## STATEMENT OF BASIS

For the issuance of Air Permit # 0075-AOP-R20 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:

Andrea Sandage

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Cement Manufacturing NAICS Code: 327310

5. ALL SUBMITTALS:

Date of	Type of Application	Short Description of Any Changes
Application	(New, Renewal, Modification,	That Would Be Considered New or Modified
	Deminimis/Minor Mod, or	Emissions
	Administrative Amendment)	
9/29/2017	Denevuel	Added SN-326.CH22, Added condensable
9/29/2017	Renewal	PM <sub>10</sub> for SN-443.SK10
3/12/2018	Minor Mod	Installed wider conveyor belt in the clinker
5/12/2018	Williof Mod	dome tunnel.

## 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 SN-326.CH22 Raw Meal.

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- 3. Removed the following sources SN-326.BF20, SN-213.P1, SN-41F.BF10, SN-403.T1, SN-449.T1, SN-HR09, 41F.TK10.
- 4. Revising the specific condition numbering system to a chapter numbering system.
- 5. Revising applicable subpart sections and eliminate paraphrasing of the Federal regulations.
- 6. Updating the permit shield.
- 7. Revising source descriptions and process descriptions.
- 8. Correcting several emission limits due to updated calculations and rounding.
- 9. Source SN-RCC was renamed to SN-BCC. Source SN-M9 was renamed to SN-311-CHA.
- 10. Updating the insignificant activity list.
- 11. Adding condensable  $PM_{10}$  to the  $PM_{10}$  total for SN-443.SK10.
- 12. Removing the negotiated conditions (Specific Conditions 288 291 of Permit 0075-AOP-R19) of the Permit Appeal Resolution (PAR) regarding road emissions. Silt testing was completed in 2014 and was below permit limits.
- 13. Installing a wider conveyor belt in the clinker dome tunnel Minor Mod
- 14. Incorporating the conditions of the Consent Decree and removing Appendix Q Ash Grove Cement EPA Consent Decree.

The permitted emission increases include 400.8 tpy of  $PM_{10}$ , 0.2 tpy of  $SO_2$ , 1.1 tpy of VOC, 0.3 tpy of CO, and 0.16 tpy of HCL/Chlorine. The permitted emission decreases include 0.2 tpy of PM, 0.3 tpy NO<sub>x</sub>, and 0.8 tpy HAPs.

The facility did not undergo a PSD review for PM10 since there was no physical change to SN-443.SK10. This source was not required to be evaluated for condensable PM10 during the previous PSD evaluation and was therefore grandfathered. The PSD permit was issued in 2007 which pre-dates condensable PM10 as a regulated NSR pollutant.

## 7. COMPLIANCE STATUS:

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

This facility was inspected December 7-8, 2015. The following items were noted on the inspection report:

The permittee did provide all of the daily records as required by Specific Conditions 216, 220, 221, 224, 225, 235, 238, 244, and 247. The records were available on site for review; however, these records were not submitted in accordance with General Provision 7. The revised SAM reports were received 12/30/15 and 1/4/16. Informal Enforcement was recommended. No formal enforcement action is pending against this facility.

## 8. PSD/GHG APPLICABILITY:

- a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
- b) Is the facility categorized as a major source for PSD?

• Single pollutant  $\geq 100$  tpy and on the list of 28 or single pollutant  $\geq 250$  tpy and not on list

If yes, explain why this permit modification is not PSD. There were no increases in emissions above the significance threshold for VOC. The facility did not undergo a PSD review for  $PM_{10}$  since there was no physical change to SN-443.SK10. This source was not required to be evaluated for condensable  $PM_{10}$ during the previous PSD evaluation and was therefore grandfathered.

## 9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
326.CH22,326.CH26, 403.CHM 403.CHR, 403.CHU 443.CH56, 443.CH46, 449.BF10, 449.BF15, 449.BF20, 449.BF30, 449.BF40, 449.BF15, 449.BF60, 449.BF70, 449.CH30, 449.CH31, 449.CH32, 449.CH33, 449.CH42 449.HP2, 449.HP4, 449.T7, 449.T8, 533.LS10, 534.CH12, 514.BF1, 514.BF2, 514.BF3, 524.BF1, 524.BF2, 611.BF1, 611.BF3, 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.BF10, 631.BF15, 631.BF20, 631.BF25, 631.BF10, 631.BF15, 531.BF20, 533.BF10, 533.BF20, 534.BF10, 534.BF20, 535.BF10, 533.BF20, 44C.BF10, 44M.BF10, 409.BF10, 442.BF10, 442.BF20, 327.BF30, 442.BF10, 326.BF30, 329.BF10, 329.BF20, 611.UL10	$PM_{10}$	NESHAP Subpart LLL
41A.BF10, 41A.BF20, 41A.T2, 41A.T10, 44A.T10, 44A.BF10, 44B.BF10	$PM_{10}$	NSPS Subpart Y
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	$PM_{10}$	NSPS Subpart OOO

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Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
41F.FT10, 40F.FT3, 40F.FT4, 40F.FT5, 40F.FT6, 40F.FT7, 40F.FT8, 40F.FT9, 40F.FTA	VOC	NSPS Subpart Kb
41F.FT10, 40F.FT3, 40F.FT4, 40F.FT5, 40F.FT6, 40F.FT7, 40F.FT8, 40F.FT9, 40F.FTA, 40F.TX1, 45F.TX10	Benzene Waste Operations	40 CFR Part 61, Subpart FF
41F.FT10, 40F.FT3, 40F.FT4, 40F.FT5, 40F.FT6, 40F.FT7, 40F.FT8, 40F.FT9, 40F.FTA, 40F.TX1, 45F.TX10, 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
Facility	Varies	NESHAP Subpart G
Facility	v alles	NESHAP Subpart XX

## 10. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? Y (Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Regulation 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? Y If not, explain why.

