MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
OPERATING PERMIT TECHNICAL REVIEW DOCUMENT
Permit #OP2005-09

Air, Energy, & Mining Division
1520 E. Sixth Avenue
P.O. Box 200901
Helena, Montana 59620-0901

Ash Grove Cement Company
100 MT Highway 518
Clancy, Montana 59634

The following table summarizes the air quality programs testing, monitoring, and reporting requirements applicable to this facility.

Facility Compliance Requirements	Yes	No	Comments
Source Tests Required	X		
Ambient Monitoring Required		X	
COMS Required		X	
CEMS Required	X		PM, SO_2, NO_x, THC, O_2, Hg, Inlet Temp to PMCD
Schedule of Compliance Required		X	
Annual Compliance Certification and Semiannual Reporting Required	X		
Monthly Reporting Required		X	
Quarterly Reporting Required		X	
Applicable Air Quality Programs			
ARM Subchapter 7 Preconstruction Permitting	X		MAQP #2005-12
New Source Performance Standards (NSPS)	X		40 CFR 60 Subpart F; Subpart Y; Subpart OOO
National Emission Standards for Hazardous Air Pollutants (NESHAPS) Part 61	X		Subpart M
Maximum Achievable Control Technology (MACT)	X		Subpart LLL; Subpart ZZZZ; Subpart CCCCCC
Major New Source Review (NSR)		X	
Prevention of Significant Deterioration (PSD)	X		
Risk Management Plan Required (RMP)		X	
Acid Rain Title IV		X	

Compliance Assurance Monitoring Plan (CAM)	X		Appendix F in OP2005-09
Montana Regional Haze Federal Implementation Plan (FIP)	X		40 CFR 52.1396
State Implementation Plan (SIP)	X		General SIP

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Section I. General Information

A. Purpose

This document establishes the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emission units affected by the operating permit proposed for this facility. The document is intended for reference during review of the proposed permit by the Environmental Protection Agency (EPA) and the public. It is also intended to provide background information not included in the operating permit and to document issues that may become important during modifications or renewals of the permit. Conclusions in this document are based on information provided in previous submittals, the renewal applications submitted by Ash Grove Cement Company (Ash Grove) on April 23, 2003, March 29, 2010, and March 15, 2016. Additional information and dates information was received relative to this permit is also described in the permitting history below.

B. Facility Location

The facility is located approximately 5 kilometers south of East Helena and approximately 1.8 kilometers east of the Highway 518 and I-15 interchange near Montana City, Montana. The legal description is Section 12, Township 9 North, Range 3 West, in Jefferson County, Montana.

C. Facility Permitting History

Montana Air Quality Permit

Permit #**62-100169** was issued on July 9, 1969, to Kaiser Cement & Gypsum Corporation for a Joseph Goder Incinerator Model 7P-UD and a H-250-32 secondary gas burner.

Permit **#853-091775** was issued on September 8, 1975, to Kaiser Cement and Gypsum Corporation for a coal conversion fuel system on the nodulizing kiln. The permit was renewed on September 12, 1977, for a coal grinding plant.

Permit **#2005-00** was issued to Kaiser Cement & Gypsum Company to allow for the combustion of coke and coal in the kiln on July 11, 1986. Shortly thereafter, Ash Grove Cement Company purchased Kaiser Cement & Gypsum Corporation.

On July 13, 1991, Ash Grove Cement Company applied for Permit **#2005-01** to allow the facility to use hazardous waste derived fuel in the kiln. This application was subsequently withdrawn on November 15, 1995.

On June 16, 1996, Ash Grove Cement Company was issued Permit #**2005-02** for several construction projects at the facility. This permit allowed Ash Grove Cement Company to modify their existing primary crusher by replacing the 1962 Traylor Blake-Type jaw component rated at 345 ton/hr with a 1988 Hazemag horizontal impact component rated at 300 ton/hr. During this project Ash Grove Cement Company also proposed to upgrade dust collector DA-1. This upgrade consisted of replacing the existing Norblo reverse air shakerless dust collector with a BHA pulsejet conversion package. The flow through the baghouse increased from approximately 5500 (cubic feet per minute) cfm to 11,000 cfm as a result of this upgrade. In addition, Ash Grove Cement Company also proposed to alter the crusher discharge belt system during this project. A channel from belt conveyor designated FB-1 was installed to transport

material leaving the primary crusher to the existing BC-1 conveyor. Drag conveyor #1 was abandoned and removed. Emissions from both the primary crusher and FB-1 are controlled by dust collector DA-1.

Ash Grove Cement Company upgraded the finish mill dust collection system (DA-9). This project replaced the existing Norblo DA shakerless dust collector with a BHA pulse jet conversion package. Two of the five compartments of this dust collection system were dedicated to providing dust control to auxiliary equipment (DA-9 East), while the three remaining compartments were dedicated to controlling emissions from the mill sweep function (DA-9 West). The existing 9200 cfm booster fan was utilized as the DA-9 East discharge fan while an existing 14,300 cfm fan was retained and modified and used as the DA-9 West discharge fan. This modification resulted in a flow increase of 9200 cfm.

Ash Grove Cement Company installed a new mixing system for cement kiln dust (CKD) management. This project was known as the turbulator project. The project consisted of a 5-ton/hr turbulator used to wet CKD prior to its transport to the CKD monofill. This project resulted in a decrease in emissions because the CKD will now be wet prior to transport and the number of vehicle trips to the monofill per day were decreased.

