117,034 Tons	
NO. OPERATING DAYS	days	days
NO. OPERATING HOURS PER DAY	hours	hours
DAILY THRUPUT (with units) = Thruput / days	NA	per day
VOC EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
VOC CONTROL DEVICE CODE ²		
Avg. VOC CONTROL EFFICIENCY ³ = CE	%	%
VOC EMISSIONS ⁴	tons VOC per yr	lbs VOC per day
NOx EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
NOx CONTROL DEVICE CODE ²		
Avg. NOx CONTROL EFFICIENCY ³ = CE	%	%
NOx EMISSIONS ⁴	tons NOx per yr	lbs NOx per day
SO2 EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
SO2 CONTROL DEVICE CODE ²		
Avg. SO2 CONTROL EFFICIENCY ³ = CE	%	%
SO2 EMISSIONS ⁴	tons SO2 per yr	lbs SO2 per day
PM10 EMISSION FACTOR (with units) = EF	0.0003 lbs/ton	
Source of Emission Factor ¹ AP-42		
FUEL PARAMETER (% ash or % sulfur) = FP	%	%
PM10 CONTROL DEVICE CODE ²		
Avg. PM10 CONTROL EFFICIENCY ³ = CE	%	%
PM10 EMISSIONS ⁴	0.02 tons PM10 per yr	lbs PM10 per day
TRS EMISSION FACTOR (with units) = EF		
Source of Emission Factor ¹		
TRS CONTROL DEVICE CODE ²		
Avg. TRS CONTROL EFFICIENCY ³ = CE	%	%
TRS EMISSIONS ⁴	tons TRS per yr	lbs TRS per day
PB Emission Factor (with units) = EF		
Source of Emission Factor ¹		
PB CONTROL DEVICE CODE ²		
Avg. PB CONTROL EFFICIENCY ³ = CE	%	%
PB EMISSIONS ⁴	tons PB per yr	lbs PB per day

1. AP-42; ST = Stack test; CEMS; F = Federal factor (EPA standard factor from AIRS); O = Other (describe on separate sheet; use subject to DEQ approval)
 2. See control device codes listed in Appendix.
 3. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
 4. ANNUAL EMISSIONS = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100 ; OZONE EMISSIONS = DAILY THRUPUT x EF x FP x (100-CE)/100

2005 EMISSION CALCULATIONS
OPTIONAL EMISSION FACTOR METHOD (continued)

STACK NUMBER: 003

REGISTRATION #: 80504

	ANNUAL	OZONE SEASON = June, July, August
STACK HEIGHT (ft)	162	NA
STACK DIAMETER (ft)	6	NA
EXIT GAS TEMPERATURE (E F)	219	NA
EXIT GAS VELOCITY (ft per second)	34.7	NA
ELEVATION (ft above sea level)		NA
GAS FLOW RATE (cu.ft per minute)		NA

STACK NUMBER: 006

	ANNUAL	OZONE SEASON = June, July, August
STACK HEIGHT (ft)	8	NA
STACK DIAMETER (ft)	0.27	NA
EXIT GAS TEMPERATURE (E F)		NA
EXIT GAS VELOCITY (ft per second)		NA
ELEVATION (ft above sea level)		NA
GAS FLOW RATE (cu.ft per minute)		NA

STACK NUMBER: 007

	ANNUAL	OZONE SEASON = June, July, August
STACK HEIGHT (ft)	80	NA
STACK DIAMETER (ft)	2	NA
EXIT GAS TEMPERATURE (E F)		NA
EXIT GAS VELOCITY (ft per second)		NA
ELEVATION (ft above sea level)		NA
GAS FLOW RATE (cu.ft per minute)		NA

STACK NUMBER:

	ANNUAL	OZONE SEASON = June, July, August
STACK HEIGHT (ft)		NA
STACK DIAMETER (ft)		NA
EXIT GAS TEMPERATURE (E Ft)		NA
EXIT GAS VELOCITY (ft per second)		NA
ELEVATION (ft above sea level)		NA
GAS FLOW RATE (cu.ft per minute)		NA

STACK NUMBER:

	ANNUAL	OZONE SEASON = June, July, August
STACK HEIGHT (ft)		NA
STACK DIAMETER (ft)		NA
EXIT GAS TEMPERATURE (E Ft)		NA
EXIT GAS VELOCITY (ft per second)		NA
ELEVATION (ft above sea level)		NA
GAS FLOW RATE (cu.ft per minute)		NA

ATTACHMENT B

Minor NSR Permit
(Dated January 22, 2003)

STATIONARY SOURCE PERMIT TO MODIFY AND OPERATE

**This permit includes designated equipment subject to
New Source Performance Standards (NSPS).**

This permit supersedes your permit dated October 4, 2000.

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

Global Stone Chemstone Corporation
1 Quarry Lane
Clear Brook, Virginia 22624
Registration No.: 80504
County-Plant No.: 51-069-0034

is authorized to modify and operate

a lime manufacturing facility

located at

1 Quarry Lane
Frederick County, Virginia

in accordance with the Conditions of this permit.

Approved on January 22, 2003

Larry M. Simmons
for Director, Department of Environmental Quality

Permit consists of 7 pages.
Permit Conditions 1 to 47.
Attachment A - Previously Permitted Equipment List.
Attachment B - Exempt Equipment List.
Source Testing Report Format.

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

1. Except as specified in this permit, the permitted facility is to be modified and operated as represented in the permit applications dated July 11, 1986, May 19, 1998, July 27, 2000 and October 25, 2002 including amendment sheets dated May 3, 1993, March 13, 1997, April 24, 1998, June 11, 1998, August 17, 1998, October 8, 1998, May 7, 1999, November 12, 1999 and August 25, 2000. 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.
(9 VAC 5-50-390 and 9 VAC 5-80-1210D)

2. **Equipment List** – Equipment to be installed and operated at this facility consists of:
 - one 24" x 200' Hoover belt conveyor (MP-BC-14) rated at 150 tons per hour, NSPS Subpart OOO.

Previously permitted equipment is listed in Attachment A.

Exempt equipment is listed in Attachment B.

(9 VAC 5-80-1100)

Rotary Lime Kiln Conditions

3. **Emission Controls** - Particulate emissions from the kiln shall be controlled by a four module fabric filter baghouse (LP-BH2405, LP-BH2406, LP-BH2407, and LP-BH2408). The fabric filter baghouse shall be provided with adequate access for inspection. The filter shall be equipped with a device to continuously measure the differential pressure across the modules. The device shall be installed in an accessible location and shall be maintained by the permittee such that it is in proper working order at all times.
(9 VAC 5-80-10 H and 9 VAC 5-50-260)
4. **Monitoring Devices** - The lime kiln shall be provided with a continuous opacity monitoring system (COMS) conforming to the requirements of New Source Performance Standards (NSPS), Subpart HH.
(9 VAC 5-50-410 HH and 9 VAC 5-170-160)
5. **Feed Monitoring Devices** - The lime kiln shall be equipped with a device for measuring the feed rate of limestone, accurate to + or - 5%.
(9 VAC 5-50-410 HH)

6. **Production and Throughput** - The annual production of lime shall not exceed 168,000 tons per year, calculated monthly as the sum of each consecutive 12 month period. This production is limited to a total throughput of 336,000 tons of limestone per year, calculated monthly as the sum of each 12 consecutive month period.
(9 VAC 5-80-10 H)

7. **Fuel** - The approved fuels for the lime kiln are coal, natural gas, and distillate oil. Use of a different fuel may require a permit to modify and operate.
(9 VAC 5-80-10)

8. **Fuel Specifications** – The distillate oil shall meet the specifications below:

DISTILLATE OIL which meets ASTM D396-78 specifications for numbers 1 or 2 fuel oil:
Maximum sulfur content per shipment: 0.5%

(9 VAC 5-80-10)

9. **Fuel Specifications** - The sulfur and ash content of the coal to be burned in the lime kiln shall not exceed 1.90 percent and 16 percent by weight, respectively, per shipment.
(9 VAC 5-170-160)

10. **Fuel Certification** – The permittee shall obtain a certification from the fuel supplier with each shipment of distillate oil. Each fuel supplier certification shall include the following:

- a. The name of the fuel supplier;
- b. The date on which the distillate oil was received;
- c. The volume of distillate oil delivered in the shipment;
- d. A statement that the distillate oil complies with the American Society for Testing and Material specifications D396-78 for numbers 1 or 2 fuel oil, and
- e. The sulfur content of the distillate oil.

(9 VAC 5-170-160 and 9 VAC 5-50-410)

11. **Emission Limits** - Emissions from the operation of the lime kiln shall not exceed the limits specified below:

Particulate Matter	4.8 lbs/hr	19.2 tons/yr
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PM-10	4.3 lbs/hr	17.3 tons/yr
Sulfur Dioxide	121.4 lbs/hr	490.1 tons/yr
Nitrogen Dioxides	60.9 lbs/hr	245.7 tons/yr
Carbon Monoxide	15.1 lbs/hr	61.0 tons/yr

(9 VAC 5-50-260 and 9 VAC 5-50-410)

12. **Visible Emission Limit** – Visible emissions from the lime kiln baghouse stack (LP-EP-1) shall not exceed 5% opacity as determined using EPA Method 9 (40 CFR 60, Appendix A).
(9 VAC 5-50-80 and 9 VAC 5-50-410)

13. **Visible Emission Limit** - Fugitive visible emissions from the rotary lime kiln 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 5-50-260)

14. **Requirements by Reference** – Except where this permit is more restrictive than the applicable requirement, the rotary lime kiln (LP-RK-1) shall be operated in compliance with the requirements of 40 CFR 60, Subpart HH.
(9 VAC 5-50-400 and 9 VAC 5-50-410)

Lime Finishing and Loadout Conditions

15. **Emission Controls** - Particulate emissions from the hammermill (LL-HM-1) shall be controlled by a baghouse (LL-DC-1). The baghouse shall be provided with adequate access for inspection.
(9 VAC 5-50-260)

16. **Emission Controls** - Particulate emissions from loading the previously permitted four lime storage silos (reference Attachment A, LP-SB-1) shall be controlled by a baghouse (LP-DC-2525). The baghouse shall be provided with adequate access for inspection.
(9 VAC 5-50-260)

17. **Emission Controls** - Particulate emissions from unloading of the previously permitted four lime storage silos (reference Attachment A, LP-SB-1) shall be controlled by covered conveyors and baghouses (LL-DC-2532 and LP-DC-2341). The baghouses shall be provided with adequate access for inspection.
(9 VAC 5-50-260)

18. **Emission Controls** - Particulate emissions from the belt conveyors (LS-CB-1, 2 and 3), storage bins (LS-SS-2, 3, 4 and 5) and screen (LS-S) included in the Lime Loadout Facility (referenced in Attachment A) shall be controlled by a fabric filter baghouse (LS-DC-1). The baghouse shall be provided with adequate access for inspection. The baghouse shall be equipped with a device to continuously measure the differential pressure across the fabric filter. The device shall be installed in an accessible location and shall be maintained by the permittee such that it is in proper working order at all times.
(9 VAC 5-50-260 and 9 VAC 5-80-10 H)
19. **Emission Controls** - Particulate emissions from belt conveyors (LS-CB-4, 5, 6 and 7), storage bins (LS-SS-1 and 6), screw conveyor (SC-2) and loadout dust controlling spouts (LS-1, 2 and 3) included in the Lime Loadout Facility (reference Attachment A) shall be controlled by a fabric filter baghouse (LS-DC-2). The baghouse shall be provided with adequate access for inspection. The baghouse shall be equipped with a device to continuously measure the differential pressure across the fabric filter. The device shall be installed in an accessible location and shall be maintained by the permittee such that it is in proper working order at all times.
(9 VAC 5-50-260 and 9 VAC 5-80-10 H)
20. **Emission Controls** - Particulate emissions from the Jeffery Crusher (LS-C) which is included in the Lime Loadout Facility (reference Attachment A) shall be controlled by an existing fabric filter baghouse (LP-DC-2532). The baghouse shall be provided with adequate access for inspection. The baghouse shall be equipped with a device to continuously measure the differential pressure across the fabric filter. The device shall be installed in an accessible location and shall be maintained by the permittee such that it is in proper working order at all times.
(9 VAC 5-50-260 and 9 VAC 5-80-10 H)
21. **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 or covered 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 the 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 clean wheels - achieved by use of a wheel washer or equivalent. Dirt, product, or raw

material spilled or tracked onto paved surfaces shall be promptly removed to prevent particulate matter from becoming airborne.

