November 23, 2015

Mr. Johnson
Ash Grove Cement Company
100 Highway 518
Clancy, MT 59634

Dear Mr. Johnson:

The Department of Environmental Quality (Department) has made its decision on the Montana Air Quality Permit application for Ash Grove Cement Company. The application was given permit number 2005-11. The Department's decision may be appealed to the Board of Environmental Quality (Board). A request for hearing must be filed by December 8, 2015. This permit shall become final on December 9, 2015, unless the Board orders a stay on the permit.

Procedures for Appeal: Any person jointly or severally adversely affected by the final action may request a hearing before the Board. Any appeal must be filed before the final date stated above. The request for a hearing shall contain an affidavit setting forth the grounds for the request. Any hearing will be held under the provisions of the Montana Administrative Procedures Act. Submit requests for a hearing in triplicate to: Chairman, Board of Environmental Review, P.O. Box 200901, Helena, Montana 59620.

Conditions: See attached

For the Department,

Julie A. Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626

Craig Henrikson P.E.
Environmental Engineer
Air Quality Bureau
(406) 444-6711

JM:CH
Enclosures

# MONTANA AIR QUALITY PERMIT

| | | |
|---|---|---|
| Issued To: | Ash Grove Cement Company<br>100 Highway 518<br>Clancy, MT 59634 | MAQP: #2005-11<br>Application Received: 9/30/2014<br>Additional Information Received: 10/30/2014<br>Additional Information Received 3/27/2015<br>Additional Information Received 7/27/2015<br>Additional Information Received 10/16/2015<br>Preliminary Determination Issued 11/4/2015<br>Department's Decision Issued: 11/23/2015<br>Permit Final:<br>AFS #: 30-043-0001 |

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Ash Grove Cement Company (Ash Grove), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

## Section I: Permitted Facilities

### A. Plant Location

The plant's legal location is Sections 12 and 13, Township 9 North, Range 3 West in Jefferson County. The old quarry and silos are located in Sections 7 and 18 of Township 9 North, Range 2 West in Jefferson County. The quarry is located in Sections 9, 10, 15, and 16 of Township 9 North, Range 3 West, in Jefferson County.

### B. Current Permit Action

On September 30, 2014, the Department of Environmental Quality (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 requests clarification and changes related to the solid fuel mill stack continuous emission monitors (CEMS) and continuous parametric monitoring system (CPMS) requirements. Specific requests are as noted in the "Ash Grove Modification Request" section.

## Section II: Conditions and Limitations Pre-Modernization Completion

### A. Plant Wide Emission Limitations Effective until Modernization Project Startup

1. Ash Grove shall operate and maintain all emission control equipment as specified in its application for its MAQP and all subsequent revisions (ARM 17.8.749).

2. Ash Grove may not cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed on or before November 23, 1968, that exhibit an opacity of 40% or greater averaged over a 6-minute period (ARM 17.8.304).

3. Ash Grove may not cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over a 6-minute period (ARM 17.8.304).

4. Ash Grove may not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

5. Ash Grove shall treat all unpaved portions of the haul roads, access roads, parking lots, or the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation (ARM 17.8.752).

6. Particulate matter (PM) emissions from the dust collection systems DA-1, DA-9 (East and West), DA-19, and DA-20 shall each be limited to 0.02 grains per dry standard cubic foot (gr/dscf) (ARM 17.8.752).

7. The amount of post-consumer recycled glass used by Ash Grove in the cement kiln shall be limited to 250 tons during any rolling 12-month period (ARM 17.8.752).

8. Ash Grove may not cause or authorize to be discharged into the atmosphere from the cement kiln, including during startup and shutdown, any stack emissions that:

   a. Contain filterable PM in excess of the amount allowed by the following equations (ARM 17.8.752 and Regional Haze FIP 40 CFR 52.1396).

      i. If the process weight rate of the kiln is less than or equal to 30 tons per hour, then the emission limit shall be calculated using the following equation:

$$E = 4.10P^{0.67}$$

      ii. If the process weight rate of the kiln is greater than 30 tons per hour, then the emission limit shall be calculated using the following equation:

$$E = 55.0P^{0.11}-40$$

      where E = rate of emissions in pounds per hour and
      P = process weight rate in tons per hour

9. Ash Grove shall install, operate, and maintain a baghouse to control emissions from the high efficiency air separator (ARM 17.8.752).

10. Ash Grove may not cause or authorize to be discharged into the atmosphere from the high efficiency air separator baghouse stack:

a. PM in excess of 0.01 grains per dry standard cubic foot (gr/dscf) (ARM 17.8.752) and

b. Visible emissions that exhibit an opacity of 10% or greater (ARM 17.8.340 and 40 CFR 60 Subpart F).

11. Ash Grove shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements of 40 CFR 60 Subpart F as it applies to Belt Conveyor 0 (BC-0), the High Efficiency Air Separator, and any other affected facility to which Subpart F is applicable (ARM 17.8.340 and 40 CFR 60 Subpart F).

PC MACT Requirements (40 CFR 63 Subpart LLL)

Clinker Production Rates

12. Ash Grove shall record the hourly clinker production rates in accordance with the requirements found at 40 63.1350(d) (40 CFR 63 Subpart LLL, ARM 17.8.340 and ARM 17.8.749).

PM Limits Existing Kiln

13. Ash Grove may not exceed a PM emission rate of 0.07 lb/ton of clinker produced from the kiln stack excluding startup and shutdown periods based on an annual Method 5 stack performance test and a PM continuous parametric monitoring system (PM CPMS). Condensable particulate matter is not included in Method 5 reporting and is not included in determining compliance. For all reporting under 40 CFR 63 Subpart LLL, *Startup* means the period starting when a shutdown kiln first begins firing fuel and ending when it begins producing clinker. Startup "begins" when a shutdown kiln turns on the induced draft fan and begins firing fuel in the main burner. Startup "ends" when feed is being continuously introduced into the kiln for at least 120 minutes or when the feed rate exceeds 60 percent of the kiln design limitation rate, whichever occurs first (40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

Mercury Limits Existing Kiln

14. Ash Grove may not exceed emissions of 55lbs of mercury per million tons of clinker from the main kiln stack averaged over 30 days of continuous monitoring excluding hours of operation of startup and shutdown(40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

Total Hydrocarbons (THC) Limits Existing Kiln

15. Ash Grove may not exceed emissions of 24 parts per million by volume (ppmv)THC (measured as propane and corrected to 7% oxygen)from the main kiln stack averaged over 30 days of continuous monitoring excluding hours of operation of startup and shutdown(40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

16. As an alternative to the THC Limit in Section II.A.15, Ash Grove may comply with a 12 ppmv organic air toxic limit from the main kiln stack excluding hours of operation of startup and shutdown (40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

PM Limits Existing Clinker Cooler

17. Ash Grove may not exceed a PM emission rate of 0.07 lb/ton of clinker produced from the clinker cooler stack excluding startup and shutdown periods of operation based on an annual Method 5 stack performance test and a PM CPMS. Condensable particulate matter is not included in Method 5 reporting and is not included in determining compliance (40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

Dioxin/Furans Existing Kiln

18. Ash Grove may not cause to be discharged into the atmosphere from the kiln, excluding hours of operation during startup and shutdown, any gases that contain dioxins and furans in excess of:

    1. 0.2nanograms per dry standard cubic meter (ng per dscm) ($8.7 \times 10^{-11}$ gr/dscf) Toxic Equivalent (TEQ) corrected to 7% oxygen; or

    2. 0.40 ng per dscm ($1.7 \times 10^{-10}$ gr/dscf) (TEQ) corrected to 7% oxygen, when the average of the performance test run average temperatures at the inlet to the particulate matter control device is 204° C (400° F) or less (40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

Work Practices

19. Ash Grove shall utilize "work practices" for the existing kiln, existing clinker cooler and existing dryers as identified in 40 CFR 63.1346(f), 40 CFR 63.1346(g) and 40 CFR 63.1348(b)(9) (40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

All Other Applicable Requirements from 40 CFR 63 Subpart LLL

20. Ash Grove shall meet all applicable requirements of 40 CFR 63 Subpart LLL not specifically highlighted within this permit (ARM 17.8.749 and ARM 17.8.342).

Additional Regional Haze Requirements 40 CFR 52.1396

21. Ash Grove may not exceed a sulfur dioxide ($SO_2$) emission rate of 11.5 lb/ton of clinker no later than April 17, 2013 (180 days following October 18, 2012). Ash Grove shall limit $SO_2$ emissions from the kiln during startup, shutdown, malfunction, emergencies and normal operation to 11.5 lb/ton of clinker produced based on a 30-day rolling average. An $SO_2$ Continuous Emission Monitoring system (CEMS) shall be maintained, calibrated and operated at all times to demonstrate compliance with the emission limit and shall satisfy CEMS requirements under 40 CFR 52. (Regional Haze FIP 40 CFR 52.1396 and ARM 17.8.749).

22. Ash Grove may not exceed a $NO_x$ emissions rate of 8.0 lb/ton of clinker no later than October 18, 2017. Ash Grove shall limit $NO_x$ emissions from the kiln during startup, shutdown, malfunction, emergencies and normal operation to 8.0 lb/ton of clinker produced based on a 30-day rolling average. Commencing on October 18, 2017, Ash Grove shall maintain, calibrate and operate a $NO_x$ CEMS at all times to demonstrate compliance with the emission limit and shall satisfy CEMS requirements under 40 CFR 52 (Regional Haze FIP 40 CFR 52.1396 and ARM 17.8.749).

23. Ash Grove shall meet Regional Haze Requirements CFR 52.1396 for recordkeeping, reporting, and equipment operation requirements as identified in CFR 52.l396(h), 52.1396(i), and 52.1396(m), respectively(40 CFR 52.1396 and ARM 17.8.749).

B. Existing Kiln Emission Limits and Requirements 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) (Terms used in this section shall be as defined in the Consent Decree).

1. Ash Grove shall install and operate baghouse control technology on the kiln exhaust and may not exceed a filterable PM emission rate of 0.07 lb/ton of clinker based on a 30-day rolling average from the kiln during startup, shutdown, malfunction, and normal operation (Consent Decree 57and ARM 17.8.749).

