

STATEMENT OF LEGAL AND FACTUAL BASIS

Roanoke Cement Company
Botetourt County, Virginia
Permit No. VA-20232
Permit Date: **December 1, 2003**
AFS ID No. 51-023-0003

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, Roanoke Cement Company has applied for a Title V Operating Permit for its Botetourt County facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

FACILITY INFORMATION

<u>Permittee</u> Roanoke Cement P.O. Box 27 Cloverdale, Virginia 24077	<u>Facility</u> Roanoke Cement 555 Catawba Road Botetourt County, Virginia
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Prepared By: _____
Environmental Engineer Senior

Date: **December 1, 2003**

SOURCE DESCRIPTION

SIC Code: 3241 – Cement, Hydraulic: Establishments primarily engaged in manufacturing hydraulic cement, including portland, natural, masonry, and pozzolana cements.

The facility quarries raw material rock onsite, crushes the stone at the crushing plants, and then pulverizes it in the raw mills. The pulverized stone is sintered in a 6 stage preheater/precalciner dry process kiln direct fired primarily with pulverized coal. The clinker from the kiln is then

cooled in the clinker cooler for handling. The clinker is ground in the finish mills and mixed with other additives, such as gypsum. Most of the finished product is shipped by rail car. The remainder is either bulk loaded onto trucks or bagged at the packing plant and shipped out.

The facility is a Title V major source of PM₁₀, SO₂, NO_x, CO and VOC. This source is located in an attainment area for all pollutants, and is a PSD major source. The facility was previously permitted under a Minor NSR Permit issued on October 23, 1997. The permit was recently modified on June 13, 2003 per the PSD regulations to allow an increase in the annual CO limit. No new equipment was added, nor were any material throughput limits increased as a result of the PSD permit action. The facility experienced a steady increase in the CO emissions do to naturally occurring variations in the hydrocarbon content of the limestone, and required only an increase in the CO annual emission limit.

The facility had included in its previous permit a new quarry crushing plant, Ref. No. Q, and a new slag dryer, Ref. No. SD. These units were not constructed in the required timeframe: the conditions allowing the construction of these units have been designated as invalid in the PSD permit. Construction of these units will require a new permit.

The facility has conducted stack testing and determined that it is considered an area source per 40 CFR 63 Subpart LLL, National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry. Testing demonstrated that HCL emissions are below the 10 tpy applicability threshold for hazardous air pollutants. Combined HAP emissions are below 25 tpy.

COMPLIANCE STATUS

The facility is inspected two times a year. The facility is currently considered to be in compliance with all applicable requirements.

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
Fuel Burning Equipment - NA.							
Raw Material Processing							
B01-B17	B04, B-5, B12, B13 & B16	Limestone crushing & screening	900 tph	Sly 141 type 360 Micropul Sly 158 type 360 Micropul 1215-10-20 Micropul	2220, 2025, 2240, 2250 & 101155	PM & PM ₁₀	6/13/2003
B25-B36	B29, B30 & B35	Shale crushing plant	500 tph	Micropul 78-360 Micropul Micropul	3660, 3543 & 3585	PM & PM ₁₀	6/13/2003
Kiln Feed System & Recycle Dust							
C01-C16	C09, C11, C15, 30, 32, 31A & 36	Rock Sampling	60 tph	Micropul 100S-8-20 Micropul 25S-8-30 Micropul 100S-8-30 Micropul 55S-8-55 Micropul 23S-8-105 Micropul 55-8-55 Micropul 25S-6-30	101956, 101960, 101979, 101980, 101287 & 101995	PM & PM ₁₀	6/13/2003
C21-C37		Limestone & additives storage/transfer	800 tph			PM & PM ₁₀	6/13/2003
C41-C47	C41 & C45	Raw mix blending, stacker reclaim	900 tph	Micropul Micropul	101186 & 102122	PM & PM ₁₀	6/13/2003

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
D01-D48	D03, D42, D47 & D48	Raw meal feed/proportioning	400 tph	Micropul 80-F-2 Micropul 80-F-3 Micropul 80-F-3 Micropul 100S-8-20	102944, 104908, 103908 & 102926	PM & PM ₁₀	6/13/2003
RS		Raw Silos Nos. 1 - 13	165 tph			PM & PM ₁₀	6/13/2003
F04-H12	G10, G11, 73, 75, G12B, H02 & 63A	Homogenizing & kiln feed	320 tph	Micropul 64S-8-20 Micropul Micropul 144S-6-20 Micropul 100S-6-20 BHA ROABAB002 Micropul DCE DLM-V10/10F1	104968, 104967, 110002, 110990, 503205 & 63A	PM & PM ₁₀	6/13/2003
No. 5 Kiln System (alkyli bypass & inline raw mills)							
E1	Main	Raw mill No. 1	250 tph	Environmental Elements (ESP)	E04	PM, SO ₂ , CO, NO _x & VOC	6/13/2003
E2	Main	Raw mill No. 2	250 tph	Environmental Elements (ESP)	E54	PM, SO ₂ , CO, NO _x & VOC	6/13/2003
K	Main	No. 5 precalciner Kiln	184 tph	Environmental Elements (ESP)	K34	PM, SO ₂ , CO, NO _x & VOC	6/13/2003
Clinker Cooler							
C	K43	Clinker cooler	184 tph	Airpol Inc. IF400/H2P/340- I88130/IT/K/L2D	505300	PM & PM ₁₀	6/13/2003

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Coal/Coke Grinding & Handling							
S01-S86	S23, S63, S27, S67, 110 & 113	Coal/Coke grinding & handling (including coal mill air heater)	30 tph	Micropul Micropul Micropul Micropul Micropul 100S-8-20 Micropul36S-	504240, 504340, 504265, 504365, 205912 & 504182	PM & PM ₁₀	6/13/2003
Clinker Storage & Conveying							
L01-M52	L02, L27, L31, M55 & M57	Clinker Storage & conveying	184 tph	Micropul Micropul 80S-12-20A Micropul Dalimatic V45/15M Micropul 64S-6-20	506107, 520196, 506112, 506125 & 506165	PM & PM ₁₀	6/13/2003
Clinker Grinding							
FM5	501 & 502	Finish grinding mill No. 5	20 tph	Norfelt HE14-6 Norfelt HE5-6	426111 & 426110	PM & PM ₁₀	6/13/2003
FM6	601 & 602	Finish grinding mill No. 6	20 tph	Norfelt HE13-6 Norfelt HE5-6	427111 & 427110	PM & PM ₁₀	6/13/2003
FM9	150A, 154 & 156	Finish grinding mill No. 9	20 tph	Griffen JV-36-9X Envirotech HE-5-6 Envirotech HE-18-6	507160, 507963 & 507965	PM & PM ₁₀	6/13/2003

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
FM10	136, 138, 140, 142A, 143, 145, 147, 147A, 148A & 148B	Finish grinding mill No. 10	182 tph	Fuller 640S8 DCE DLM V45/15F10 DCE DLM V45/15F10 ZZ Conv. 13008-20-TA Fuller 224C10 Fuller 6Z128 Fuller 18Z128 ZZ C.CF42-39(37)-20 Donaldson/Day232RF12 3606-20TRD BV	520144, 520150, 520157, 506195, 520182, 520257, 520270, 520301, 304700 & 1488	PM & PM ₁₀	6/13/2003
FM11	1101, 1102, 1103, 104, FAS, LS & PS	Finish grinding mill No. 11	100 tph	Fuller 390512 Fuller 2M690512 Fuller 100C10 Fuller 100C10 Sly SBR-45-8 Sly SBR-45-8 Sly SBR 48	1101, 1102, 1103, 104, FAS, LS & PS	PM & PM ₁₀	6/13/2003
Cement Storage							
SG1	159 & 161	Finish silos group No. 1	200 tph	Sly SBR-78-10-BV Sly SBR-78-10-BV	634110 & 634120	PM & PM ₁₀	6/13/2003
SG2	164	Finish silos group No. 2	200 tph	Sly STJ-1011-10	635050	PM & PM ₁₀	6/13/2003
SG3	168	Finish silos group No. 3	200 tph	Sly STJ-1011-10	637030	PM & PM ₁₀	6/13/2003
SG4	172 & 174	Finish silos group No. 4	200 tph	Micropul 100S-10-20 Micropul 100S-10	637030 & 637110	PM & PM ₁₀	6/13/2003

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
SG5	179, 181, 183 & 186	Finish silos group No. 5	600 tph	Micropul 100S-8-20 Micropul 100S-8-20 Micropul 100S-8-20 (See CBL)	709114, 709115, 709116	PM & PM ₁₀	6/13/2003
Cement Bulk Load Out							
CBL	186, 188, 190 & 191B	Rail/ truck loading (Group 5 silos & dribble bin)	640 tph	Midwest MCP8-2.0 Midwest MCP8-2.0 Midwest MCP8-2.0 Fuller 87-20080-336	751002, 751003, 751004 & 750020	PM & PM ₁₀	6/13/2003
Cement Bagging/Packing							
PH	PH1, PH2 & PH3	Cement Packing	113 tph	Sly STJ-1311-10 Sly STJ-1311-10 Sly STJ-1311-10	BPH1, BPH2 & BPH3	PM & PM ₁₀	6/13/2003
Waste Dust Storage & Handling							
K26-K72	K61, 70A, K66 & K73		150 tph	Micropul 48S-8-20 Micropul 80S-8-20 Micropul 48S-8-20 Micropul 81S-8	505087, 506106, 503777 & 121280	PM & PM ₁₀	6/13/2003

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

EMISSIONS INVENTORY

2002 Annual Emissions Update (Criteria Pollutants)		Tons Emitted
Carbon Monoxide - CO		1,261
Nitrogen Oxides as NO ₂		2,049
Lead - PB		0.42
PM ₁₀		355
PM _{2.5}		190
Sulfur Dioxide - SO ₂		2,855
Volatile Organic Compounds - VOC		64
Sulfuric Acid Mist - H ₂ SO ₄		17

2002 Annual Emissions Update (Hazardous Air Pollutants)		
	CAS #	Tons Emitted
Biphenyl - BIPH	92524	0.01
Chlorine - CL	7782505	0.00
Chromium Compounds - CRC	136	0.01
Hydrochloric Acid - HCL	7647010	8.54
Hydrogen Flouride - HF	7664393	0.00
Methylene Chloride - MC	75092	0.00
Manganese Compounds - MNC	198	0.02
1,1,2 Trichloroethane - TCA	79005	0.00

PROCESS EQUIPMENT REQUIREMENTS – RAW MATERIAL PROCESSING

Limitations

Particulate emissions from the Raw Material Processing System shall be controlled by fabric filters. Each fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter
 (9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 11 of 6/13/2003 PSD permit)

Fugitive Dust controls from drills, shot piles, material handling, screens, crushers, load-outs

and traffic areas shall be controlled by wet suppression or equivalent (as approved by the DEQ). There shall be no exemption from this requirement due to cold weather. All material being stockpiled outside shall be kept moist to control dust during storage and handling or covered at all times to minimize emissions. Haul roads shall be controlled by wet suppression.