(9 VAC 5-50-260 and 9 VAC 5-50-90)

22. **Production** -The yearly production of lime from the hammermill (LL-HM-1) shall not exceed 336,000 tons, calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-10 H)

23. **Throughput** - The yearly throughput of lime to the previously permitted four lime storage silos (reference Attachment A, LP-SB-1) shall not exceed 168,000 tons, calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-10 H)

24. **Throughput** - The yearly throughput of lime to the Lime Loadout Facility (equipment listed in Attachment A) shall not exceed 168,000 tons, calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-10 H)

25. **Emission Limits** - Emissions from the operation of the hammermill (LL-HM-1) shall not exceed the limitations specified below:

Particulate Matter	0.022 gr/dscf	1.2 tpy
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(9 VAC 5-50-260)

26. **Emission Limits** - Emissions from the operation of the Lime Loadout Facility (equipment listed in Attachment A) shall not exceed the limitations specified below:

Particulate Matter	0.022 gr/dscf	0.5 tpy
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(9 VAC 5-50-260)

27. **Visible Emission Limit** - Visible emissions from each of the following baghouses: LL-DC-1, LP-DC-2525, LP-DC-2532, LP-DC-2341, LS-DC-1 and LS-DC-2, shall not exceed 5% opacity as determined using EPA Method 9 (40 CFR 60, Appendix A).
(9 VAC 5-50-80, 9 VAC 5-50-260 and 9 VAC 5-50-410)

28. **Visible Emission Limit** - Visible emissions from any fugitive emission point associated with the Lime Loadout Facility (equipment listed in Attachment A) shall not exceed 10% opacity, in accordance with 40 CFR, Part 60, Appendix A, Method 9.
(9 VAC 5-50-410 and 9 VAC 5-50-80)

Facility Wide Conditions

29. **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. Test ports shall be provided at the appropriate locations.
(9 VAC 5-50-30 F)
30. **Visible Emission Limit** - Visible emissions from Hoover belt conveyor (MP-BC-14) transfers shall not exceed 10% 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 5-50-1180)
31. **Requirements by Reference** – Except where this permit is more restrictive than the applicable requirement, the Hoover belt conveyor (MP-BC-14) shall be operated in compliance with the requirements of 40 CFR 60, Subpart OOO.
(9 VAC 5-50-400 and 9 VAC 5-50-410)

INITIAL COMPLIANCE DETERMINATION

32. **Visible Emissions Evaluation** – Visible Emission Evaluations (VEE) in accordance with the 40 CFR Part 60, Appendix A, Method 9, shall be conducted on the following equipment: Hoover belt conveyor (MP-BC-14) transfer points. Each test shall consist of 30 sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average. The details of the tests are to be arranged with the Director, Valley Regional Office«Region». 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. Two copies of the test result shall be submitted to the Director, Valley Regional Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30)
33. **Visible Emissions Evaluation**- Visible Emission Evaluations required, in Condition 32, on the Hoover belt conveyor (MP-BC-14) may be reduced to 10 sets of 24 consecutive observations (at fifteen second intervals) to yield a six minute average if:
- a. There are no individual readings greater than 10% opacity for the Hoover belt conveyor (MP-BC-14), and
 - b. There are no more than three readings of 10% opacity for the one hour period for Hoover belt conveyor (MP-BC-14).
- (40 CFR 60.675 (C)(3) and 9 VAC 5-50-410)

CONTINUING COMPLIANCE

34. **Visible Emissions Evaluation** – Upon request by the DEQ, the permittee shall conduct additional visible emission evaluations from Lime load out facility or baghouse controls to demonstrate compliance with the visible emission limits contained in the permit. The details of the tests shall be arranged with the Director, Valley Regional Office.
(9 VAC 5-50-30 G)

NOTIFICATIONS & RECORDS

35. **Initial Notifications** - The permittee shall furnish written notification to the Director, Valley Regional Office:
- a. The actual date on which installation of the Hoover belt conveyor (MP-BC-14) commenced within 30 days after such date.
 - b. The actual start-up date of the Hoover belt conveyor (MP-BC- 14) within 15 days after such date.
 - c. The anticipated date of the visible emission evaluation of the Hoover belt conveyor transfer points postmarked at least 30 days prior to such date.

Copies of the written notification referenced in items a through c above are to be sent to:

Associate Director
Office of Air Enforcement (3AP10)
U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

(9 VAC 5-50-50)

36. **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 the Director, Valley Regional Office. These records shall include, but are not limited to:
- a. The monthly and annual production of lime, 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 the lime kiln.
 - c. The monthly and annual consumption of limestone, in tons. Monthly

consumption shall be calculated from records of the feed rate measuring device. The annual consumption shall be calculated monthly as the sum of each consecutive 12-month period.

- d. 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. Each shipment shall be defined as 1,000 tons. Each shipment shall be sampled by 35 incremental, 6 pound samples, to develop a representative sample of the shipment. A final sample shall be drawn from this mass.
- e. The monthly and annual throughput of coal, in tons. The annual consumption shall be calculated monthly as the sum of each consecutive 12-month period.
- f. 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.
- g. The monthly and annual throughput of distillate oil, in gallons. The annual consumption shall be calculated monthly as the sum of the consecutive 12-month period.
- h. All fuel supplier certifications.
- i. Quarterly COMS opacity data from the lime kiln stack (LP-EP-1).
- j. Results of all performance tests and visible emissions evaluations.
- k. The monthly and annual production of lime, in tons, to the hammermill (LL-HM-1). The annual throughput shall be calculated monthly as the sum of each consecutive 12-month period.
- l. The annual throughput of lime, in tons, to the four lime storage silos. The annual throughput shall be calculated monthly as the sum of each consecutive 12-month period.
- m. The annual throughput of lime, in tons, processed by the Lime Loadout Facility (referenced in Attachment A), calculated monthly as the sum of each consecutive 12-month period.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-50-50)

REPORTING

37. **Reporting** - The permittee shall submit Quarterly Excess Emissions Reports which shall include all six-minute periods during which the average opacity of the visible emissions from the rotary lime kiln (LP-RK-1) is greater than 15%. Reports shall follow the format provided in 40 CFR 60.7(c) and shall be submitted to:

Associate Director
Air Enforcement Branch (3AP10)
U. S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Reports shall be postmarked by the 30th day following the end of each calendar quarter. A copy of the report shall also be submitted to the Director, Valley Regional Office. (9 VAC 5-50-260, 9 VAC 5-50-400 and 9 VAC 5-50-410)

GENERAL CONDITIONS

38. **Permit Invalidation** - The portions of this permit to modify the lime manufacturing facility, by installing a 24" x 200' Hoover belt conveyor (MP-BC-14), shall become invalid, unless an extension is granted by the DEQ, if:
- a. A program of continuous installation is not commenced before the latest of the following:
 - i. 18 months from the date of this permit;
 - ii. Nine months from the date that the last permit or other authorization was issued from any other governmental agency;
 - iii. Nine months from the date of the last resolution of any litigation concerning any such permits or authorization; or
 - b. A program of installation 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 a phased construction project.

(9 VAC 5-80-1210)

39. **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)

40. **Notification for Control Equipment Maintenance** - The permittee shall furnish notification to the Director, Valley Regional Office, 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)

41. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the Director, Valley Regional Office, 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 the Director, Valley Regional Office, in writing.
(9 VAC 5-20-180 C)

42. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the 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)

43. **Maintenance/Operating Procedures** - 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)

44. **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 the equipment listed in Condition 2;
- 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;
- f. Fails to install or operate this facility in accordance with the application for this permit or any amendments to it; or
- g. Allows the permit to become invalid.

(9 VAC 5-80-1210)

45. **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 the Director, Valley Regional Office.
(9 VAC 5-80-1240)

46. **Registration/Update** - Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the 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 the DEQ will either be in writing or by personal contact. The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.1-340 through 2.1-348 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.
(9 VAC 5-170-60 and 9 VAC 5-20-160)

47. **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)

ATTACHMENT A - Previously Permitted Equipment

Lime Loadout Facility:

- One Jeffery Crusher (30 Flextooth) rated at 50 tph (LS-C),
- One Midwestern Screen (MEV 510-5) rated at 60 tph (LS-S),
- One 36" Belt Conveyor rated at 150 tph (LS-CB-1),
- Three 36" Belt Conveyors, each rated at 200 tph (LS-CB-4, 5 and 6)
- Two 24" Belt Conveyors, each rated at 150 tph (LS-CB-2 and 3)
- One 24" Belt Conveyor rated at 50 tph (LS-CB-7)
- Five Storage Silos, each rated at 165 tons each (LS-SS-1, 2, 3, 4 and 5)
- One Storage Silo rated at 30 tons (LS-SS-6)
- One 16" Screw Conveyor, rated at 150 tph (SC-2)
- Three Loadout Spouts (LS-1, 2 and 3)
- Two fabric filter baghouses rated at 15,000 cfm each (LL-DC-1 and 2)

Control Equipment

Process Equipment

LP-DC-2533

Screen # 2 (LP-SC-2),
Conveyor # 5 (LP-BC-5)

LP-DC-2525

Screen # 3 (LP-SC-3),
Conveyor # 9 (LP-BC-9),
Four Lime Storage Bins (LP-SB-1)

LP-DC-2204

Conveyor # 3 (LP-BC-3)

LP-DC-2504

Conveyor # 4 (LP-BC-4)

LL-DC-1

Pebble Lime Pulverizer Plant:
Loadout Hammermill (LL-HM-1),

LP-DC-2106

Conveyor # 10 (LP-BC-10)

LP-DC-2341

Conveyor # 11 (LP-BC-11),
Conveyor # 12 (LP-EP-6),
Conveyor # 14 (LP-BC-14),
Conveyor # 15 (LP-BC-15)

LP-DC-2532

Conveyor # 13 (LP-BC-13)

LP-DC-2425

Screw Conveyors and Pneumatic Conveyors (LP-SW/PC),
Dust Bin (LP-SB-2)

Fugitive

Screen #1 (LP-SC-1),
Coal Mill (LP-CM-1),
Conveyor # 1 (LP-BC-1),
Conveyor #2 (LP-BC-2),
Conveyor #6 (LP-BC-6),
Conveyor #7 (LP-BC-7),
Two Old Silos (LP-SB-3)

Four Module Baghouse
TPH
LP-BH2405, 2406,
2407 and 2408

F.L. Smidth Rotary Kiln, 10 ft. dia. x 350 ft. long, 20.83
(lime) (LP-RK-1)
Associated conveyors, silos and handling equipment

ATTACHMENT B - Exempt Equipment

Control Equipment

Process Equipment

Fugitive

Drilling (MP-DR)

Fugitive

Primary 42" x 48" Jaw Crusher, 500 tons/hr, (MP-CR-1)

Fugitive

No. 2 Crusher, Allis Chalmers 16-50 gyratory, (MP-CR-2)

Fugitive

No. 1 Screen, Tyler F-900, 500 tons/hr, (MP-SC-1)

Fugitive

No. 2 Screen, Tyler F-800, 500 tons/hr, (MP-SC-2)

Fugitive

No. 3 Screen, Tyler F-800, 500 tons/hr, (MP-SC-3)

Fugitive
BC)

Belt Conveyors Numbers 2,3,4,7,8,9,11,12 and 13, (MP-

Fugitive

Storage Bins (9), (MP-SB)

LL-DC-1

Pebble Lime Pulverizer Plant:
Conveyor # 8 (LP-BC-8)
Loadout Screen (LL-SC-1)
Loadout Storage Bins (LL-SB)

ATTACHMENT C

State Operating Permit
(Dated February 9, 2005)

STATIONARY SOURCE PERMIT TO OPERATE

This permit implements the requirements for Reasonably Available Control Technology (RACT) for NO_x in the Western Virginia Emissions Control Area

This permit (i) is for the purpose of implementing the "reasonably available control technology" (RACT) requirements of 9 VAC 5-40-310 and 9 VAC 5-40-311 of the Regulations of the Board and (ii) establishes control technology and other requirements for the control of nitrogen oxides (NO_x) emissions from the Global Stone Chemstone Corporation lime manufacturing plant in the Western Virginia Emissions Control Area. These RACT requirements shall be the legal and regulatory basis for control of NO_x emissions from this facility.

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

Global Stone Chemstone Corporation
508 Quarry Lane
Clear Brook, Virginia 22624
Registration No.: 80504
Plant ID No.: 51-069-0034

is authorized to operate

a lime manufacturing facility

located at

508 Quarry Lane
Frederick County, Virginia

in accordance with the Conditions of this permit.