2. Ash Grove shall install, operate and maintain a PMCPMS on the combined kiln and in-line solid fuel mill stack and establish a Site-Specific Operating Limit (SSOL) for PM in accordance with the requirements of Appendix B of the Consent Decree and 40 CFR 1350(b) and (d). Ash Grove shall conduct the performance test using EPA Method 5 or Method 5I at appendix A-3 of 40 CFR Part 60. Compliance demonstration shall be an initial test and within 365 operating days thereafter. After September 9, 2015, Ash Grove may employ the SSOL methodology in 40 CFR 63.1349(b) in lieu of this methodology as the Subpart LLL methodology is more stringent (Consent Decree 56, 59, 60 and ARM 17.8.749).

3. Ash Grove shall continuously operate low-$NO_x$ burner technology on the kiln (Consent Decree 27 and ARM 17.8.749)

4. Ash Grove shall install and operate by September 10, 2014, selective non-catalytic reduction (SNCR)control technology, and demonstrate compliance with the 8.0 lb/ton of clinker based on a 30-day rolling average including startup, shutdown, and malfunction periods, beginning by the 30th operating day after 9/10/2014 (Consent Decree 27and ARM 17.8.749).

5. By September 10, 2014, Ash Grove shall install and operate Semi-Dry Scrubbing control technology on the kiln stack and shall demonstrate compliance with an $SO_2$ emission limit of 2.0 lb/ton of clinker based on a 30-day rolling average including, startup, shutdown, and malfunction periods by the 210th operating day after September 10, 2014, (Consent Decree 47and ARM 17.8.749).

6. Ash Grove shall install and make operational no later than August 14, 2014, (12 months from the effective date of the Consent Decree), a $NO_x$ CEMS and $SO_2$ CEMS at each stack from which the kiln directly discharges emissions. The CEMS shall be operated at all times during kiln operation except during CEMS breakdowns, repairs, calibration check and zero span adjustments. (Consent Decree 32, 34, 51, 52 and ARM 17.8.749).

7. Ash Grove shall install and make operational a PM CPMS at each stack from which the kiln directly discharges emissions as required in Appendix B of the Consent Decree (Consent Decree 59, 60 and ARM 17.8.749).

C. Testing Requirements – Pre-Modernization Project Completion

1. PM Testing Requirements on Kiln Stack. Ash Grove shall monitor the kiln stack emissions to demonstrate compliance with PM limits in Section II.A.13 as follows: (a) by September 9, 2015, and annually thereafter, conduct a Method 5 (or equivalent as approved by the Department) performance stack test; and (b) by September 9, 2015, operate a PM continuous parametric monitoring system (CPMS). The test methods and procedures shall be conducted in accordance with40 CFR 63.1349(b) and the CPMS shall be operated in accordance with 40 CFR 63.1350(b). Condensable particulate matter is not included in Method 5 reporting and is not included in determining compliance (ARM 17.8.105, ARM 17.8.106, ARM 17.8.749 and40 CFR 63 Subpart LLL).

2. PM Testing Requirements on Kiln Stack. Before October 10, 2014, Ash Grove shall test the kiln stack exhaust emissions for PM compliance with Section II.A.8 by conducting an initial and then annual Method 5 performance stack tests. The test methods and procedures shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual with the following exceptions: a test shall consist of three runs with each run lasting at least 120 minutes in duration and each run collecting a minimum sample volume of 60 dry standard cubic feet (Regional Haze FIP 40 CFR 52.1396, ARM 17.8.105 and ARM 17.8.106).

3. Ash Grove shall monitor the clinker cooler stack emissions to demonstrate compliance with the PM limit of 0.07 lb/ton of clinker in Section II.A.17 as follows: (a) by September 9, 2015, and annually thereafter, conducting a Method 5 (or equivalent) performance stack test; and (b) by September 9, 2015, operating a PM CPMS. Condensable particulate matter is not included in Method 5 reporting and is not included in determining compliance (40 CFR 63 Subpart LLL, ARM 17.8.105, ARM 17.8.106, ARM 17.8.749, and ARM 17.8.342).

4. Mercury Testing Requirements. Ash Grove shall demonstrate initial compliance with the mercury limit in Section II.A.14 as specified in 40 CFR 63.1349(b)(5).Ash Grove shall continue to monitor compliance using a mercury CEMS or sorbent trap monitoring system as specified in 40 CFR 63.1350(k). The initial compliance test must be based on the first 30 kiln operating days in which the affected source operates using a mercury CEMS or a sorbent trap monitoring system after the compliance date of the rule.

Mercury must be measured either upstream of the coal mill or in the coal mill stack. (ARM 17.8.105, ARM 17.8.106, ARM 17.8.342, ARM 17.8.749 and 40 CFR 63 Subpart LLL).

5. Ash Grove shall conduct initial testing to demonstrate compliance with the THC limit (measured as propane and corrected to 7% oxygen) in Section II.A.15or the alternative limit in Section II.A.16 and then continue to demonstrate compliance in accordance with the requirements of 40 CFR 63.1350(i) or (j), as appropriate. (ARM 17.8.105, ARM 17.8.106, ARM 17.8.749 and 40 CFR 63 Subpart LLL).

6. Ash Grove shall conduct additional testing as required by the Department (ARM 17.8.105).

7. All compliance source tests must be completed in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

D. Operational Reporting Requirement Pre-Modernization Project Completion

1. Ash Grove shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used for calculating operating fees, based on actual emissions from the facility, and to verify compliance with permit limitations (ARM 17.8.505).

2. Ash Grove shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745(1) that would include ***the addition of a new emissions unit,*** a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1) (ARM 17.8.745).

3. Ash Grove shall record the hourly clinker production rates in accordance with the requirements found at 40 CFR 63.1350(d) (ARM 17.8.340 and ARM 17.8.749).

4. By August 14, 2014, Ash Grove shall install and make operational a $NO_x$ and $SO_2$ CEMS (including flow monitor) on the kiln stack. Except during CEMS breakdowns, repairs, calibration checks, and zero span adjustments, the $NO_x$ and $SO_2$CEMS shall be operated at all times during kiln operation. Each

CEMS required by this condition shall monitor and record the $NO_x$ and $SO_2$ emission rate in units of lbs of $NO_x$ and $SO_2$ per ton of clinker and shall be installed, certified, calibrated, maintained, and operated in accordance with the applicable requirements of 40 CFR Part 60. For purposes of the $NO_x$ and $SO_2$ limits in Section II.B, all emissions of $NO_x$ and $SO_2$ from the kiln stack shall be measured by CEMS. Emissions from the kiln (in pounds) shall be calculated for each Operating Day and the previous 29 Operating Days and the total divided by the sum of the clinker produced (in tons) that Operating Day and the previous 29 Operating Days and the resulting value compared to the limit. During any time when CEMS are inoperable and otherwise not measuring emissions, Ash Grove shall use the average emission rate (lb/hr) from the most recent previous hour for which valid data are available. (Consent Decree 32, 34, 35, 36, 51, 52, 53, 54 and ARM 17.8.749).

5. Commencing 30 days after the limits in Section II.A. 21and 22 become effective, Ash Grove shall calculate and record the 30-operating day rolling emission rates of $SO_2$ and $NO_X$ lb/ton of clinker produced including startup, shutdown, and malfunctions periods as the total of all hourly emissions data for the cement kiln in the preceding 30 days, divided by the total tons of clinker produced in that kiln during the same 30-day operating period, using the following equation (40 CFR 52.1396):

$$E_D = k\frac{1}{(n)}\sum_{i=1}^{n}\frac{C_i Q_i}{P_i}$$

Where:
ED = 30 kiln operating day average emission rate of NOX or SO2, lb/ton of clinker;
*Ci* = Concentration of NOx or SO2 for hour i, ppm;
*Qi* = volumetric flow rate of effluent gas for hour i, where Ci and Qi are on the same basis (either wet or dry), scf/hr;
*Pi* = total kiln clinker produced during production hour i, ton/hr;
*k* = conversion factor, 1.194 × 10E-7 for NOX and 1.660 × 10E-7 for SO2; and
*n* = number of kiln operating hours over 30 kiln operating days, n = 1 to 720

For each kiln operating hour for which Ash Grove does not have at least one valid 15-minute CEMS data value, Ash Grove must use the average emissions rate (lb/hr) from the most recent previous hour for which valid data are available. Hourly clinker production shall be determined by Ash Grove in accordance with the requirements found at 40 CFR 60.63(b). Ash Grove must operate the monitoring system and collect data at all required intervals at all times the kiln is operating, except for periods of monitoring system malfunction, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and zero and span adjustments) (40 CFR 52.1396 and ARM 17.8.340).

6. Commencing 30 days after September 9, 2015, Ash Grove shall calculate and record the 30-operating day rolling emission rates of mercury in lb/ton of clinker produced, as specified in 40 CFR 63.1350(k) (40 CFR 63 Subpart LLL).

7. Commencing on September 9, 2015, Ash Grove shall calculate and record the PM CPMS arithmetic average operating parameter in units of the operating limit on a 30-operating day rolling average basis, updated at the end of each kiln operating day. For any exceedance of the 30 process operating day PM CPMS average value from the established operating parameter, Ash Grove must:

   a. Within 48 hours of the exceedance, visually inspect the APCD;

   b. If inspection of the APCD identifies the cause of the exceedance, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and

   c. Within 30 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the PM CPMS operating limit within 45 days. Ash Grove is not required to conduct additional testing for any exceedances that occur between the time of the original exceedance and the PM emissions compliance test required under this paragraph.

   PM CPMS exceedances leading to more than four required performance tests in a 12-monthprocess operating period (rolling monthly) constitute a presumptive violation of this condition (40 CFR 63 Subpart LLL).

8. Ash Grove shall document, by month, the amount of recycled glass used in the kiln. By the 25th day of each month, Ash Grove shall calculate the amount of recycled glass used in the kiln the prior month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.7. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

9. The records compiled in accordance with this MAQP shall be maintained by Ash Grove as a permanent business record for at least 5 years following the date of the measurement, shall be submitted to the Department upon request, and shall be available at the plant site for inspection by the Department (ARM 17.8.749).

10. For each continuous monitoring system (CMS) required in this section, Ash Grove must develop, and submit to the Department for approval upon request, a site-specific monitoring plan that addresses the following paragraphs "a" through "c". This site-specific monitoring plan, if requested, must be submitted at least 30 days before the initial performance evaluation of Ash Grove's CMS (ARM 17.8.749).

a. Installation of the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device);

b. Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems; and

c. Performance evaluation procedures and acceptance criteria (e.g., calibrations).