Ash Grove Cement Company modified the petroleum coke feed system. This project involved installation of a 50 ton/hr Gundlach lump breaker in the existing coke hopper. The Gundlach lump breaker does not crush the coke, but rather it contains rollers that separate the aggregated coke into individual coke nodules. There was no increase in emissions as a result of this project. As of June 17, 1997, the Gundlach lump breaker was not installed. Ash Grove Cement Company was required to begin construction by June 13, 1999, and proceed with due diligence until the Gundlach lump breaker is completed otherwise the authority to construct and operate the Gundlach lump breaker would be revoked.

Ash Grove Cement Company installed a second cement cooler in a parallel configuration to the existing cooler. This unit provided the facility with 100% standby capability if the primary cooler fails or is out of service for extended maintenance. The cooler system has been sized so that either cooler #1 or cooler #2 can handle the entire process throughput of the upstream air separator independently. Both coolers are operated simultaneously at reduced rates to improve product-cooling efficiency. There was not an increase in production or emissions as a result of this project, and both coolers are controlled by mill room dust collector DA-9 East.

Ash Grove Cement Company proposed to install a bucket elevator (BE-6) as a stand-by clinker transport method in the event drag conveyor DC-3 or apron conveyor AC-4 failed. Bucket elevator BE-6 may also be used for rail car loading of clinker in response to production shortages at other Ash Grove Cement Company plants. In addition, BE-6 may be used to transfer clinker to outdoor clinker storage piles in the winter during low shipping periods. BE-6 is capable of operating at 55 ton/hr and controlled by a new dust collector. The new dust collector was called DA-19 and is a W.W. Sly model with a BHA pulse jet conversion. DA-19 operates at 2500 cfm. This project resulted in a slight increase in emissions of approximately 0.18 ton/yr. As of June 17, 1997, BE-6 had not been completely installed. Ash Grove Cement Company was required to begin construction by June 13, 1999, and proceed with due diligence until the BE-6 is completed otherwise the authority to construct and operate the BE-6 would be revoked. In addition, during the permitting action Permit **#853-091775** was incorporated into Permit #2005-02.

On June 6, 1996, Ash Grove Cement Company applied for Permit **#2005-03** to install a 1980 belt conveyor (BC-0) rated at 200 ton/hr to remove clinker or crushed limestone from existing Storage Bin #3 or #5. Crushed limestone transported on this conveyor will be loaded into trucks for in-plant usage or customer sale. Clinker transported on this conveyor will either be loaded into trucks for stockpiling outside or loaded into rail cars for customer shipments. A 1000 cfm pulse jet baghouse (DA-20) will be used to control particulate emissions from the conveyor-to-truck material transfer point. This modification resulted in an increase in particulate emissions of 0.75 ton/yr. As of June 17, 1997, construction on BE-0 had not begun. Ash Grove Cement Company was required to begin construction by August 10, 1999, and proceed with due diligence until BC-0 is completed otherwise the authority to construct and operate BC-0 would be revoked.

On July 25, 1996, Ash Grove Cement Company applied for Permit **#2005-04** to allow the facility to place a 900 ton/hour portable primary crusher and associated material transfer equipment at the Clark's Gulch Quarry. Ash Grove Cement Company placed this application on hold and Permit #2005-04 was never issued.

On July 29, 1997, the Department revoked Permit #**62-100169**. The Joseph Goder Incinerator Model 7P-UD and a H-250-32 secondary gas burner are no longer at the facility.

On August 8, 1997, Permit **#2005-05** was issued to Ash Grove Cement Company to allow the facility to substitute 250 ton/year of post-consumer recycled glass for 250 ton/year of mined silica. The Department determined that this activity met the statutory definition of an incinerator contained in Montana Code Annotated (MCA) 75-2-103 and the intent of House Bill 380; therefore, Ash Grove Cement Company was required to demonstrate that this activity posed no more than a negligible risk to human health and the environment.

On November 11, 1998, Permit #2005-06 was issued to Ash Grove Cement Company for replacement of the existing Raymond air separator in the finish cement circuit with a new high efficiency separator. A 35,850 dry cubic feet per minute (dscfm) pulse jet dust collector was proposed to control particulate emissions from the separator and to collect "on-spec" product. The product is forwarded on to cement cooler #2. **Permit #2005-06** replaced Permit #2005-05.

On February 2, 2001, Permit # 2005-07 was issued to Ash Grove Cement Company for the installation and operation of seven temporary, diesel-fired generators at their facility. These generators are necessary because the high cost of electricity has forced Ash Grove Cement Company to curtail operations at their facility. The operation of the generators would not occur beyond 2 years and was not expected to last for an extended period of time, but rather only for the length of time necessary for Ash Grove Cement Company to acquire a permanent, more economical supply of power. **Permit #2005-07** replaced Permit #2005-06.

Ash Grove submitted an application for an administrative amendment to MAQP #2005-07 for the replacement of the existing reverse-air type Dust Collector DA-2 to a pulse-jet cleaning style. The proposed dust collector will reduce particulate matter emissions by half. The project was part of a Supplemental Environmental Project (SEP) required by Administrative Order on Consent Docket Number AQ-07-10. The Department determined the change could be accomplished under the provisions of ARM 17.8.745(1) because the project did not cause or contribute to a violation of any ambient air quality standard and the potential emissions of the project were less than the 15 tons per year de minimis threshold at that time. The dust collector is an insignificant emitting unit listed in Ash Grove's Title V Operating Permit #OP2005-06. **MAQP #2005-08** replaced MAQP #2005-07.

On April 21, 2010, the Department received a request from Ash Grove for an administrative amendment to MAQP #2005-08. Ash Grove requested the removal of the hourly crusher throughput limit and to identify that the crusher has a maximum rated throughput of 400 tons per hour (ton/hr). Because the potential to emit (PTE) was calculated based on emissions from the baghouse operated continuously for 8760 hours per year, and the baghouse operation will not change, removal of the limit will not result in a change to the PTE of the facility. In addition, when using updated AP-42 emission factors, the uncontrolled PTE for the primary crusher is significantly lower at 400 ton/hr than when originally permitted at 300 ton/hr. **MAQP #2005-09** replaced MAQP #2005-08.

