

## STATEMENT OF BASIS

For the issuance of Air Permit # 0075-AOP-R14 AFIN: 41-00001

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Ash Grove Cement Company  
4343 Highway 108  
Foreman, Arkansas 71836

3. PERMIT WRITER:

Joseph Hurt

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Cement Manufacturing  
NAICS Code: 327310

5. SUBMITTALS:

11/1/2011 and 8/14/2012 and 11/20/2012 and 12/7/2012

6. REVIEWER'S NOTES:

Ash Grove Cement Company (AFIN: 41-00001) operates a portland cement plant located at 4457 Hwy 108 West in Foreman, Arkansas 71836. With this permitting action, Ash Grove is:

1. Renewing the Title V permit for the facility;
2. Adding an additional nuisance dust collector, 611.BF9 (North Load Out Spout), on the new truck load out silos;
3. Revising the VOC BACT limits for SN-443.SK10;
4. Incorporating the negotiated conditions of the Permit Appeal Resolution (PAR); and
5. Sources SN-611.BF5 – SN-611.BF9 have been renumbered to SN-631.BF10, SN-631.BF15, SN-631.BF20, SN-631.BF25, and SN-631.BF30.

The total permitted emission increases include 74.5 tpy of VOC.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

The last inspection was performed on June 12, 2012 and June 13, 2012. During the inspection, the facility provided all required documents with no violations noted. However, due to a pending enforcement action, this facility was noted to be out of compliance. The VOC BACT limit for SN-443.SK10 has been revised with this permitting action.

8. PSD APPLICABILITY:

- a. Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? Y
- b. Is the facility categorized as a major source for PSD? Y
  - *Single pollutant  $\geq 100$  tpy and on the list of 28 or single pollutant  $\geq 250$  tpy and not on list, or*
  - *CO<sub>2</sub>e potential to emit  $\geq 100,000$  tpy and  $\geq 100$  tpy/ $\geq 250$  tpy of combined GHGs?*

If yes, explain why this permit modification is not PSD.

9. GHG MAJOR SOURCE (TITLE V):

Indicate one:

- Facility is classified as a major source for GHG and the permit includes this designation
- Facility does not have the physical potential to be a major GHG source
- Facility has restrictions on GHG or throughput rates that limit facility to a minor GHG source. Describe these restrictions: \_\_\_\_\_

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10. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
326.CH26, 403.CHM, 403.CHR, 403.CHU, 431.LS12, 443.CH46, 449.BF1, 449.BF10, 449.BF15, 449.BF20, 449.BF30, 449.BF40, 449.BF50, 449.BF60, 449.BF70, 449.CH30, 449.CH31, 449.CH32, 449.CH33, 449.CH42, 449.HP2, 533.LS10, 534.CH12, 514.BF1, 514.BF2, 514.BF3, 524.BF1, 524.BF2, 611.BF1, 611.BF3, 611.BF4, 611.BF10, 611.BF20, 611.BF30, 611.BF40, 403.BF3, 403.BF4, 403.BF6, 403.BF7, 403.BF8, 612.BF1, 612.BF2, 612.BF3, 612.BF4, 612.BF5, 621.BF1, 621.BF2, 621.BF3, 621.BF5, 621.BF6(E), 621.BF7(W), 621.BF8, 621.BF9, 631.BF10, 631.BF15, 631.BF20, 631.BF25, 631.BF30, 513.BF1, 521.BF1, 521.BF2, 523.BF2, 531.BF10, 531.BF20, 533.BF10, 533.BF20, 534.BF10, 534.BF20, 535.BF10, 535.BF20, 44C.BF10, 502.BF1, 502.BF2, 502.BF3, 327.BF10, 327.BF20, 327.BF30, 442.BF10, 442.BF20, 443.BF20, M9, 326.BF10, 326.BF20, 326.BF30, 329.BF10, 329.BF20, 611.UL10	PM <sub>10</sub>	NESHAP Subpart LLL
41A.BF10, 41A.BF20, 41A.T2, 41A.T10, 44A.T10, 44A.BF10, 44B.BF10	PM <sub>10</sub>	NSPS Subpart Y