11. On or before the date that a $NO_x$ CEMS is required pursuant to Section II.B.6, Ash Grove shall determine and record the daily clinker production rates by either one of the two following methods:

a. Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates of the amount of clinker produced in tons of mass per hour; or

b. Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates of the amount of feed to the kiln in tons of mass per hour. Ash Grove shall calculate hourly clinker production rate using a kiln specific feed-to-clinker ratio based on reconciled clinker production determined for accounting purposes and recorded feed rates. This ratio should be updated no less frequently than once per month. If this ratio changes at clinker reconciliation, the new ratio must be used going forward, but it is not necessary to retroactively change clinker production rates previously estimated (Consent Decree 33 and ARM 17.8.749).

Section III: Conditions and Limitations Effective Upon Modernization Startup

A. Baghouse Emission Limits Associated with Modernization Project

The below requirements do not become effective until the start-up of the facility following the modernization project.

1. Ash Grove shall install, operate, and maintain baghouses (or an equivalent emission control technology upon Department approval) on its respective sources as described in the MAQP #2005-10 application (ARM 17.8.752).

| **Baghouse Emitting Unit** | **Description** |
|---|---|
| **New Point Sources** | |
| 111.BF290 | Limestone - Apron Feeder/Crusher Building |
| 121.BF110 | Limestone - Quarry Pile LoadoutVFeederBagfilter |

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|---|---|
| 121.BF120 | Limestone - Quarry Pile LoadoutVFeederBagfilter |
| 121.BF130 | Limestone - Quarry Pile LoadoutVFeederBagfilter |
| 121.BF140 | Limestone Belt 111BC160 to 121BC100 |
| 121.BF150 | Limestone Belt 121BC100 to Over land BC 1 |
| 121.BF230 | Limestone Over Land BC 1 to Over Land BC 2 |
| 121.BF290 | Limestone Over Land BC 2 to Over Land BC 3 |
| 121.BF330 | Limestone Over Land BC 3 to Over Land BC 4 |
| 121.BF370 | Limestone Over Land BC 4 to 121BC400 |
| 121.BF410 | Limestone 121BC400 to 121BC450 |
| 121.BF430 | Limestone 121BC460 to 121BC470 |
| 141.BF415 | Limestone 141BC400 to 141BC450 |
| 143.BF340 | Additive Hopper 143FY325 & 143BC330 to 143BC355 |
| 143.BF350 | Additive 143BC355 to 143BC400 |
| 242.BF340 | Additive Hopper 232FY325 & 232BC330 to 242BC350 |
| 242.BF320 | Additive 242BC350 to 242BC400 |
| 232.BF110 | Additive Hopper 212FY045/FY055 to 232BC100 |
| 231.BF160 | Solid Fuel Hopper 241AF090 to 241BC150 |
| 311.BF020 | Raw Mill Additive Bins |
| 311.BF080 | Raw Mill Limestone Bins |
| 311.BF610 | Raw Mill Bins to 311BC600 |
| 321.BF020 | Raw Mill 311BC600 to 321BC010 |
| 321.BF290 | Raw Mill 321BC200 to 321BE220 |
| 321.BF610 | Raw Meal 321AS510 to 341BE050 |
| 341.BF090 | Raw Meal 341BE050 to 341AS060 |
| 341.BF085 | Raw Meal 331VA585 to 341AV080 |
| 341.BF400 | Raw Meal silo South |
| 342.BF400 | Raw Meal silo North |
| 351.BF400 | Raw Meal 351BE340 351SA300 351BL100 351AS050 |
| 351.BF410 | Raw Meal 351BE340 to 351AS350 |
| 351.BF085 | Raw Meal 331VA585 to 341AV080 |
| 441.BF620 | Clinker Cooler to 471DB100 |
| 451.BF610 | Other dust 451BE330 to 451BI410 and 451LS495 to Truck |
| 461.BF045 | Raw Coal/Solid Fuel - 461 BC010 to bins 461BI020 and BI030 |
| 461.BF050 | Raw Coal/Solid Fuel - Bins 461BI020 and BI030 to 461BC080 |
| 471.BF150 | Existing Clinker Silo 1 thru 6 Venting |
| 471.BF160 | Clinker -471BE110 to 471DB210 |
| 471.BF620 | Clinker - 471DB100 to 471BE110 |
| 481.BF450 | Off Std Clinker 471DB240 to Off Standard Clinker Silo |
| 481.BF520 | Off Std Clinker Silo to 481BW416 , 481LS430 (truck loadout), and 481BW181 |
| 481.BF610 | Clinker Silos to 481BC150, BC160, BC170 to 481BW181 |
| 481.BF620 | Clinker - 481BW181 to 481BC190 |
| 511.BF070 | Cement Mill Feed - 242BC400 to 511BC150 to 511BI200 and 511BI300 |
| 531.BF020 | Clinker - 531BE220 to 531BC010 |
| 531.BF290 | Clinker - 531BC200 to 531BC210 to 531BE220 |

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|---|---|
| 541.BF050 | Cement - 541BE100 to 541 AS110 |
| 541.BF150 | Cement - 541 AS110 to 541AS120 to 541BE200 |
| 541.BF250 | Cement - 541BE200 to 611SI100, SI200, SI300, SI400 |
| 611.BF610 | Cement - 611SI100 to Cement Silo |
| 612.BF610 | Cement - 611SI200 to Cement Silo |
| 613.BF610 | Cement - 611SI300 to Cement Silo |
| 614.BF610 | Cement - 611SI400 to Cement Silo |
| | |
| **Baghouse Emitting Unit** | **Description** |
| **Existing Point Sources** | |
| DA-12 | Valve House |
| DA-14 | South Packer (SLA) |
| DA-17 | Silo #13 Bottom (Rail loading) |
| DA-18 | Silo #11 Top (Rail loading) |
| 416.BF3 | Lime Silo |
| 416.BF4 | Dust Bin |
| 416.BF5 | Dust Master |
| 416.BF6 | Loadout Spout |

2. Ash Grove may not cause or authorize to be discharged into the atmosphere, from any of the baghouses referenced in Section III.A.1 (ARM 17.8.752):

   a. Filterable particulate matter (PM) in excess of 0.0055 gr/dscf (ARM 17.8.752)

   b. Filterable particulate matter ($PM_{10}$) in excess of 0.005 gr/dscf (ARM 17.8.752)

   c. Filterable particulate matter ($PM_{2.5}$) in excess of 0.004 gr/dscf (ARM 17.8.752)

3. For the new baghouses shown in Section III.A.1, which are subject to Subpart F or Y, Ash Grove may not cause or authorize to be discharged into the atmosphere, visible emissions that exhibit an opacity of 10% or greater See the table in Section IV.I. for a specific list of NSPS applicability (ARM 17.8.340, 40 CFR 60 Subpart F and 40 CFR 60 Subpart Y).

4. Ash Grove shall install, operate, and maintain baghouse461.BF300 on the In-line Solid Fuel Mill Stack (461.SK395) as described in the MAQP #2005-10 application (ARM 17.8.752).

5. Ash Grove may not cause or authorize to be discharged into the atmosphere, from the In-line Solid Fuel Mill Stack (461.SK395) referenced in Section III.A.4 (ARM 17.8.752):

a. Filterable PM in excess of 0.008 gr/dscf (ARM 17.8.752)

b. Filterable $PM_{10}$ in excess of 0.006 gr/dscf (ARM 17.8.752)

c. Filterable $PM_{2.5}$ in excess of 0.004 gr/dscf (ARM 17.8.752)

d. Visible emissions that exhibit an opacity of 10% or greater (ARM 17.8.340).

6. Ash Grove shall install, operate, and maintain baghouse 441.BF550 on the Clinker Cooler as described in the MAQP #2005-10 application (ARM 17.8.752).

7. Ash Grove may not cause or authorize to be discharged into the atmosphere, from the Clinker Cooler Stack (441.SK720) referenced in Section III.A.6 (ARM 17.8.752):

a. Filterable PM in excess of 0.0055 gr/dscf (ARM 17.8.752)

b. Filterable $PM_{10}$ in excess of 0.005 gr/dscf (ARM 17.8.752)

c. Filterable $PM_{2.5}$ in excess of 0.004 gr/dscf (ARM 17.8.752)

8. Ash Grove shall install, operate, and maintain baghouse 331.BF300 and baghouse 451.BF200prior to the Kiln Stack/Bypass (331.SK410) as described in the MAQP #2005-10 application (ARM 17.8.752).

9. Ash Grove shall install, operate, and maintain baghouse 531.BF500 on the Cement Mill from the Cement Mill Stack (531.SK590) as described in the MAQP #2005-10 application (ARM 17.8.752).

10. Ash Grove may not cause or authorize to be discharged into the atmosphere, from Cement Mill Stack (531.SK590) referenced in Section III.A.9 (ARM 17.8.752):

a. Filterable PM in excess of 0.0055 gr/dscf (ARM 17.8.752)

b. Filterable $PM_{10}$ in excess of 0.005 gr/dscf (ARM 17.8.752)

c. Filterable $PM_{2.5}$in excess of 0.004 gr/dscf (ARM 17.8.752).

11. Ash Grove may not cause or authorize to be discharged into the atmosphere, from Kiln Stack/Bypass(331.SK410):

a. Particulate matter (PM total including condensable) in excess of 0.14 lb/ ton clinker (ARM 17.8.752)

b. Particulate matter ($PM_{10}$total including condensable) in excess of 0.11 lb/ ton clinker (ARM 17.8.752)

c. Particulate matter ($PM_{2.5}$total including condensable) in excess of 0.11lb/ ton clinker (ARM 17.8.752)

d. Visible emissions that exhibit an opacity of 10% or greater (ARM 17.8.316, ARM 17.8.340).

12. Ash Grove may not cause or authorize to be discharged into the atmosphere from the following baghouses particulate matter in excess of 0.010 gr/dscf: transfer points (231.BF160, 461.BF045, 461.BF050) associated with the solid fuel mill (40 CFR 60 Subpart Y, 60.254(b)(2)).

13. Ash Grove may not cause or authorize to be discharged into the atmosphere from the following baghouses, particulate matter in excess of 0.014 gr/dscf; the new quarry crusher building (111.BF290), controlled transfer points associated with the limestone pile (121.BF110, 121.BF120, 121.BF130, 121.BF140, 121.BF150), transfer points associated with the overland conveyor (121.BF230, 121.BF290, 121.BF330, and 121.BF370), transfer points associated with the raw material storage building (121.BF410, 121.BF430, and 141.BF415), and transfer points associated with the additive hoppers (143.BF340, 143.BF350, 242.BF340, 242.BF320, and 232.BF110). (40 CFR 60 Subpart OOO, 60.672 Table 2).