On October 19, 2010 the Department received a letter from Ash Grove notifying the Department of two proposed de minimis changes at the plant: replacement of the existing electrostatic precipitator (ESP) on the cement kiln with a pulse-jet baghouse, and installation of a used oil-fired heater in the maintenance shop in the main office. Both changes could be accomplished under the provisions of ARM 17.8.745(1) because the projects will not cause or contribute to a violation of any ambient air quality standards and the potential emissions of the projects are less than the five tons per year de minimis threshold.

On December 16, 2013, the Department received a permit application from Ash Grove for a modification to MAQP #2005-09. Ash Grove requested a production increase to the existing facility, achieved through modernization of the existing plant including a conversion from a "wet" process to a "dry" process for the manufacture of Portland cement. Additional information was received after December 16, 2013, up until May 19, 2014, at which time the Department determined the application "complete". The permit action includes information to process the MAQP application for both New Source Review and Prevention of Significant Deterioration (PSD) requirements. This permit action included language for the existing facility up to the time where the new equipment begins operation and also all of the conditions that become effective after the modernization project is completed. **MAQP #2005-10** replaced MAQP #2005-09.

On September 30, 2014, the Department received a request from Ash Grove for a modification to MAQP #2005-10. Additional information regarding the modification request was received throughout the incompleteness period up until October 16, 2015, at which time the application was considered complete. The modification request asked for clarification and changes related to the solid fuel mill stack CEMS and CPMS requirements. **MAQP #2005-11** replaced MAQP #2005-10.

On March 2, 2016, the Department received a request from Ash Grove for a modification to MAQP #2005-11. When MAQP #2005-10 was issued for the modernization project, it required that the Best Available Control Technology (BACT) be reviewed and modified as appropriate no later than 18 months prior to commencement of construction. As Ash Grove did not commence construction within 18 months of the issuance of MAQP #2005-10, Ash Grove submitted a new BACT analysis which provides an additional 18 month period from the final date of issuance of MAQP #2005-12 for commencement of construction. MAQP #2005-11 was issued after the BACT analysis which was part of MAQP #2005-10 but MAQP #2005-11 did not address revalidation of the BACT analysis. **MAQP #2005-12** replaced MAQP #2005-11.

Title V Operating Permit

The original operating permit application was submitted July 12, 1995. Additional information was received October 7, 1996, October 16, 1996, March 25, 1997, June 13, 1997, June 26, 1997, and January 30, 1998. Permit **#OP2005-00** was effective October 24, 1998.

On October 6, 1998, Ash Grove Cement Company requested a significant modification to the operating permit to add the requirements for new equipment permitted in Permit #2005-06. The Department incorporated the requirements for the new equipment (a high efficiency air separator) into the operating permit. Permit **#OP2005-01** was issued July 10, 1999, and replaced Permit #OP2005-00.

On August 30, 2001, the Department received a letter from Ash Grove Cement Company requesting a de minimis change to OP2005-01 resulting from a modification of the existing Fuel Transfer (FT) Emitting Unit (EU). Ash Grove Cement Company also requested removal of any reference to the Gundlach Lump Breaker (FT-5). Documentation submitted to the Department by Ash Grove Cement Company indicated that the potential fugitive emissions of the proposed project would be less than the 15 tons per year de minimis threshold and would not violate any permit condition or cause or contribute to a violation of air quality standards. In addition, because the Gundlach Lump Breaker was never installed, the Department removed reference to the Gundlach Lump Breaker from the operating permit. Permit **#OP2005-02** replaced Permit #OP2005-01.

On April 23, 2003, Ash Grove Cement Company submitted an operating permit renewal application. The permit action included that information and updated the permit. Permit **#OP2005-03** replaced Permit #OP2005-02.

On January 17, 2006, the Ash Grove Cement Company requested a minor change to the CAM Plan for the Clinker Cooler Stack Baghouse. They requested to change the definition of an excursion as a daily average differential pressure of below 3 inches of water pressure to below 2. This permit action made these changes to the permit as well as addressed minor comments received from Ash Grove Cement Company. Permit **#OP2005-04** replaced Permit #OP2005-03.

On September 19, 2007, the Department received a request for an administrative amendment to Permit #OP2005-04, and MAQP 2005-07, for the replacement of the existing reverse-air type Dust Collector DA-2 to a pulse-jet cleaning style. The proposed dust collector reduced particulate matter emissions by half. The project was part of a Supplemental Environmental Project (SEP) required by Administrative Order on Consent Docket Number AQ-07-10. The Department determined the change could be accomplished under the provisions of ARM

17.8.745(1) because the project did not cause or contribute to a violation of any ambient air quality standard and the potential emissions of the project were less than the 15 tons per year de minimis threshold. **Permit #OP2005-05** was not issued prior to the renewal application being submitted; therefore, Permit action #OP2005-05 was rolled into **Permit #OP2005-06**.

On March 29, 2010, the Department received a complete Title V Operating permit renewal application from Ash Grove for the Montana City facility. There were no physical changes to the facility or processes at the facility that have not been covered by previous submittals. All of the equipment and control device information required for the operating permit renewal process was previously submitted to the Department. In addition, Ash Grove requested some minor changes to language in the Title V Operating Permit. Title V Operating **Permit #OP2005-06** replaced Title V Operating Permit #OP2005-04.