(9 VAC 5-80-10 H, 9 VAC 5-50-260 9 VAC 5-80-110 & Condition 16 of 6/13/2003 PSD permit)

Visible emissions from the fabric filter exhaust stacks shall not exceed 3% opacity. (9 VAC 5-50-20, 9 VAC 5-50-80, 9 VAC 5-50-290, 9 VAC 5-80-110, 9 VAC 5-170-160 & Condition 61 of 6/13/2003 PSD permit)

Emissions from the operation of the Raw Material Processing System from primary crushing through feed to the raw mills shall not exceed the limits specified below:

Total Suspended				
Particulate	0.005 gr/acf	5.85 lbs/hr	25.01 tons/yr	
PM-10	0.005 gr/acf	5.56 lbs/hr	23.75 tons/yr	

(9 VAC 5-50-260, 9 VAC 5-50-180, 9 VAC 5-80-110 & Condition 49 of 6/13/2003 PSD permit)

Monitoring

Operation & Maintenance Procedures –

1. Develop a maintenance schedule and maintain records of maintenance.
2. Develop an inspection schedule, monthly at a minimum, to insure the operational integrity of the air pollution control equipment and maintain records of inspection results.
3. Have available written operating procedures for the air pollution control equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
4. Train operators in the proper operation of all air pollution control 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.
5. Maintain an inventory of spare parts that are needed to maintain the air pollution control equipment in proper working order.

Records of maintenance, inspections and training shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

(9 VAC 5-80-110 F & K, 9 VAC 5-40-20E, 9 VAC 5-50-20E & Conditions 73 & 74 of

6/13/2003 PSD permit)

Recordkeeping (See Facility Wide Conditions)

Testing

Constructed so as to allow for emissions testing, test ports shall be provided at the appropriate locations.

(9 VAC 5-50-30 F, 9 VAC 5-80-110 & Condition 34 of 6/13/2003 PSD permit)

If testing is conducted for compliance purposes, in addition to the monitoring specified in this permit, the permittee shall use test methods in accordance with procedures approved by the DEQ.

(9 VAC 5-80-110)

Reporting (See General Conditions)

PROCESS EQUIPMENT REQUIREMENTS – KILN FEED SYSTEM & RECYCLE DUST

The following section of the permit contains terms and conditions from 40 CFR Part 60 Subpart F – Standards of Performance for Portland Cement Plants. A current copy of 40 CFR Part 60 Subpart F has been attached. As used in this section, all terms shall have the meaning as defined in 40 CFR 60.2 and 40 CFR 60.61

Limitations

The permittee shall operate the affected facilities in compliance with all applicable New Source Performance Standards; Standards of Performance for Portland Cement Plants (40 CFR Part 60 Subpart F)

(9 VAC 5-50-410, 40 CFR 60 Subpart F)

Particulate emissions from the No. 5 Kiln Feed and Storage System shall be controlled by fabric filters. Each fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter.

(9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 11 of 6/13/2003 PSD permit)

The annual throughput of the Kiln Feed System from the raw mills to the No. 5 kiln, including recycle dust, shall not exceed 2,258,932 tons, calculated monthly as the sum of

each consecutive 12 month period.
(9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 22 of 6/13/2003 PSD permit)

Visible emissions from the fabric filter exhaust stacks shall not exceed 3% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 10% opacity.
(9 VAC 5-50-20, 9 VAC 5-50-80, 9 VAC 5-50-290, 9 VAC 5-170-160, 9 VAC 5-80-110, 40 CFR 60.62(c) & Condition 61 of 6/13/2003 PSD permit)

Emissions from the operation of the Kiln Feed System, including reactivation of thirteen old silos refr. RS, shall not exceed the limits specified below:

Total Suspended			
Particulate	0.005 gr/acf	1.44 lbs/hr	6.3 tons/yr
PM-10	0.005 gr/acf	1.37 lbs/hr	5.98 tons/yr

(9 VAC 5-50-260, 9 VAC 5-50-180, 9 VAC 5-80-110 & Condition 50 of 6/13/2003 PSD permit)

Monitoring

Operation & Maintenance Procedures –

1. Develop a maintenance schedule and maintain records of maintenance.
2. Develop an inspection schedule, monthly at a minimum, to insure the operational integrity of the air pollution control equipment and maintain records of inspection results.
3. Have available written operating procedures for the air pollution control equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
4. Train operators in the proper operation of all air pollution control 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.
5. Maintain an inventory of spare parts that are needed to maintain the air pollution control equipment in proper working order.

Records of maintenance, inspections and training shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

(9 VAC 5-80-110 F & K, 9 VAC 5-40-20E, 9 VAC 5-50-20E & Conditions 73 & 74 of 6/13/2003 PSD permit)

Recordkeeping (See Facility Wide Conditions)

Testing

The permitted facility shall be constructed so as to allow for emissions testing, test ports shall be provided at the appropriate locations.

(9 VAC 5-50-30 F, 9 VAC 5-80-110 & Condition 34 of 6/13/2003 PSD permit)

If testing is conducted for compliance purposes, in addition to the monitoring specified in this permit, the permittee shall use test methods in accordance with procedures approved by the DEQ.

(9 VAC 5-80-110)

Reporting (See General Conditions)

PROCESS EQUIPMENT REQUIREMENTS – NO. 5 KILN SYSTEM

The following section of the permit contains terms and conditions from 40 CFR Part 60 Subpart F – Standards of Performance for Portland Cement Plants and 40 CFR Part 63 Subpart LLL – National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry. Current copies of 40 CFR Part 60 Subpart F and 40 CFR Part 63 Subpart LLL have been attached. As used in this section, all terms shall have the meaning as defined in 40 CFR 60.2 and 40 CFR 60.61, or 40 CFR 63.2 and 40 CFR 63.1341, as applicable.

Limitations

The permittee shall operate the affected facilities in compliance with all applicable National Emissions Standards for Hazardous Air Pollutants for Source Categories; Portland Cement Manufacturing Industry (40 CFR Part 63 Subpart LLL), in accordance with the compliance schedule set forth under these standards. The facility has determined that it is considered an area source and the facility is required to obtain a Title V permit. Under this determination, only the No. 5 Kiln is considered an affected facility per 40 CFR Part 63 Subpart LLL. Should the facility's area source status change, then the facility will need to comply with the major source requirements and submit an application to amend this permit in accordance with state and federal regulations.

(9 VAC 5-50-260, 9 VAC 5-60-70, 9 VAC 5-80-110 & Condition 67 of 6/13/2003 PSD permit)

The permittee shall operate the affected facilities in compliance with all applicable New Source Performance Standards; Standards of Performance for Portland Cement Plants (40

CFR Part 60 Subpart F)
(9 VAC 5-50-410, 40 CFR 60 Subpart F)

Particulate emissions from the No. 5 Kiln System, raw mills, and alkali bypass (main stack) shall be controlled by electrostatic precipitators equipped with water spray gas conditioning systems. Each electrostatic precipitator shall be equipped with a device to continuously measure the temperature, voltage and current to the electrostatic precipitator.
(9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 4 of 6/13/2003 PSD permit)

SO₂, NO_x, VOC, CO emissions from the No. 5 Kiln System shall be controlled by process control, to include proper operation and maintenance of the Kiln and pollution control devices controlling Kiln emissions.
(9 VAC 5-80-10 H and 9 VAC 5-50-260, 9 VAC 5-80-110 & Conditions 5, 6, 7 & 8 of 6/13/2003 PSD permit)

SO₂ shall also be controlled by the operation of a process lime injection system. This is mainly to be used when the raw mills are off-line.
(9 VAC 5-80-10 H and 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 5 of 6/13/2003 PSD permit)

Particulate/opacity, SO₂, NO_x, and VOC emissions from the No. 5 Kiln System shall be controlled by reducing production to achieve compliance with the emission limits for the No. 5 kiln system (main stack).
(9 VAC 5-80-10 H, 9 VAC 5-170-160, 9 VAC 5-20-30, 9 VAC 5-80-110 & Condition 9 of 6/13/2003 PSD permit)

The approved fuels for the No. 5 kiln are: (a) coal, (b) petroleum coke , (c) synthetic fuel, (d) No. 2 fuel oil for heat-up and flame stabilization and (e) natural gas. The petroleum coke fuel is subject to additional limitations in this permit. A change in the fuels may require a permit to modify and operate.
(9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 17 of 6/13/2003 PSD permit)

Petroleum coke fuel shall be fired in the hot end of the kiln; no petroleum coke shall be fired in the precalciner portion of the kiln.
(9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 18 of 6/13/2003 PSD permit)

The No. 5 kiln shall consume no more than 162,500 tons of coal per year, 73,996 tons of petroleum coke per year, and no more than 162,500 tons per year of coal plus petroleum coke combined per year and no more than 40,625 tons of synthetic coal (Synfuel) per year,

calculated monthly as the sum of each consecutive 12 month period.
(9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 20 of 6/13/2003 PSD permit)

The sulfur content of the coal to be burned in the No. 5 kiln shall not exceed 1.5 percent by weight per shipment and 1.0 percent by weight annual average (except as provided below), calculated monthly as the average of each consecutive 12 month period. The permittee shall maintain records (supplier fuel analysis) of all coal shipments purchased. These records shall be available for inspection by the DEQ. Such records shall be current for the most recent five years.