B. New Kiln Stack Specific PM Limits 331.SK410 and 461.SK395 as noted. Kiln Emission Limits and Requirements 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) (Terms used in this section shall be as defined in the Consent Decree).

PM limits noted here apply to the "kiln stacks" associated with the kiln i.e., Kiln System stack 331.SK410 and the In-line solid fuel mill stack 461.SK395. The results of the filterable PM performance tests must be summed to determine compliance with the limits stated below in "1" thru "3". Continuing compliance shall be determined based upon compliance with the SSOL requirements using the CPMS on the main stack (331.SK410).

1. Ash Grove may not exceed a PM emission rate of 0.02 lb/ton of clinker Upon startup of the Replacement Kiln, Ash Grove shall limit total filterable particulate emissions from the kiln stacks (331.SK410 and 461.SK395), excluding startup and shutdown periods, to 0.02 lb/ton of clinker produced based on an annual Method 5 stack performance test and continuous demonstration of compliance with the Site Specific Operating Limit using the PM CPMS. Condensable particulate matter is not included in Method 5 reporting and is not included in determining compliance. For all reporting under 40 CFR 63 Subpart LLL, *Startup* means the time from when a shutdown kiln first begins firing fuel until it begins producing clinker. Startup "begins" when a shutdown kiln turns on the induced draft fan and begins firing fuel in the main burner. Startup "ends" when feed is being continuously introduced into the kiln for at least 120 minutes or when the feed rate exceeds 60 percent of the kiln design limitation rate, whichever occurs first (40 CFR 63 Subpart LLL, 40 CFR 60 Subpart F and ARM 17.8.749).

2. Ash Grove shall install and operate a baghouse to control kiln emissions and may not exceed a filterable PM emission rate of 0.07 lb/ton of clinker based on a 30-day rolling average including startup, shutdown, malfunction and normal operation. Condensable particulate matter is not included in Method 5 reporting and is not included in determining compliance (Consent Decree 57 and ARM 17.8.749).

3. Twelve (12) months after commencing operation of the Montana City Replacement Kiln, Ash Grove may not exceed a rolling 12-month tonnage PM limit of 32.7 tpy including periods of startup, shutdown, and malfunction. Condensable particulate matter is not included in Method 5 reporting and is not included in determining compliance (Consent Decree 75 and ARM 17.8.749).

$SO_2$ Limits

4. Ash Grove may not exceed an $SO_2$ emission rate of 0.4 lb/ton of clinker based on a 30-day rolling average including startup, shutdown and malfunction periods. Compliance demonstration with the 0.4 lb/ton of clinker limit shall be completed within 180 days after Replacement Kiln startup (Consent Decree 48 and ARM 17.8.749).

5. Ash Grove may not exceed an $SO_2$ emission rate of 0.4 lb/ton of clinker based on a 30-day rolling average excluding startup and shutdown periods. Ash Grove shall complete a compliance demonstration with the 0.4 lb/ton of clinker limit within 60 days after achieving maximum production rate but not later than 180 days after startup(40 CFR 60 Subpart F, and ARM 17.8.749).

6. Within twelve (12) consecutive months after startup of the Replacement Kiln, Ash Grove may not exceed a rolling 12-month tonnage $SO_2$ limit of 200 tpy including periods of startup, shutdown, and malfunction (Consent Decree 48, 75and ARM 17.8.749).

$NO_x$ Limits

7. Ash Grove may not exceed a $NO_x$ emission rate of 1.5lb/ton of clinker based on a 30-day rolling average including startup, shutdown, malfunction and normal operation. Ash Grove shall complete a compliance demonstration with the 1.5 lb/ton of clinker limit within 180 days after Replacement Kiln startup (Consent Decree 29 and ARM 17.8.749).

8. Ash Grove may not exceed a $NO_x$ emission rate of 1.5 lb/ton of clinker based on a 30-day rolling average excluding startup and shutdown periods. Ash Grove shall complete a compliance demonstration with the 1.5lb/ton of clinker limit within 60 days after achieving maximum production rate but not later than 180 days from startup (40 CFR 60 Subpart F, and ARM 17.8.749).

9. Within twelve (12) consecutive months after startup of the Replacement Kiln, Ash Grove may not exceed a rolling 12-month tonnage $NO_x$ limit of 700 tpy including periods of startup, shutdown and malfunction (Consent Decree 75 and ARM 17.8.749).

Mercury Limits

10. Ash Grove may not exceed emissions of 21 lbs mercury per million tons of clinker (including Solid Fuel Mill Stack) averaged over 30 days continuous monitoring excluding periods during startup and shutdown. Ash Grove shall maintain either a sorbent mercury trap or CEMS to demonstrate compliance with this limit (40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

THC Limits

11. Ash Grove may not exceed emissions of 24ppmvTHC (measured as propane and corrected to 7% oxygen) averaged over 30 days of continuous monitoring excluding periods during startup and shutdown (40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

12. As an alternative to the THC Limit above, Ash Grove may comply with a 12 ppmv total organic HAP limit excluding periods during startup and shutdown(40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

Dioxin/Furans

13. Ash Grove may not cause to be discharged into the atmosphere from the kiln(including Solid Fuel Mill Stack), excluding hours during startup and shutdown, any gases that contain dioxins and furans in excess of:

    a. 0.2 ng per dscm (8.7x10-11 gr/dscf)(TEQ) corrected to 7% oxygen; or

    b. 0.40 ng per dscm (1.7x10-10 gr/dscf) (TEQ) corrected to 7% oxygen, when the average of the performance test run average temperatures at the inlet to the particulate matter control device is 204° C (400° F) or less (40 CFR 63 Subpart LLL and ARM 17.8.342).

Hydrochloric Acid (HCl)

14. If, following modernization project completion, Ash Grove is no longer an area source and becomes a major source, Ash Grove may not exceed 3 ppmv HCl at 7 percent oxygen excluding hours during startup and shutdown (40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

CO

15. Ash Grove may not exceed a CO limit of 459.4 tons (including Solid Fuel Mill Stack) on a 12-month rolling basis including periods of startup, shutdown, and malfunction (ARM 17.8.749 and ARM 17.8.752).

GHGs

16. Ash Grove may not exceed a rolling 12-Month rolling carbon dioxide equivalent ($CO_2e$) limit of 0.95 tons $CO_2e$/ ton of clinker (including Solid Fuel Mill Stack) including periods of startup, shutdown, and malfunction (ARM 17.8.749 and ARM 17.8.752).

17. Ash Grove shall use only natural gas in the Finish Mill Heater (ARM 17.8.752).

C. Kiln Stack (331.SK410) Continuous Monitoring System Requirements

1. Ash Grove shall install, operate and maintain on the kiln stack (331.SK410), a PM CPMS (40 CFR 63 Subpart LLL, Consent Decree 59, ARM 17.8.342 and ARM 17.8.749).

2. Ash Grove shall use a PM CPMS on the kiln stack to establish a Site-Specific Operating Limit (SSOL) for PM corresponding to the results of the performance test demonstrating compliance with the 0.07 lb/ton of clinker limit and following the procedures in Appendix B of the Consent Decree. Ash Grove shall conduct the performance test using EPA Method 5 or Method 5I at appendix A-3 of 40 CFR Part 60. Ash Grove shall perform the initial performance test and commence operation of the PM CPMS for the Replacement Kiln within 60 days after achieving the maximum production rate at which the Replacement Kiln will be operated, but not later than 180 Days after Ash Grove first operates the Replacement Kiln. After September 9, 2015, Ash Grove may employ the SSOL methodology in 40 CFR 63.1349(b) in lieu of this methodology as the Subpart LLL methodology is more stringent (Consent Decree 59 and ARM 17.8.749).

3. Ash Grove shall install and make operational on the kiln stack a $NO_X$ CEMS and $SO_2$ CEMS no later than 60 days after achieving the maximum production rate at which the Replaced Montana City Kiln will be operated, but not later than 180 days after Ash Grove first operates the Replaced Montana City Kiln. The CEMS shall be operated at all times during kiln operation except during CEMS breakdowns, repairs, calibration check and zero span adjustments (Consent Decree 29.b, 40 CFR 60 Subpart F, ARM 17.8.340 and ARM 17.8.749).

4. Ash Grove shall install, operate, and maintain on the kiln stack an $O_2$ analyzer necessary to allow the required oxygen correction to be applied for reference method tests as necessary (ARM17.8.749).

5. Ash Grove shall install, operate, and maintain on the kiln stack a CO analyzer to demonstrate the kiln is achieving the BACT limit (ARM 17.8.749).

6. Ash Grove shall install, operate and maintain on the kiln stack a $CO_2$ analyzer to demonstrate the kiln is achieving the BACT limit (ARM 17.8.749).

7. Ash Grove shall install, operate and maintain on the kiln stack a mercury sorbent trap or CEMS to demonstrate the kiln is achieving the mercury limit (ARM 17.8.749).

8. Ash Grove shall install, operate and maintain on the kiln stack a THC analyzer necessary to demonstrate the kiln is achieving the THC limit (ARM 17.8.749).

9. Ash Grove shall utilize the "work practices" for the kiln identified in 40 CFR 63.1346(f) (40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

10. Ash Grove shall install, operate, and maintain on both the kiln stack and the solid fuel mill stack a volumetric flow monitor to measure the exhaust flow (Consent Decree 32 and 51 and ARM 17.8.749).

11. Ash Grove shall install, operate and maintain a continuous monitoring system (CMS) to record the exhaust temperature from the kiln prior to entering the baghouse to demonstrate Dioxin/Furan compliance as identified in 40 CFR 63.1350 (g) (40 CFR 63 Subpart LLL and ARM 17.8.749).