De Minimis requests were also received on May 15, 2012, and August 28, 2012, and these were each approved by the Department. Once the equipment associated with the May 15, 2012, request is operating, Ash Grove Cement Company will have one year to submit an update to the Title V Operating Permit. A request was also received by the Department on September 14, 2012, requesting an extension to the applicable Portland Cement NESHAP particulate limit and related monitoring.

On August 30, 2012, Ash Grove requested a minor change to the CAM Plan for the Clinker Cooler Stack Baghouse. They requested a change from a differential pressure operating range of 2 to 10 inches of water column, to 1 to 10 inches of water column based on the most recent historical data. The basis for the change was based upon the start-up history of the system prior to the filter bags having any dust cake to create adequate pressure drop to meet the low end of the permitted operating range. Without the change, compliance issues would likely occur associated with these normal start-up occurrences. The transducer accuracy was also changed from +/- 1 inch of water column to +/- 0.1 inch of water column. This will ensure the delta pressure can effectively be monitored below 1 inch of water column. Appendix H was modified to reflect the CAM Plan changes for the Clinker Cooler Stack Baghouse. Title V Operating Permit **#OP2005-07** replaced Title V Operating Permit #OP2005-06.

On November 30, 2012, the Department received an application to modify Title V Operating Permit #OP2005-07. The application included the following modifications:

- Replace the existing electrostatic precipitator (ESP) on the cement kiln (EU006) with a jet pulse baghouse.
- Add a Lime Unloading System with lime silo and associated dust collector in support of a proposed Semi-Dry SO_2 scrubbing system
- Modify the Cement Kiln Dust (CKD) Load out system and associated dust collectors
- Revise the Pollution Control Device Inspection and Maintenance Plan to identify the additional dust collectors being installed with this project
- Install a used-oil-fired heater in the maintenance shop in the main office (insignificant emitting unit)

It was determined that the above modifications satisfy the definition of de minimis under Administrative Rules of Montana (ARM) 17.8.745 and would not require a Montana air quality permit, and therefore, in accordance with ARM 17.8.1224(1), could be made without modifying

the facility's Title V operating permit. However, the previous version of the operating permit (#OP2005-07) included a CAM plan that identified the ESP as the control equipment on the kiln. Updating the CAM plan to replace the ESP with the proposed jet pulse baghouse, qualifies as a significant modification to the operating permit in accordance with ARM 17.8.1227(1). This permitting action modified #OP2005-07 to update the kiln CAM plan and add the above listed changes in emitting units.

In addition, the revised Portland Cement MACT Standard and the Regional Haze Federal Implementation Plan (FIP) were recently promulgated. In response, Ash Grove requested that the associated applicable requirements be updated in Title V Operating permit OP#2005-08. Title V Operating Permit **#OP2005-08** replaced Title V Operating Permit #OP2005-07.

De Minimis Requests:

Ash Grove has also submitted a number of requests which are identified as "De Minimis" under the Administrative Rules of Montana (ARM) 17.8.745. Since the March 29, 2010, renewal application was received De Minimis requests were submitted on October 18, 2010 (two were received), November 11, 2010, May 14, 2012 (supplement to October 18 submittal), August 24, 2012, July 3, 2013, August 7, 2013, December 30, 2013, January 14, 2014 (two were received), September 26, 2014, and February 25, 2015.

D. Current Permitting Action

On March 15, 2016, the Department received an application to renew Title V Operating Permit #OP2005-08. The application did not ask to include the future replacement kiln and therefore only conditions from the Montana Air Quality Permit associated with existing equipment are included. If the new kiln and associated equipment are constructed in the future, the Operating Permit will be updated at that time. Ash Grove also asked to provide "streamlining" in several instances where very similar requirements were replaced by the most stringent condition to avoid nearly identical permit conditions. Ash Grove also requested the removal of two CAM plans as these two units were no longer subject to the CAM rules due to the use of Continuous Parametric Monitoring Systems. Title V Operating Permit **#OP2005-09** replaces #OP2005-08.

E. Taking and Damaging Analysis

House Bill (HB) 311, the Montana Private Property Assessment Act, requires analysis of every proposed state agency administrative rule, policy, permit condition or permit denial, pertaining to an environmental matter, to determine whether the state action constitutes a taking or damaging of private real property that requires compensation under the Montana or U.S. Constitution. As part of issuing an operating permit, the Department of Environmental Quality is required to complete a Taking and Damaging Checklist. As required by 2-10-101 through 2-10-105, Montana Code Annotated (MCA), the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

F. **Compliance Designation**

Ash Grove was last inspected on August 24, 2016, and was found to be in compliance with all applicable rules and regulations.

Ash Grove has been successful in implementing the requirements of the Consent Decree which are reflected in permit conditions which have been including in OP #2005-09.

Section II. Summary of Emission Units

A. Facility Process Description

The production of Portland cement begins at the quarry. For Ash Grove, approximately 85 to 99 percent of the raw materials used in the cement process are combined high and low-grade limestone quarried from Clark's Gulch quarry. Limestone rock and other raw materials are blasted and loaded onto trucks and transported to the crusher or to stockpiles. The raw materials are conveyed from the primary and secondary crushers and delivered by bucket elevator to the storage bins. From the storage bins, the raw materials are conveyed to the ball mill where the ore is ground with water to form a slurry and sent to storage tanks. In the tanks, the slurry is blended thoroughly before entering the kiln. Slurry is pumped to the uphill end of the kiln and heated, evaporating water from the slurry forming clinker.

Ash Grove plant uses a combination of natural gas, coal and/or coke, heavy oils and pitch as fuel sources for the clinker production. When the clinker leaves the kiln, it is cooled, transported by drag chains, pan conveyor and bucket elevator to the clinker bins or outside storage. From there, clinker and gypsum go to the finish ball mill, where it is ground together with gypsum to produce Portland cement. The final cement product is conveyed to storage silos where it is loaded into railroad cars, bulk trucks, or bagged and loaded onto trucks.