If justified, coal containing increased sulfur but not to exceed 1.5 percent sulfur as an annual average (and per shipment) may be used temporarily upon written agreement from the DEQ. The sulfur dioxide emissions limits in this permit shall continue to be met. The owner shall provide justification, shall minimize the amount of excess sulfur, provide an estimate of the percent sulfur, the amount of coal, and the duration of its use. The length of time for a temporary agreement shall not exceed 12 months per agreement.
(9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 30 of 6/13/2003 PSD permit)

Coal with a higher sulfur content than the typical 1.0% sulfur content is permit approved, subject to DEQ agreement, if a representative comparison demonstration of SO₂ emissions from the main stack verifies that there is "no statistically significant increase" of SO₂ emissions. Demonstration shall use the typical raw material/additives, standard formulations, and each fuel. Details of the demonstration shall be arranged with DEQ. Trial burns to establish the process before a comparison demonstration may be arranged with DEQ.
(9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 31 of 6/13/2003 PSD permit)

The sulfur content of the petroleum coke to be burned in the No. 5 kiln shall not exceed 4.0 percent by weight per shipment and 3.5 percent by weight annual average, calculated monthly as the average of each consecutive 12 month period. The permittee shall maintain records (supplier fuel analysis) of all coke shipments purchased. These records shall be available for inspection by the DEQ. Such records shall be current for the most recent five years.
(9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 32 of 6/13/2003 PSD permit)

Before petroleum coke with a higher sulfur content than permitted for coal may be used as fuel for the No. 5 kiln system, a representative comparison demonstration of SO₂ emissions from the main stack shall be measured, using this plant's modified kiln, typical raw material/additives, standard formulations and each fuel, to verify that there is "no statistically significant increase" of SO₂ emissions to the atmosphere when burning petroleum coke. The details of the comparison demonstration shall be arranged with the Director, West Central Regional Office. Limited trial burns with petroleum coke to establish the process before a

comparison demonstration may be arranged with the Director, West Central Regional Office.
(9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 33 of 6/13/2003 PSD permit)

The approved fuel for the raw mills is No. 2 fuel oil and natural gas. A change in the fuels may require a permit to modify and operate. (The raw mills will normally be heated by the No. 5 kiln exhaust.)

(9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 19 of 6/13/2003 PSD permit)

The annual throughput of the No. 5 Kiln System shall not exceed 1,300,000 tons of clinker produced, calculated monthly as the sum of each consecutive 12 month period.

(9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 23 of 6/13/2003 PSD permit)

No hazardous, solid or regulated medical (infectious) waste may be processed through the No. 5 Kiln System without being approved through the DEQ permitting process including a public comment period/public hearing. This permit does not allow for the processing/use of these materials.

The permittee shall notify the Director, West Central Regional Office of any proposed change in materials to be processed through the No. 5 Kiln System prior to the change to determine if a permit may be required.

Use of the following substances are acceptable:

1. Naturally occurring: limestone, shale, cement rock and equivalent raw materials,
2. Naturally occurring: sand and equivalent high silica substances,
3. Gypsum, and naturally occurring: high calcium limestone and equivalent high calcium substances,
4. Steel mill scale (iron oxide) from carbon steel mill facilities and equivalent naturally occurring high iron/iron oxide ores,
5. Naturally occurring: bauxite and equivalent high alumina substances,
6. Bottom ash and fly ash,
7. Other raw materials/additives that DEQ determines are exempt from review, including toxic emissions evaluation,
8. Specific fuels as listed elsewhere in this permit.
9. Granulated iron/pig iron blast furnace slag glass.
10. Spent foundry sand, as approved by DEQ

(9 VAC 5-170-160 and 9 VAC 5-50-200, 9 VAC 5-80-110 & Condition 3 of 6/13/2003 PSD permit)

Visible emissions from the No. 5 kiln system/raw mills/alkali bypass (main stack) shall not exceed twenty percent (20%) opacity as determined by the required continuous opacity

monitor. This condition applies at all times except during startup, shutdown and malfunction.

(9 VAC 5-170-160, 9 VAC 5-50-20, 9 VAC 5-50-80, 9 VAC 5-50-290, 9 VAC 5-50-400, 40 CFR 60.62(a)(2), 9 VAC 5-80-110 & Condition 62 of 6/13/2003 PSD permit)

Emissions from the operation of the No. 5 Kiln System including the kiln hot end/preheater/precalciner, raw mill pulverizers and alkali bypass (main stack) shall not exceed the limits specified below:

Total Suspended Particulate kiln feed 0.30 lbs/ton 83.9 lbs/hr 297.5 tons/yr

PM-10 kiln feed 0.255 lbs/ton 71.31 lbs/hr 252.8 tons/yr

Sulfur Dioxide 950. lbs/hr 3,104.4 tons/yr

Nitrogen Oxides (as NO₂) 982. lbs/hr 2,850 tons/yr

Carbon Monoxide 600. lbs/hr 1,950 tons/yr

Volatile Organic Compounds 126.35 lbs/hr 493. tons/yr

Lead 0.13 lbs/hr 0.46 tons/yr

Fluorides 0.17 lbs/hr 0.6 tons/yr

Sulfuric Acid Mist 10.0 lbs/hr 35.5 tons/yr

Hydrogen Chloride 4.89 lbs/hr N.A. tons/yr

The sulfur dioxide pound per hour emission limit is averaged over 3 hours and the nitrogen oxide pound per hour emission limit is averaged over 24 hours. Annual emission limits are based on 1,300,000 tons per year clinker produced. The corresponding kiln feed is based on a combined total of 2,258,932 tons per year raw materials plus recycle dust.
(9 VAC 5-50-260, 9 VAC 5-50-180, 9 VAC 5-80-1700, 9 VAC 5-50-400, 9 VAC 5-80-110 & Condition 51 of 6/13/2003 PSD permit)

On or before the compliance date specified in 40 CFR 63.1351, Dioxin/Furan emissions from the No. 5 kiln system/raw mills/alkali bypass (main stack) shall not exceed:
 8.7×10^{-11} gr per dscf (TEQ) corrected to seven percent oxygen; or
 1.7×10^{-10} gr per dscf (TEQ) corrected to seven percent oxygen, when the average of the performance test run average temperatures at the inlet to the particulate matter control device (PMCD) is 400 degrees Fahrenheit or less.
(40 CFR 63.1343(d))

Monitoring

A continuous emission monitor shall be installed to measure and record opacity from the No. 5 kiln system/raw mills/alkali bypass system (main stack). The monitor shall be located on the main stack. This opacity monitor shall be a "compliance" monitor. The monitor shall be maintained, located, and calibrated in accordance with approved procedures (ref. 40 CFR 60.13). A thirty (30) day notification, prior to the demonstration of continuous monitoring system's performance, and subsequent notifications shall be submitted to the Director, West Central Regional Office. (Completed in 1997.)
(9 VAC 5-50-40 F, 9 VAC 5-80-110 & Condition 42 of 6/13/2003 PSD permit)

A continuous emission monitor shall be installed to measure and record the emission of sulfur dioxide from the No. 5 kiln system/raw mills/alkali bypass system (main stack). The monitor shall be located on the main stack. This sulfur dioxide monitor shall be a "compliance" monitor. The monitor shall be co-located with a cfm, CO₂ or O₂ monitor. The monitor shall be maintained, located, and calibrated in accordance with approved procedures (ref. 40 CFR 60.13). A thirty (30) day notification, prior to the demonstration of continuous monitoring system's performance, and subsequent notifications shall be submitted to the Director, West Central Regional Office. (Completed in 1997.)
(9 VAC 5-50-40 F, 9 VAC 5-80-110 & Condition 43 of 6/13/2003 PSD permit)

Continuous emission monitors shall be installed to measure and record the emissions of carbon monoxide, nitrogen oxides and volatile organic compounds or total hydrocarbons from the No. 5 kiln system/raw mills/alkali bypass system (main stack). (The CO CEM is a 2003 new requirement). The type of monitor proposed for measurement of volatile organic compounds shall be approved by the Director, West Central Regional Office. The monitors shall be located on the main stack. Exceedance of the emission limits stated in this permit may subject Roanoke Cement Company to a request from DEQ to re-test these stack emissions. Each monitor shall be co-located with a flow, cfm, CO₂ or O₂ monitor. The monitors shall be maintained, located, and calibrated in accordance with approved procedures (ref. 40 CFR 60.13). A thirty (30) day notification, prior to the demonstration of continuous monitoring system's performance, and subsequent notifications shall be submitted to the

Director, West Central Regional Office. [Already operational in 1997.] In accordance with 40 CFR 60.13, a Relative Accuracy Test Audit (RATA) shall be performed, and demonstrate compliance, on the CO Continuous Emission Monitoring System (CEMS) on the No. 5 kiln system within 60 days after achieving the maximum production rate at which the No. 5 kiln system will be operated, but not later than 180 days after issuance of the 2003 CO PSD permit. The details of the tests are to be arranged with the Director, West Central Regional Office. The permittee shall submit a test protocol at least thirty (30) days prior to testing. Three (3) copies of the test results shall be submitted to the Director, West Central Regional Office within 45 days after test completion and shall conform to the test report format enclosed with this permit. One copy of the test results shall be submitted to EPA within 45 days of test completion.

(9 VAC 5-50-40 F, 9 VAC 5-80-110 & Condition 44 of 6/13/2003 PSD permit)

Process instruments to continuously measure and record oxygen and temperature shall be installed near the outlet of the kiln's precalciner. Although not required to meet any specific air pollution control regulatory requirements, these are considered to be normal plant process instruments which assist the plant in determining the preferred operating parameters for process control of NO_x and VOC. Stack continuous emission monitors are already required for NO_x and VOC, as stated in Condition 44.

(9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 48 of 6/13/2003 PSD permit)

On or before the initial compliance date specified in 40 CFR 63.1351, prepare a written operations and maintenance plan. The plan shall be submitted to DEQ and EPA for approval. The plan shall include the procedures for the proper operation and maintenance of the affected source and control devices in order to meet the emission limits and operating limits of 40 CFR 63.1343. The maintenance plan shall include an annual inspection of the combustion system components of each in-line kiln/raw mill and establish the procedures to be used during the inspection. Failure to comply with any provision of the operations and maintenance plan developed in accordance with this condition and 40 CFR 63.1350(a) shall be a violation of the standard.