Approved on:

February 9, 2005

Director, Department of Environmental Quality

Permit consists of 4 pages.
Permit Conditions 1 to 13.
Source Testing Report Format.

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

PROCESS REQUIREMENTS

1. **Equipment List** – The following equipment is subject to the requirements of 9 VAC 5-40-310 for the Western Virginia Emissions Control Area. A demonstration of Reasonably Available Control Technology, (RACT), for NO_x is required for the following unit:

- a rotary lime kiln rated at 500 tons/day

(9 VAC 5-80-850 and 9 VAC 5-40-310)

✓ 2. **Emission Controls** – NO_x emissions from the rotary lime kiln shall be controlled by proper kiln design and operation.
(9 VAC 5-80-850)

OPERATING/EMISSION LIMITATIONS

✓ 3. **Emission Limits** – Maximum NO_x emissions from the operation of the rotary lime kiln shall not exceed 60.9 lb per hour and 3.2 lb per ton of lime produced. Compliance with the NO_x emissions of 3.2 lb per ton of lime produced shall be based on NO_x emission rates obtained from the most recent stack test and the annual production of lime which is calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-850 and 9 VAC 5-50-260)

INITIAL COMPLIANCE DETERMINATION

✓ 4. **Stack Testing** – The permitted facility shall conduct a performance test for NO_x from the rotary lime kiln stack to demonstrate compliance with the emission limits contained in Condition 3. The tests shall be performed no later than April 30, 2007. The test shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 and the applicable reference methods contained in 40 CFR Part 60, Appendix A. The details of the test are to be arranged with the Director, Valley Region. The permittee shall submit a test protocol at least 30 days prior to testing. One copy of the test results shall be submitted to the Director, Valley Region, within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-80-880 and 9 VAC 5-50-30)

RECORDS

✓ 5. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Valley Region. These records shall

include, but are not limited to:

- a. The monthly and annual production of lime, in tons. The annual throughput shall be calculated monthly as the sum of each consecutive 12-month period.
- b. Results of all performance tests.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years.
(9 VAC 5-50-50 and 9 VAC 5-80-900)

6. **Testing/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. Test ports shall be provided when requested at the appropriate locations and in accordance with the applicable performance specification (reference 40 CFR Part 60, Appendix B).
(9 VAC 5-80-930)

GENERAL CONDITIONS

7. **Relationship To Other Requirements** - Except to the extent that conditions in this permit may be more stringent, this permit does not supersede or replace any other valid permit, regulatory or statutory requirement. Furthermore, this approval to operate shall not relieve the Global Stone Chemstone Corporation of the responsibility to comply with all other local, state and federal regulations, including permit regulations.
(9 VAC 5-80-800 D and 9 VAC 5-80-820 F)
8. **Federal Enforceability** - Once the permit is approved by the U.S. Environmental Protection Agency into the Commonwealth of Virginia State Implementation Plan, the permit is enforceable by EPA and citizens under the federal Clean Air Act.
(9 VAC 5-80-800 C.2 and 9 VAC 5-80-820 F)
9. **Permit Modification** - The Board may modify, rewrite, or amend this permit with the consent of the Global Stone Chemstone Corporation, for good cause shown by the Global Stone Chemstone Corporation, or on its own motion provided approval of the changes is accomplished in accordance with Regulations of the Board and the Administrative Process Act (§ 2.2-4000 et seq.); however, such changes shall not be effective until the changes are approved following the requirements of 40 CFR Part 51 (Requirements for Preparation, Adoption, and Submittal of Implementation Plans).
(9 VAC 5-80-960 and 9 VAC 5-80-1000)
10. **Failure to Comply** - Failure by the Global Stone Chemstone Corporation to comply with any of the conditions of this permit shall constitute a violation of a Permit of the Board. Failure to comply may result in a Notice of Violation and civil penalty. Nothing herein shall waive the

initiation of appropriate enforcement actions or the issuance of orders as appropriate by the Board as a result of such violations. Nothing herein shall affect appropriate enforcement actions by any other federal, state, or local regulatory authority.
(9 VAC 5-80-820 F, 9 VAC 5-80-910 and 9 VAC 5-80-1010)

11. **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 to 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 and 9 VAC 5-80-850)

12. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Director, Valley Region of the change of ownership within 30 days of the transfer.
(9 VAC 5-80-940)
13. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-860 D)

SOURCE TESTING REPORT FORMAT

Cover

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

Certification

1. Signed by team leader / certified observer (include certification date)
- * 2. Signed by reviewer

Introduction

1. Test purpose
2. Test location, type of process
3. Test dates
- * 4. Pollutants tested
5. Test methods used
6. Observers' names (industry and agency)
7. Any other important background information

Summary of Results

1. Pollutant emission results / visible emissions summary
2. Input during test vs. rated capacity
3. Allowable emissions
- * 4. Description of collected samples, to include audits when applicable
5. Discussion of errors, both real and apparent

Source Operation

1. Description of process and control devices
2. Process and control equipment flow diagram
3. Process and control equipment data

* Sampling and Analysis Procedures

1. Sampling port location and dimensioned cross section
2. Sampling point description
3. Sampling train description
4. Brief description of sampling procedures with discussion of deviations from standard methods
5. Brief description of analytical procedures with discussion of deviation from standard methods

Appendix

- * 1. Process data and emission results example calculations
2. Raw field data
- * 3. Laboratory reports
4. Raw production data
- * 5. Calibration procedures and results
6. Project participants and titles
7. Related correspondence
8. Standard procedures

* Not applicable to visible emission evaluations.

ATTACHMENT D

Emission Calculations

SPREADSHEET FOR AGGREGATE PROCESSING EMISSION CALCULATION

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
 AGGREGATE PROCESSING EMISSION CALCULATION SPREADSHEET
 AUGUST 24, 2004
 VERSION 3.0

PROCESS DEFINITIONS:
 MANIF = Equipment Manufacturer's Name
 MODEL # = Manufacturer's Model Number

MODIFICATION CODES - Choose a code and insert:

- 0. - No Change
- 1. - for increase in throughput limit.
- 2. - for physical change in emissions unit (modification).
- 3. - for like-for-like replacement emissions unit(s).
- 4. - for new emissions unit(s).

COMPANY NAME:	J-O-N Minerals
PLANT REGISTRATION #:	80504
PLANT NAME:	Pre-calcination Process (Main plant)
PLANT STREET ADDRESS:	
COUNTY/CITY:	JRP
COMPLETED BY:	JRP
COMMENTS:	9/1/2006

PROCESS TYPE	DESCRIPTION	Flags	---FACTORS---			-CONTROLLED- ANNUAL-EMISSIONS			-CONTROLLED- HOURLY-EMISSIONS			-UNCONTROLLED- 8760 HR/YR EMISSIONS			NEW EMISSION UNITS		
			PM	PM10	TONS/YR	PM	PM10	TONS/YR	PM	PM10	TONS/YR	PM	PM10	TONS/YR	8760 HR/YR	PM10	TONS/YR
PRIMARY CRUSHER	MP-CR-1																
Manf.	4380000	NSPS?															
Model #	500	Dry	0.000730	0.000710	0.078	0.018	0.018	0.018	1.589	1.555							
Mod. Code	4380000	Wet	0.000037	0.000036													
		Bag	0.000007	0.000007													
PRIMARY CRUSHER																	
Manf.		NSPS?															
Model #		Dry	0.000730	0.000710													
Mod. Code		Wet	0.000037	0.000036													
		Bag	0.000007	0.000007													
SECONDARY CRUSHER	MP-CR-2																
Manf.	4380000	NSPS?															
Model #	500	Dry	0.005400	0.002400	1.183	0.600	0.270	11.826	0.000	5.256							
Mod. Code	4380000	Wet	0.001200	0.000540													
		Bag	0.000054	0.000024													
SECONDARY CRUSHER																	
Manf.		NSPS?															
Model #		Dry	0.005400	0.002400													
Mod. Code		Wet	0.001200	0.000540													
		Bag	0.000054	0.000024													
SECONDARY CRUSHER																	
Manf.		NSPS?															
Model #		Dry	0.005400	0.002400													
Mod. Code		Wet	0.001200	0.000540													
		Bag	0.000054	0.000024													

NEW EMISSION UNITS

- UNCONTROLLED-

8760 HR/YR
PM10 EMISSIONS
TONS/YR

- UNCONTROLLED-

8760 HR/YR EMISSIONS
PM
TONS/YR

- CONTROLLED-

HOURLY EMISSIONS
PM10
LBS/HR

- CONTROLLED-

ANNUAL EMISSIONS
PM10
TONS/YR

---FACTORS---

PM LBS/TON

PM10 LBS/TON

PM TONS/YR

PM10 LBS/HR

PM TONS/YR

PM10 TONS/YR

PROCESS TYPE

DESCRIPTION

PROCESS TYPE	DESCRIPTION	NSPS? Dry Wet Bag	PM LBS/TON	PM10 LBS/TON	PM TONS/YR	PM10 LBS/HR	PM TONS/YR	PM10 TONS/YR	PM TONS/YR	PM10 TONS/YR
TERTIARY CRUSHER	PROCESS ID #		0.005400	0.002400	0.000	0.000	0.000	0.000	0.000	0.000
	Actual Processed (t/yr)		0.001200	0.000540	0.000	0.000	0.000	0.000	0.000	0.000
	Rated Capacity (t/yr)		0.000054	0.000024	0.000	0.000	0.000	0.000	0.000	0.000
TERTIARY CRUSHER	PROCESS ID #		0.005400	0.002400	0.000	0.000	0.000	0.000	0.000	0.000
	Actual Processed (t/yr)		0.001200	0.000540	0.000	0.000	0.000	0.000	0.000	0.000
	Rated Capacity (t/yr)		0.000054	0.000024	0.000	0.000	0.000	0.000	0.000	0.000
TERTIARY CRUSHER	PROCESS ID #		0.005400	0.002400	0.000	0.000	0.000	0.000	0.000	0.000
	Actual Processed (t/yr)		0.001200	0.000540	0.000	0.000	0.000	0.000	0.000	0.000
	Rated Capacity (t/yr)		0.000054	0.000024	0.000	0.000	0.000	0.000	0.000	0.000
TERTIARY CRUSHER	PROCESS ID #		0.005400	0.002400	0.000	0.000	0.000	0.000	0.000	0.000
	Actual Processed (t/yr)		0.001200	0.000540	0.000	0.000	0.000	0.000	0.000	0.000
	Rated Capacity (t/yr)		0.000054	0.000024	0.000	0.000	0.000	0.000	0.000	0.000
FINES CRUSHING	PROCESS ID #		0.039000	0.015000	0.000	0.000	0.000	0.000	0.000	0.000
	Actual Processed (t/yr)		0.003000	0.001200	0.000	0.000	0.000	0.000	0.000	0.000
	Rated Capacity (t/yr)		0.000390	0.000150	0.000	0.000	0.000	0.000	0.000	0.000
FINES CRUSHING	PROCESS ID #		0.039000	0.015000	0.000	0.000	0.000	0.000	0.000	0.000
	Actual Processed (t/yr)		0.003000	0.001200	0.000	0.000	0.000	0.000	0.000	0.000
	Rated Capacity (t/yr)		0.000390	0.000150	0.000	0.000	0.000	0.000	0.000	0.000
FINES CRUSHING	PROCESS ID #		0.039000	0.015000	0.000	0.000	0.000	0.000	0.000	0.000
	Actual Processed (t/yr)		0.003000	0.001200	0.000	0.000	0.000	0.000	0.000	0.000
	Rated Capacity (t/yr)		0.000390	0.000150	0.000	0.000	0.000	0.000	0.000	0.000
SCREENING (P.S. OR T.)	PROCESS ID #		0.025000	0.008700	4.818	1.621	1.100	0.370	54.750	19.053
	Actual Processed (t/yr)	1	0.002200	0.000740	0.000087					
	Rated Capacity (t/yr)		0.000250	0.000087						
SCREENING (P.S. OR T.)	PROCESS ID #		0.025000	0.008700	4.818	1.621	1.100	0.370	54.750	19.053
	Actual Processed (t/yr)	1	0.002200	0.000740	0.000087					
	Rated Capacity (t/yr)		0.000250	0.000087						
SCREENING (P.S. OR T.)	PROCESS ID #		0.025000	0.008700	4.818	1.621	1.100	0.370	54.750	19.053
	Actual Processed (t/yr)	1	0.002200	0.000740	0.000087					
	Rated Capacity (t/yr)		0.000250	0.000087						