B. Emission Units and Pollution Control Device Identification

Section II of the operating permit contains a summary table of emission units and the corresponding pollution control device or practice.

C. Categorically Insignificant Sources/Activities

The Administrative Rules of Montana (ARM) 17.8.1201(22)(a) defines an insignificant emissions unit as one that emits less than 5 tons per year of any regulated pollutant, has the potential to emit less than 500 pounds per year of lead or any hazardous air pollutant, and is not regulated by any applicable requirement other than a generally applicable requirement. The list of insignificant emitting units at the Ash Grove facility is summarized in the following table.

Emissions Unit ID	Description
CCP	Coal/Coke Preparation
CDA	Clinker Drag Conveyor A
CDB	Clinker Drag Conveyor B
CSA	Transfer to/from Cement Storage Silos A
CSB	Transfer to/from Cement Storage Silos B
DL	Dust Loadout
DT	Dust Return System
EC	Clinker Bucket Conveyor
LS/416.BF3	Lime Silo
PLO2	Product Loadout 2
PST	Petroleum Storage Tanks
QA	Quarry Activities

Emissions Unit ID	Description
RT	Raw Material Transfer
SC	Slag/Silica/Clinker Conveyors
SLA	Storage Loadout A
SLM	Specialty Bin
SLN	Storage Loadout at New Silos
TFS	Transfer from Silos
TSC	Transfer/Secondary Crushing
VE	Vehicle Emissions
OFH	Used-oil-fired Heater

Section III. Permit Conditions

A. Emission Limits and Standards

Applicable requirements for significant emission units are listed after each emission unit. At the time of permit issuance, the requirements listed underneath each emission unit or group of emission units are believed to be the applicable requirements. The Department does not intend for the facility-wide conditions to supersede the applicable requirements listed below for each emission unit or group of emission units.

New limits and monitoring requirements have been added in Operating Permit # OP2005-09 which come from the Consent Decree in United States v. Ash Grove Cement Co., Case No. 2:13-cv-02299-JTM-DJW, doc. 27 (D. Kan. 8/14/13), as amended by doc. 28 on 10/16/15.) (Consent Decree). Additionally, some "streamlining" was performed where very similar conditions from the Portland Cement MACT, Regional Haze and the Consent Decree overlapped. These limits were associated with particulate matter (PM), sulfur dioxide (SO_2) and oxides of nitrogen (NOx). The descriptions of the streamlining changes are outlined within OP #2005-09 in Section IV.C.

B. Monitoring Requirements

ARM 17.8.1212(1) requires that all monitoring and analysis procedures or test methods required by any applicable requirement to be contained in the operating permit. In addition, when the applicable requirement does not require periodic testing or monitoring, periodic monitoring must be prescribed that is sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit.

The requirements for testing, monitoring, recordkeeping, reporting and compliance certification, sufficient to assure compliance, do not require the permit to impose the same level of rigor for all emission units. Furthermore, they do not require extensive testing or monitoring to assure compliance with the applicable requirements for emission units that do not have significant potential to violate emission limitations or other requirements under normal operating conditions. When compliance with the underlying applicable requirements for an insignificant emission unit is not threatened by lack of regular monitoring and when periodic testing or monitoring is not otherwise required by the applicable requirement, the status quo (i.e., no monitoring) will meet the requirements of ARM 17.8.1212(1). Therefore, the permit does not include monitoring for insignificant emission units.

The permittee can rely on the results of periodic monitoring to certify compliance. However, compliance with the monitoring requirements in the operating permit does not prohibit the use of other approved methods for determining compliance with an applicable emission limit or requirement. Furthermore, Ash Grove will not be shielded from any enforcement action, even if the required monitoring methods listed in the permit indicates compliance with the applicable requirement, if an approved method demonstrates noncompliance.

The permit includes periodic monitoring or recordkeeping for each applicable requirement. The information obtained from the monitoring and recordkeeping will be used by the permittee to periodically certify compliance with the emission limits and standards. However, the Department may request additional testing to determine compliance with the emission limits and standards.

C. Test Methods and Procedures

The operating permit may not require testing for all sources if routine monitoring is used to determine compliance, but the Department has the authority to require testing if deemed necessary to determine compliance with an emission limit or standard. In addition, the permittee may elect to voluntarily conduct compliance testing to confirm its compliance status. The Department determined the frequency of emission testing for particulate and opacity based on the potential to emit of each emission unit as well as the requirements applicable to each emission unit.

D. Reporting Requirements

Reporting requirements are included in the permit for each emission unit and Section V of the operating permit, "General Conditions", explains the reporting requirements. However, the permittee is required to submit semi-annual and annual monitoring reports to the Department and to annually certify compliance with the applicable requirements contained in the permit. The reports must include a list of all emission limit and monitoring deviations, the reason for any deviation, and the corrective action taken as a result of any deviation.

E. Recordkeeping Requirements

The permittee is required to keep all records listed in the operating permit as a permanent business record for at least five years following the date of the generation of the record.

F. Public Notice

In accordance with ARM 17.8.1232, a public notice was published in the *Helena Independent Record* newspaper on or before February 10, 2017. The Department is providing a 30-day public comment period on the draft operating permit from February 10, 2017 to March 13, 2017. ARM 17.8.1232 requires the Department to keep a record of both comments and issues raised during the public participation process. The comments and issues received by March 13, 2017 will be summarized, along with the Department's responses, in the Proposed Permit. All comments received during the public comment period will be promptly forwarded to Ash Grove so they may have an opportunity to respond to these comments as well.