(40 CFR 63.1350(a), 40 CFR 63.1350(a)(1) & (a)(3) & 40 CFR 63.1350(b))

On or before the initial compliance date specified in 40 CFR 63.1351, install, calibrate, maintain and continuously operate a continuous monitor to record the temperature at the inlet to, or upstream of, the in-line kiln/raw mill and the alkali bypass particulate matter control devices. The recorder response range must include zero and 1.5 times either of the average temperatures established according to the requirements of 40 CFR 63.1349(b)(3)(iv). The reference method must be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or approved alternate. Calibration shall be verified quarterly.

(40 CFR 63.1350(f)(1) through (6))

Operation & Maintenance Procedures:

1. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
2. Develop an inspection schedule, monthly at a minimum, to insure the operational integrity of the air pollution control equipment and maintain records of inspection results.
3. Have available written operating procedures for the air pollution control equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
4. Train operators in the proper operation of all air pollution control 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.
5. Maintain an inventory of spare parts that are needed to maintain the air pollution control equipment in proper working order.

Records of maintenance, inspections and training shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

(9 VAC 5-80-110, 9 VAC 5-80-110 F & K, 9 VAC 5-40-20E, 9 VAC 5-50-20E & Conditions 73 & 74 of 6/13/2003 PSD permit)

Recordkeeping (See Facility Wide Conditions)

Testing

Periodic performance tests shall be conducted for particulate emissions from the No. 5 kiln system/raw mills/alkali bypass (main stack) to determine compliance with the particulate emission limits.

(9 VAC 5-50-30, 9 VAC 5-80-10 J, 9 VAC 5-80-110 & Condition 36 of 6/13/2003 PSD permit)

Conduct an initial performance test using Method 23, 40 CFR 60, Appendix A.

Simultaneous performance tests shall be run on the kiln/raw mill and alkali bypass exhaust. Performance tests shall be conducted as specified in 40 CFR 63.1349(b)(3)(i) through (iv). The concentration shall be determined for each run and the arithmetic average of the concentrations measured for the three runs shall be calculated and used to determine compliance.

The temperature at the inlet to the in-line kiln/raw mill PMCD and the temperature at the inlet of the alkali bypass PMCD, must be continuously recorded during the period of the Method 23 test, and the continuous temperature records must be included in the performance test report.

One-minute average temperatures must be calculated for each minute of each run of the test. The run average temperature must be calculated for each run, and the average of the run average temperatures must be determined and included in the performance test report and will determine the applicable temperature limit in accordance with 40 CFR 63.1344(b). (40 CFR 63.1349(b)(3))

The initial compliance test stated above has been completed. This condition has been replaced by the requirements to periodically retest every 30 months or whenever there is a significant change in the feed or fuel from the previous performance test per 40 CFR 63.1349(d) & (e)

The permitted facility shall be constructed so as to allow for emissions testing at any time, test ports shall be provided at the appropriate locations.
(9 VAC 5-50-30 F, 9 VAC 5-80-110 & Condition 34 of 6/13/2003 PSD permit)

If testing is conducted for compliance purposes, in addition to the monitoring specified in this permit, the permittee shall use test methods in accordance with procedures approved by the DEQ.
(9 VAC 5-80-110)

Reporting (See General Conditions)

PROCESS EQUIPMENT REQUIREMENTS – CLINKER COOLER

The following section of the permit contains terms and conditions from 40 CFR Part 60 Subpart F – Standards of Performance for Portland Cement Plants. A current copy of 40 CFR Part 60 Subpart F has been attached. As used in this section, all terms shall have the meaning as defined in 40 CFR 60.2 and 40 CFR 60.61

Limitations

The permittee shall operate the affected facilities in compliance with all applicable New

Source Performance Standards; Standards of Performance for Portland Cement Plants (40 CFR Part 60 Subpart F)
(9 VAC 5-50-410, 40 CFR 60 Subpart F)

Particulate emissions from the Clinker Cooler shall be controlled by an electrostatic precipitator. The electrostatic precipitator shall be equipped with devices to continuously measure the temperature and the voltage and current to the electrostatic precipitator. The device shall be installed in an accessible location and shall be maintained by the permittee. (9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 10 of 6/13/2003 PSD permit)

The annual throughput of the Clinker Cooler shall not exceed 1,300,000 tons of clinker produced, calculated monthly as the sum of each consecutive twelve (12) month period. (9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 23 of 6/13/2003 PSD permit)

Visible emissions from the Clinker Cooler stack shall not exceed ten percent (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 5-50-20, 9 VAC 5-50-80, 9 VAC 5-50-290, 9 VAC 5-50-400, 9 VAC 5-170-160, 40 CFR 60.62(b)(2), 9 VAC 5-80-110 & Condition 63 of 6/13/2003 PSD permit)

Emissions from the operation of the Clinker Cooler shall not exceed the limits specified below:

Total Suspended 0.0473 lbs/ton 13.23 lbs/hr 46.9 tons/yr
Particulate kiln feed annual avg.

PM-10 0.0402 lbs/ton 11.24 lbs/hr 39.9 tons/yr
kiln feed annual avg.

Annual emission limits are based on 1,300,000 tons per year of clinker produced. The corresponding kiln feed is based on a combined total of 2,258,932 tons per year raw materials plus recycle dust. (9 VAC 5-50-260, 9 VAC 5-50-180, 9 VAC 5-80-1700, 9 VAC 5-50-400, 9 VAC 5-80-110 & Condition 52 of 6/13/2003 PSD permit)

Monitoring

The electrostatic precipitator shall be equipped with devices to continuously measure the temperature, and the voltage and current to the electrostatic precipitator. 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.

A continuous emission monitor shall be installed to measure and record opacity of the clinker cooler. The opacity monitor shall be located on the clinker cooler stack. The monitor shall be an "indicating" monitor; exceedance of the emission limits stated in this permit will subject Roanoke Cement Company to a request from DEQ to re-test stack emissions. The monitor shall be maintained, located, and calibrated in accordance with approved procedures (ref. 40 CFR 60.13). A thirty (30) day notification, prior to the demonstration of continuous monitoring system's performance, and subsequent notifications shall be submitted to the Director, West Central Regional Office. (Completed In 1997.)
(9 VAC 5-50-40 F, 9 VAC 5-80-110 & Condition 45 of 6/13/2003 PSD permit)

Operation & Maintenance Procedures

1. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
2. Develop an inspection schedule, monthly at a minimum, to insure the operational integrity of the air pollution control equipment and maintain records of inspection results.
3. Have available written operating procedures for the air pollution control equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
4. Train operators in the proper operation of all air pollution control 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.
5. Maintain an inventory of spare parts that are needed to maintain the air pollution control equipment in proper working order.

Records of maintenance, inspections and training shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

(9 VAC 5-80-110, 9 VAC 5-80-110 F & K, 9 VAC 5-40-20E, 9 VAC 5-50-20E & Conditions 73 & 74 of 6/13/2003 PSD permit)

Recordkeeping (See Facility Wide Conditions)

Testing

The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Upon request from the Department, test ports shall be provided at the appropriate locations.

(9 VAC 5-50-30 F, 9 VAC 5-80-110 & Condition 34 of 6/13/2003 PSD permit)

If testing is conducted for compliance purposes, in addition to the monitoring specified in this

permit, the permittee shall use test methods in accordance with procedures approved by the DEQ.
(9 VAC 5-80-110)

Reporting (See General Conditions)

PROCESS EQUIPMENT REQUIREMENTS – COAL/COKE GRINDING & HANDLING SYSTEM

The following section of the permit contains terms and conditions from 40 CFR Part 60 Subpart Y – Standards of Performance for Coal Preparation Plants. A current copy of 40 CFR Part 60 Subpart Y has been attached. As used in this section, all terms shall have the meaning as defined in 40 CFR 60.2 and 40 CFR 60.251

Limitations

The permittee shall operate the affected facilities in compliance with all applicable New Source Performance Standards; Standards of Performance for Portland Cement Plants (40 CFR Part 60 Subpart Y)
(9 VAC 5-50-410, 40 CFR 60 Subpart Y)

Particulate emissions from the Coal/Coke Grinding System shall be controlled by fabric filters. Each fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter.
(9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 11 of 6/13/2003 PSD permit)

Visible emissions from the fabric filter exhaust stacks shall not exceed 3% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 20% opacity.
(9 VAC 5-50-20, 9 VAC 5-50-80, 9 VAC 5-50-290, 9 VAC 5-170-160, 9 VAC 5-80-110, 40 CFR 60.252(c) & Condition 61 of 6/13/2003 PSD permit)

Emissions from the operation of the Coal/Coke Grinding and Handling System shall not exceed the limits specified below:

Total Suspended				
Particulate	0.005 gr/acf	1.80 lbs/hr	7.9 tons/yr	
PM-10	0.005 gr/acf	1.71 lbs/hr	7.5 tons/yr	

(9 VAC 5-50-260, 9 VAC 5-50-180, 9 VAC 5-80-110 & Condition 53 of 6/13/2003 PSD

permit)

Monitoring

Operation & Maintenance Procedures:

1. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
2. Develop an inspection schedule, monthly at a minimum, to insure the operational integrity of the air pollution control equipment and maintain records of inspection results.
3. Have available written operating procedures for the air pollution control equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
4. Train operators in the proper operation of all air pollution control 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.
5. Maintain an inventory of spare parts that are needed to maintain the air pollution control equipment in proper working order.

Records of maintenance, inspections and training shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

(9 VAC 5-80-110, 9 VAC 5-80-110 F & K, 9 VAC 5-40-20E, 9 VAC 5-50-20E & Conditions 73 & 74 of 6/13/2003 PSD permit)

Recordkeeping (See Facility Wide Conditions)

Testing

The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Test ports shall be provided at the appropriate locations.

(9 VAC 5-50-30 F, 9 VAC 5-80-110 & Condition 34 of 6/13/2003 PSD permit)

If testing is conducted for compliance purposes, in addition to the monitoring specified in this permit, the permittee shall use test methods in accordance with procedures approved by the DEQ.