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS

- UNCONTROLLED -

8760 HR/YR
PM10 EMISSIONS
TONS/YR

- UNCONTROLLED -

8760 HR/YR EMISSIONS
PM
TONS/YR

- CONTROLLED -

HOURLY EMISSIONS
PM10
LBS/HR

- CONTROLLED -

ANNUAL EMISSIONS
PM10
TONS/YR

---FACTORS---

PM
LBS/TON

DESCRIPTION

PROCESS TYPE

PROCESS TYPE	DESCRIPTION	NSPS?	PM LBS/TON	PM10 LBS/TON	TONS/YR	PM LBS/HR	PM10 LBS/HR	TONS/YR	PM TONS/YR	PM10 TONS/YR	TONS/YR
SCREENING (P,S OR T)	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.025000	0.008700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Rated Capacity (t/yr)	Wet	0.002200	0.000740	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Allowable (t/yr)	Bag	0.000250	0.000087							
SCREENING (P,S OR T)	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.025000	0.008700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Rated Capacity (t/yr)	Wet	0.002200	0.000740	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Allowable (t/yr)	Bag	0.000250	0.000087							
SCREENING (P,S OR T)	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.025000	0.008700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Rated Capacity (t/yr)	Wet	0.002200	0.000740	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Allowable (t/yr)	Bag	0.000250	0.000087							
SCREENING (P,S OR T)	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.025000	0.008700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Rated Capacity (t/yr)	Wet	0.002200	0.000740	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Allowable (t/yr)	Bag	0.000250	0.000087							
SCREENING (P,S OR T)	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.025000	0.008700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Rated Capacity (t/yr)	Wet	0.002200	0.000740	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Allowable (t/yr)	Bag	0.000250	0.000087							
SCREENING (FINE)	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.300000	0.072000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Rated Capacity (t/yr)	Wet	0.003600	0.002200	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Allowable (t/yr)	Bag	0.003000	0.000720							
SCREENING (FINE)	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.300000	0.072000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Rated Capacity (t/yr)	Wet	0.003600	0.002200	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Allowable (t/yr)	Bag	0.003000	0.000720							
SCREENING (FINE)	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.300000	0.072000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Rated Capacity (t/yr)	Wet	0.003600	0.002200	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Allowable (t/yr)	Bag	0.003000	0.000720							
CONVEYOR	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.307	0.101	0.070	0.023	6.570	2.409	2.409
Mod. Code	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.307	0.101	0.070	0.023	6.570	2.409	2.409
	Allowable (t/yr)	Bag	0.000030	0.000011							
CONVEYOR	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.307	0.101	0.070	0.023	6.570	2.409	2.409
Mod. Code	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.307	0.101	0.070	0.023	6.570	2.409	2.409
	Allowable (t/yr)	Bag	0.000030	0.000011							
CONVEYOR	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.307	0.101	0.070	0.023	6.570	2.409	2.409
Mod. Code	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.307	0.101	0.070	0.023	6.570	2.409	2.409
	Allowable (t/yr)	Bag	0.000030	0.000011							

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS

- UNCONTROLLED-

8760 HR/YR
PM10 EMISSIONS
TONS/YR

- UNCONTROLLED-

8760 HR/YR EMISSIONS
PM
TONS/YR

- CONTROLLED-

HOURLY EMISSIONS
PM
LBS/HR

- CONTROLLED-

ANNUAL EMISSIONS
PM
TONS/YR

---FACTORS---

PM
LBS/TON

DESCRIPTION

PROCESS TYPE

PROCESS TYPE	DESCRIPTION	NSPS?	PM LBS/TON	PM10 LBS/TON	TONS/YR	PM LBS/HR	PM10 LBS/HR	TONS/YR	PM TONS/YR	PM10 TONS/YR	TONS/YR
CONVEYOR	MP-BC-7 4380000 500 4380000 Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)	Dry 1 Bag	0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.307	0.070	0.023	0.101	6.570	0.023	2.409
CONVEYOR	MP-BC-8 4380000 500 4380000 Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)	Dry 1 Bag	0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.307	0.070	0.023	0.101	6.570	0.023	2.409
CONVEYOR	MP-BC-9 4380000 500 4380000 Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)	Dry 1 Bag	0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.307	0.070	0.023	0.101	6.570	0.023	2.409
CONVEYOR	MP-BC-11 4380000 500 4380000 Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)	Dry 1 Bag	0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.307	0.070	0.023	0.101	6.570	0.023	2.409
CONVEYOR	MP-BC-12 4380000 500 4380000 Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)	Dry 1 Bag	0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.307	0.070	0.023	0.101	6.570	0.023	2.409
CONVEYOR	MP-BC-13 4380000 500 4380000 Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)	Dry 1 Bag	0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.307	0.070	0.023	0.101	6.570	0.023	2.409
CONVEYOR	MP-BC-14 4380000 500 4380000 Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)	Dry 1 Bag	0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.307	0.070	0.023	0.101	6.570	0.023	2.409
CONVEYOR		NSPS?									
CONVEYOR		Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR		Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR		Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR		NSPS?									
CONVEYOR		Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR		Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR		Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR		NSPS?									
CONVEYOR		Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR		Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR		Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR		NSPS?									
CONVEYOR		Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR		Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR		Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS

- UNCONTROLLED-

8760 HR/YR
PM10 EMISSIONS
TONS/YR

- UNCONTROLLED-

8760 HR/YR EMISSIONS
PM
TONS/YR

- CONTROLLED-

HOURLY EMISSIONS
PM
LBS/HR

- CONTROLLED-

ANNUAL EMISSIONS
PM
TONS/YR

---FACTORS---
PM
LBS/TON

PM10
LBS/TON

PM10
TONS/YR

PM
LBS/HR

PM10
LBS/HR

PM10
TONS/YR

PROCESS TYPE	DESCRIPTION	NSPS?	PM LBS/TON	PM10 LBS/TON	TONS/YR	PM LBS/HR	PM10 LBS/HR	TONS/YR	PM TONS/YR	PM10 TONS/YR
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100	0.000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS

- UNCONTROLLED -

8760 HR/YR
PM10 EMISSIONS
TONS/YR

- UNCONTROLLED -

8760 HR/YR EMISSIONS
PM
TONS/YR

- CONTROLLED -

HOURLY EMISSIONS
PM
LBS/HR

- CONTROLLED -

ANNUAL EMISSIONS
PM
TONS/YR

---FACTORS---

PM10
LBS/TON

DESCRIPTION

PROCESS TYPE

PROCESS TYPE	DESCRIPTION	NSPS?	PM10 LBS/TON	PM TONS/YR	PM10 LBS/HR	PM TONS/YR	PM10 LBS/HR	PM TONS/YR	PM10 TONS/YR
CONVEYOR	PROCESS ID #								
Manf.	Actual Processed (t/yr)		0.003000	0.001100					
Mod. Code	Rated Capacity (t/yr)		0.000140	0.000046					0.000
	Allowable (t/yr)		0.000030	0.000011					0.000
CONVEYOR	PROCESS ID #								
Manf.	Actual Processed (t/yr)		0.003000	0.001100					
Mod. Code	Rated Capacity (t/yr)		0.000140	0.000046					0.000
	Allowable (t/yr)		0.000030	0.000011					0.000
CONVEYOR	PROCESS ID #								
Manf.	Actual Processed (t/yr)		0.003000	0.001100					
Mod. Code	Rated Capacity (t/yr)		0.000140	0.000046					0.000
	Allowable (t/yr)		0.000030	0.000011					0.000
CONVEYOR	PROCESS ID #								
Manf.	Actual Processed (t/yr)		0.003000	0.001100					
Mod. Code	Rated Capacity (t/yr)		0.000140	0.000046					0.000
	Allowable (t/yr)		0.000030	0.000011					0.000
CONVEYOR	PROCESS ID #								
Manf.	Actual Processed (t/yr)		0.003000	0.001100					
Mod. Code	Rated Capacity (t/yr)		0.000140	0.000046					0.000
	Allowable (t/yr)		0.000030	0.000011					0.000
CONVEYOR	PROCESS ID #								
Manf.	Actual Processed (t/yr)		0.003000	0.001100					
Mod. Code	Rated Capacity (t/yr)		0.000140	0.000046					0.000
	Allowable (t/yr)		0.000030	0.000011					0.000
CONVEYOR	PROCESS ID #								
Manf.	Actual Processed (t/yr)		0.003000	0.001100					
Mod. Code	Rated Capacity (t/yr)		0.000140	0.000046					0.000
	Allowable (t/yr)		0.000030	0.000011					0.000
CONVEYOR	PROCESS ID #								
Manf.	Actual Processed (t/yr)		0.003000	0.001100					
Mod. Code	Rated Capacity (t/yr)		0.000140	0.000046					0.000
	Allowable (t/yr)		0.000030	0.000011					0.000
CONVEYOR	PROCESS ID #								
Manf.	Actual Processed (t/yr)		0.003000	0.001100					
Mod. Code	Rated Capacity (t/yr)		0.000140	0.000046					0.000
	Allowable (t/yr)		0.000030	0.000011					0.000

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS
- UNCONTROLLED-
8760 HR/YR
PM10 EMISSIONS
TONS/YR

- UNCONTROLLED-
8760 HR/YR EMISSIONS
PM10
TONS/YR

- CONTROLLED-
HOURLY-EMISSIONS
PM10
LBS/HR

- CONTROLLED-
ANNUAL-EMISSIONS
PM10
TONS/YR

---FACTORS---
PM
LBS/TON

PROCESS TYPE	DESCRIPTION	NSPS?	PM LBS/TON	PM10 LBS/TON	PM TONS/YR	PM10 LBS/HR	PM LBS/HR	PM TONS/YR	PM10 TONS/YR	PM10 TONS/YR
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100						
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046						
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100						
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046						
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100						
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046						
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100						
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046						
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100						
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046						
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100						
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046						
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100						
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046						
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100						
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046						
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100						
Model #	Rated Capacity (t/yr)	Wet	0.000140	0.000046						
Mod. Code	Allowable (t/yr)	Bag	0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

PROCESS TYPE	DESCRIPTION	FACTORS			CONTROLLED-ANNUAL-EMISSIONS			CONTROLLED-HOURLY-EMISSIONS			UNCONTROLLED-8760 HRYR EMISSIONS			NEW EMISSION UNITS - UNCONTROLLED-8760 HRYR		
		PM LBS/TON	PM10 LBS/TON	TONS/YR	PM LBS/HR	PM10 LBS/HR	TONS/YR	PM TONS/YR	PM10 TONS/YR	TONS/YR	PM TONS/YR	PM10 TONS/YR	TONS/YR	PM TONS/YR	PM10 TONS/YR	
SURGE BIN	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
Mod. Code																
SURGE BIN	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
Mod. Code																
SURGE BIN	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
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SURGE BIN	PROCESS ID #															
	Actual Processed (t/yr)															
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Mod. Code																
SURGE BIN	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
Mod. Code																
SURGE BIN	PROCESS ID #															
	Actual Processed (t/yr)															

EMISSION SUMMARY

PROCESS TYPE	-CONTROLLED- ANNUAL-EMISSIONS PM		-CONTROLLED- HOURLY-EMISSIONS PM		- UNCONTROLLED- 8760 HR/YR EMISSIONS PM		- UNCONTROLLED- 8760 HR/YR EMISSIONS PM10		NEW EMISSION UNITS	
	TONS/YR	PM10 TONS/YR	LBS/HR	PM10 LBS/HR	TONS/YR	PM10 TONS/YR	TONS/YR	PM10 TONS/YR	8760 HR/YR TONS/YR	PM10 EMISSIONS TONS/YR
PRIMARY CRUSHING	0.080	0.078	0.018	0.018	1.555	1.555	0.000	0.000	0.000	0.000
SECONDARY CRUSHING	2.628	1.183	0.600	0.270	11.926	5.256	0.000	0.000	0.000	0.000
TERTIARY CRUSHING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FINES CRUSHING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SCREENING (P.S. OR T)	14.454	4.862	3.300	1.170	164.250	57.159	0.000	0.000	0.000	0.000
SCREENING (FINES)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYORS	3.056	1.007	0.700	0.230	65.700	24.090	0.000	0.000	0.000	0.000
SURGE BINS	0.613	0.201	0.140	0.046	13.140	4.818	0.000	0.000	0.000	0.000
STOCKPILE EMISSIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CEMENT SILOS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LOADOUT EMISSIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TRUCK UNLOADING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FACILITY GRAND TOTAL	20.841	7.331	4.759	1.674	256.515	92.878	0.000	0.000	0.000	0.000

NOTE 1: If this spreadsheet is altered, other than entering process/plant information, then it is no longer considered to be DEQ approved.