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
41A.BF10, 41A.BF20, 44A.BF10, 213.BF10, 213.BF20, 213.T2, 213.T3, 221.BF10, 323.BF10, 325.BF10, 325.BF20, 325.BF30, 41A.T1, 111.T10, 111.T12, 213.T1, 221.CH01, 221.RMB1, 221.T1, 321.CH01, 323.T1, 41A.BF10, 41A.BF20, 44A.BF10	PM <sub>10</sub>	NSPS Subpart OOO
41F.FT10, 40F.FT3, 40F.FT4, 40F.FT5, 40F.FT6, 40F.FT7, 40F.FT8, 40F.FT9, 40F.FTA	VOC	NSPS Subpart Kb
41F.BF10, 41F.FT10, 41F.TK10, 40F.FT3, 40F.FT4, 40F.FT5, 40F.FT6, 40F.FT7, 40F.FT8, 40F.FT9, 40F.FTA, 40F.TX1	Benzene Waste Operations	40 CFR Part 61, Subpart FF
41F.BF10, 41F.FT10, 41F.TK10, 40F.FT3, 40F.FT4, 40F.FT5, 40F.FT6, 40F.FT7, 40F.FT8, 40F.FT9, 40F.FTA, 40F.TX1, RCC	Benzene Waste Operations	40 CFR 63, Subpart DD
443.BF10, 443.BF30, 443.SK10	HAPs and THC	NESHAP Subpart EEE
710-EG10	Varies	NSPS Subpart IIII

The facility is not subject to 40 CFR Part 63, Subpart JJJ – National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins.

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

## 12. MODELING:

## Criteria Pollutants

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ( $\mu\text{g}/\text{m}^3$ )	Averaging Time	Highest Concentration ( $\mu\text{g}/\text{m}^3$ )	% of NAAQS
PM <sub>10</sub>	83.8	150	24-Hour	145.5462 <sup>b</sup>	97%
SO <sub>2</sub>	618.1	80	Annual	23.6 <sup>a</sup>	30%
		1300	3-Hour	882.6 <sup>a</sup>	68%
		365	24-Hour	268.6 <sup>a</sup>	74%
CO	2503.3	10,000	8-Hour	1169.0 <sup>a</sup>	12%
		40,000	1-Hour	4366.8 <sup>a</sup>	11%
NO <sub>x</sub>	685.6	100	Annual	51.1 <sup>a</sup>	51%
Pb	0.14	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.00063 <sup>c</sup>	0.5%

- These modeling results were obtained through detailed modeling performed by the facility in Permit # 0075-AOP-R7. There were no increases in emissions from these pollutants.
- Modeled result of 97.5462  $\mu\text{g}/\text{m}^3$  plus background of 48  $\mu\text{g}/\text{m}^3$  (Little Rock 2007). The PM<sub>10</sub> modeling results were obtained through detailed modeling performed by the facility in Permit 0075-AOP-R13. There were no permitted increases in PM<sub>10</sub> emissions.
- Modeled as the 1<sup>st</sup> highest Month, therefore it is impossible for the rolling 3-month average to exceed the NAAQS.

## Non-Criteria Pollutants:

This facility is subject to 40 CFR 63, Subpart EEE. This subpart requires a risk assessment to be performed and no threat to the public health or safety was found.

13. CALCULATIONS:

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
Kiln	Testing BACT	Various VOC: 44.5 lb/hr	Baghouse	99%	
Fabric filters	Various	0.01 gr/dscf or 0.005 gr/dscf		95%	
Combustion sources	AP-42	Various			Based on equation in AP-42
Crushers	AP-42	Various			based on equation in AP-42
Roads	AP-42	Various			based on equation in AP-42
Storage piles	AP-42	Various			based on equation in AP-42

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
443.SK10	All	See NESHAP EEE		
443.SK10	Methane	18 with 25A or 25A with Methane cutter	Quarterly	To verify the methane portion of emission from 443.SK10
443.SK10	PM (Condensables)	202	Within 60 days of issuance of Permit 0075-AOP-R14, and every 5 years thereafter	§26.703(A)
HR07 - HR09, HR15, HR17 - HR22, 111.R1A-F	Silt content of roads to verify PM <sub>10</sub>	Appendix C.1 and C.2 of AP-42	Within 60 days of issuance of Permit 0075-AOP-R14, and quarterly thereafter until each road segment has been tested twice.	§26.703(A)
HR01 - HR06, HR12 - HR14, HR16, HR23	Road surface silt loading to verify PM <sub>10</sub>			