G. Draft Permit Comments

Permit Reference	Permittee Comment	Department Response
Section III.A.14	Delete this condition. Table 1 to 40 CFR 63 Subpart LLL (PCMACT) (after 63.1359) indicates that 63.6(e)(3) is not an applicable requirement.	Changed as requested.
Section III.B.4	Replace the Method 9 requirement with the requirements from 63.1350(f) . Ash Grove recommends the following language: "Ash Grove shall either install a Baghouse Leak Detection System and comply with the requirements in 40 CFR 63.1350(f)(4)(ii) or perform a monthly 10-minute visible emissions survey using Method 22 and in compliance with the requirements of	The language as written, only requires a Method 9 if the Department requests it. No change made.

	40 CFR 63.1350(f)(1) and (f)(3) to demonstrate compliance . .. "	
Section III.B.11.b	Delete this condition. This issue is covered by the prompt deviation requirements in Section V.E.	Department has opted to leave as is to further clarify specific requirements for this baghouse.
Section III.C.12.b	Delete this condition. This issue is covered by the prompt deviation requirements in Section V.E.	Department has opted to leave as is to further clarify specific requirements for this baghouse.
Section III.G.5	Modify the emission limit from 8.0 to 7.5 lb/ton clinker in accordance with USEPA's correspondence dated 12/29/16 approving the Demonstration Phase report. Also, modify the reference from Consent Decree 27 to 28.	Changed as requested.
Section III.G.14	Change the frequency of a Method 9 test from annual to "as required by the department". The PM emission limit and monitoring requirements of PCMACT and the Consent Decree are significantly more stringent than the 40% opacity limit. Conducting annual Method 9 testing is not an effective compliance monitoring method. To demonstrate, a Method 9 was performed on May 28, 2014 while injecting dust to establish the Site Specific Operating Limit which resulted in emissions of 0.06 lb/ton clinker (70% of the emission limit). The Method 9 reading was 0% opacity.	Changed as requested.
Section III.G.15	Cite is incomplete. Modify the cite in the third line to". . and 40 CFR 63.1350(b) and (d)."	Changed as requested.
Section III.G.17	Change the reference from Subpart F to Section 52.1396. The kiln is not subject to Subpart F	Changed as requested.
Section III.G.21	Remove requirements identifying initial compliance demonstration, this requirement has been completed. Ash Grove recommends the following language: "Ash Grove shall monitor compliance with the mercury limit in Section III.G.8 using a mercury GEMS or sorbent trap monitoring system as specified in 40 CFR 63.1350(k). (ARM 17.8.105, ARM 17.8.106, ARM 17.8.342, ARM 17.8.749, and 40 CFR 63, Subpart LLL)."	Changed as requested.
Section III.G.22	Remove requirements identifying initial compliance demonstration, this requirement has been completed. Ash Grove recommends the following language: "Ash Grove shall demonstrate compliance with the THC limit (measured as propane and corrected to 7% oxygen) in Section III.G.9 or the alternative limit in Section III.G.10 in accordance with the requirements of 40 CFR 63.1350(i) or (j), as appropriate (ARM 17.8.105, ARM	Changed as requested.

	17.8.106, ARM 17.8.342, ARM 17.8.749, and 40 CFR 63, Subpart LLL)."	
Section III.G.23	Include that the monitor is to be located at the inlet to, or upstream of, the kiln PMCD	Changed as requested.
Section III.G.33	Remove requirement to operating CEMS, this is contained in Section G.18	Changed as requested.
Section G.35	In the first sentence, insert".. .and record the hourly and daily. . ." PCMACT and the Consent Decree require hourly production while BART requires daily.	Changed as requested.
Section G.35.a	Include the language; "The system for measuring hourly clinker production must be maintained within ±5 percent accuracy;	Changed as requested.
Section G.35.b	Include the language; "The system for measuring feed must be maintained within ±5 percent accuracy." Also in this condition the reference should be Consent Decree 33, 63.1350, and 52.1396	Changed as requested.
Section G.39.p	Remove this requirement and replace it with the language in 63.1354(b)(9)(iv). 63.1354 no longer requires a summary of the inspection.	Changed as requested.
Section IV.A	A number of requirements were listed as non-applicable in Section 7.1 of the permit application but it appears this table was not updated. Please include the following non-applicable requirements; 40 CFR 60 Subparts AAAA, EEEE, FFFF, HHHH-MMMM and 0000 40 CFR 63 Subparts B-E, J, DODD, EEEE, FFFF, HHHH- KKKK, MMMM- RRRR, WWWW, YYYY, AAAAA- NNNNN, PPPPP- UUUUU, WV\MJWW-ZZZZZ, BBBBBB, DDDDDD- HHHHHH, JJJJJJ, LLLLLL- TTTTTT , VVVVW- ZZZZZZ, AAAAAAA-EEEEEEE, and HHHHHHHH	Updated the list but did not include those for which the Department does not provide shields for including 40 CFR 63 B-E.
Section IV.C	Change NOx emission limit to 7.5 lb/ton in the table.	Changed as requested.
Technical Review Document	Table- The required CEMS list is incomplete , recommend adding THC, 02 , and Hg	Changed as requested
Technical Review Document	Table- The table lists NESHAPS (should be clarified as Part 61) as non-applicable; however, Subpart M - National Emission Standards for Asbestos is an applicable requirement	Changed as requested
Technical Review Document	Table- Please clarify the comment to Compliance Assurance Monitoring Plan to indicate that Appendix F refers to the Operating Permit.	Changed as requested.
Technical Review Document	Section III.A- The last sentence contains a typo, should be Section IV.C	Changed as requested.