Altered spreadsheets must not be distributed with the DEQ name.

Note 2: If the equipment is not covered by a state air permit, (ie, having a registration statement only), then the equipment is considered to be without controls and assume operation of 8760 hours/yr at rated capacity for purposes of Title V, Title V potential will be calculated using the dry emission factors multiplied by the rated capacity of the equipment at 8760 hours/yr.

Note 3: The emission factors used in this spreadsheet are based on the August 2004 version of AP-42, Section 19.2-4, 11.19.2, Crushed Stone Processing. Emission factors are summarized in Table 19.2-2 through 19.2-4.

Note 4: The "wet suppression" emission factors include all wet suppression (natural and manmade) and no extra control efficiency should be added.

Note 5: New Emission Unit: The maximum potential will be based on the dry emission factors multiplied by the rated capacity of the equipment at 8760 hours.

Note 6: Cement silo emission factors (AP42 Section 11.12, 10/2001) includes pneumatic loading and silo discharge. Spreadsheet user should only enter tons of cement in the "Actual Processed" field instead of tons of cement treated aggregate processed.

Note 7: For wet processing, enter "W/P" in "Flags" field adjacent to "WET".

For conveyors with no transfer point, enter "NTP" in "Flags" field.

DISCLAIMER:

DEQ does not guarantee the accuracy of the information contained herein. It is your responsibility to be aware of the most current information available.

Address all comments to:

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 Attn: Dave Skelly
 7705 Timberlake Road
 Lynchburg, VA 24502
 Phone: (434)562-5120, ext. 6035
 FAX: (434)562-5125
 E-Mail: dskelly@deq.virginia.gov

This spreadsheet and is continually being revised and updated.

DEQ is not responsible for errors or omissions that may be contained herein.

SPREADSHEET FOR AGGREGATE PROCESSING EMISSION CALCULATION

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
 AGGREGATE PROCESSING EMISSION CALCULATION SPREADSHEET
 AUGUST 24, 2004
 VERSION 3.0

PROCESS DEFINITIONS:
 MANE = Equipment Manufacturer's Name
 MODEL # = Manufacturer's Model Number

MODIFICATION CODES - Choose a code and insert:

- 0 - No Change.
- 1 - for increase in throughput limit.
- 2 - for physical change in emissions unit (modification).
- 3 - for like-for-like replacement emissions unit(s).
- 4 - for new emissions unit(s).

COMPANY NAME:	O-N Minerals
PLANT REGISTRATION #:	80504
PLANT NAME:	Lime Plant
PLANT STREET ADDRESS:	
COUNTY/CITY:	JRP
COMPLETED BY:	
COMMENTS:	
ZIP CODE:	9712006
DATE:	

PROCESS TYPE	DESCRIPTION	Flags	---FACTORS---			-CONTROLLED- ANNUAL-EMISSIONS			-CONTROLLED- HOURLY-EMISSIONS			-UNCONTROLLED- 8760 HR/YR EMISSIONS			NEW EMISSION UNITS		
			PM	PM10	TONS/YR	PM	PM10	TONS/YR	PM	PM10	TONS/YR	PM	PM10	TONS/YR	8760 HR/YR	PM10	TONS/YR
PRIMARY CRUSHER	Actual Processed (t/yr)					0.000730	0.000710		0.00037	0.00036		0.000	0.000		0.000	0.000	
	Rated Capacity (t/hr)					0.000007	0.000007										
	Allowable (t/yr)																
PRIMARY CRUSHER	Actual Processed (t/yr)					0.000730	0.000710		0.000037	0.000036		0.000	0.000		0.000	0.000	
	Rated Capacity (t/hr)					0.000007	0.000007										
	Allowable (t/yr)																
SECONDARY CRUSHER	Actual Processed (t/yr)	61320				0.005400	0.002400		0.001200	0.000540		0.038	0.017		0.166	0.074	
	Rated Capacity (t/hr)	7				0.000054	0.000024										
	Allowable (t/yr)	61320															
SECONDARY CRUSHER	Actual Processed (t/yr)					0.005400	0.002400		0.001200	0.000540		0.000	0.000		0.000	0.000	
	Rated Capacity (t/hr)					0.000054	0.000024										
	Allowable (t/yr)																
SECONDARY CRUSHER	Actual Processed (t/yr)					0.005400	0.002400		0.001200	0.000540		0.000	0.000		0.000	0.000	
	Rated Capacity (t/hr)					0.000054	0.000024										
	Allowable (t/yr)																
SECONDARY CRUSHER	Actual Processed (t/yr)					0.005400	0.002400		0.001200	0.000540		0.000	0.000		0.000	0.000	
	Rated Capacity (t/hr)					0.000054	0.000024										
	Allowable (t/yr)																

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS

-UNCONTROLLED-

8760 HR/YR

PM10 EMISSIONS

TONS/YR

-UNCONTROLLED-

8760 HR/YR EMISSIONS

PM10

TONS/YR

-CONTROLLED-

HOURLY EMISSIONS

PM10

LBS/HR

-CONTROLLED-

ANNUAL EMISSIONS

PM10

TONS/YR

---FACTORS---

PM10

LBS/TON

LBS/TON

TONS/YR

TONS/YR

PROCESS TYPE

DESCRIPTION

PROCESS ID #

Actual Processed (t/yr)

Rated Capacity (t/yr)

Allowable (t/yr)

NSPS?

Dry

Wet

Bag

0.005400 0.002400

0.001200 0.000540

0.000054 0.000024

0.000 0.000

0.005400 0.002400

0.001200 0.000540

0.000054 0.000024

0.000 0.000

0.005400 0.002400

0.001200 0.000540

0.000054 0.000024

0.000 0.000

0.005400 0.002400

0.001200 0.000540

0.000054 0.000024

0.000 0.000

0.039000 0.015000

0.003000 0.001200

0.000390 0.000150

0.000 0.000

0.039000 0.015000

0.003000 0.001200

0.000390 0.000150

0.000 0.000

0.039000 0.015000

0.003000 0.001200

0.000390 0.000150

0.000 0.000

0.025000 0.008700

0.002200 0.000740

0.000250 0.000087

0.401 0.135

0.025000 0.008700

0.002200 0.000740

0.000250 0.000087

0.046 0.016

0.025000 0.008700

0.002200 0.000740

0.000250 0.000087

0.000 0.000

0.025000 0.008700

0.002200 0.000740

0.000250 0.000087

0.000 0.000

0.025000 0.008700

0.002200 0.000740

0.000250 0.000087

0.000 0.000

0.025000 0.008700

0.002200 0.000740

0.000250 0.000087

0.000 0.000

0.025000 0.008700

0.002200 0.000740

0.000250 0.000087

0.000 0.000

0.025000 0.008700

0.002200 0.000740

0.000250 0.000087

0.000 0.000

0.025000 0.008700

0.002200 0.000740

0.000250 0.000087

0.000 0.000

0.025000 0.008700

0.002200 0.000740

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VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS

- UNCONTROLLED -

8760 HR/YR
PM10 EMISSIONS
TONS/YR

- UNCONTROLLED -

8760 HR/YR EMISSIONS
PM
TONS/YR

- CONTROLLED -

HOURLY EMISSIONS
PM
LBS/HR

- CONTROLLED -

ANNUAL EMISSIONS
PM
TONS/YR

--FACTORS--

PMI
LBS/TON

PM10
LBS/TON

DESCRIPTION

PROCESS ID #

Actual Processed (t/yr)

Rated Capacity (t/yr)

Allowable (t/yr)

NSPS?

Dry

Wet

Bag

NSPS?

Dry

Wet

Bag

NSPS?

Dry

Wet

Bag

NSPS?

Dry

Wet

Bag

PROCESS TYPE	Manf. Model #	Mod. Code	DESCRIPTION	PROCESS ID #	Actual Processed (t/yr)	Rated Capacity (t/yr)	Allowable (t/yr)	NSPS?	PMI	PM10	TONS/YR	PM	TONS/YR	PM10	TONS/HR	PM	TONS/HR	PM10	TONS/HR	PM	TONS/YR	PM10	TONS/YR	PM10	TONS/YR
SCREENING (P.S. OR T.)																									
SCREENING (P.S. OR T.)																									
SCREENING (P.S. OR T.)																									
SCREENING (P.S. OR T.)																									
SCREENING (FINE)																									
SCREENING (FINE)																									
SCREENING (FINE)																									
CONVEYOR																									
CONVEYOR																									
CONVEYOR																									

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS
- UNCONTROLLED -
8760 HR/YR
PM10 EMISSIONS
TONS/YR

- UNCONTROLLED -
8760 HR/YR EMISSIONS
PM
TONS/YR

- CONTROLLED -
HOURLY EMISSIONS
PM
LBS/HR

- CONTROLLED -
ANNUAL EMISSIONS
PM10
TONS/YR

--FACTORS--
PM
LBS/TON

PROCESS TYPE	DESCRIPTION	NSPS?		PM		PM10		PM		PM10	
		Dry	Wet	LBS/TON	LBS/TON	TONS/YR	TONS/YR	LBS/HR	LBS/HR	TONS/YR	TONS/YR
CONVEYOR	PROCESS ID #										
	182500 Actual Processed (t/yr)										
	20.83 Rated Capacity (t/yr)										
Mod. Code	182500 Allowable (t/yr)	1	Bag	0.00030	0.00046	0.00030	0.00011	0.001	0.000	0.274	0.100
CONVEYOR	PROCESS ID #										
	182500 Actual Processed (t/yr)										
	20.83 Rated Capacity (t/yr)										
Mod. Code	182500 Allowable (t/yr)	1	Wet	0.00030	0.00046	0.00030	0.00011	0.003	0.001	0.274	0.100
CONVEYOR	PROCESS ID #										
	182500 Actual Processed (t/yr)										
	20.83 Rated Capacity (t/yr)										
Mod. Code	182500 Allowable (t/yr)	1	Wet	0.00030	0.00046	0.00030	0.00011	0.003	0.001	0.274	0.100
CONVEYOR	PROCESS ID #										
	182500 Actual Processed (t/yr)										
	20.83 Rated Capacity (t/yr)										
Mod. Code	182500 Allowable (t/yr)	1	Wet	0.00030	0.00046	0.00030	0.00011	0.003	0.001	0.274	0.100
CONVEYOR	PROCESS ID #										
	182500 Actual Processed (t/yr)										
	20.83 Rated Capacity (t/yr)										
Mod. Code	182500 Allowable (t/yr)	1	Wet	0.00030	0.00046	0.00030	0.00011	0.003	0.001	0.274	0.100
CONVEYOR	PROCESS ID #										
	182500 Actual Processed (t/yr)										
	20.83 Rated Capacity (t/yr)										
Mod. Code	182500 Allowable (t/yr)	1	Wet	0.00030	0.00046	0.00030	0.00011	0.003	0.001	0.274	0.100
CONVEYOR	PROCESS ID #										
	1341000 Actual Processed (t/yr)										
	150 Rated Capacity (t/yr)										
Mod. Code	1314000 Allowable (t/yr)	1	Wet	0.00030	0.00046	0.00030	0.00011	0.005	0.002	1.971	0.723
CONVEYOR	PROCESS ID #										
	1341000 Actual Processed (t/yr)										
	150 Rated Capacity (t/yr)										
Mod. Code	1314000 Allowable (t/yr)	1	Wet	0.00030	0.00046	0.00030	0.00011	0.005	0.002	1.971	0.723
CONVEYOR	PROCESS ID #										
	182500 Actual Processed (t/yr)										
	20.83 Rated Capacity (t/yr)										
Mod. Code	182500 Allowable (t/yr)	1	Wet	0.00030	0.00046	0.00030	0.00011	0.001	0.000	0.274	0.100
CONVEYOR	PROCESS ID #										
	182500 Actual Processed (t/yr)										
	20.83 Rated Capacity (t/yr)										
Mod. Code	182500 Allowable (t/yr)	1	Wet	0.00030	0.00046	0.00030	0.00011	0.001	0.000	0.274	0.100
CONVEYOR	PROCESS ID #										
	182500 Actual Processed (t/yr)										
	20.83 Rated Capacity (t/yr)										
Mod. Code	182500 Allowable (t/yr)	1	Wet	0.00030	0.00046	0.00030	0.00011	0.001	0.000	0.274	0.100
CONVEYOR	PROCESS ID #										
	182500 Actual Processed (t/yr)										
	20.83 Rated Capacity (t/yr)										
Mod. Code	182500 Allowable (t/yr)	1	Wet	0.00030	0.00046	0.00030	0.00011	0.003	0.001	0.274	0.100