(9 VAC 5-80-110)

Reporting (See General Conditions)

Process Equipment Requirements – Clinker Handling & Storage System

The following section of the permit contains terms and conditions from 40 CFR Part 60

Subpart F – Standards of Performance for Portland Cement Plants. A current copy of 40 CFR Part 60 Subpart F has been attached. As used in this section, all terms shall have the meaning as defined in 40 CFR 60.2 and 40 CFR 60.61

Limitations

The permittee shall operate the affected facilities in compliance with all applicable New Source Performance Standards; Standards of Performance for Portland Cement Plants (40 CFR Part 60 Subpart F)
(9 VAC 5-50-410, 40 CFR 60 Subpart F)

Particulate emissions from the Clinker Handling and Storage System shall be controlled by fabric filters. Each fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter.
(9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 11 of 6/13/2003 PSD permit)

Visible emissions from the fabric filter exhaust stacks shall not exceed 3% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 10% opacity.
(9 VAC 5-50-20, 9 VAC 5-50-80, 9 VAC 5-50-290, 9 VAC 5-170-160, 9 VAC 5-80-110, 40 CFR 60.62(c) & Condition 61 of 6/13/2003 PSD permit)

Emissions from the operation of the Clinker Storage and Handling System, including adding a third 25,000 ton silo controlled by the existing fabric filter with no emissions increase, shall not exceed the limits specified below:

Total Suspended			
Particulate	0.005 gr/acf	1.36 lbs/hr	6.0 tons/yr
PM-10	0.005 gr/acf	1.29 lbs/hr	5.7 tons/yr

(9 VAC 5-50-260, 9 VAC 5-50-180, 9 VAC 5-80-110 & Condition 55 of 6/13/2003 PSD permit)

Monitoring

Operation & Maintenance Procedures:

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

2. Develop an inspection schedule, monthly at a minimum, to insure the operational integrity of the air pollution control equipment and maintain records of inspection results.
3. Have available written operating procedures for the air pollution control equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
4. Train operators in the proper operation of all air pollution control 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.
5. Maintain an inventory of spare parts that are needed to maintain the air pollution control equipment in proper working order.

Records of maintenance, inspections and training shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

(9 VAC 5-80-110, 9 VAC 5-80-110 F & K, 9 VAC 5-40-20E, 9 VAC 5-50-20E & Conditions 73 & 74 of 6/13/2003 PSD permit)

Recordkeeping (See Facility Wide Conditions)

Testing

The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Test ports shall be provided at the appropriate locations.

(9 VAC 5-50-30 F, 9 VAC 5-80-110 & Condition 34 of 6/13/2003 PSD permit)

If testing is conducted for compliance purposes, in addition to the monitoring specified in this permit, the permittee shall use test methods in accordance with procedures approved by the DEQ.

(9 VAC 5-80-110)

Reporting (See General Conditions)

PROCESS EQUIPMENT REQUIREMENTS – CLINKER GRINDING SYSTEM

The following section of the permit contains terms and conditions from 40 CFR Part 60 Subpart F – Standards of Performance for Portland Cement Plants. A current copy of 40 CFR Part 60 Subpart F has been attached. As used in this section, all terms shall have the meaning as defined in 40 CFR 60.2 and 40 CFR 60.61

Limitations

The permittee shall operate the affected facilities in compliance with all applicable New

Source Performance Standards; Standards of Performance for Portland Cement Plants (40 CFR Part 60 Subpart F)
(9 VAC 5-50-410, 40 CFR 60 Subpart F)

Particulate emissions from the Clinker Grinding System shall be controlled by fabric filters. Each fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter.
(9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 11 of 6/13/2003 PSD permit)

Particulate emissions from the storage and handling of fly ash shall be controlled by enclosing all storage of fly ash and by fabric filtration (or DEQ approved equivalent) of all emissions from storing and handling fly ash. No outside stockpiles shall be used for storage of fly ash. The fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter.
(9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 12 of 6/13/2003 PSD permit)

Operations at the Gypsum Unloading Bin and the Gypsum Storage Bin shall not exceed 16 hours per day and 5839 hours per year, calculated monthly as the sum of each consecutive 12 month period.
(9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 28 of 6/13/2003 PSD permit)

Visible emissions from the fabric filter exhaust stacks shall not exceed 3% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 10% opacity.
(9 VAC 5-50-20, 9 VAC 5-50-80, 9 VAC 5-50-290, 9 VAC 5-170-160, 9 VAC 5-80-110, 40 CFR 60.62(c) & Condition 61 of 6/13/2003 PSD permit)

Emissions from the operation of the Clinker Grinding Systems, including addition of large finish mill 11 (refr. FM11) and reactivation of small finish mills 5 and 6 (refr. FM5 and FM6), shall not exceed the limits specified below:

Total Suspended			
Particulate	0.005 gr/acf	17.83 lbs/hr	76.3 tons/yr
PM-10	0.005 gr/acf	16.94 lbs/hr	72.5 tons/yr

(9 VAC 5-50-260, 9 VAC 5-50-180, 9 VAC 5-80-1700, 9 VAC 5-50-400, 9 VAC 5-80-110 & Condition 56 of 6/13/2003 PSD permit)

Monitoring

Operation & Maintenance Procedures:

1. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
2. Develop an inspection schedule, monthly at a minimum, to insure the operational integrity of the air pollution control equipment and maintain records of inspection results.
3. Have available written operating procedures for the air pollution control equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
4. Train operators in the proper operation of all air pollution control 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.
5. Maintain an inventory of spare parts that are needed to maintain the air pollution control equipment in proper working order.

Records of maintenance, inspections and training shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

(9 VAC 5-80-110, 9 VAC 5-80-110 F & K, 9 VAC 5-40-20E, 9 VAC 5-50-20E & Conditions 73 & 74 of 6/13/2003 PSD permit)

Recordkeeping (See Facility Wide Conditions)

Testing

The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Test ports shall be provided at the appropriate locations.

(9 VAC 5-50-30 F, 9 VAC 5-80-110 & Condition 34 of 6/13/2003 PSD permit)

If testing is conducted for compliance purposes, in addition to the monitoring specified in this permit, the permittee shall use test methods in accordance with procedures approved by the DEQ.

(9 VAC 5-80-110)

Reporting (See General Conditions)

PROCESS EQUIPMENT REQUIREMENTS – CEMENT STORAGE SILO SYSTEM

The following section of the permit contains terms and conditions from 40 CFR Part 60 Subpart F – Standards of Performance for Portland Cement Plants. A current copy of 40

CFR Part 60 Subpart F has been attached. As used in this section, all terms shall have the meaning as defined in 40 CFR 60.2 and 40 CFR 60.61

Limitations

The permittee shall operate the affected facilities in compliance with all applicable New Source Performance Standards; Standards of Performance for Portland Cement Plants (40 CFR Part 60 Subpart F)
(9 VAC 5-50-410, 40 CFR 60 Subpart F)

Particulate emissions from the Cement Silos shall be controlled by fabric filters. Each fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter
(9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 11 of 6/13/2003 PSD permit)

Visible emissions from the fabric filter exhaust stacks shall not exceed 3% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 10% opacity.
(9 VAC 5-50-20, 9 VAC 5-50-80, 9 VAC 5-50-290, 9 VAC 5-170-160, 9 VAC 5-80-110, 40 CFR 60.62(c) & Condition 61 of 6/13/2003 PSD permit)

Emissions from the operation of the Cement Silos shall not exceed the limits specified below:

Total Suspended			
Particulate	0.005 gr/acf	1.76 lbs/hr	7.7 tons/yr
PM-10	0.005 gr/acf	1.67 lbs/hr	7.3 tons/yr

(9 VAC 5-50-260, 9 VAC 5-50-180, 9 VAC 5-80-110 & Condition 57 of 6/13/2003 PSD permit)

Monitoring

Operation & Maintenance Procedures:

1. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
2. Develop an inspection schedule, monthly at a minimum, to insure the operational integrity of the air pollution control equipment and maintain records of inspection results.
3. Have available written operating procedures for the air pollution control equipment.

- These procedures shall be based on the manufacturer's recommendations, at a minimum.
4. Train operators in the proper operation of all air pollution control 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.
 5. Maintain an inventory of spare parts that are needed to maintain the air pollution control equipment in proper working order.

Records of maintenance, inspections and training shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

(9 VAC 5-80-110, 9 VAC 5-80-110 F & K, 9 VAC 5-40-20E, 9 VAC 5-50-20E & Conditions 73 & 74 of 6/13/2003 PSD permit)

Recordkeeping (See Facility Wide Conditions)

Testing

The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Test ports shall be provided at the appropriate locations.

(9 VAC 5-50-30 F, 9 VAC 5-80-110 & Condition 34 of 6/13/2003 PSD permit)

If testing is conducted for compliance purposes, in addition to the monitoring specified in this permit, the permittee shall use test methods in accordance with procedures approved by the DEQ.

(9 VAC 5-80-110)

Reporting (See General Conditions)

PROCESS EQUIPMENT REQUIREMENTS – CEMENT BULK LOADOUT SYSTEM

The following section of the permit contains terms and conditions from 40 CFR Part 60 Subpart F – Standards of Performance for Portland Cement Plants. A current copy of 40 CFR Part 60 Subpart F has been attached. As used in this section, all terms shall have the meaning as defined in 40 CFR 60.2 and 40 CFR 60.61.

Limitations

The permittee shall operate the affected facilities in compliance with all applicable New Source Performance Standards; Standards of Performance for Portland Cement Plants (40 CFR Part 60 Subpart F)

(9 VAC 5-50-410, 40 CFR 60 Subpart F)

Particulate emissions from Cement Bulk Loadout shall be controlled by fabric filters. Each fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter.

(9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 11 of 6/13/2003 PSD permit)

Particulate emissions from the Cement Bulk Loadout to rail and trucks shall be controlled by loadout through the No. 5 cement silo group loadout station with retractable chute which shall be controlled by a fabric filter collector or through the Dribble Bin loadout station with retractable chute which shall be controlled by a fabric filter collector.

(9 VAC 5-80-10 H and 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 13 of 6/13/2003 PSD permit)

Visible emissions from the fabric filter exhaust stacks shall not exceed 3% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 10% opacity.

(9 VAC 5-50-20, 9 VAC 5-50-80, 9 VAC 5-50-290, 9 VAC 5-170-160, 9 VAC 5-80-110, 40 CFR 60.62(c) & Condition 61 of 6/13/2003 PSD permit)

Emissions from the operation of the Cement Bulk Loadout System (rail and truck), including the Dribble Bin, shall not exceed the limits specified below:

Total Suspended			
Particulate	0.005 gr/acf	0.36 lbs/hr	1.44 tons/yr
PM-10	0.005 gr/acf	0.35 lbs/h	1.37 tons/yr

(9 VAC 5-50-260, 9 VAC 5-50-180, 9 VAC 5-80-110 & Condition 58 of 6/13/2003 PSD permit)

Monitoring

Operation & Maintenance Procedures:

1. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
2. Develop an inspection schedule, monthly at a minimum, to insure the operational integrity of the air pollution control equipment and maintain records of inspection results.
3. Have available written operating procedures for the air pollution control equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.

