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Arkansas Department of Pollution Control and Ecology
Division of Air Pollution Control

Summary Report Relative to Permit Application

Submitted By: Ash Grove Cement Company
Foreman (Little River County)

CSN: 410001 Permit No.: 75-AR-5 Date Issued: 6/30/89

Submittals: Sept. 9, 1988; 10, 1988; Oct. 14, 1988; Nov. 4, 1988; Jan. 12, 1989; Jan. 17, 1989; Feb. 1, 1989

Summary

The Ash Grove Cement Company owns and operates a portland cement plant near Foreman. This plant was previously permitted as Arkansas Cement Corporation and was previously owned by Arkla Gas.

In January 1988 permit 75-AR-4 was issued to Ash Grove which formally changed the owner of record to Ash Grove Cement Company, placed certain restrictions on Ash Grove's use of waste derived fuel (WDF), consolidated all existing emission sources at Ash Grove into one permit, and specified emission limits for each kiln. These limits were based on the actual emissions measured during one test and varied with the fuel being burned.

This permit will allow Ash Grove to burn solid WDF in the cement kilns and it will modify the structure of the allowable emission rate table.

Ash Grove uses the wet process to make cement. In this process limestone slurry is added to one of three rotary kilns. The slurry is fed into the upper end of the kiln and travels slowly to the lower end. As the material travels towards the flame it is dried, decarbonated, and calcinied. Finally, at the lower end of the kiln the material burns and fuses together to form clinker. The clinker is cooled, mixed with gypsum, and ground to the desired fineness. After grinding, the cement is stored for later packaging and shipping.

Each kiln is equipped with an electrostatic precipitator (ESP) which controls particulate emissions and each ESP has two stacks. The three clinker coolers (which once had their own stacks) are ducted to one baghouse (SN-7).

Reviewed By: Mike Porta Approved By: James B. Jones Jr.
Applicable Regulation: Air Code SIP

Specific Conditions

1. The permittee shall maintain and operate the KVB gas monitoring system as described in Attachment I to this permit.

2. Within 180 days after the date of the issuance of this permit, the permittee shall install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the system,for measuring total hydrocarbon emissions to the atmosphere from each kiln capable of burning WDF. This data may be used for enforcement purposes and to determine compliance with this permit and with all applicable State and federal regulations.

3. The feed of WDF to any kiln shall be stopped if the exhaust gases of that kiln have a hourly averaged total hydrocarbon (THC) concentration greater than 20 ppm as measured by a total hydrocarbon analyzer. The waste feed may not resume until the hourly average THC concentration is below 20 ppm.

4. When the total hydrocarbon analyzer is not in operation, the feed of WDF to any kiln shall be stopped if the exhaust gases of that kiln have:

   a) a nitrogen oxides (NOx) concentration less than 200 ppm as measured by the KVB gas monitoring system or

   b) an hourly averaged carbon monoxide (CO) concentration greater than 100 ppm as measured by the KVB gas monitoring system.

   In the case of NOx the waste feed may not resume until the exhaust gas concentration is above 200 ppm. In the case of CO, the waste feed may not resume until the hourly averaged concentration is below 100 ppm.

5. When the permittee is required to demonstrate compliance with the emission limits specified in Table I for kilns 1, 2, or 3, they shall:

   a) sample one stack per kiln in accordance with the test methods specified in specific condition #6 and double the measured emission rate in order to determine the emission rate from the entire kiln, or

   b) sample both stacks simultaneously in accordance with the test methods specified in specific condition #6 and add the measured emission rates.

   The ADPC&E reserves the right to specify which kiln stack shall be tested. We may also require both stacks be

sampled simultaneously if we feel that the emissions from any one stack are not representative of one-half of the kiln's emissions.

6. When required to demonstrate compliance with the emission limits specified in Table I, the permittee shall use the following test methods:

Pollutant	Test Method
Particulate	EPA reference method 5
Sulfur Dioxide	EPA reference method 6
Hydrogen Chloride	Ion Chromatoraphy
Metals	Multiple Metals Train
Opacity	EPA reference method 9

The permittee may substitute an equivalent test method provided it is approved by the Director before it is used.

7. The permittee shall comply with the emission limits specified in Table I. The emission specified in Table I for kilns 1, 2, and 3 apply to each kiln not each stack.

8. The waste derived fuel shall meet the specifications listed in Table II and Table IIa on an as received basis. Each parameter for which a specification is listed shall be measured in accordance with the conditions below.

9. The permittee shall sample at least one load of liquid WDF per day. This data will be evaluated to determine if the fuel shipments are meeting required specifications and to determine if the fuel vendor's sample analysis is accurate. The permittee shall use the test methods specified in Attachment III when conducting the sampling required by this condition unless, prior to use, an equivalent test method has been approved by the Director.

10. The solid WDF shall be sampled in accordance with Attachment II. The permittee shall use the test methods specified in Attachment III when conducting the sampling required by this condition unless, prior to use, an equivalent test method has been approved by the Director. The sample is to be analyzed for Btu, chlorides, and ash content before any solid WDF from the load in question is introduced into the kiln. In addition a composite of each shipment shall be made and analyzed weekly for all parameters listed in Table IIa except for those parameters already tested (Btu, chlorides, and ash).

11. In addition to WDF and coal, the permittee may also burn oil, natural gas, and/or carbon black.

12. The permittee shall burn no more than one container of solid WDF per kiln revolution. The total weight of each container shall be no more than 80 pounds.

TABLE I
Allowable Emission Rates

Source	Pollutant	Allowable Emission Rate lb/hr	Alternate Units
Kiln #1	TSP	19.5	0.3 lb/Ton dry Feed
	SO_2	450.	
	HCl	46.8	0.18 lb/mmBtu
	Pb	0.06	
	Cr	0.086	
	Opacity	20%	
Kiln #2	TSP	19.5	0.3 lb/Ton dry Feed
	SO_2	450.	
	HCl	46.8	0.18 lb/mmBtu
	Pb	0.06	
	Cr	0.086	
	Opacity	20%	
Kiln #3	TSP	27.0	0.3 lb/Ton dry Feed
	SO_2	674.	
	HCl	71.0	0.18 lb/mmBtu
	Pb	0.10	
	Cr	0.144	
	Opacity	20%	
Clinker Cooler	TSP	25	
	Opacity	10%	
Clinker Handling	TSP	1	
	Opacity	5%	

TABLE II
Liquid Waste Derived Fuel Specifications

Parameter	Specifications
Heat of Combustion	Range: 6,000-20,000 Btu/lb Avg.: 11,700
Ash Content	10% wt. or less
Sulphur content	1% or less
Moisture content	No visible standing water
Heavy Metals*	Less than 0.3% wt.
Chlorine content	Less than 3.5% wt. as burned Less than 10% wt. as received
Flash point	Flammable (less than 140°F)
Pesticides or Pesticide by-products	Less than 50 ppm Pesticides or Pesticide by-products

* "Heavy Metals" means arsenic, silver, cadmium, lead, chromium 6, selenium, and mercury.

TABLE IIa
Solid Waste Derived Fuel Specifications

Parameter	Specifications
Heat of Combustion	6,000 Btu/lb
Ash Content	40% wt. or less
Sulphur content	1% or less
Moisture content	No visible standing water
Heavy Metals*	Less than 0.72% wt.
Chlorine content	Less than 8.0% wt. as burned
Pesticides or Pesticide by-products	Less than 50 ppm Pesticides or Pesticide by-products

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* "Heavy Metals" means arsenic, silver, cadmium, lead, chromium 6, selenium, and mercury.