## 15. MONITORING OR CEMS

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
443.SK10	CO	CEM	Continuously	Y
	VOC	THC Analyzer (CEM)	Continuously	Y
40F.TX1 & 41F.TX10	Combustion chamber temperature	Continuous temperature recorder	Continuously	N

## 16. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
443.SK10 & Plantwide	Clinker production	5,300 tons/day	Daily	Y
443.SK10	Operating Parameter Limits	See Appendix N	Daily	Y
403.P1	Pile area	20 acres	Annually	Y
449.P1	Pile area	4 acres	Annually	Y
41.AP1, 41.AP2, & 41.AP3	Pile area	0.92 acres (total)	Annually	Y
41A.P5	Pile area	1.03 acres	Annually	Y
41A.P6	Pile area	0.52 acres	Annually	Y
221.RMB1	Pile area	4.93 acres	Annually	Y
710.EG10	Operating Hours	500 hours per consecutive 12-month period	As Necessary	Y
40F.TX1	Combustion chamber temperature	≥ 1500°F	Continuously	N
	Breakthrough indicators	Log of observations	Good engineering judgment	N

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
443.BF10, 443.BF30, & 443.SK10	20	NESHAP Subpart EEE	Weekly observation
326.BF10, 326.BF20, 326.BF30, 326.CH26, 327.BF10, 327.BF20, 329.BF10, 329.BF20, 403.CHM, 403.CHR, 403.CHU, 431.LS12, 442.BF20, 443.BF20, 443.CH46, 449.CH30, 449.CH31, 449.CH32, 449.CH33, 449.CH42, 449.HP2, 502.BF2, 502.BF3, 533.LS10, 534.CH12, M9, 514.BF1, 514.BF2, 514.BF3, 524.BF1, 524.BF2, 611.BF1, 611.BF3, 611.BF4, 611.BF10, 611.BF20, 611.BF30, 611.BF40, 611.UL10, 403.BF3, 403.BF4, 403.BF6, 403.BF7, 403.BF8, 612.BF1, 612.BF2, 612.BF3, 612.BF4, 612.BF5, 621.BF1, 621.BF2, 621.BF3, 621.BF5, 621.BF6(E), 621.BF7(W), 621.BF8, 621.BF9, 631.BF10, 631.BF15, 631.BF20, 631.BF25, 631.BF30, 449.BF1, 449.BF10, 449.BF15, 449.BF20, 449.BF30, 449.BF40, 449.BF50, 449.BF60, 449.BF70, 513.BF1, 521.BF1, 521.BF2, 523.BF2, 531.BF10, 531.BF20, 533.BF10, 533.BF20, 534.BF10, 534.BF20, 535.BF10, 535.BF20, 44C.BF10, 502.BF1, 502.BF2, 327.BF30, 442.BF10	10	NESHAP Subpart LLL	Weekly observation



SN	Opacity	Justification for limit	Compliance Mechanism
40F.TX1	10	Department Guidance	Natural gas only
41A.BF10, 41A.BF20, 41A.T2, 41A.T10, 44A.T10, 44A.BF10, 44B.BF10	10	NSPS Subpart Y	Weekly observation
41A.BF10, 41A.BF20, 44A.BF10, 213.BF10, 213.BF20, 213.T2, 213.T3, 221.BF10, 323.BF10, 325.BF10, 325.BF20, 325.BF30, 41A.T1, 111.T10, 111.T12, 213.T1, 221.CH01, 221.RMB1, 221.T1, 321.CH01, 323.T1	Various	NSPS Subpart OOO	Weekly observation
403.P1, 449.P1, 41A.P1, 41A.P2, 41A.P3, 41A.P5, 41A.P6, 211.BF1, 213.P1, 311.BF1, 311.CH10, 311.CH11, 311, CH15, 311.CH16, 403.T1, 403.T2, 449.T1, 449.T4, 502.T1, 502.T2	20	Department Guidance	Weekly observation
311.CH1, 311.CHC	40	Department Guidance	Weekly observation

18. DELETED CONDITIONS:

Former SC	Justification for removal
SC 50	This condition stated that the facility was subject to NESHAP EEE and shall comply with all applicable requirements. The applicable NESHAP EEE requirements were added to the permit with this modification.