Section IV. Non-Applicable Requirements Analysis

The permittee provided a Non-Applicable Requirements analysis in the March 15, 2016, Title V renewal application. The Department granted a shield for all non-applicable requirements on a facility wide basis that the Department agreed was non-applicable. The discussion below lists the requirements that the permittee identified as non-applicable and the reason(s) that the Department did not provide a shield for the requirement.

Table 4. Regulations Not Identified as Non-Applicable By the Department.

Reason	Rule Citation	
These rules do not have specific requirements for major sources because they are requirements for EPA or state and local authorities. These rules can be used as authority to impose specific requirements on a major source.	ARM 17.8.130 ARM 17.8.142 ARM 17.8.510 ARM 17.8.808 ARM 17.8.825 ARM 17.8.826 ARM 17.8.1108 ARM 17.8.1109 ARM 17.8.1210 ARM 17.8.1211 ARM 17.8.1212 ARM 17.8.1213 ARM 17.8.1214 ARM 17.8.1215 ARM 17.8.1225 ARM 17.8.1228 ARM 17.8.1231 ARM 17.8.1232	40 CFR 50 40 CFR 51 40 CFR 53 40 CFR 54 40 CFR 56 40 CFR 58 40 CFR 60, Subpart B 40 CFR 65 40 CFR 66 40 CFR 67
These regulations may not be applicable to the source at this time, however, these regulations may become applicable during the life of the permit.	ARM 17.8.120 ARM 17.8.121 ARM 17.8.131 ARM 17.8.140 ARM 17.8.141 ARM 17.8.316 ARM 17.8.511 ARM 17.8.514 ARM 17.8.515 ARM 17.8.611 ARM 17.8.612 ARM 17.8.701 *et seq.*	ARM 17.8.804 ARM 17.8.805 ARM 17.8.828 ARM 17.8.905 ARM 17.8.906 ARM 17.8.1005 ARM 17.8.1006 ARM 17.8.1007 ARM 17.8.1214 ARM 17.8.1222 ARM 17.8.1223 ARM 17.8.1224 ARM 17.8.1226 ARM 17.8.1227
This federal regulation has specific procedural requirements that may	40 CFR 61, Subpart M	

Reason	Rule Citation	
become relevant during the permit term.		
This rule contains requirements for regulatory authorities and not major sources; this rule can be used to impose specific requirements on a major facility.	40 CFR 62	
Rules that are always applicable to a major source and may contain specific requirement for compliance.	ARM 17.8.204 ARM 17.8.205 ARM 17.8.206 ARM 17.8.326	
These regulations are applicable requirements to specific emissions units; therefore, a facility wide shield will not be granted.	ARM 17.8.324 40 CFR 60, Subpart A 40 CFR 60, Subpart F 40 CFR 60, Subpart Y 40 CFR 60, Subpart OOO	
These rules include either a statement of purpose, applicability statement, regulatory definitions, or a statement of incorporation by reference. Therefore, facility wide permit shields will not be granted for these rules.	ARM 17.8.201 ARM 17.8.302 ARM 17.8.301 ARM 17.8.330 ARM 17.8.401 ARM 17.8.402 ARM 17.8.403 ARM 17.8.601 ARM 17.8.605 ARM 17.8.806 ARM 17.8.807 ARM 17.8.901 ARM 17.8.902 ARM 17.8.904	ARM 17.8.1103 ARM 17.8.1101 ARM 17.8.1001 ARM 17.8.1002 ARM 17.8.1004 40 CFR 52 40 CFR 61, Subpart A 40 CFR 63, Subpart A 40 CFR 63, Subpart B 40 CFR 63, Subpart D 40 CFR 63, Subpart E
Repealed Regulations	ARM 16.8.301 ARM 16.8.401 *et seq.* ARM 16.8.805 ARM 16.8.1104	ARM 16.8.1414 ARM 16.8.1419 ARM 17.8.1601 ARM 16.8.1904
Shields will not be granted for regulations that do not have specific requirements for major sources. These regulations contain requirements for state and local authorities.	MCA 75-2-101 *et. seq.* MCA 75-2-201 *et. seq.* MCA 75-2-301 *et. seq.* MCA 75-2-401 *et. seq.* MCA 75-2-501 *et. seq.*	42 U.S.C. Section 7412 42 U.S.C. Section 7651-7651o 42 U.S.C. Section 7414(a)(3) 42 U.S.C. Section 7429 42 U.S.C. Section 7511b(e) 42 U.S.C. Section 7511b(f) 42 U.S.C. Section 7671-7671q

Reason	Rule Citation
	42 U.S.C. Section 7661c(e)
These regulations are not applicable to the permittee pursuant to ARM 17.8.1201(10); a facility wide shield will not be granted.	40 CFR 55 40 CFR 79 40 CFR 69 40 CFR 80

SECTION V. FUTURE PERMIT CONSIDERATIONS

A. MACT/NESHAP Standards

Ash Grove is subject to 40 CFR 63, Subpart LLL-*National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry* (PC MACT). Ash Grove requested the Department's concurrence to classify the Ash Grove -Montana City Plant as an "area source". In a letter dated February 25, 2002, the Department concurred that the Ash Grove -Montana City Plant is an area source under the PC MACT. Currently, the kiln is subject to the dioxin and furan emission limits and the Particulate Matter Control Device (PMCD) inlet temperature-operating limit to control dioxin and furan emissions. The compliance date for the revised PC MACT was September 9, 2015. Ash Grove is now subject to mercury, total hydrocarbon (THC), organic air toxics, and dioxin and furan emission limits and the Particulate Matter Control Device (PMCD) inlet temperature operating limit to control dioxin and furan emissions. Additionally, the clinker cooler at Ash Grove must meet the appropriate particulate matter emission limits and operating limits as identified in Subpart LLL.