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS
- UNCONTROLLED -

8760 HR/YR
PM10 EMISSIONS
TONS/YR

UNCONTROLLED-
8760 HR/YR EMISSIONS
PM
TONS/YR

-CONTROLLED-
HOURLY EMISSIONS
PM10
LBS/HR

-CONTROLLED-
ANNUAL EMISSIONS
PM10
TONS/YR

---FACTORS---
PM
LBS/TON

PROCESS TYPE	DESCRIPTION	NSPS? Dry Wet Bag	PM LBS/TON	PM10 LBS/TON	TONS/YR	PM LBS/HR	PM10 LBS/HR	TONS/YR	PM TONS/YR	PM10 TONS/YR	8760 HR/YR EMISSIONS PM TONS/YR	8760 HR/YR EMISSIONS PM10 TONS/YR
CONVEYOR	PROCESS ID # LP-SW-1 365000 Actual Processed (t/yr) 41.66 Rated Capacity (t/yr) 365000 Allowable (t/yr)		0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.005	0.002	0.001	0.000	0.547	0.201		
CONVEYOR	PROCESS ID # LP-SW-2 365000 Actual Processed (t/yr) 41.66 Rated Capacity (t/yr) 365000 Allowable (t/yr)		0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.005	0.002	0.001	0.000	0.547	0.201		
CONVEYOR	PROCESS ID # LP-SW-3 365000 Actual Processed (t/yr) 41.66 Rated Capacity (t/yr) 365000 Allowable (t/yr)		0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.005	0.002	0.001	0.000	0.547	0.201		
CONVEYOR	PROCESS ID # LP-SW-4 365000 Actual Processed (t/yr) 41.66 Rated Capacity (t/yr) 365000 Allowable (t/yr)		0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.005	0.002	0.001	0.000	0.547	0.201		
CONVEYOR	PROCESS ID # LP-PC 365000 Actual Processed (t/yr) 41.66 Rated Capacity (t/yr) 365000 Allowable (t/yr)		0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.005	0.002	0.001	0.000	0.547	0.201		
CONVEYOR	PROCESS ID # Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)		0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.000	0.000	0.000	0.000	0.000	0.000		
CONVEYOR	PROCESS ID # Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)		0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.000	0.000	0.000	0.000	0.000	0.000		
CONVEYOR	PROCESS ID # Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)		0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.000	0.000	0.000	0.000	0.000	0.000		
CONVEYOR	PROCESS ID # Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)		0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.000	0.000	0.000	0.000	0.000	0.000		
CONVEYOR	PROCESS ID # Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)		0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.000	0.000	0.000	0.000	0.000	0.000		
CONVEYOR	PROCESS ID # Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)		0.003000 0.000140 0.000030	0.001100 0.000046 0.000011	0.000	0.000	0.000	0.000	0.000	0.000		

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS

- UNCONTROLLED -

8760 HR/YR
PM10 EMISSIONS
TONS/YR

- UNCONTROLLED -

8760 HR/YR EMISSIONS
PM10
TONS/YR

- CONTROLLED -

HOURLY EMISSIONS
PM10
LBS/HR

- CONTROLLED -

ANNUAL EMISSIONS
PM10
TONS/YR

--FACTORS--

PM LBS/TON
PM10 LBS/TON

DESCRIPTION

PROCESS TYPE

PROCESS TYPE	DESCRIPTION	NSPS?	PM LBS/TON	PM10 LBS/TON	TONS/YR	PM LBS/HR	PM10 LBS/HR	TONS/YR	PM TONS/YR	PM10 TONS/YR	TONS/YR
CONVEYOR	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100							
Mod. Code	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000			0.000	0.000		0.000
	Allowable (t/yr)	Bag	0.000030	0.000011							
CONVEYOR	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100							
Mod. Code	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000			0.000	0.000		0.000
	Allowable (t/yr)	Bag	0.000030	0.000011							
CONVEYOR	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100							
Mod. Code	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000			0.000	0.000		0.000
	Allowable (t/yr)	Bag	0.000030	0.000011							
CONVEYOR	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100							
Mod. Code	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000			0.000	0.000		0.000
	Allowable (t/yr)	Bag	0.000030	0.000011							
CONVEYOR	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100							
Mod. Code	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000			0.000	0.000		0.000
	Allowable (t/yr)	Bag	0.000030	0.000011							
CONVEYOR	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100							
Mod. Code	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000			0.000	0.000		0.000
	Allowable (t/yr)	Bag	0.000030	0.000011							
CONVEYOR	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100							
Mod. Code	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000			0.000	0.000		0.000
	Allowable (t/yr)	Bag	0.000030	0.000011							
CONVEYOR	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100							
Mod. Code	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000			0.000	0.000		0.000
	Allowable (t/yr)	Bag	0.000030	0.000011							
CONVEYOR	PROCESS ID #										
Manf.	Actual Processed (t/yr)	Dry	0.003000	0.001100							
Mod. Code	Rated Capacity (t/yr)	Wet	0.000140	0.000046	0.000			0.000	0.000		0.000
	Allowable (t/yr)	Bag	0.000030	0.000011							

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS
- UNCONTROLLED -
8760 HR/YR
PM10 EMISSIONS
TONS/YR

- UNCONTROLLED -
8760 HR/YR EMISSIONS
PM10
TONS/YR

- CONTROLLED -
HOURLY EMISSIONS
PM10
LBS/HR

- CONTROLLED -
ANNUAL EMISSIONS
PM10
TONS/YR

---FACTORS---
PM10 LBS/TON
PM LBS/TON

PROCESS TYPE	DESCRIPTION	NSPSP?	PM10 LBS/TON	PM LBS/TON	TONS/YR	PM10 LBS/HR	PM LBS/HR	TONS/YR	PM10 TONS/YR	TONS/YR
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)		0.003000	0.001100						
Model #	Rated Capacity (t/yr)		0.000140	0.000046						
Mod. Code	Allowable (t/yr)		0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)		0.003000	0.001100						
Model #	Rated Capacity (t/yr)		0.000140	0.000046						
Mod. Code	Allowable (t/yr)		0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)		0.003000	0.001100						
Model #	Rated Capacity (t/yr)		0.000140	0.000046						
Mod. Code	Allowable (t/yr)		0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)		0.003000	0.001100						
Model #	Rated Capacity (t/yr)		0.000140	0.000046						
Mod. Code	Allowable (t/yr)		0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)		0.003000	0.001100						
Model #	Rated Capacity (t/yr)		0.000140	0.000046						
Mod. Code	Allowable (t/yr)		0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)		0.003000	0.001100						
Model #	Rated Capacity (t/yr)		0.000140	0.000046						
Mod. Code	Allowable (t/yr)		0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)		0.003000	0.001100						
Model #	Rated Capacity (t/yr)		0.000140	0.000046						
Mod. Code	Allowable (t/yr)		0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)		0.003000	0.001100						
Model #	Rated Capacity (t/yr)		0.000140	0.000046						
Mod. Code	Allowable (t/yr)		0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)		0.003000	0.001100						
Model #	Rated Capacity (t/yr)		0.000140	0.000046						
Mod. Code	Allowable (t/yr)		0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR	PROCESS ID #									
Manf.	Actual Processed (t/yr)		0.003000	0.001100						
Model #	Rated Capacity (t/yr)		0.000140	0.000046						
Mod. Code	Allowable (t/yr)		0.000030	0.000011	0.000	0.000	0.000	0.000	0.000	0.000

EMISSION SUMMARY

PROCESS TYPE	-CONTROLLED- ANNUAL-EMISSIONS		-CONTROLLED- HOURLY-EMISSIONS		- UNCONTROLLED- 8760 HR/YR EMISSIONS		NEW EMISSION UNITS	
	PM TONS/YR	PM10 TONS/YR	PM LBS/HR	PM10 LBS/HR	PM TONS/YR	PM10 TONS/YR	8760 HR/YR TONS/YR	PM10 EMISSIONS TONS/YR
PRIMARY CRUSHING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SECONDARY CRUSHING	0.166	0.074	0.038	0.017	0.166	0.074	0.000	0.000
TERTIARY CRUSHING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FINES CRUSHING	0.493	0.167	0.102	0.034	9.124	3.175	0.000	0.000
SCREENING (P.S. OR T)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SCREENING (FINES)	0.164	0.057	0.037	0.013	10.675	3.914	0.000	0.000
CONVEYORS	0.051	0.017	0.012	0.004	1.095	0.401	0.000	0.000
SURGE BINS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
STOCKPILE EMISSIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CEMENT SILOS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LOADOUT EMISSIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TRUCK UNLOADING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FACILITY GRAND TOTAL	0.873	0.314	0.189	0.058	21.059	7.564		

NOTE 1: If this spreadsheet is altered, other than entering process/plant information, then it is no longer considered to be DEQ approved.

NOTE 2: If the equipment is not covered by a state air permit, (ie. having a registration statement only), then the equipment is considered to be without controls and assume operation of 8760 hours/yr at rated capacity for purposes of Title V. Title V potential will be calculated using the dry emission factors multiplied by the rated capacity of the equipment at 8760 hours/yr.

NOTE 3: The emission factors used in this spreadsheet are based on the August 2004 version of AP-42, Section 19.2. 11.19.2, Crushed Stone Processing. Emission factors are summarized in Table 19.2.2 through 19.2.4.

NOTE 4: The 'wet suppression' emission factors include all wet suppression (natural and manmade) and no extra control efficiency should be added.

NOTE 5: New Emission Unit. The maximum potential will be based on the dry emission factors multiplied by the rated capacity of the equipment at 8760 hours.

NOTE 6: Cement silo emission factors (AP-42 Section 11.12, 10/2001) includes pneumatic loading and silo discharge. Spreadsheet user should only enter tons of cement in the 'Actual Processed' field instead of tons of cement treated aggregate processed.

NOTE 7: For wet processing, enter "Wp" in "flags" field adjacent to "WET".
For conveyors with no transfer point, enter "NTP" in "flags" field.

DISCLAIMER:

DEQ does not guarantee the accuracy of the information contained herein. It is your responsibility to be aware of the most current information available.

Address all comments to:

DEQ, South Central Regional Office
 Attn: Dave Skelly
 7705 Timberlake Road
 Lynchburg, VA 24502
 Phone: (434)562-5120, ext. 6035
 FAX: (434)562-5125
 E-Mail: djskelly@deq.virginia.gov

This spreadsheet is continually being revised and updated. DEQ is not responsible for errors or omissions that may be contained herein.

SPREADSHEET FOR AGGREGATE PROCESSING EMISSION CALCULATION

PROCESS DEFINITIONS:
 MANE = Equipment Manufacturer's Name
 MODEL # = Manufacturer's Model Number

MODIFICATION CODES - Choose a code and insert:

- 0 - No Change.
- 1 - for increase in throughput limit.
- 2 - for physical change in emissions unit (modification).
- 3 - for like-for-like replacement emissions unit(s).
- 4 - for new emissions unit(s).