4. Train operators in the proper operation of all air pollution control 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.
5. Maintain an inventory of spare parts that are needed to maintain the air pollution control equipment in proper working order.

Records of maintenance, inspections and training shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

(9 VAC 5-80-110, 9 VAC 5-80-110 F & K, 9 VAC 5-40-20E, 9 VAC 5-50-20E & Conditions 73 & 74 of 6/13/2003 PSD permit)

Recordkeeping (See Facility Wide Conditions)

Testing

The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Test ports shall be provided at the appropriate locations.

(9 VAC 5-50-30 F, 9 VAC 5-80-110 & Condition 34 of 6/13/2003 PSD permit)

If testing is conducted for compliance purposes, in addition to the monitoring specified in this permit, the permittee shall use test methods in accordance with procedures approved by the DEQ.

(9 VAC 5-80-110)

Reporting (See General Conditions)

PROCESS EQUIPMENT REQUIREMENTS – CEMENT BAGGING/PACKING SYSTEM

The following section of the permit contains terms and conditions from 40 CFR Part 60 Subpart F – Standards of Performance for Portland Cement Plants. A current copy of 40 CFR Part 60 Subpart F has been attached. As used in this section, all terms shall have the meaning as defined in 40 CFR 60.2 and 40 CFR 60.61.

Limitations

The permittee shall operate the affected facilities in compliance with all applicable New Source Performance Standards; Standards of Performance for Portland Cement Plants (40 CFR Part 60 Subpart F)

(9 VAC 5-50-410, 40 CFR 60 Subpart F)

Particulate emissions from the Cement Bagging/Packing Systems shall be controlled by fabric filters. Each fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter.

(9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 11 of 6/13/2003 PSD permit)

Visible emissions from the fabric filter exhaust stacks shall not exceed 3% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 10% opacity.

(9 VAC 5-50-20, 9 VAC 5-50-80, 9 VAC 5-50-290, 9 VAC 5-170-160, 9 VAC 5-80-110, 40 CFR 60.62(c) & Condition 61 of 6/13/2003 PSD permit)

Emissions from the operation of the Cement Bagging/Packing System shall not exceed the limits specified below:

Total Suspended			
Particulate	0.005 gr/acf	2.29 lbs/hr	6.69 tons/yr
PM-10	0.005 gr/acf	2.18 lbs/hr	6.35 tons/yr

(9 VAC 5-50-260, 9 VAC 5-50-180, 9 VAC 5-80-110 & Condition 59 of 6/13/2003 PSD permit)

Monitoring

Operation & Maintenance Procedures:

1. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
2. Develop an inspection schedule, monthly at a minimum, to insure the operational integrity of the air pollution control equipment and maintain records of inspection results.
3. Have available written operating procedures for the air pollution control equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
4. Train operators in the proper operation of all air pollution control 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.
5. Maintain an inventory of spare parts that are needed to maintain the air pollution control equipment in proper working order.

Records of maintenance, inspections and training shall be maintained on site for a period of

five (5) years and shall be made available to DEQ personnel upon request.
(9 VAC 5-80-110, 9 VAC 5-80-110 F & K, 9 VAC 5-40-20E, 9 VAC 5-50-20E &
Conditions 73 & 74 of 6/13/2003 PSD permit)

Recordkeeping (See Facility Wide Conditions)

Testing

The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Test ports shall be provided at the appropriate locations.
(9 VAC 5-50-30 F, 9 VAC 5-80-110 & Condition 34 of 6/13/2003 PSD permit)

If testing is conducted for compliance purposes, in addition to the monitoring specified in this permit, the permittee shall use test methods in accordance with procedures approved by the DEQ.
(9 VAC 5-80-110)

Reporting (See General Conditions)

PROCESS EQUIPMENT REQUIREMENTS – WASTE DUST STORAGE AND HANDLING SYSTEM

The following section of the permit contains terms and conditions from 40 CFR Part 60 Subpart F – Standards of Performance for Portland Cement Plants. A current copy of 40 CFR Part 60 Subpart F has been attached. As used in this section, all terms shall have the meaning as defined in 40 CFR 60.2 and 40 CFR 60.61.

Limitations

The permittee shall operate the affected facilities in compliance with all applicable New Source Performance Standards; Standards of Performance for Portland Cement Plants (40 CFR Part 60 Subpart F)
(9 VAC 5-50-410, 40 CFR 60 Subpart F)

Particulate emissions from the Waste Dust Storage and Handling System shall be controlled by fabric filters. Each fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter.
(9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 11 of 6/13/2003 PSD permit)

Visible emissions from the fabric filter exhaust stacks shall not exceed 3% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 10% opacity.

(9 VAC 5-50-20, 9 VAC 5-50-80, 9 VAC 5-50-290, 9 VAC 5-170-160, 9 VAC 5-80-110, 40 CFR 60.62(c) & Condition 61 of 6/13/2003 PSD permit)

Emissions from the operation of the Waste Dust Storage and Handling System shall not exceed the limits specified below:

Total Suspended			
Particulate	0.005 gr/acf	0.34 lbs/hr	1.5 tons/yr
PM-10	0.005 gr/acf	0.33 lbs/hr	1.4 tons/yr

(9 VAC 5-50-260, 9 VAC 5-50-180, 9 VAC 5-80-110 & Condition 54 of 6/13/2003 PSD permit)

Monitoring

Operation & Maintenance Procedures:

1. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
2. Develop an inspection schedule, monthly at a minimum, to insure the operational integrity of the air pollution control equipment and maintain records of inspection results.
3. Have available written operating procedures for the air pollution control equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
4. Train operators in the proper operation of all air pollution control 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.
5. Maintain an inventory of spare parts that are needed to maintain the air pollution control equipment in proper working order.

Records of maintenance, inspections and training shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

(9 VAC 5-80-110, 9 VAC 5-80-110 F & K, 9 VAC 5-40-20E, 9 VAC 5-50-20E & Conditions 73 & 74 of 6/13/2003 PSD permit)

Recordkeeping (See Facility Wide Conditions)

Testing

The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Test ports shall be provided at the appropriate locations.
(9 VAC 5-50-30 F, 9 VAC 5-80-110 & Condition 34 of 6/13/2003 PSD permit)

If testing is conducted for compliance purposes, in addition to the monitoring specified in this permit, the permittee shall use test methods in accordance with procedures approved by the DEQ.
(9 VAC 5-80-110)

Reporting (See General Conditions)

PROCESS EQUIPMENT REQUIREMENTS – STORAGE GALLERY

The following section of the permit contains terms and conditions from 40 CFR Part 60 Subpart F – Standards of Performance for Portland Cement Plants. A current copy of 40 CFR Part 60 Subpart F has been attached. As used in this section, all terms shall have the meaning as defined in 40 CFR 60.2 and 40 CFR 60.61.

Limitations

The permittee shall operate the affected facilities in compliance with all applicable New Source Performance Standards; Standards of Performance for Portland Cement Plants (40 CFR Part 60 Subpart F)
(9 VAC 5-50-410, 40 CFR 60 Subpart F)

Particulate emissions from the clinker stored in the Storage Gallery shall be controlled by use of the existing gallery for storage of cement clinker only during malfunctions involving the Clinker Handling and Storage System. Enclosed bin systems in the Storage Gallery with all emissions controlled by fabric filters are exempt from this condition.
(9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 15 of 6/13/2003 PSD permit)

The annual throughput of clinker through the Storage Gallery, as storage during malfunctions involving the Clinker Handling and Storage System, shall not exceed 20,000 tons of clinker per year, calculated monthly as the sum of each consecutive 12 month period. Enclosed bin systems in the Storage Gallery with all emissions controlled by fabric filters are exempt from

this condition and do not contribute to 20,000 ton per year limit on storage.
(9 VAC 5-170-160, 9 VAC 5-80-110 & Condition 25 of 6/13/2003 PSD permit)

Visible emissions from the Storage Gallery shall not exceed ten percent (10%) opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-50-20, 9 VAC 5-50-80, 9 VAC 5-50-290, 9 VAC 5-170-160, 9 VAC 5-80-110, 40 CFR 60.62(c) & Condition 64 of 6/13/2003 PSD permit)

Visible emissions from the fabric filter exhaust stacks shall not exceed 3% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 10% opacity.
(9 VAC 5-50-20, 9 VAC 5-50-80, 9 VAC 5-50-290, 9 VAC 5-170-160, 9 VAC 5-80-110, 40 CFR 60.62(c) & Condition 61 of 6/13/2003 PSD permit)

Monitoring

Operation & Maintenance Procedures:

1. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
2. Develop an inspection schedule, monthly at a minimum, to insure the operational integrity of the air pollution control equipment and maintain records of inspection results.
3. Have available written operating procedures for the air pollution control equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
4. Train operators in the proper operation of all air pollution control 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.
5. Maintain an inventory of spare parts that are needed to maintain the air pollution control equipment in proper working order.