40 CFR 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines*, pertains to this facility because the facility contains a 105 hp stationary Diesel Engine (auxiliary kiln drive).

This facility dispenses gasoline into motor vehicles, and is an area source; therefore, the facility is subject to 40 CFR 63, Subpart CCCCCC, *National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities*. This facility dispenses less than 10,000 gallons of gasoline a month.

As of issuance of this permit, the Department is unaware of any other current or proposed MACT or NESHAP standards that are applicable to this facility.

B. NSPS Standards

The air separator, bucket elevator (BE-6) and belt conveyor (BC-0) are subject to the requirements of 40 CFR 60, Subpart F - *Standards of Performance for Portland Cement Plants*.

Emitting units FT, FC, and CCP are subject to 40 CFR 60, Subpart Y, *Standards of Performance for Coal Preparation Plants*.

Emitting unit CPC contains sources belt conveyor (FB-1) and primary crusher (AC-1) and therefore are subject to 40 CFR 60, Subpart OOO, *Standards of Performance for Nonmetallic Mineral Processing Plants*.

As of the issuance of this permit, the Department is unaware of any additional proposed or pending NSPS standards that are applicable to this facility.

C. Risk Management Plan

Currently, Ash Grove does not exceed the minimum threshold quantities for any regulated substance listed in 40 CFR 68.115 for any facility process. Consequently, this facility is not required to submit a Risk Management Plan. If a facility has more than a threshold quantity

of a regulated substance in a process, the facility must comply 3 years after the date on which a regulated substance is first listed under 40 CFR 68.130 or the date on which a regulated substance is first present in more than a threshold quantity in a process, whichever is later.

D. Compliance Assurance Monitoring (CAM) Plan

An emitting unit located at a Title V facility that meets the following criteria listed in ARM 17.8.1503 is subject to Subchapter 15 and must develop a CAM Plan for that unit:

- The emitting unit is subject to an emission limitation or standard for the applicable regulated air pollutant (other than emission limits or standards proposed after November 15, 1990, since these regulations contain specific monitoring requirements);
- The emitting unit uses a control device to achieve compliance with such limit; and
- The emitting unit has potential pre-control device emission of the applicable regulated air pollutants that are greater than major source thresholds.

With this revision of the Operating Permit both the Kiln Stack Pulse Jet Baghouse and the Clinker Cooler Stack Baghouse CAM Plans have been removed because they are exempt from needing a CAM plan now that they each are monitored with a PM Continuous Parametric Monitoring System. These CAM Plans were removed from the appendices. The Finish Mill is the only emitting unit that meets all the applicability criteria in ARM 17.8.150: The CAM Plan for the Finish Mill is located in Appendix F in Ash Grove's Title V Operating Permit.

F. PSD and Title V Greenhouse Gas Tailoring Rule

On May 7, 2010, EPA published the "light duty vehicle rule" (Docket # EPA-HQ-OAR-2009-0472, 75 FR 25324) controlling greenhouse gas (GHG) emissions from mobile sources, whereby GHG became a pollutant subject to regulation under the Federal and Montana Clean Air Act(s). On June 3, 2010, EPA promulgated the GHG "Tailoring Rule" (Docket # EPA-HQ-OAR-2009-0517, 75 FR 31514) which modified 40 CFR Parts 51, 52, 70, and 71 to specify which facilities are subject to GHG permitting requirements and when such facilities become subject to regulation for GHG under the PSD and Title V programs.

Under the Tailoring Rule, any PSD action (either a new major stationary source or a major modification at a major stationary source) taken for a pollutant or pollutants other than GHG that would become final on or after January 2, 2011, would be subject to PSD permitting requirements for GHG if the GHG increases associated with that action were at or above 75,000 TPY of carbon dioxide equivalent (CO_2e) and greater than 0 TPY on a mass basis. Similarly, if such action were taken, any resulting requirements would be subject to inclusion in the Title V Operating Permit. Facilities which hold Title V permits due to criteria pollutant emissions over 100 TPY would need to incorporate any GHG applicable requirements into their operating permits for any Title V action that would have a final decision occurring on or after January 2, 2011.

Starting on July 1, 2011, PSD permitting requirements would be triggered for modifications that were determined to be major under PSD based on GHG emissions alone, even if no other pollutant triggered a major modification. In addition, sources that have not been considered PSD major sources based on criteria pollutant emissions would become PSD major sources if their facility-wide potential emissions equaled or exceeded 100,000 TPY of CO_2e and 100 or 250 TPY of GHG on a mass basis depending on their listed status in ARM 17.8.801(22). With respect to Title V, sources not currently holding a Title V permit that have potential facility-wide emissions equal to or exceeding 100,000 TPY of CO_2e and 100 TPY of GHG on a mass basis would be required to obtain a Title V Operating Permit.

The Supreme Court of the United States (SCOTUS), in its Utility Air Regulatory Group v. EPA decision on June 23, 2014, ruled that the Clean Air Act neither compels nor permits EPA to require a source to obtain a PSD or Title V permit on the sole basis of its potential emissions of GHG. SCOTUS also ruled that EPA lacked the authority to tailor the Clean Air Act's unambiguous numerical thresholds of 100 or 250 TPY to accommodate a CO2e threshold of 100,000 TPY. SCOTUS upheld that EPA reasonably interpreted the Clean Air Act to require sources that would need PSD permits based on their emission of conventional pollutants to comply with BACT for GHG. As such, the Tailoring Rule has been rendered invalid and sources cannot become subject to PSD or Title V regulations based on GHG emissions alone. Sources that must undergo PSD permitting due to pollutant emissions other than GHG may still be required to comply with BACT for GHG emissions.