19. GROUP A INSIGNIFICANT ACTIVITIES

Source Name	Group A Category	Emissions (tpy)						
		PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs	
							Single	Total
250 gal grinding aid tanks	A-2			<1.0			<1.0	<1.0
Less than 15 gallon DOT Containers	A-2			<1.0			<1.0	<1.0
10,000 gal diesel UST x 3	A-3	See A-3 total.						
10,000 gal Masonry air entraining agent tank	A-3							
1,000 gal used oil UST	A-3							
550 gal motor oil and/or hydraulic fluid UST x 4	A-3							
350 gal used oil tanks x 2	A-3							
Total	A-3			<10			<5	<5
Piles associated with clean-up	A-13	See A-13 total.						
10,000 gallon oil tank	A-13							
12,000 gallon oil tank	A-13							
10,000 gallon unleaded UST	A-13							
30,000 gallon grinding aid tank	A-13							
Total	A-13	<5		<5			<1	<1

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

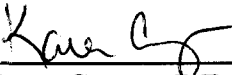
List all active permits voided/superseded/subsumed by the issuance of this permit.

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21. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

  
\_\_\_\_\_  
Karen Cerney, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

## Fee Calculation for Major Source

Revised 08-20-12

Facility Name: Ash Grove Cement Company  
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\$/ton factor	22.97	Annual Chargeable Emissions (tpy)	<u>6596.5</u>
Permit Type	Modification	Permit Fee \$	<u>1711.265</u>

Minor Modification Fee \$	500
Minimum Modification Fee \$	1000
Renewal with Minor Modification \$	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	74.5
Initial Title V Permit Fee Chargeable Emissions (tpy)	

*HAPs not included in VOC or PM:* Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride

*Air Contaminants:* All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensible PM, H2S in TRS, etc.)