D. Clinker Cooler Stack Limits and CEM Requirements

1. Ash Grove shall install, operate and maintain on the clinker cooler stack (441.SK720) a PM CPMS (40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

2. Upon startup of the Replacement Kiln, Ash Grove shall limit filterable particulate emissions from the clinker cooler stack (441.SK720) during normal operation to 0.02 pounds per ton (lb/ton) of clinker produced based on an annual Method 5 stack performance test and continuous demonstration of compliance with the Site Specific Operating Limit using the PM CPMS. Condensable particulate matter is not included in Method 5 reporting and is not included in determining compliance (40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

3. Ash Grove shall utilize the "work practices" for the clinker cooler identified in 40 CFR 63.1348(b)(9) (40 CFR 63 Subpart LLL, ARM 17.8.342 and ARM 17.8.749).

E. In-line Solid Fuel Mill Stack CEMS Requirements (461.SK395)

1. Ash Grove shall install, operate, and maintain on the In-line solid fuel mill stack a volumetric flow monitor to measure the exhaust flow (Consent Decree 32, 51, and ARM 17.8.749).

F. Basic Requirements

1. Ash Grove may not cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over a 6-minute period (ARM 17.8.304).

2. Ash Grove may not cause or authorize to be discharged into the atmosphere, from any Standards of Performance for New Stationary Source (NSPS)-affected crusher, any fugitive visible emissions that exhibit an opacity of 12% or greater averaged over a 6-minute period for crushers that commence construction, modification or reconstruction on or after April 22, 2008, as identified in the table in Section IV.I (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60 Subpart OOO).

3. Ash Grove may not cause or authorize to be discharged into the atmosphere from any other NSPS-affected equipment, such as screens or conveyor transfers, any visible emissions that exhibit an opacity of 7% or greater averaged over a 6-minuteperiodfor equipment, including screens and conveyors, and other affected equipment that commences construction, modification, or reconstruction on or after April 22, 2008 (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60 Subpart OOO).

4. Ash Grove may not cause or authorize to be discharged into the atmosphere, from any non-NSPS-affected equipment, any visible emissions that exhibit an opacity of 20% or greater averaged over a 6-minute period (ARM 17.8.304 and ARM 17.8.752).

5. Ash Grove may not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

6. Ash Grove shall treat all unpaved portions of the haul roads, access roads, parking lots, and the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation (ARM 17.8.752).

7. The amount of post-consumer recycled glass used by Ash Grove Cement Company in the cement kiln shall be limited to 250 tons during any rolling 12-month period (ARM 17.8.752).

8. When process equipment is operating, Ash Grove shall use and maintain, as they were intended, conveyor covers, transfer point covers, or structural enclosures surrounding process equipment (ARM 17.8.749).

9. Ash Grove shall limit kiln production to 2300 tons of clinker per day on a 12-month rolling average (ARM 17.8.749).

10. Ash Grove shall limit kiln production to 750,000 tons of clinker per year during any rolling-12-month period (ARM 17.8.749).

11. Ash Grove shall be limited to a maximum hourly $SO_2$ emission rate of 115 lb/hr (equivalent to 1.2 lb/ton clinker at 2300 tpd) based on a 24-hr rolling average from kiln stack 331.SK410 and 461.SK395 (ARM 17.8.749.)

12. Ash Grove shall be limited to maximum hourly $NO_x$ emission rate of 431.25 lb/hr (equivalent to 4.50 lb/ton clinker at 2300 lb/day) based on a 24-hr rolling average from kiln stack 331.SK410 and 461.SK395 (ARM 17.8.749).

13. Ash Grove shall be limited to a maximum hourly CO emission rate of 880 lbs/hr (equivalent to 9.2 lb/ton clinker at 2300 tpd) based on a 8-hr rolling average from kiln stack 331.SK410 and 461.SK395 (ARM 17.8.749 and ARM 17.8.752).

14. Ash Grove shall prepare an operation and maintenance plan as required by 40 CFR 63.1347(a) (40 CFR 63.1347 ARM 17.8.749 and ARM 17.8.342).

15. Ash Grove shall startup the kiln on clean fuels only until the kiln reaches a temperature of 1200 degrees Fahrenheit. Clean fuels include natural gas, synthetic natural gas, propane, distillate oil, synthesis gas (syngas), and ultra-low sulfur diesel (ULSD) (40 CFR 63.1346, ARM 17.8.342 and ARM 17.8.749).

16. Ash Grove shall document, by month, records for calibrating, maintaining, and operating a monitor to record the temperature of the exhaust gases from the kiln for monitoring Dioxin/Furan emissions. Ash Grove shall verify, at least once every 3 months, the calibration of all thermocouples and other temperature sensors required by 40 CFR 63.1350 (40 CFR 63.1350, ARM 17.8.342 and ARM 17.8.749).

17. Ash Grove shall prepare a site specific monitoring plan for each continuous monitoring system required by 40 CFR 63 Subpart LLL and submit it to the Department upon request (40 CFR 63.1350 (p) and ARM 17.8.342)).

18. Pursuant to ARM 17.8.322(4), Ash Grove may not burn liquid or solid fuels containing sulfur in excess of 1 pound per million BTU fired, unless otherwise specified by rule or in this permit (ARM 17.8.322 and ARM 17.8.749).

19. Pursuant to ARM 17.8.322(5), Ash Grove may not burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions, unless otherwise specified by rule or in this permit (ARM 17.8.322 and ARM 17.8.749).

20. Ash Grove shall limit emergency generator (EG1.SK1) hours to no more than 500 hours per rolling 12-month period and shall be a least a Tier III EPA certified engine (ARM 17.8.749).

21. Ash Grove shall limit the operation of the overland conveyor and associated equipment directly connected to the overland conveyor to no more than 3,200 hours per rolling 12-month period (ARM 17.8.749).

22. Ash Grove shall limit explosive usage to 400 tons/year of ammonium nitrate and fuel oil (ANFO) per rolling 12-month period (ARM 17.8.749).

23. Ash Grove shall determine and record the daily clinker production rates by either one of the two following methods:

a. Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates of the amount of clinker produced in tons of mass per hour; or

b. Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates of the amount of feed to the kiln in tons of mass per hour. Ash Grove shall calculate hourly clinker production rate using a kiln specific feed-to-clinker ratio based on reconciled clinker production determined for accounting purposes and recorded feed rates. This ratio should be updated no less frequently than once per month. If this ratio changes at clinker reconciliation, the new ratio must be used going forward, but it is not necessary to retroactively change clinker production rates previously estimated (Consent Decree 33 and ARM 17.8.749).

G. Testing Requirements – Post Modernization Project Completion

1. PM Testing Requirement on Kiln (331.SK410 and 461.SK395).Ash Grove shall test the kiln stack emissions for PM to demonstrate compliance with Section III.B.1 and III.B.2 (This testing shall also satisfy the testing under III. C. 2– Consent Decree) by conducting an initial, and then annual, Method 5 (or equivalent) performance stack test. Condensable particulate matter is not included in Method 5 reporting and is not included in determining compliance. Initially and at least annually during Method 5 source testing, Ash Grove shall establish a Site Specific Operating Limit for the PM CPMS . The initial Method 5 test shall be conducted within 180 days after Replacement Kiln startup. The test methods and procedures shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual. Condensable particulate matter is not included in Method 5 reporting. All source testing shall occur while Ash Grove is using a representative fuel mix (ARM 17.8.105, ARM 17.8.106, ARM 17.8.749 and 40 CFR 63 Subpart LLL).

2. Ash Grove shall monitor the clinker cooler stack (441.SK720) for PM emissions to demonstrate compliance with 0.02 lb/ton of clinker in Section III.D.2 as follows: a Method 5 (or equivalent) performance stack test shall be conducted within 180 days after Replacement Kiln startup and then annually thereafter. Condensable particulate matter is not included in Method 5 reporting and is not included in determining compliance. Initially and at least annually during Method 5 source testing, Ash Grove shall establish a Site Specific Operating Limit for the PM CPMS. All source testing shall occur while Ash Grove is using a representative fuel mix (40 CFR 63 Subpart LLL,ARM 17.8.105, ARM 17.8.106, ARM 17.8.342 and ARM 17.8.749).

3. Ash Grove shall test the clinker cooler stack (441.SK720) for PM emissions to demonstrate compliance with Section III.A.7 limit for PM, $PM_{10}$, and $PM_{2.5}$. The initial test shall be conducted within 180 days of Replacement

Kiln startup. Condensable particulate matter is not included in Method 5 reporting and is not included in determining compliance. All source testing shall occur while Ash Grove is using a representative fuel mix (40 CFR 63 Subpart LLL, ARM 17.8.105, ARM 17.8.106, ARM 17.8.342 and ARM 17.8.749).

4. Ash Grove shall test the Cement Mill Stack (Finish Mill) (531.SK590) for PM emissions to demonstrate compliance with Section III.A.10 limit for PM, $PM_{10}$, and $PM_{2.5}$. The initial test shall be conducted within 180 days of Replacement Kiln startup. Condensable particulate matter is not included in Method 5 reporting and is not included in determining compliance. All source testing shall occur while Ash Grove is using a representative fuel mix (40 CFR 63 Subpart LLL, ARM 17.8.105, ARM 17.8.106, ARM 17.8.342 and ARM 17.8.749).

5. Ash Grove shall conduct performance evaluations of the Kiln stack $SO_2$ CEMS monitor and the Kiln stack and In-line solid fuel mill stack flow monitors according to the requirements in §60.13(c) and Performance Specification 2 of appendix B of 40 CFR 60 to verify the $SO_2$ CEMS and volumetric flow monitors are accurate for demonstrating compliance with the limits contained in Section III.B.4 and Section III.B.5. Within 60 days after achieving the maximum production rate at which the reconstructed mill will be operated but not later than 180 days after Ash Grove first operates the replacement kiln, Ash Grove shall certify the $SO_2$ CEMS, including the flow monitors at the main stack and coal mill stack, and simultaneously test the $SO_2$ concentration in the main stack and the coal mill stack. If the average $SO_2$ concentration in the coal mill stack during the $SO_2$ CEMS certification tests is less than or equal to 110 percent of the $SO_2$ concentration in the main stack, then Ash Grove shall determine Kiln $SO_2$ emissions by using the combined flow rates and the $SO_2$ concentration measured in the main stack. If the average $SO_2$ concentration in the coal mill stack during the $SO_2$ CEMS certification tests exceeds 110 percent of the $SO_2$ concentration in the main stack, then Ash Grove shall determine Kiln $SO_2$ emissions by separately calculating Kiln and coal mass emissions for all hours of operation during the applicable reporting period and adding those mass emissions together. When separately calculating Kiln and coal mill mass emissions, Ash Grove shall add the main stack $SO_2$ emissions calculated using the CEMS to the coal mill stack $SO_2$ emissions calculated using the coal mill flow rate, plus an adjustment factor equal to the ratio of the average $SO_2$ concentration measured in the coal mill stack during the testing divided by the average $SO_2$ concentration measured in the main stack during the testing. Ash Grove shall simultaneously test $SO_2$ emissions in the main stack and the coal mill stack annually thereafter and generate a new correction ratio for use in any year where the coal mill $SO_2$ concentration exceeds the main stack $SO_2$ concentration by more than 10 percent. Ash Grove may stop using the correction factor and stop the annual tests if five consecutive tests, each performed annually, demonstrate that the average $SO_2$ concentration in the coal mill stack is less than or equal to 110 percent of the

$SO_2$ concentration in the main stack. All source testing shall occur while Ash Grove is using a representative fuel mix (ARM 17.8.105, ARM 17.8.106 and ARM 17.8.749).