NEW EMISSION UNITS
 - UNCONTROLLED-
 8760 HR/YR
 PM10 EMISSIONS
 TONS/YR

- UNCONTROLLED-
 8760 HR/YR EMISSIONS
 PM
 TONS/YR

- UNCONTROLLED-
 8760 HR/YR EMISSIONS
 PM
 TONS/YR

- CONTROLLED-
 HOURLY-EMISSIONS
 PM10
 LBS/HR

- CONTROLLED-
 ANNUAL-EMISSIONS
 PM10
 TONS/YR

---FACTORS---
 PM10 LBS/TON

PROCESS TYPE	DESCRIPTION	Flags	NSPS?	PM10 LBS/TON	PM10 TONS/YR	PM10 LBS/HR	PM10 TONS/YR	PM10 TONS/YR	PM10 TONS/YR	NEW EMISSION UNITS
PRIMARY CRUSHER	PROCESS ID #			0.000730	0.000710		0.000	0.000	0.000	0.000
Manf.	Actual Processed (t/yr)		Dry	0.000037	0.000036					
Model #	Rated Capacity (t/yr)		Wet	0.000007	0.000007					
Mod. Code	Allowable (t/yr)		Bag							
PRIMARY CRUSHER	PROCESS ID #			0.000730	0.000710		0.000	0.000	0.000	0.000
Manf.	Actual Processed (t/yr)		Dry	0.000037	0.000036					
Model #	Rated Capacity (t/yr)		Wet	0.000007	0.000007					
Mod. Code	Allowable (t/yr)		Bag							
SECONDARY CRUSHER	LS-C			0.005400	0.002400		0.003	0.001	0.001	0.526
Manf.	Actual Processed (t/yr)		Dry	0.001200	0.000540					
Model #	Rated Capacity (t/yr)		Wet	0.000054	0.000024					
Mod. Code	Allowable (t/yr)		1, Bag							
SECONDARY CRUSHER	PROCESS ID #			0.005400	0.002400		0.000	0.000	0.000	0.000
Manf.	Actual Processed (t/yr)		Dry	0.001200	0.000540					
Model #	Rated Capacity (t/yr)		Wet	0.000054	0.000024					
Mod. Code	Allowable (t/yr)		Bag							
SECONDARY CRUSHER	PROCESS ID #			0.005400	0.002400		0.000	0.000	0.000	0.000
Manf.	Actual Processed (t/yr)		Dry	0.001200	0.000540					
Model #	Rated Capacity (t/yr)		Wet	0.000054	0.000024					
Mod. Code	Allowable (t/yr)		Bag							
SECONDARY CRUSHER	PROCESS ID #			0.005400	0.002400		0.000	0.000	0.000	0.000
Manf.	Actual Processed (t/yr)		Dry	0.001200	0.000540					
Model #	Rated Capacity (t/yr)		Wet	0.000054	0.000024					
Mod. Code	Allowable (t/yr)		Bag							

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
 AGGREGATE PROCESSING EMISSION CALCULATION SPREADSHEET
 AUGUST 24, 2004
 VERSION 3.0

COMPANY NAME: O-N Minerals
 PLANT REGISTRATION #: 80504
 PLANT NAME: Lime Finishing and Loadout
 PLANT STREET ADDRESS:
 COUNTY/CITY: JRP
 ZIP CODE: 91120006
 COMPLETED BY: JRP
 DATE: 9/1/2006

COMMENTS:

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS - UNCONTROLLED-

8760 HR/YR PM10 EMISSIONS TONS/YR

8760 HR/YR EMISSIONS PM TONS/YR

CONTROLLED- HOURLY-EMISSIONS PM10 LBS/HR

CONTROLLED- ANNUAL-EMISSIONS PM10 TONS/YR

FACTORS--- PM10 LBS/TON

8760 HR/YR PM10 EMISSIONS TONS/YR

8760 HR/YR EMISSIONS PM TONS/YR

CONTROLLED- HOURLY-EMISSIONS PM10 LBS/HR

CONTROLLED- ANNUAL-EMISSIONS PM10 TONS/YR

FACTORS--- PM10 LBS/TON

DESCRIPTION

PROCESS TYPE

PROCESS TYPE	DESCRIPTION	NSPS?	PM10 LBS/TON	PM TONS/YR	PM10 LBS/HR	PM TONS/YR	PM10 TONS/YR	PM TONS/YR	PM10 TONS/YR
TERTIARY CRUSHER	PROCESS ID #								
Manf.	Actual Processed (t/yr)	Dry	0.005400	0.002400	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.001200	0.000540	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000054	0.000024	0.000	0.000	0.000	0.000	0.000
TERTIARY CRUSHER	PROCESS ID #								
Manf.	Actual Processed (t/yr)	Dry	0.005400	0.002400	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.001200	0.000540	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000054	0.000024	0.000	0.000	0.000	0.000	0.000
TERTIARY CRUSHER	PROCESS ID #								
Manf.	Actual Processed (t/yr)	Dry	0.005400	0.002400	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.001200	0.000540	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000054	0.000024	0.000	0.000	0.000	0.000	0.000
TERTIARY CRUSHER	PROCESS ID #								
Manf.	Actual Processed (t/yr)	Dry	0.005400	0.002400	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.001200	0.000540	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000054	0.000024	0.000	0.000	0.000	0.000	0.000
FINES CRUSHING	PROCESS ID #								
Manf.	Actual Processed (t/yr)	Dry	0.039000	0.015000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.003000	0.001200	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000390	0.000150	0.000	0.000	0.000	0.000	0.000
FINES CRUSHING	PROCESS ID #								
Manf.	Actual Processed (t/yr)	Dry	0.039000	0.015000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.003000	0.001200	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000390	0.000150	0.000	0.000	0.000	0.000	0.000
FINES CRUSHING	PROCESS ID #								
Manf.	Actual Processed (t/yr)	Dry	0.039000	0.015000	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.003000	0.001200	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000390	0.000150	0.000	0.000	0.000	0.000	0.000
SCREENING (P.S. OR T)	PROCESS ID #								
Manf.	Actual Processed (t/yr)	Dry	0.025000	0.008700	0.016	0.005	0.038	0.113	5.716
Model #	Rated Capacity (t/yr)	Wet	0.002200	0.000740	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000250	0.000087	0.000	0.000	0.000	0.000	0.000
SCREENING (P.S. OR T)	PROCESS ID #								
Manf.	Actual Processed (t/yr)	Dry	0.025000	0.008700	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.002200	0.000740	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000250	0.000087	0.000	0.000	0.000	0.000	0.000
SCREENING (P.S. OR T)	PROCESS ID #								
Manf.	Actual Processed (t/yr)	Dry	0.025000	0.008700	0.000	0.000	0.000	0.000	0.000
Model #	Rated Capacity (t/yr)	Wet	0.002200	0.000740	0.000	0.000	0.000	0.000	0.000
Mod. Code	Allowable (t/yr)	Bag	0.000250	0.000087	0.000	0.000	0.000	0.000	0.000

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS

- UNCONTROLLED-

8760 HR/YR
PM10 EMISSIONS
TONS/YR

- UNCONTROLLED-

8760 HR/YR EMISSIONS
PM10
TONS/YR

- CONTROLLED-

HOURLY EMISSIONS
PM10
LBS/HR

- CONTROLLED-

ANNUAL EMISSIONS
PM10
TONS/YR

---FACTORS---

PM10
LBS/TON

DESCRIPTION

PROCESS TYPE

Manf. Model #	Mod. Code	Actual Processed (t/yr)	Rated Capacity (t/yr)	Allowable (t/yr)	NSPS?	Dry	Wet	Bag	PM10 LBS/TON	TONS/YR	PM10 LBS/HR	TONS/YR	PM10 LBS/HR	TONS/YR	PM10 TONS/YR	TONS/YR
SCREENING (P.S. OR T.)																
Manf. Model #		0.025000	0.008700							0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code		0.002200	0.000740							0.000250	0.000087					
SCREENING (P.S. OR T.)																
Manf. Model #		0.025000	0.008700							0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code		0.002200	0.000740							0.000250	0.000087					
SCREENING (P.S. OR T.)																
Manf. Model #		0.025000	0.008700							0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code		0.002200	0.000740							0.000250	0.000087					
SCREENING (P.S. OR T.)																
Manf. Model #		0.025000	0.008700							0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code		0.002200	0.000740							0.000250	0.000087					
SCREENING (P.S. OR T.)																
Manf. Model #		0.025000	0.008700							0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code		0.002200	0.000740							0.000250	0.000087					
SCREENING (FINE)																
Manf. Model #		0.300000	0.072000							0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code		0.003600	0.002200							0.003000	0.000720					
SCREENING (FINE)																
Manf. Model #		0.300000	0.072000							0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code		0.003600	0.002200							0.003000	0.000720					
SCREENING (FINE)																
Manf. Model #		0.300000	0.072000							0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mod. Code		0.003600	0.002200							0.003000	0.000720					
CONVEYOR																
Manf. Model #	LS-CB-1	131400	Actual Processed (t/yr)							0.002	0.001	0.002	0.001	0.002	0.001	0.002
Mod. Code		150	Rated Capacity (t/yr)							0.000300	0.000011			0.000300	0.000011	
CONVEYOR																
Manf. Model #	LS-CB-2	131400	Actual Processed (t/yr)							0.002	0.001	0.002	0.001	0.002	0.001	0.002
Mod. Code		150	Rated Capacity (t/yr)							0.000300	0.000011			0.000300	0.000011	
CONVEYOR																
Manf. Model #	LS-CB-3	131400	Actual Processed (t/yr)							0.002	0.001	0.002	0.001	0.002	0.001	0.002
Mod. Code		150	Rated Capacity (t/yr)							0.000300	0.000011			0.000300	0.000011	

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS
- UNCONTROLLED -

8760 HR/YR
PM10 EMISSIONS
TONS/YR

UNCONTROLLED-
8760 HR/YR EMISSIONS
PM10
TONS/YR

CONTROLLED-
HOURLY EMISSIONS
PM10
LBS/HR

CONTROLLED-
ANNUAL EMISSIONS
PM10
TONS/YR

FACTORS---
PM10
LBS/TON

PROCESS TYPE	DESCRIPTION	NSPS? Dry Wet Bag	PM10 LBS/TON	TONS/YR	PM10 LBS/HR	TONS/YR	PM10 TONS/YR	TONS/YR	PM10 TONS/YR
CONVEYOR	LS-CB-4 1752000 200 1752000 Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)		0.003000 0.000140 0.000030	0.010	0.005	0.002	2.628	0.964	0.964
CONVEYOR	LS-CB-5 1752000 200 1752000 Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)		0.003000 0.000140 0.000030	0.010	0.006	0.002	2.628	0.964	0.964
CONVEYOR	LS-CB-6 1752000 200 1752000 Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)		0.003000 0.000140 0.000030	0.010	0.006	0.002	2.628	0.964	0.964
CONVEYOR	LS-CB-7 438000 50 438000 Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)		0.003000 0.000140 0.000030	0.007	0.002	0.001	0.857	0.241	0.241
CONVEYOR	SC-2 131400 150 131400 Actual Processed (t/yr) Rated Capacity (t/yr) Allowable (t/yr)		0.003000 0.000140 0.000030	0.002	0.005	0.002	1.971	0.723	0.723
CONVEYOR			0.003000 0.000140 0.000030	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR			0.003000 0.000140 0.000030	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR			0.003000 0.000140 0.000030	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR			0.003000 0.000140 0.000030	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR			0.003000 0.000140 0.000030	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR			0.003000 0.000140 0.000030	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR			0.003000 0.000140 0.000030	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR			0.003000 0.000140 0.000030	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR			0.003000 0.000140 0.000030	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYOR			0.003000 0.000140 0.000030	0.000	0.000	0.000	0.000	0.000	0.000

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS
- UNCONTROLLED-
8760 HR/YR
PM10 EMISSIONS
TONS/YR

-UNCONTROLLED-
8760 HR/YR EMISSIONS
PM
TONS/YR

-CONTROLLED-
HOURLY EMISSIONS
PM
LBS/HR

-CONTROLLED-
ANNUAL EMISSIONS
PM
TONS/YR

---FACTORS---
PM
LBS/TON

PROCESS TYPE	DESCRIPTION	---FACTORS---			-CONTROLLED- ANNUAL EMISSIONS			-CONTROLLED- HOURLY EMISSIONS			-UNCONTROLLED- 8760 HR/YR EMISSIONS			NEW EMISSION UNITS - UNCONTROLLED- 8760 HR/YR		
		PM	PM10	LBS/TON	PM	PM10	TONS/YR	PM	PM10	LBS/HR	PM	PM10	TONS/YR	PM	PM10	TONS/YR
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
Mod. Code	Allowable (t/yr)															
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
Mod. Code	Allowable (t/yr)															
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
Mod. Code	Allowable (t/yr)															
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
Mod. Code	Allowable (t/yr)															
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
Mod. Code	Allowable (t/yr)															
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
Mod. Code	Allowable (t/yr)															
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
Mod. Code	Allowable (t/yr)															
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
Mod. Code	Allowable (t/yr)															
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
Mod. Code	Allowable (t/yr)															
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
Mod. Code	Allowable (t/yr)															

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS

- UNCONTROLLED-

8760 HR/YR

PM10 EMISSIONS

TONS/YR

- UNCONTROLLED-

8760 HR/YR EMISSIONS

PM10

TONS/YR

- CONTROLLED-

HOURLY EMISSIONS

PM10

LBS/HR

- CONTROLLED-

ANNUAL EMISSIONS

PM10

TONS/YR

---FACTORS---

PM10

LBS/TON

TONS/YR

PM10

TONS/YR

DESCRIPTION

PROCESS ID #

Actual Processed (t/yr)

Rated Capacity (t/yr)

Allowable (t/yr)

PROCESS TYPE

CONVEYOR

Manf. Model # Mod. Code

NSPS?