## 11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

## 12. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark Code Ann. § 8-4-318, dated March 2017 and the ADEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

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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
	Testing BACT	Various VOC: 44.5 lb/hr	Baghouse	99%	
Kiln	EPA Consent Decree	lb/ton: 1.5 NO <sub>x</sub> 0.6 SO <sub>2</sub> 0.086 PM/PM <sub>10</sub>	SNCR for NO <sub>x</sub>		30-day rolling average emission limits
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
45F.TX10	AP-42 Chapter 5.2, Equation 1 And Chapter 7.1, equation 4.4	Various VOC: 0.7 lb/hr	RTO	95%	

# 14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
443.SK10	All		See NESHAP EEE	

SN	Pollutants	Test Method	Test Interval	Justification
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	Once every five years	§26.703(A)
HR07, HR15, HR17 - HR22, 111.R1A-F HR01 - HR06, HR12 - HR14, HR16, HR23	Silt content of roads to verify $PM_{10}$ Road surface silt loading to verify $PM_{10}$	Appendix C.1 and C.2 of AP-42	Quarterly until each road segment has been tested twice.	§26.703(A)

## 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)
	СО	CEM	Continuously	Y
443.SK10	VOC	THC Analyzer (CEM)	Continuously	Y
445.5K10	NO <sub>x</sub>	CEM	Continuously	Y
	SO <sub>2</sub>	CEM	Continuously	Y
40F.TX1 & 41F.TX10	Combustion chamber temperature	Continuous temperature recorder	Continuously	Ν
45F.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

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
443.SK10	Daily clinker production	Tons per hour	Hourly	N
443.3K10	Operating Parameter Limits	See Appendix N	Daily	Y
403.P1	Pile area	20 acres	Annually	Y
449.P1	Pile area	4 acres	Annually	Y
213.P2	Pile area	$22,500 \text{ ft}^2$	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
406.171	Breakthrough indicators	Log of observations	Good engineering judgment	N
45F.TX10	Combustion chamber temperature	≥ 1425°F	Continuously	Ν
449.CR10	Fuel oil sulfur content	Not to exceed 0.05%	Each fuel shipment received	Ν

# 17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
443.BF10, 443.BF30, & 443.SK10	20	NESHAP Subpart EEE	Weekly observation

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SN	Opacity	Justification for limit	Compliance Mechanism
326.BF10, 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, 449.T7, 449.T8, 533.LS10, 534.CH12, M9, 514.BF1, 514.BF2, 514.BF3, 524.BF1, 524.BF2, 611.BF10, 611.BF20, 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, 409.BF10, 449.BF10, 449.BF15, 449.BF20, 449.BF30, 449.BF31, 449.BF40, 449.BF50, 449.BF60, 449.BF70, 513.BF1, 521.BF1, 521.BF2, 523.BF2, 531.BF10, 534.BF20, 535.BF10, 535.BF20, 44C.BF10, 440.BF10, 327.BF30, 442.BF10	10	NESHAP Subpart LLL	Monthly observation
40F.TX1 & 45F.TX10	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

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SN	Opacity	Justification for limit	Compliance Mechanism
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.P2, 311.BF1, 311.CH10, 311.CH11, 311, CH15, 311.CH16, 403.T2, 449.CR10, 449.T4	20	Department Guidance	Weekly observation
311.CH1, 311.CHC	40	Department Guidance	Weekly observation

## 18. DELETED CONDITIONS:

Former SC	Justification for removal
288-291	PAR for road emissions. Silt testing completed in 2014 and was below permit limits.

# 19. GROUP A INSIGNIFICANT ACTIVITIES:

	Group A	Emissions (tpy)						
Source Name	Category	PM/PM <sub>10</sub>	$SO_2$	VOC	СО	NO <sub>x</sub>	HAPs	
		1 102/1 10110					Single	Total
500 gal grinding aid tank	A-3							
1000 gal grinding aid tank	A-3							
<15 gal DOT containers	A-3	See A-3 total.						
10,000 gal diesel storage tank – vendor x 2	A-3							
10,000 gal diesel UST x 3	A-3	-						
10,000 gal Masonry air entraining agent tank	A-3							