6. Ash Grove shall conduct performance evaluations of the Kiln stack $NO_x$ CEMS monitor according to the requirements in §60.13(c) and Performance Specification 2 of appendix B of 40 CFR 60 to verify the $NO_x$ CEMS and volumetric flow monitors are accurate for demonstrating compliance with the limits contained in Section III.B.7 and Section III.B.8. Within 60 days after achieving the maximum production rate at which the reconstructed mill will be operated but not later than 180 days after Ash Grove first operates the replacement kiln, Ash Grove shall certify the $NO_X$ CEMS, including the flow monitors at the main stack and coal mill stack, and simultaneously test the $NO_x$ concentration in the main stack and the coal mill stack. If the average $NO_x$ concentration in the coal mill stack during the $NO_x$ CEMS certification tests is less than or equal to 110 percent of the $NO_x$ concentration in the main stack, then Ash Grove shall determine Kiln $NO_x$ emissions by using the combined flow rates and the $NO_x$ concentration measured in the main stack. If the average $NO_x$ concentration in the coal mill stack during the $NO_x$ CEMS certification tests exceeds 110 percent of the $NO_x$ concentration in the main stack, then Ash Grove shall determine Kiln $NO_x$ emissions by separately calculating Kiln and coal mass emissions for all hours of operation during the applicable reporting period and adding those mass emissions together. When separately calculating Kiln and coal mill mass emissions, Ash Grove shall add the main stack $NO_x$ emissions calculated using the CEMS to the coal mill stack NOx emissions calculated using the coal mill flow rate, plus an adjustment factor equal to the ratio of the average $NO_x$ concentration measured in the coal mill stack during the testing divided by the average $NO_x$ concentration measured in the main stack during the testing. Ash Grove shall report the Kiln stack exhaust emissions for $NO_x$ and CO concurrently to demonstrate compliance with the emission limits contained in this permit. During the initial performance evaluation of the kiln $NO_X$ CEMS, Ash Grove shall simultaneously test $NO_x$ concentration in the Solid Fuel Mill stack. All source testing shall occur while Ash Grove is using a representative fuel mix (ARM 17.8.105, ARM 17.8.106 and ARM 17.8.749).

7. Mercury Testing Requirements. Ash Grove shall demonstrate initial compliance with the mercury limit as specified in 40 CFR 63.1349(b)(5) to demonstrate compliance with Section III.B.10 within 180 days after Replacement Kiln startup. All source testing shall occur while Ash Grove is using a representative fuel mix. Ash Grove shall continue to monitor compliance using a mercury CEMS or sorbent trap monitoring system as specified in 40 CFR 63.1350(k). The initial compliance test must be based on the first 30 kiln operating days in which the affected source operates using a mercury CEMS or a sorbent trap monitoring system after the compliance date of the rule. The In-line Coal fuel mill stack mercury emissions shall also be tested initially and then annually thereafter (or another schedule as approved by the Department) to determine the concentration of mercury which shall be used with the volumetric flow monitor to determine the

hourly mass emission rate and added to the main kiln stack emissions (ARM 17.8.105, ARM 17.8.106, ARM 17.8.342, ARM 17.8.749 and 40 CFR 63 Subpart LLL).

8. THC. Ash Grove shall demonstrate initial compliance with the THC limit as specified in 40 CFR 63.1349(b)(4) to support compliance with the limits in Section III.B.11 or Section III.B.12 within 180 days after Replacement Kiln startup. All source testing shall occur while Ash Grove is using a representative fuel mix. (40 CFR 63 Subpart LLL, ARM 17.8.105, ARM 17.8.106, ARM 17.8.342, and ARM 17.8.749).

9. Dioxin/Furan. Ash Grove shall conduct an initial Dioxin/Furan (Method 23 (40 CFR 60, Appendix A)) test to demonstrate compliance with Section III.B.13 within 180 days after Replacement Kiln startup and once during every subsequent 30 months. Ash Grove shall repeat the performance test for the kiln and In-line solid fuel mill stacks within 90 days after initiating any significant change in the feed or fuel from that used during the previous performance test. All source testing shall occur while Ash Grove is using a representative fuel mix. The test methods and procedures shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (40 CFR 63 Subpart LLL, ARM 17.8.105, ARM 17.8.106, ARM 17.8.342, 40 CFR 63.1349).

10. Ash Grove shall perform the following particulate testing of baghouses to demonstrate compliance with particulate limits.

    a. Within 60 days after achieving maximum production rate but not later than 180 days after startup Ash Grove shall conduct a Method 5 source test on the following sources to demonstrate compliance with the 0.014 gr/dscf emission transfer points (231.BF160, 461.BF045, 461.BF050) associated with the solid fuel mill (40 CFR 60 Subpart Y, 60.254(b)(2)).

    b. Within 60 days after achieving maximum production rate but not later than 180 days after startup Ash Grove shall conduct a Method 5 source test on the following sources to demonstrate compliance with the 0.014 gr/dscf limit; the new quarry crusher building (111.BF290), controlled transfer points associated with the limestone pile (121.BF110, 121.BF120, 121.BF130, 121.BF140, 121.BF150), transfer points associated with the overland conveyor (121.BF230, 121.BF290, 121.BF330, and 121.BF370), transfer points associated with the raw material storage building (121.BF410, 121.BF430, and 141.BF415), and transfer points associated with the additive hoppers (143.BF340, 143.BF350, 242.BF340, 242.BF320, and 232.BF110). (40 CFR 60 Subpart OOO, 60.672 Table 2).

    c. Within 180 days after startup Ash Grove shall conduct a Method 5 source test on the baghouse 231.BF160 to demonstrate compliance with the emission limits of Section III.A.2 (ARM 17.8.105, ARM 17.8.106, ARM 17.8.749).

11. Within 60 days after achieving maximum production, but no later than 180 days after initial start-up, an Environmental Protection Agency (EPA) Method 9 opacity test and/or other methods and procedures, as specified in 40 CFR 60.675, must be performed on all NSPS-affected equipment to demonstrate compliance for crushers that commence construction, modification, or reconstruction on or after April 22, 2008, with a 12% opacity limitation. 111.BF290 is the baghouse controlling the crusher building, subject to 40 CFR 60 Subpart OOO. If 111.BF290 is tested within 180 days as required in Section III.G.1, a Method 9 test is not required (ARM 17.8.340, ARM 17.8.749, 40 CFR 60 Subpart A and Subpart OOO).

12. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

13. Ash Grove shall conduct further testing if required by the Department (ARM 17.8.105).

H. Operational Reporting Requirements – Post Modernization Project Completion

1. Ash Grove shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory summary contained in the permit analysis.

   Ash Grove shall gather production information on a calendar-year basis and submit it to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505). Ash Grove shall submit the following information annually to the Department by February 15 of each year; the information may be submitted along with the annual emission inventory (ARM 17.8.505).

   -annual production related information

2. Ash Grove shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include ***the addition of a new emissions unit,*** change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to startup or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information required in ARM 17.8.745(l)(d) (ARM 17.8.745).

3. Ash Grove shall document, by month, the results of the PM CPMS from the kiln and In-line solid fuel mill stacks and the lbs/day of clinker produced. Total PM CPMS data and total clinker produced shall be calculated from 12:00 midnight to 12:00 midnight on a daily basis and averaged over rolling 30-day time periods. The PM CPMS must be operated while the kiln is operating and Ash Grove shall keep a record of the PM emissions measure by the CPMS. For clarity, it is noted that 40 CFR 60 Subpart F and 40 CFR 63 Subpart LLL have emission limit calculations excluding startup and shutdown periods whereas the Consent Decree limits include startup, shutdown, and malfunction periods. The monthly information will be used to verify compliance with Section III.B.1, III.B.2, and III.B.3 (ARM 17.8.749, 40 CFR 60 Subpart F, 40 CFR 63 Subpart LLL, and Consent Decree).

4. Ash Grove shall document, by month, the lb/day amount of $SO_2$ emissions discharged into the atmosphere from the kiln and In-line solid fuel mill stacks and the lbs/day of clinker produced. Ash Grove shall maintain and operate an $SO_2$ CEMS monitor on the kiln stack which shall be assumed to also represent the $SO_2$ concentration in the In-line solid fuel mill stack unless a correction factor is applied according to III.G.5. A volumetric flow monitor on the In-line solid fuel mill stack is also required. Total $SO_2$ emissions shall be calculated from 12:00 midnight to 12:00 midnight on a daily basis for each operating day and averaged over 30-day rolling periods. Except during CEMS breakdowns, repairs, calibration checks, and zero span adjustments, the $SO_2$ CEMS shall be operated at all times during kiln operation. Emissions from the kiln and In-line solid fuel mill stacks (in pounds) shall be summed for each Operating Day and the previous 29 Operating Days and the total divided by the sum of the clinker produced (in tons) that Operating Day and the previous 29 Operating Days and the resulting value compared to the limit. During any time when CEMS are inoperable and otherwise not measuring emissions, Ash Grove shall use the average emission rate (lb/hr) from the most recent previous hour for which valid data are available. For clarity, it is noted that 40 CFR 60 Subpart F and 40 CFR 63 Subpart LLL have emission limit calculations excluding startup and shutdown periods, whereas the Consent Decree limits include startup, shutdown, and malfunction periods. The monthly information will be used to verify compliance with Sections III.B.4, III.B.5 and III.B.6 (ARM 17.8.749, Consent Decree 52, 53, 54 and 40 CFR 60 Subpart F).