Records of maintenance, inspections and training shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

(9 VAC 5-80-110, 9 VAC 5-80-110 F & K, 9 VAC 5-40-20E, 9 VAC 5-50-20E & Conditions 73 & 74 of 6/13/2003 PSD permit)

Recordkeeping (See Facility Wide Conditions)

Testing

The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Test ports shall be provided at the appropriate locations.
(9 VAC 5-50-30 F, 9 VAC 5-80-110 & Condition 34 of 6/13/2003 PSD permit)

If testing is conducted for compliance purposes, in addition to the monitoring specified in this permit, the permittee shall use test methods in accordance with procedures approved by the DEQ.
(9 VAC 5-80-110)

Reporting (See General Conditions)

FACILITY WIDE CONDITIONS

Limitations

Any dusty material being transported in bulk form shall be transported into or out of the plant only in enclosed tanker trucks or rail cars, or equivalent totally enclosed trucks, rail cars or containers, or DEQ-Air Division approved equivalent. Dusty materials include cement product, waste dust and flyash.
(9 VAC 5-80-10 H, 9 VAC 5-50-260, 9 VAC 5-80-110 & Condition 14 of 6/13/2003 PSD permit)

Visible emissions from other process fugitive emission points shall not exceed ten percent (10%) opacity.
(9 VAC 5-20-110, 9 VAC 5-50-20, 9 VAC 5-50-400, 9 VAC 5-80-110 & Condition 65 of 6/13/2003 PSD permit)

Monitoring

Visible Emissions: - Each emissions unit with a visible emissions requirement in this permit that does not have a continuous opacity monitor meeting the requirements of 40 CFR 60 Appendix A, shall be observed visually at least once each calendar month in which the emissions unit operates. Observations shall be performed more frequently if requested by the DEQ or EPA. The visual observations shall be conducted using 40 CFR 60 Appendix A Method 22 techniques (condensed water vapor/steam is not a visible emission) for at least one minute to only identify the presence of visible emissions. Each emissions unit in the Method 22 technique observation having visible emissions shall be evaluated by conducting a 40 CFR 60 Appendix A Method 9 visible emissions evaluation (VEE) for at least six (6)

minutes; the VEE must begin within one hour of the Method 22 test. 40 CFR 60 Appendix A Method 9 requires the observer to have a Method 9 certification that is current at the time of the VEE. If any of these six (6) minute VEE averages exceed the unit's opacity limitation, a VEE shall be conducted on these emissions for at least 3 six minute periods (at least 18 minutes). All visible emission observations, VEE results, and corrective actions taken shall be recorded.

(9 VAC 5-80-110E)

Recordkeeping

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, West Central Regional Office. These records shall include, but are not limited to:

1. Annual throughput of the following, calculated monthly as the sum of each consecutive twelve (12) month period.
 - a. Primary/secondary crushing overall process throughput,
 - b. No. 5 Kiln feed material throughput, including recycle dust,
 - c. No. 5 Kiln/Clinker Cooler clinker produced,
 - d. Clinker Grinding System cement produced,
 - e. Storage Gallery clinker throughput,
 - f. Waste Dust Storage and Handling System throughput,
2. The annual consumption of coal, and petroleum coke by the No. 5 kiln system, calculated monthly as the sum of each consecutive twelve (12) month period.
3. The annual overall consumption of No. 2 fuel oil and natural gas by the plant, calculated monthly as the sum of each consecutive twelve (12) month period.
4. Coal and petroleum coke shipments purchased, indicating sulfur content per shipment.
5. Continuous emissions monitors and process monitor data/records.

6. The annual emissions of SO₂, NO_x and VOC for the No. 5 kiln system (main stack), calculated monthly as the sum of each consecutive twelve (12) month period.

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, 9 VAC 5-80-110 & Condition 69 of 6/13/2003 PSD permit)

Testing

The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Test ports shall be provided at the appropriate locations.

(9 VAC 5-50-30 F, 9 VAC 5-80-110 & Condition 34 of 6/13/2003 PSD permit)

If testing is conducted for compliance purposes, in addition to the monitoring specified in this permit, the permittee shall use test methods in accordance with procedures approved by the DEQ.

(9 VAC 5-80-110)

Reporting (See General Conditions)

Streamlined Requirements

Conditions 1 & 2 of the 6/13/2003 PSD permit, have been streamlined out of the Title V permit. They include incorporation of the permit applications and an equipment list.

Conditions 5, 6, 7 & 8 of the 6/13/2003 PSD permit, were streamlined and combined together. They separately addressed controlling SO₂, NO_x, VOC, CO by process control. A section of Condition 5 addressing operation of lime injection was included in a new condition.

Condition 24 of 6/13/2003 PSD permit, states "The annual throughput of the Waste Dust Storage and Handling System is estimated to typically be 40,000 tons of waste dust but may vary widely, calculated as the sum of each consecutive 12 month period." This condition is not a limit but was included in the original permit as an indication of typical waste dust throughput. Since the condition imposes no limit on the throughput, the condition is being streamlined out of the Title V permit as environmentally insignificant.

Condition 25 of 6/13/2003 PSD permit limits clinker storage during malfunctions to 20,000 tons per year. Verbiage was added, per Condition 15 of the 6/13/2003 PSD permit to exclude from the 20,000 ton per year limit, storage in enclosed bins and compartments that are controlled by

fabric filter. The intent of the two conditions is to limit uncontrolled emissions from storage of clinker.

Conditions 35 & 37 of 6/13/2003 PSD permit which require initial performance tests to be conducted on the Kiln main stack and the clinker cooler has been removed as the testing has been completed.

Conditions 38, 39, 40 & 41 of 6/13/2003 PSD permit have been streamlined. The conditions require initial performance testing and VEE's for several units included in the expansion. The time frame for installation of the new quarry equipment and the slag dryer has passed. These units were not constructed and will require a new permit

Conditions 67 & 68 of 6/13/2003 PSD permit have been streamlined. The conditions required initial notifications for equipment included in the expansion. These conditions have been removed for completed items and included in the appropriate sections of the Title V permit for the as yet uncompleted items.

Conditions 73 & 74 of 6/13/2003 PSD permit have been streamlined into one condition and follow the standardized wording for Title V permits. They appear as one condition in each process section of the permit.

Conditions 70, 71, 72, 75, 76, 77 & 78 of 6/13/2003 PSD permit have been streamlined. These conditions address permit modification/revocation, right of entry, failure malfunction, permit invalidation, change in control/ownership, prompt response to requests for information (emissions update) and the requirement to keep a copy of the permit on the premises. These conditions have been streamlined out of the permit. The Title V program has its own basis for these requirements and they are included in the general conditions of the Title V permit.

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.

Comments on General Conditions

B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §§2.1-20.01:2 and §10.1-1185 of the Code of Virginia, and the “Department of Environmental Quality Agency Policy Statement NO. 3-2001”.

This general condition cites the entire Article that follows:
Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Operating Permits for Stationary Sources

This general condition cites the sections that follow:
9 VAC 5-80-80. Application
9 VAC 5-80-140. Permit Shield
9 VAC 5-80-150. Action on Permit Applications

F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emissions reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

This general condition cites the sections that follow:
9 VAC 5-40-50. Notification, Records and Reporting
9 VAC 5-50-50. Notification, Records and Reporting

H. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The

malfunction requirements are listed in General Condition H and General Condition F.
For further explanation see the comments on general condition F.

This general condition cites the sections that follow:

- 9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction
- 9 VAC 5-80-110. Permit Content

M. Permit Modification

This general condition cites the sections that follow:

- 9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources
- 9 VAC 5-80-190. Changes to Permits.
- 9 VAC 5-80-260. Enforcement.
- 9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources
- 9 VAC 5-80-1790. Applicability, Permits For Major Stationary Sources and Modifications Locating in Prevention of Significant Deterioration Areas
- 9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas

Y. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

This general condition contains citations from the Code of Federal Regulations as follows:

- 40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.
- 40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.
- 40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

This general condition cites the regulatory sections that follow:

- 9 VAC 5-60-70. Designated Emissions Standards
- 9 VAC 5-80-110. Permit Content

STATE ONLY APPLICABLE REQUIREMENTS

The following Virginia Administrative Codes have specific requirements only enforceable by the State and have been identified as applicable by the applicant:

-None Identified-

FUTURE APPLICABLE REQUIREMENTS

-None Identified-

INAPPLICABLE REQUIREMENTS

The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A 3 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan. The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state that "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions."

COMPLIANCE PLAN - NA

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the 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.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted	Rated Capacity
001-001	Cleaver Brooks ng fired boiler	9 VAC 5-80-720 C	NO _x , CO	6 mm Btu/hr
G-1	Diesel Emergency generator for Kiln drive	9 VAC 5-80-720 B	PM, NO _x , CO, SO ₂	300 HP
G-2	Diesel emergency process water pump	9 VAC 5-80-720 B	PM, NO _x , CO, SO ₂	300 HP
G-3	Portable diesel water pump	9 VAC 5-80-720 B	PM, NO _x , CO, SO ₂	60 HP
G-4	Steam jenny propane engine	9 VAC 5-80-720 B	NO _x , CO	6 HP
SK	Safety-Kleen cold solvent cleaning units (7)	9 VAC 5-80-720 B	VOC	30 gal each
T-1	Raw Mill, No. 2 fuel oil tank	9 VAC 5-80-720 B	VOC	20,000 gal
T-2	Em gen. diesel fuel tank	9 VAC 5-80-720 B	VOC	275 gal
T-4A	Gasoline tank & dispensing	9 VAC 5-80-720 B	VOC	2,000 gal
T-4B	Diesel fuel tank & dispensing	9 VAC 5-80-720 B	VOC	2,000 gal
T-5	Oil house lubricant storage	9 VAC 5-80-720 B	VOC	4,000 gal total multiple containers
T-6	Diesel fuel tank & dispensing	9 VAC 5-80-720 B	VOC	20,000 gal
T-9	Diesel fuel tank, emergency water pump	9 VAC 5-80-720 B	VOC	275 gal
T-11	Lubricant Storage, Mill building	9 VAC 5-80-720 B	VOC	2,000 gal total multiple containers
T-12	Grinding aid tank	9 VAC 5-80-720 B	VOC	10,000 gal
T-13	Grinding aid-blend tank	9 VAC 5-80-720 B	VOC	5,000 gal
T-14	Lubricant storage, quarry shop	9 VAC 5-80-720 B	VOC	2,500 gal total multiple containers

¹The citation criteria for insignificant activities are as follows:

- 9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
- 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

-None Identified-

PUBLIC PARTICIPATION

A public notice regarding the draft permit was published in the September 14, 2003, edition of the Roanoke Times. The public comment period expired on October 14, 2003 at 4:30 p.m.

A public hearing was requested by the Blue Ridge Environmental Defense League. The request did not involve any disputed issues, but was addressing possible future applicable requirements, such as possible PM_{2.5} non-attainment and concern over the possible health effects of hazardous air pollutants.

The SOB was amended, review of the SOB showed incorrect HAP inventory data was listed in the SOB. The source is an area source, the SOB stated so, but incorrect emission factors in the DEQ emissions database resulted in the HAP emissions summary table showing the source to be major for HAP's. This information has been corrected, and may have been a factor in the public's concern. This has been addressed by updating the HAP emission summary table in the SOB.