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	Group A Category	Emissions (tpy)						
Source Name		PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	СО	NO <sub>x</sub>	HAPs	
			202				Single	Total
1,000 gal used oil UST	A-3							
550 gal motor oil and/or hydraulic fluid UST x 3	A-3							
350 gal used oil tanks x 2	A-3							
Total	A-3			4.91			4.91	4.91
Cadence Lab Vents	A-5			0.007			0.007	0.007
Piles associated with clean-up	A-13		1					
10,000 gallon oil tank	A-13							
12,000 gallon grinding aid tank	A-13	See A-13 total.						
10,000 gallon unleaded UST	A-13							
30,000 gallon grinding aid tank	A-13							
Total	A-13	4.92		4.37			0.88	0.88

# 20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #	
0075-AOP-R19	

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

#### Facility Name: Ash Grove Cement Company Permit Number: 0075-AOP-R20 AFIN: 41-00001

\$/ton factor	23.93
Permit Type	Modification
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	
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	334.56
Initial Title V Permit Fee Chargeable Emissions (tpy)	

Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride

Air Contaminants:

HAPs not included in VOC or PM:

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

Annual Chargeable Emissions (tpy)

Permit Fee \$

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
РМ		324.4	324.2	-0.2		
$PM_{10}$		257	657.8	400.8	333.4	657.8
PM <sub>2.5</sub>		0	0	0		
SO <sub>2</sub>		2701.4	2701.6	0.2	0.2	2701.6
VOC		219.7	220.8	1.1	1.1	220.8
со		1722.9	1723.2	0.3		
NO <sub>X</sub>		2978.9	2978.6	-0.3	-0.3	2978.6
1. (The following HAPs are bubbled together)		0	0	0		
1,1,1-Trichloroethane*		195.96	195.94	-0.02		
1,1,2,2-Tetrachloroethane*		0	0	0		
1,1,2-Trichloroethane*		0	0	0		
1,1-Dichloroethane*		0	0	0		
1,2-Dichloroethane*		0	0	0		
1,2-Dichloropropane*		0	0	0		
Acrylonitrile*		0	0	0		
Allyl Chloride*		0	0	0		
Benzene*		0	0	0		
Bromoform*		0	0	0		
Bromomethane*		0	0	0		
Carbon disulfide*		0	0	0		
Carbon tetrachloride*		0	0	0		
Chlorobenzene*		0	0	0		
Chloroform*		0	0	0		
Chloromethane*		0	0	0		
Cumene*		0	0	0		
Diethanolamine*		0	0	0		
Ethyl Acrylate*		0	0	0		
Ethylbenzene*		0	0	0		
Ethylene Glycol*		0	0	0		
Iodomethane*		0	0	0		

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	Check if				Permit Fee	Annual
	Chargeable				Chargeable	Chargeable
Pollutant (tpy)	Emission	Old Permit	New Permit	Change in Emissions	Emissions	Emissions
Methyl Methacrylate*		0	0			
Methyl tert-butyl ether*		0	0			
Methylene chloride*		0	0	-		
n-Hexane*		0	0			
Styrene*		0	0	0		
Toluene*		0	0	0		
trans-1,3-Dichloropropene*		0	0	0		
Vinyl acetate*		0	0	0		
Vinyl Bromide*		0	0	0		
Vinyl chloride*		0	0	0		
Xylene*		0	0	0		
1,2,4-Trichlorobenzene*		0	0	0		
1,4-Dichlorobenzene*		0	0	0		
1,4-Phenylenediamine*		0	0	0		
2,4,5-Trichlorophenol*		0	0	0		
2,4,6,-Trichlorophenol*		0	0	0		
2,4-Dinitrophenol*		0	0	0		
2,4-Dinitrotoluene*		0	0	0		
3,3'-Dichlorobenzidine*		0	0	0		
4,4'-Methylenedianiline*		0	0	0		
4-Aminobiphenyl*		0	0	0		
4-Nitrobiphenyl*		0	0	0		
4-Nitrophenol*		0	0	0		
Aniline*		0	0	0		
Benzidine*		0	0	0		
bis(2-Chloroethyl) ether*		0	0	0		
bis(2-Ethylhexyl) phthalate*		0	0	0		
Dimethyl phthalate*		0	0	0		
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	-		
o-Anisidine*		0	0	-		
o-Toluidine*		0	0	-		
Pentachloronitrobenzene*		0	0	-		
Pentachlorophenol*		0	0	-		
Phenol*		0	0	-		
F 110101 *		0	0			
Dioxin/Furan*		1.30E-06				
Dioxin/Furan*		1.30E-06	1.30E-06			
			-	-		
(The following emissions are bubbled together)	<b>V</b>	0	0			41676
HCl		416.6				416.76
Chlorine		0	0	-		
		0	0	-		
Arsenic*		0.2	0.18	-0.02		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Beryllium*		0.2	0.18	-0.02		
Cadmium*		0.7	0.58	-0.12		
Chromium*		0.2	0.18	-0.02		
Lead*		0.7	0.58	-0.12		
Mercury*		0.4	0.39	-0.01		
		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		
		0	0	0		
Single HAP		0	0	0		
Total Other HAP		0.61	0.14	-0.47		
		0	0	0		
NOx + VOC adjustment	>	-5.4	-5.4	0	0	-5.4