5. Ash Grove shall document, by month, the lb/day amount of $NO_x$ emissions discharged into the atmosphere from the kiln and In-line solid fuel mill stacks and the lb/day of clinker produced. Ash Grove shall maintain and operate a $NO_x$ CEMS monitor on the kiln stack which shall be assumed to also represent the $NO_x$ concentration in the In-line solid fuel mill stack unless a correction factor is applied according to Section III.G.6. A volumetric flow monitor on the In-line solid fuel mill stack also is required. Total $NO_x$ emissions and total clinker produced shall be calculated from 12:00 midnight to 12:00 midnight on a daily basis for each operating day and averaged over rolling 30-day periods. Except during CEMS breakdowns, repairs, calibration checks, and zero span adjustments, the $NO_x$ CEMS shall be operated at all times during kiln operation. Emissions from the kiln and

In-line solid fuel mill stacks (in pounds) shall be summed for each Operating Day and the previous 29 Operating Days and the total divided by the sum of the clinker produced (in tons) that Operating Day and the previous 29 Operating Days and the resulting value compared to the limit. During any time when CEMS are inoperable and otherwise not measuring emissions, Ash Grove shall use the average emission rate (lb/hr) from the most recent previous hour for which valid data are available. For clarity it is noted that 40 CFR 60 Subpart F and 40 CFR 63 Subpart LLL have emission limit calculations excluding startup and shutdown periods whereas the Consent Decree limits include startup, shutdown, and malfunction periods. The monthly information will be used to verify compliance with Sections III.B.7, III.B.8 and III.B.9 (ARM 17.8.749, Consent Decree 34, 35, 36 and 40 CFR 60 Subpart F).

6. Ash Grove shall document, by month, the amount of post-consumer glass used in the kiln. By the 25th day of each month, Ash Grove shall total the amount of post-consumer glass used during the previous month. The information will be used to verify compliance with the rolling 12-month limitation contained in Section III.F.7 above. The information for each of the previous 12 months shall be submitted along with the annual emission inventory (ARM 17.8.749).

7. Ash Grove shall document, by day, the amount of clinker produced in the kiln. By the 25th day of each month, Ash Grove shall total the amount of clinker produced during the previous month. The information will be used to verify compliance with the rolling 12-month limitation contained Section III.F.9 and III.F.10 above. The information for each of the previous 12 months shall be submitted along with the annual emission inventory (ARM 17.8.749).

8. Ash Grove shall document, by hour, the amount of $SO_2$ discharged into the atmosphere from the kiln and In-line solid fuel mill stacks. The information will be used to verify compliance with the rolling 24-hour limitation contained in Section III.F.11 (ARM 17.8.749).

9. Ash Grove shall document, by hour, the amount of $NO_x$ discharged into the atmosphere from the kiln and In-line solid fuel mill stacks. The information will be used to verify compliance with the rolling 24-hour limitation contained in Section III.F.12 (ARM 17.8.749).

10. Ash Grove shall document, by month, the lb/hr of CO discharged into the atmosphere from the kiln. The monthly information will be used to verify compliance with the rolling 8-hr limitation contained in Section III.F.13 (ARM 17.8.749).

11. Ash Grove shall demonstrate compliance with Section III.F.14 by having available on request the Operation and Maintenance plan, and shall maintain a log of activities completed according to the Inspection and Maintenance Plan (ARM 17.8.749).

12. Ash Grove shall monitor compliance with Section III.F.15 by maintaining records during normal operation whenever the temperature is 1200 degrees Fahrenheit or less, the date, time, and duration of each startup and shutdown, and the type and quantity of fuel added (40 CFR 63.1346 and ARM 17.8.342).

13. Ash Grove shall document the records required under Section III.F.16(40 CFR 63.1350, ARM 17.8.342 and ARM 17.8.749).

14. Ash Grove shall document, by month, the tons of $CO_2$ emissions discharged into the atmosphere from the kiln and In-line solid fuel mill per ton of clinker produced. The total $CO_2$ emissions in lbs/ton clinker produced shall be calculated from 12:00 midnight to 12:00 midnight and averaged over a rolling 12-month period (ARM 17.8.749).

15. Ash Grove shall document, by month, the lb/hr amount of CO emissions discharged into the atmosphere from the kiln and In-line solid fuel mill stacks. The total CO shall be calculated from 12:00 midnight to 12:00 midnight and averaged over a rolling 12-month periods (ARM 17.8.749

16. Ash Grove shall document, by month, the lbs of Mercury emissions discharged into the atmosphere from the kiln and In-line solid fuel mill stacks per million tons of clinker produced. The total Mercury emissions to the total clinker produced shall be calculated from 12:00 midnight to 12:00 midnight on a daily basis and averaged over rolling 30-day periods (ARM 17.8.749).

17. Ash Grove shall document, by month, either the concentration of THC emissions or total organic HAP concentration discharged into the atmosphere from the kiln and In-line solid fuel mill stack. The total THC or total organic HAP emission concentration produced shall be calculated from 12:00 midnight to 12:00 midnight on a daily basis and averaged over rolling 30-day periods (ARM 17.8.749).

18. Ash Grove shall document, by month, the total hours of operation of the emergency generator EG1.SK1 to satisfy Section III.F.20 (ARM 17.8.749).

19. Ash Grove shall document by month, the total hours of operation of the overland conveyor to satisfy Section III.F.21 (ARM 17.8.749).

20. Ash Grove shall document, by month, the lbs of ANFO and emulsion usage to satisfy Section III.F.22 (ARM 17.8.749).

21. All records compiled in accordance with this permit must be:(a) maintained by Ash Grove as a permanent business record for at least 5 years following the date of the measurement;(b) available at the plant site for inspection by the Department; and (c) submitted to the Department upon request (ARM 17.8.749).

A. Notification – Post Modernization Project Completion

a. Ash Grove shall provide written notification to the Department within 15 days after the facility begins initial construction of the modernization project (ARM 17.8.340 and ARM 17.8.749).

b. Ash Grove shall provide written notification to the Department within 15 days after the startup date of the Replacement Kiln (ARM 17.8.340 and ARM 17.8.749).

SECTION IV: General Conditions

A. Inspection – Ash Grove shall allow the Department's representatives access to the source at all reasonable times to make inspections or surveys, collect samples, obtain data, audit any monitoring equipment (CEMS, CERMS), observe any monitoring or testing, or otherwise conduct a necessary function related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if Ash Grove fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Ash Grove of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM Title 17, chapter 8, subchapter 7 (ARM 17.8.756).

D. Enforcement – Violations of a limitation, condition, or requirement of this permit may constitute grounds for permit revocation, or for penalties or corrective action or injunctive relief under Title 75, chapter 2, part 4, MCA.

E. Appeals – Any person or persons directly and adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefor, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final after 15 days have elapsed from the date of the Department's decision.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, and rules adopted thereunder by the Board, failure to pay the annual operation fee by Ash Grove may be grounds for revocation of this permit.

H. Duration of Permit – This permit expires unless construction or installation has begun, or contractual obligations that would constitute substantial loss have been entered into, within 18 months after permit issuance. In addition, this permit expires if Ash Grove does not proceed with due diligence until the project is complete. (ARM 17.8.762).

I. Applicability – Once the modernization project is complete, Ash Grove emitting units are subject to the following NSPS 40 CFR 60 Subparts and NESHAP 40 CFR 63 Subparts as noted.

| New | | **Significant Emitting Unit** | **NSPS:40 CFR 60, Subpart(s)** | **MACT: 40 CFR 63, Subpart(s)** |
|---|---|---|---|---|
| 331.SK410 | Kiln Stack / Bypass | Yes | A, F | A, LLL |
| 441.SK720 | Clinker Cooler Stack | Yes | A, F | A, LLL |
| 461.SK395 | In-Line Solid Fuel Mill Stack | Yes | A, F | A, LLL |
| 531.SK590 | Cement Mill | Yes | A, F | A, LLL |
| EG1.SK1 | Emergency Generator | Yes | A, IIII | A, ZZZZ |
| 111.BF290 | Limestone - Apron Feeder/Crusher Building | Yes | A, OOO | |
| 121.BF110 | Limestone - Quarry Pile Loadout VFeeder Bagfilter | Yes | A, OOO | |
| 121.BF120 | Limestone - Quarry Pile Loadout VFeeder Bagfilter | Yes | A, OOO | |
| 121.BF130 | Limestone - Quarry Pile Loadout VFeeder Bagfilter | Yes | A, OOO | |
| 121.BF140 | Limestone Belt 111BC160 to 121BC100 | Yes | A, OOO | |
| 121.BF150 | Limestone Belt 121BC100 to Over land BC 1 | Yes | A, OOO | |
| 121.BF230 | Limestone Over Land BC 1 to Over Land BC 2 | Yes | A, OOO | |
| 121.BF290 | Limestone Over Land BC 2 to Over Land BC 3 | Yes | A, OOO | |
| 121.BF330 | Limestone Over Land BC 3 to Over Land BC 4 | Yes | A, OOO | |
| 121.BF370 | Limestone Over Land BC 4 to 121BC400 | Yes | A, OOO | |
| 121.BF410 | Limestone 121BC400 to 121BC450 | Yes | A, OOO | |
| 121.BF430 | Limestone 121BC460 to 121BC470 | Yes | A, OOO | |
| 141.BF415 | Limestone 141BC400 to 141BC450 | Yes | A, OOO | |
| 143.BF340 | Additive Hopper 143FY325 & 143BC330 to 143BC355 | Yes | A, OOO | |
| 143.BF350 | Additive 143BC355 to 143BC400 | Yes | A, OOO | |
| 242.BF340 | Additive Hopper 232FY325 & 232BC330 to 242BC350 | Yes | A, OOO | |
| 242.BF320 | Additive 242BC350 to 242BC400 | Yes | A, OOO | |