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
West Central Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Addendum to December 1, 2003 Statement of Legal and Factual Basis

Roanoke Cement Company
Botetourt County, Virginia
Permit No. VA-20232

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. Pursuant to 40 CFR Part 70 and 9 VAC 5 Chapter 80, Roanoke Cement Company has applied for a minor permit amendment to the Title V Operating Permit for its Botetourt County facility. The Department has reviewed the application and has prepared a minor amendment for the Title V Operating Permit.

Engineer/Permit Contact: _____ Date:

Air Permit Manager: _____ Date:

FACILITY INFORMATION:

Permittee

Roanoke Cement Company
6071 Catawba Road
Troutville, VA 24175

Facility

Roanoke Cement Company
6071 Catawba Road
Troutville, VA 24175

AFS ID No.: 51-023-0003

SOURCE DESCRIPTION

SIC Code: 3241 – Cement, Hydraulic: Establishments primarily engaged in manufacturing hydraulic cement, including portland, natural, masonry, and pozzolana cements.

The facility quarries raw material rock onsite, crushes the stone at the crushing plants, and then pulverizes it in the raw mills. The pulverized stone is sintered in a 6 stage preheater/precalciner dry process kiln direct fired primarily with pulverized coal. The clinker from the kiln is then cooled in the clinker cooler for handling. The clinker is ground in the finish mills and mixed with other additives, such as gypsum. Most of the finished product is shipped by rail car. The remainder is either bulk loaded onto trucks or bagged at the packing plant and shipped out.

The facility is a Title V major source of PM₁₀, SO₂, NO_x, CO and VOC. This source is located in an attainment area for PM₁₀, SO₂ and CO, and is a PSD major source. However the source is located in Botetourt County which is listed as a volatile organic compound and nitrogen oxide emission control area as defined in 9 VAC 5-20-206. The facility currently has a Title V permit dated December 1, 2003, a PSD permit that was issued on June 12, 2003 and which has been amended January 18, 2006, January 22, 2007 and most recently October 26, 2007. Furthermore, Roanoke Cement has a State Operating Permit dated December 22, 2004 which was issued to enforce a Reasonable Available Control Technology determination for NO_x emissions from the kiln and a State Operating Permit issued on June 18, 2007 to address the NO_x SIP call. Lastly, Roanoke Cement is subject to the requirements of 40 CFR 63 Subpart LLL – National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry.

SUMMARY OF PERMIT CHANGES

Roanoke Cement Company is in the process of installing new equipment based on three recent minor NSR applications. As a result, Roanoke Cement submitted an application to update the existing Title V permit issued on December 1, 2003. This will consolidate all current applicable requirements into one Title V permit. In addition to the recent underlying NSR permit amendments, requirements of 40 CFR 63 Subpart LLL, the MACT standard applicable to this facility were added to the December 2006 permit and contains additional applicable requirements. The facility has indicated that consolidation of the NSR amendments as well as the new MACT requirements into one Title V permit will facilitate compliance determinations

and make record keeping easier for the facility. The changes requested are identified as a minor permit amendment as defined in 9 VAC 5-80-210 and are outlined below in more detail.

A minor NSR permit amendment for a new primary crusher, secondary crusher and associated conveyors for the quarry operation was issued on January 18, 2006. The facility has requested that this action be incorporated into the Title V as a minor amendment to update the equipment list in the permit. The existing Title V permit has limits for "raw material processing" which covers all equipment, crushers and conveyors from quarry operations. The existing permit requires fabric filter control for all non exempt units associated with raw material processing and establishes emission limits for grain loading and opacity from raw material processing equipment. The limits are 0.005 gr/acf from fabric filters and no more than 3% opacity. Requested changes to the existing Title V permit are editorial in nature, equipment list changes and the NSPS OOO citations will need to be added to the existing permit conditions covering raw material processing. The changes will not result in any relaxation of existing record keeping or monitoring requirements.

A second minor NSR permit amendment dated January 22, 2007 was issued to allow higher sulfur content for the coal, installation of two 100 ton coal bins to replace existing bins, a replacement bucket elevator for raw material feed into the kiln and allow existing electrostatic precipitators (ESPs) to be replaced with more efficient fabric filters. The higher sulfur content for the coal is currently allowed by the Title V permit after a demonstration that there would be no "statistically significant" increase in sulfur emissions as a result of the change. The NSR permit amendment documented the sulfur contents allowed per the demonstration that was completed in the later part of 2006. The coal bins, and the main kiln feed bucket elevator are replacements for existing equipment, and the Title V permit has existing conditions limiting emissions from these units.

A third minor NSR permit amendment dated October 26, 2007. The facility identified during preparations of their Title V permit update application several typographical errors as well as several conditions that needed further clarification. The specific changes that were requested included: (1) correction of a condition reference outlined in condition #57. The correct reference should be changed from #51 to #42; (2) Clarification to include language that addresses the main feed bucket elevator and existing main feed conveyor operations during start-up, shutdown and malfunction operations; (3) Clarification to include language that addresses operation of the new and old coal bins during transfer from one bin to the other; (4) Correction of the language in condition #51 in that the opacity limit listed is not applicable to the clinker cooler stack or the main stack. The opacity limit outlined in this condition is applicable to the fabric filters that vent to the atmosphere but not the clinker cooler or main stack which have limits imposed in conditions #52 and #53; and, (5) Correction of the VOC limit outlined in condition #42. An incorrect limit of 2,850 tons of VOCs had been mistakenly copied. The correct limitation should be listed as 493 tons of VOC per year. The requested changes to the permit were identified as an administrative permit amendment as outlined in 9 VAC 5-80-1935.

A State Operating Permit was issued to the facility to enforce a Reasonably Available Control Technology determination for NO_x emissions from the facility for installation of a low NO_x burner in the kiln. These requirements were incorporated into the January 22, 2007 NSR amendment outlined above. These limits were also incorporated into the Title V permit update. These conditions were subject to both public comment and EPA review. The NO_x requirements

are more stringent than the current Title V permit limits and included lower hourly NO_x emission limits from the kiln main stack.

In addition to the current NSR amendments, 40 CFR 63 Subpart LLL – National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry was amended in December 2006. The updated MACT Standard, §63.1344(g) states “no kiln and in-line kiln/raw mill may use as a raw material or fuel any fly ash where the mercury content of the fly ash has been increased through the use of activated carbon, or any other sorbent unless the facility can demonstrate that the use of that fly ash will not result in an increase of mercury emissions over baseline emissions (i.e. emissions not using the fly ash). The facility has the burden of proving there has been no emissions increase over baseline.” This requirement as well as the appropriate monitoring found at §§ 63.1350 (o) and (p) are added to the Title V permit. The monitoring under § 63.1350(o) requires certification from the flyash supplier that no sorbents (carbon or other) were used to reduce mercury emissions. The later citation, §63.1350(p) allows the facility to demonstrate that the use of fly ash with sorbents used to control mercury will not increase the mercury emissions from the facility. The Roanoke Cement facility has requested the ability to use either monitoring requirement to demonstrate compliance.

TITLE V PROGRAM APPLICABILITY BASIS:

There is no change in the Title V applicability since the Title V permit was issued on December 1, 2003. Roanoke Cement remains a Title V major source for PM₁₀, SO₂, NO_x, CO and VOC.

LEGAL AND FACTUAL BASIS FOR PERMIT CONDITIONS:

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the Commonwealth of Virginia Federal Operating Permit Regulations for the purposes of Title V of the Federal Clean Air Act (9 VAC 5 Chapter 80 Article 1), and underlying applicable requirements in other state and federal rules. Applicable requirement means all of the following as they apply to emission units in a Title V source:

- a. Any standard or other requirement provided for in the State Implementation Plan or the Federal Implementation Plan, including any source-specific provisions such as consent agreements or orders.
- b. Any term or condition of any preconstruction permit issued pursuant to 9 VAC 5-80-1100, Article 8 (9 VAC 5-80-1605 et seq.) of this part or 9 VAC 5-80-30 or of any operating permit issued pursuant to 9 VAC 5 Chapter 80 Article 5, except for terms or conditions derived from applicable state requirements or from any requirement of these regulations not included in the definition of applicable requirement.
- c. Any standard or other requirement prescribed under these regulations, particularly the provisions of 9 VAC 5 Chapter 40 (9 VAC 5-40-10 et seq.), 9 VAC 5 Chapter 50 (9 VAC 5-50-10 et seq.) or 9 VAC 5 Chapter 60 (9 VAC 5-60-10 et seq.), adopted pursuant to requirements of the federal Clean Air Act or under §111, 112 or 129 of the federal Clean Air Act.

- d. Any requirement concerning accident prevention under § 112(r)(7) of the federal Clean Air Act.
- e. Any compliance monitoring requirements established pursuant to either § 504(b) or §114(a)(3) of the federal Clean Air Act or these regulations.
- f. Any standard or other requirement for consumer and commercial products under §183(e) of the federal Clean Air Act.
- g. Any standard or other requirement for tank vessels under §183(f) of the federal Clean Air Act.
- h. Any standard or other requirement in 40 CFR Part 55 to control air pollution from outer continental shelf sources.
- i. Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under Title VI of the federal Clean Air Act, unless the administrator has determined that such requirements need not be contained in a permit issued under this article.
- j. With regard to temporary sources subject to 9 VAC 5-80-130, (i) any ambient air quality standard, except applicable state requirements, and (ii) requirements regarding increments or visibility as provided in Article 8 (9 VAC 5-80-1605 et seq.) of this part.
- k. Any standard or other requirement of the acid deposition control program under Title IV of the Clean Air Act or the regulations promulgated thereunder.
- l. Any standard or other requirement governing solid waste incineration under §129 of the Clean Air Act.

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 9 VAC 5 Chapter 80 Article 1 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the state but is not federally-enforceable is identified in the Title V permit as such.

REQUEST FOR VARIANCES OR ALTERNATIVES:

None

PUBLIC HEARING AND COMMENT PERIOD:

In accordance with the provisions of 9 VAC 5-80-210 D, minor permit amendments are processed without providing notice to the public or affected states. The draft amendment was sent to the EPA for a 45 day review period which began February 5, 2008 and ended March 20, 2008. No comments were received from the EPA regarding this permit action.