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM	<input checked="" type="checkbox"/>	296.7	296.7	0	0	296.7
PM <sub>10</sub>	<input type="checkbox"/>	257.1	257.1	0		
SO <sub>2</sub>	<input checked="" type="checkbox"/>	2699.6	2699.6	0	0	2699.6
VOC	<input checked="" type="checkbox"/>	136.7	211.2	74.5	74.5	211.2
CO	<input type="checkbox"/>	1717.2	1717.2	0		
NO <sub>x</sub>	<input checked="" type="checkbox"/>	2972.4	2972.4	0	0	2972.4
1. (The following HAPs are bubbled together)	<input type="checkbox"/>	0	0	0		
1,1,1-Trichloroethane*	<input type="checkbox"/>	121.46	191.46	70		
1,1,2,2-Tetrachloroethane*	<input type="checkbox"/>	0	0	0		
1,1,2-Trichloroethane*	<input type="checkbox"/>	0	0	0		
1,1-Dichloroethane*	<input type="checkbox"/>	0	0	0		
1,2-Dichloroethane*	<input type="checkbox"/>	0	0	0		
1,2-Dichloropropane*	<input type="checkbox"/>	0	0	0		
Acrylonitrile*	<input type="checkbox"/>	0	0	0		
Allyl Chloride*	<input type="checkbox"/>	0	0	0		
Benzene*	<input type="checkbox"/>	0	0	0		
Bromoform*	<input type="checkbox"/>	0	0	0		
Bromomethane*	<input type="checkbox"/>	0	0	0		
Carbon disulfide*	<input type="checkbox"/>	0	0	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Carbon tetrachloride*	<input type="checkbox"/>	0	0	0		
Chlorobenzene*	<input type="checkbox"/>	0	0	0		
Chloroform*	<input type="checkbox"/>	0	0	0		
Chloromethane*	<input type="checkbox"/>	0	0	0		
Cumene*	<input type="checkbox"/>	0	0	0		
Diethanolamine*	<input type="checkbox"/>	0	0	0		
Ethyl Acrylate*	<input type="checkbox"/>	0	0	0		
Ethylbenzene*	<input type="checkbox"/>	0	0	0		
Ethylene Glycol*	<input type="checkbox"/>	0	0	0		
Iodomethane*	<input type="checkbox"/>	0	0	0		
Methyl Methacrylate*	<input type="checkbox"/>	0	0	0		
Methyl tert-butyl ether*	<input type="checkbox"/>	0	0	0		
Methylene chloride*	<input type="checkbox"/>	0	0	0		
n-Hexane*	<input type="checkbox"/>	0	0	0		
Styrene*	<input type="checkbox"/>	0	0	0		
Toluene*	<input type="checkbox"/>	0	0	0		
trans-1,3-Dichloropropene*	<input type="checkbox"/>	0	0	0		
Vinyl acetate*	<input type="checkbox"/>	0	0	0		
Vinyl Bromide*	<input type="checkbox"/>	0	0	0		
Vinyl chloride*	<input type="checkbox"/>	0	0	0		
Xylene*	<input type="checkbox"/>	0	0	0		
1,2,4-Trichlorobenzene*	<input type="checkbox"/>	0	0	0		
1,4-Dichlorobenzene*	<input type="checkbox"/>	0	0	0		
1,4-Phenylenediamine*	<input type="checkbox"/>	0	0	0		
2,4,5-Trichlorophenol*	<input type="checkbox"/>	0	0	0		
2,4,6,-Trichlorophenol*	<input type="checkbox"/>	0	0	0		
2,4-Dinitrophenol*	<input type="checkbox"/>	0	0	0		
2,4-Dinitrotoluene*	<input type="checkbox"/>	0	0	0		
3,3'-Dichlorobenzidine*	<input type="checkbox"/>	0	0	0		
4,4'-Methylenedianiline*	<input type="checkbox"/>	0	0	0		
4-Aminobiphenyl*	<input type="checkbox"/>	0	0	0		
4-Nitrobiphenyl*	<input type="checkbox"/>	0	0	0		
4-Nitrophenol*	<input type="checkbox"/>	0	0	0		
Aniline*	<input type="checkbox"/>	0	0	0		
Benzidine*	<input type="checkbox"/>	0	0	0		
bis(2-Chloroethyl) ether*	<input type="checkbox"/>	0	0	0		
bis(2-Ethylhexyl) phthalate*	<input type="checkbox"/>	0	0	0		
Dimethyl phthalate*	<input type="checkbox"/>	0	0	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Hexachlorobenzene*	✓	0	0	0		
Hexachlorobutadiene*	✓	0	0	0		
Hexachlorocyclopentadiene*	✓	0	0	0		
Hexachloroethane*	✓	0	0	0		
Hydroquinone*	✓	0	0	0		
Isophorone*	✓	0	0	0		
Napthalene*	✓	0	0	0		
Nitrobenzene*	✓	0	0	0		
o-Anisidine*	✓	0	0	0		
o-Toluidine*	✓	0	0	0		
Pentachloronitrobenzene*	✓	0	0	0		
Pentachlorophenol*	✓	0	0	0		
Phenol*	✓	0	0	0		
-----	✓	0	0	0		
Dioxin/Furan*	✓	1.3E-06	1.30E-06	0		
-----	✓	0	0	0		
(The following emissions are bubbled together)	✓	0	0	0		
HCl	✓	416.6	416.6	0	0	416.6
Chlorine	✓	0	0	0		
-----	✓	0	0	0		
Arsenic*	✓	0.2	0.2	0		
Beryllium*	✓	0.2	0.2	0		
Cadmium*	✓	0.7	0.7	0		
Chromium*	✓	0.2	0.2	0		
Lead*	✓	0.7	0.7	0		
Mercury*	✓	0.4	0.4	0		
-----	✓	0	0	0		
(The following emissions are bubbled together)	✓	0	0	0		
Antimony*	✓	119.3	119.3	0		
Cobalt*	✓	0	0	0		
Manganese*	✓	0	0	0		
Nickel*	✓	0	0	0		
Selenium*	✓	0	0	0		