Dry Wet Bag

0.003000 0.001100

0.000140 0.000046

0.000030 0.000011

0.000 0.000

0.000 0.000

0.000 0.000

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VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

STONE PROCESSING SPREADSHEET

NEW EMISSION UNITS
- UNCONTROLLED -
8760 HR/YR
PM10 EMISSIONS
TONS/YR

- UNCONTROLLED -
8760 HR/YR EMISSIONS
PM10
TONS/YR

- CONTROLLED -
HOURLY EMISSIONS
PM10
LBS/HR

- CONTROLLED -
ANNUAL EMISSIONS
PM10
TONS/YR

FACTORS
PM10
LBS/TON

PROCESS TYPE	DESCRIPTION	FACTORS			- CONTROLLED - ANNUAL EMISSIONS			- CONTROLLED - HOURLY EMISSIONS			- UNCONTROLLED - 8760 HR/YR EMISSIONS			NEW EMISSION UNITS - UNCONTROLLED - 8760 HR/YR		
		PM10 LBS/TON	PM TONS/YR	PM10 LBS/HR	PM10 TONS/YR	PM LBS/HR	PM10 LBS/HR	PM TONS/YR	PM10 LBS/HR	PM TONS/YR	PM10 TONS/YR	PM10 TONS/YR	PM10 TONS/YR	PM10 TONS/YR		
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
	Allowable (t/yr)															
NSPS?																
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
	Allowable (t/yr)															
NSPS?																
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
	Allowable (t/yr)															
NSPS?																
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
	Allowable (t/yr)															
NSPS?																
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
	Allowable (t/yr)															
NSPS?																
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
	Allowable (t/yr)															
NSPS?																
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
	Allowable (t/yr)															
NSPS?																
CONVEYOR	PROCESS ID #															
	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
	Allowable (t/yr)															
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	Actual Processed (t/yr)															
	Rated Capacity (t/yr)															
	Allowable (t/yr)															
NSPS?																

PROCESS TYPE	DESCRIPTION	---FACTORS---			-CONTROLLED- ANNUAL-EMISSIONS			-CONTROLLED- HOURLY-EMISSIONS			-UNCONTROLLED- 8760 HR/YR EMISSIONS			NEW EMISSION UNITS - UNCONTROLLED- 8760 HR/YR		
		PM LBS/TON	PM10 LBS/TON	TONS/YR	PM LBS/HR	PM10 LBS/HR	TONS/YR	PM LBS/HR	PM10 LBS/HR	TONS/YR	PM TONS/YR	PM10 TONS/YR	TONS/YR	PM10 TONS/YR	TONS/YR	
SURGE BIN LP-SB-3	Actual Processed (t/yr)	0.066000	0.002200	0.201	0.125	0.046	0.547	0.201	0.046	0.547	0.201	0.046	0.547	0.201		
	Rated Capacity (t/yr)	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280		
	Allowable (t/yr)	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060		
SURGE BIN LP-SB-1	Actual Processed (t/yr)	0.066000	0.002200	0.201	0.125	0.046	0.547	0.201	0.046	0.547	0.201	0.046	0.547	0.201		
	Rated Capacity (t/yr)	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280		
	Allowable (t/yr)	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060		
SURGE BIN LP-SB-2	Actual Processed (t/yr)	0.066000	0.002200	0.201	0.125	0.046	0.547	0.201	0.046	0.547	0.201	0.046	0.547	0.201		
	Rated Capacity (t/yr)	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280		
	Allowable (t/yr)	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060		
SURGE BIN	Actual Processed (t/yr)	0.066000	0.002200	0.201	0.125	0.046	0.547	0.201	0.046	0.547	0.201	0.046	0.547	0.201		
	Rated Capacity (t/yr)	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280		
	Allowable (t/yr)	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060		
SURGE BIN	Actual Processed (t/yr)	0.066000	0.002200	0.201	0.125	0.046	0.547	0.201	0.046	0.547	0.201	0.046	0.547	0.201		
	Rated Capacity (t/yr)	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280		
	Allowable (t/yr)	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060		
SURGE BIN	Actual Processed (t/yr)	0.066000	0.002200	0.201	0.125	0.046	0.547	0.201	0.046	0.547	0.201	0.046	0.547	0.201		
	Rated Capacity (t/yr)	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280	0.000092	0.547	0.000280		
	Allowable (t/yr)	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060	0.000022	0.005	0.000060		
STOCKPILE EMISSIONS	Actual Processed (t/yr)	0.330000	0.156000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
	Rated Capacity (t/yr)	0.016500	0.007800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
	Allowable (t/yr)	0.000000	0.000000	0.000	0.000000	0.000000	0.000	0.000000	0.000000	0.000	0.000000	0.000000	0.000	0.000000		
CEMENT/FILLER SILO	Actual Processed (t/yr)	0.720000	0.460000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
	Rated Capacity (t/yr)	0.000990	0.000340	0.000	0.000990	0.000340	0.000	0.000990	0.000340	0.000	0.000990	0.000340	0.000	0.000990		
	Allowable (t/yr)	0.000000	0.000000	0.000	0.000000	0.000000	0.000	0.000000	0.000000	0.000	0.000000	0.000000	0.000	0.000000		
CEMENT/FILLER SILO	Actual Processed (t/yr)	0.720000	0.460000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
	Rated Capacity (t/yr)	0.000990	0.000340	0.000	0.000990	0.000340	0.000	0.000990	0.000340	0.000	0.000990	0.000340	0.000	0.000990		
	Allowable (t/yr)	0.000000	0.000000	0.000	0.000000	0.000000	0.000	0.000000	0.000000	0.000	0.000000	0.000000	0.000	0.000000		
LOADOUT EMISSIONS	Actual Processed (t/yr)	0.060000	0.030000	0.526	0.120	0.060	0.526	0.263	0.120	0.060	0.526	0.263	0.120	0.060		
	Rated Capacity (t/yr)	0.003000	0.001500	0.526	0.120	0.060	0.526	0.263	0.120	0.060	0.526	0.263	0.120	0.060		
	Allowable (t/yr)	0.000600	0.000300	0.000	0.000600	0.000300	0.000	0.000600	0.000300	0.000	0.000600	0.000300	0.000	0.000600		
TRUCK UNLOADING	Actual Processed (t/yr)	0.000030	0.000010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
	Rated Capacity (t/yr)	0.000002	0.000001	0.000	0.000002	0.000001	0.000	0.000002	0.000001	0.000	0.000002	0.000001	0.000	0.000002		
	Allowable (t/yr)	0.000002	0.000001	0.000	0.000002	0.000001	0.000	0.000002	0.000001	0.000	0.000002	0.000001	0.000	0.000002		

EMISSION SUMMARY

PROCESS TYPE	-CONTROLLED- ANNUAL-EMISSIONS		-CONTROLLED- HOURLY-EMISSIONS		-UNCONTROLLED- 8760 HR/YR EMISSIONS		NEW EMISSION UNITS	
	PM TONS/YR	PM10 TONS/YR	PM LBS/HR	PM10 LBS/HR	PM TONS/YR	PM10 TONS/YR	8760 HR/YR PM10 EMISSIONS TONS/YR	8760 HR/YR PM10 EMISSIONS TONS/YR
PRIMARY CRUSHING	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.000
SECONDARY CRUSHING	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000
TERTIARY CRUSHING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FINES CRUSHING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SCREENING (P.S. OR T)	0.000	0.016	0.006	0.038	16.425	5.716	0.000	0.000
SCREENING (FINES)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CONVEYORS	0.093	0.034	0.038	0.014	16.425	6.023	0.000	0.000
SURGE BINS	0.568	0.206	0.127	0.047	1.642	0.602	0.000	0.000
STOCKPILE EMISSIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CEMENT SILOS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LOADOUT EMISSIONS	0.526	0.263	0.120	0.060	52.560	26.280	0.000	0.000
TRUCK UNLOADING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FACILITY GRAND TOTAL	1.206	0.513	0.325	0.135	88.235	39.145	0.000	0.000

NOTE 1: If this spreadsheet is altered, other than entering process/plant information, then it is no longer considered to be DEQ approved.

Altered spreadsheets must not be distributed with the DEQ name.

Note 2: If the equipment is not covered by a state air permit, (ie. having a registration statement only), then the equipment is considered to be without controls and assume operation of 8760 hours/yr at rated capacity for purposes of Title V. Title V potential will be calculated using the dry emission factors multiplied by the rated capacity of the equipment at 8760 hours/yr.

Note 3: The emission factors used in this spreadsheet are based on the August 2004 version of AP-42, Section 19.2 through 19.2.4.

Note 4: The 'wet suppression' emission factors include all wet suppression (natural and manmade) and no extra control efficiency should be added.

Note 5: New Emission Unit: The maximum potential will be based on the dry emission factors multiplied by the rated capacity of the equipment at 8760 hours.

Note 6: Cement silo emission factors (AP42 Section 11.12, 10/2007) includes pneumatic loading and silo discharge. Spreadsheet user should only enter tons of cement in the "Actual Processed" field instead of tons of cement treated aggregate processed.

Note 7: For wet processing, enter "W/P" in "flags" field adjacent to "WET".

For conveyors with no transfer point, enter "NTP" in "flags" field.

DISCLAIMER:

DEQ does not guarantee the accuracy of the information contained herein. It is your responsibility to be aware of the most current information available.

This spreadsheet and is continually being revised and updated. DEQ is not responsible for errors or omissions that may be contained herein.

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ATTACHMENT E

Compliance Assurance Monitoring Plan for
Fabric Filters
(LP-DC-2533, LP-DC-2525, LP-DC-2341,
LP-DC-2532, LS-DC-1 and LS-DC-2)

Fabric Filter Compliance Assurance Monitoring Plan (LP-DC-2533, LP-DC-2525, LP-DC-2341, LP-DC-2532, LS-DC-1 and LS-DC-2)

	Indicator 1	Indicator 2	Indicator 3	Indicator 4
I. Indicator	Pressure Drop	Opacity	Visible Emissions Evaluation (optional – to determine if excursion occurs)	Periodic Structural Inspections
A. Measurement Approach	Daily observation of the differential pressure gauge.	At minimum of once per operating week, visible emissions observations conducted at each control device emission point.	Method 9 VEE accordance with 40 CFR 60, Appendix A conducted optionally to determine if an excursion occurs. Results recorded upon completion of each Method 9. If visible emissions are observed by Indicator 2 and a Method 9 VEE is not conducted, then an excursion has occurred.	Monthly external bag filter inspections by a qualified employee. Results recorded monthly. Annual internal bag filter inspections* by a qualified employee. Results recorded upon completion of each internal inspection.
II. Indicator Range	An excursion is defined as a pressure loss through the fabric filter below 0.5" water column and above 6" water column.	An excursion is defined as the presence of any visible emission from the control device unless otherwise determined by a Method 9 VEE.	An excursion is defined as an average opacity greater than the applicable opacity limits.	An excursion is defined as failure to perform monthly or annual inspection of bag filters. Excursions trigger an inspection, corrective action and a reporting requirement.
III. Quality Improvement Plan (QIP) Threshold	More than 2 excursions in a 2 week period per control device.	More than 2 excursions in a 2 week period per each control device.	A single excursion.	NA
IV. Performance Criteria A. Data Representativeness	The differential pressure gauge continuously monitors the static pressures across the fabric filter for comparison to a range indicative of proper operation.	Observation of visible emissions indicates possible damage to bag filter.	Observation of visible emissions greater than the applicable opacity limit indicates replacement or maintenance of bag filters is necessary.	The monthly external inspection shall include, for each fabric filter, structural components such as unit housing and ductwork, and the annual internal inspection* shall include each bag filter and associated internal components. Each inspection shall be conducted for signs of wear, leakage, or other deterioration that may affect efficient operation. Bags in the fabric filters shall be inspected visually for deterioration and remaining bag life monitored.
B. Verification of Operational Status	Pressure drop across the fabric filter.	Records that indicate time, facility operational status and results of each observation.	Pressure drop across each filter.	Pressure drop across each filter.

C. QA/QC Practices and Criteria	The pressure gauge is to be tested once per year to ensure proper operation.	Trained personnel perform observations.	Trained personnel shall perform Method 9. One copy of the test results shall be submitted to the Valley Regional Office within 45 days after completion.	Trained personnel perform the inspection and maintenance.
D. Monitoring Frequency and Data Collection Procedure	Inspect and recorded daily.	A minimum of once per operating week.	Upon observation of visible emissions from any fabric filter per Indicator 2.	Monthly and annual* inspections.

*Inspections shall be at least annually or at the earliest shutdown following one year from the previous inspection.