| New | | Significant Emitting Unit | NSPS:40 CFR 60, Subpart(s) | MACT: 40 CFR 63, Subpart(s) |
|---|---|---|---|---|
| 232.BF110 | Additive Hopper 212FY045/FY055 to 232BC100 | Yes | A, OOO | |
| 231.BF160 | Solid Fuel Hopper 241AF090 to 241BC150 | Yes | A, Y | |
| 311.BF020 | Raw Mill Additive Bins | Yes | A, F | A, LLL |
| 311.BF080 | Raw Mill Limestone Bins | Yes | A, F | A, LLL |
| 311.BF610 | Raw Mill Bins to 311BC600 | Yes | A, F | A, LLL |
| 321.BF020 | Raw Mill 311BC600 to 321BC010 | Yes | A, F | A, LLL |
| 321.BF290 | Raw Mill 321BC200 to 321BE220 | Yes | A, F | A, LLL |
| 321.BF610 | Raw Meal 321AS510 to 341BE050 | Yes | A, F | A, LLL |
| 341.BF090 | Raw Meal 341BE050 to 341AS060 | Yes | A, F | A, LLL |
| 341.BF085 | Raw Meal 331VA585 to 341AV080 | Yes | A, F | A, LLL |
| 341.BF400 | Raw Meal silo South | Yes | A, F | A, LLL |
| 342.BF400 | Raw Meal silo North | Yes | A, F | A, LLL |
| 351.BF400 | Raw Meal 351BE340 351SA300 351BL100 351AS050 | Yes | A, F | A, LLL |
| 351.BF410 | Raw Meal 351BE340 to 351AS350 | Yes | A, F | A, LLL |
| 351.BF085 | Raw Meal 331VA585 to 341AV080 | Yes | A, F | A, LLL |
| 441.BF620 | Clinker Cooler to 471DB100 | Yes | A, F | A, LLL |
| 451.BF610 | Other dust 451BE330 to 451BI410 and 451LS495 to Truck | Yes | A, F | A, LLL |
| 461.BF045 | Raw Coal/Solid Fuel - 461 BC010 to bins 461BI020 and BI030 | Yes | A, Y | |
| 461.BF050 | Raw Coal/Solid Fuel - Bins 461BI020 and BI030 to 461BC080 | Yes | A, Y | |
| 461.BF560 | Pulverized Fuel Bin 461BI550 | Yes | A, Y | |
| 461.BF660 | Pulverized Fuel Bin 461BI650 | Yes | A, Y | |
| 471.BF150 | Existing Clinker Silo 1 thru 6 Venting | Yes | A, F | A, LLL |
| 471.BF160 | Clinker -471BE110 to 471DB210 | Yes | A, F | A, LLL |
| 471.BF620 | Clinker - 471DB100 to 471BE110 | Yes | A, F | A, LLL |
| 481.BF450 | Off Std Clinker 471DB240 to Off Standard Clinker Silo | Yes | A, F | A, LLL |
| 481.BF520 | Off Std Clinker Silo to 481BW416 , 481LS430 (truck loadout), and 481BW181 | Yes | A, F | A, LLL |
| 481.BF610 | Clinker Silos to 481BC150, BC160, BC170 to 481BW181 | Yes | A, F | A, LLL |
| 481.BF620 | Clinker - 481BW181 to 481BC190 | Yes | A, F | A, LLL |

| New | | Significant Emitting Unit | NSPS:40 CFR 60, Subpart(s) | MACT: 40 CFR 63, Subpart(s) |
|---|---|---|---|---|
| 511.BF070 | Cement Mill Feed - 242BC400 to 511BC150 to 511BI200 and 511BI300 | Yes | A, F | A, LLL |
| 531.BF020 | Clinker - 531BE220 to 531BC010 | Yes | A, F | A, LLL |
| 531.BF290 | Clinker - 531BC200 to 531BC210 to 531BE220 | Yes | A, F | A, LLL |
| 541.BF050 | Cement - 541BE100 to 541 AS110 | Yes | A, F | A, LLL |
| 541.BF150 | Cement - 541 AS110 to 541AS120 to 541BE200 | Yes | A, F | A, LLL |
| 541.BF250 | Cement - 541BE200 to 611SI100, SI200, SI300, SI400 | Yes | A, F | A, LLL |
| 611.BF610 | Cement - 611SI100 to Cement Silo | Yes | A, F | A, LLL |
| 612.BF610 | Cement - 611SI200 to Cement Silo | Yes | A, F | A, LLL |
| 613.BF610 | Cement - 611SI300 to Cement Silo | Yes | A, F | A, LLL |
| 614.BF610 | Cement - 611SI400 to Cement Silo | Yes | A, F | A, LLL |
| 611.BF560 | Cement - 611AS500 to 611TK550 | Yes | A, F | A, LLL |
| 621.BF162 | Cement - 611TK550 to Truck | Yes | A, F | A, LLL |
| 621.BF142 | Cement - 611TK550 to Rail | Yes | A, F | A, LLL |
| 612.BF560 | Cement - 612AS500 to 612TK550 | Yes | A, F | A, LLL |
| 622.BF162 | Cement - 612TK550 to Truck | Yes | A, F | A, LLL |
| 622.BF142 | Cement - 612TK550 to Rail | Yes | A, F | A, LLL |
| 613.BF560 | Cement - 613AS500 to 613TK550 | Yes | A, F | A, LLL |
| 623.BF162 | Cement - 613TK550 to Truck | Yes | A, F | A, LLL |
| 623.BF142 | Cement - 613TK550 to Rail | Yes | A, F | A, LLL |
| 614.BF560 | Cement - 614AS500 to 614TK550 | Yes | A, F | A, LLL |
| 624.BF162 | Cement - 614TK550 to Truck | Yes | A, F | A, LLL |
| 624.BF142 | Cement - 614TK550 to Rail | Yes | A, F | A, LLL |
| Existing | | | | |
| DA-12 | Valve House | Yes | | A, LLL |
| DA-13 | Silo Tops (CDC) | Yes | | A, LLL |
| DA-14 | South Packer (SLA) | Yes | | A, LLL |
| DA-15 | North Packer (SLB) | Yes | | A, LLL |
| DA-16 | Specialty Bin | Yes | | A, LLL |
| DA-17 | Silo #13 Bottom (Rail loading) | Yes | | A, LLL |
| DA-18 | Silo #11 Top (Rail loading) | Yes | | A, LLL |
| 416.BF3 | Lime Silo | No | | |

| New | | Significant Emitting Unit | NSPS:40 CFR 60, Subpart(s) | MACT: 40 CFR 63, Subpart(s) |
|---|---|---|---|---|
| 416.BF4 | Dust Bin | Yes | A,F | A, LLL |
| 416.BF5 | Dust Master | Yes | A,F | A, LLL |
| 416.BF6 | Loadout Spout | Yes | A,F | A, LLL |
| Q1 | Drilling | No | | |
| Q2 | Blasting - Limestone dust | No | | |
| Q3 | Blasting - ANFO combustion | No | | |
| Q4 | Truck loading in Pit | No | | |
| Q5 | Truck Unloading to Crusher (111.FY050) | No | | |
| Q6 | 111.BC200 transfer to Limestone Pile | No | | |
| 212.FY045/55 | Truck Unloading - Additive to RMS Hoppers (Gyp, Sand, Slag, Clay, etc.) | No | | |
| DL1 | Truck Loading - CKD | No | | |
| DL2 | Truck Unloading - CKD | No | | |
| FT1 | X-fer Solid Fuel Railcar to hopper | No | | |
| FT2 | X-fer Solid Fuel hopper to CB-22 | No | | |
| FT3 | X-fer Solid Fuel CB-22 to RS-1 | No | | |
| FT4 | X-fer Solid Fuel RS-1 to pile | No | | |
| 241.FY090 | X-fer Solid Fuel pile to 241AF090 | No | | |
| SANDLOAD | Truck loading - sand, etc. | No | | |
| CTOWER | Cooling Tower | No | | |
| RMS | Raw Material Storage Building Haul Roads | No | | |
| CKD | CKD Haul Roads | No | | |
| SAND | Sand Haul Roads | No | | |
| NCEM | New Cement Silo Haul Roads | No | | |
| CEM | Existing Cement Silo Haul Roads | Yes | | |
| QR | Quarry Haul Roads | Yes | | |
| LOADER | Solid Fuel Pile to Hopper | No | | |

Montana Air Quality Permit (MAQP) Analysis
Ash Grove Cement Company
MAQP #2005-11

# I. Introduction

## A. Facility Description

Ash Grove Cement Company (Ash Grove) operates a Portland cement manufacturing facility 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 plant's legal location is Sections 12 and 13, Township 9 North, Range 3 West in Jefferson County. The old quarry and silos are located in Sections 7 and 18 of Township 9 North, Range 2 West in Jefferson County. The quarry is located in Sections 9, 10, 15, and 16 of Township 9 North, Range 3 West in Jefferson County. An overland conveyor is also permitted to transport raw materials through Sections 9, 10, and 11 in Township 9 North, Range 2 West.

## B. Facility History

**MAQP #2005-00** was issued to Kaiser Cement & Gypsum Company for a coke/coal-fired cement kiln on July 11, 1986. Shortly thereafter, Kaiser Cement & Gypsum Company was purchased by Ash Grove.

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

On June 16, 1996, Ash Grove was issued **MAQP #2005-02** for several construction projects at the facility. This MAQP allowed Ash Grove to alter their existing primary crusher by replacing the 1962 Traylor, Blake-Type jaw component rated at 345 tons per hour (ton/hr) with a 1988 Hazemag horizontal impact component rated at 300 ton/hr. During this project, Ash Grove also proposed to upgrade their dust collector DA-1. This upgrade would consist of replacing the existing Norblo reverse air shakerless dust collector with a BHA pulse jet conversion package. The flow through the baghouse would increase from approximately 5500 cubic feet per minute (cfm) to 11,000 cfm as a result of this upgrade. In addition, Ash Grove also proposed to alter the crusher discharge belt system during this project. A channel from belt conveyor designated FB-1 would be installed to transport material leaving the primary crusher to the existing BC-1 conveyor. Drag conveyor #1 had been abandoned and removed. Emissions from both the primary crusher and FB-1 are controlled by dust collector DA-1.

Ash Grove 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 had been dedicated to providing dust control to auxiliary equipment (DA-9 East), while the three remaining compartments had been dedicated to controlling emissions from the mill sweep function (DA-9 West). The existing 9200-cfm booster fan had

been utilized as the DA-9 East discharge fan while an existing 14,300-cfm fan had been retained, modified, and used as the DA-9 West discharge fan. This modification resulted in a flow increase of 9200 cfm.

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

Ash Grove 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 did not crush the coke, but rather it contained rollers that would separate the aggregated coke into individual coke nodules. There would not be an increase in emissions as a result of this project.

Ash Grove installed a second cement cooler in a parallel configuration to the existing cooler. This unit would provide the facility with 100% standby capability if the primary cooler failed or was out of service for extended maintenance. The cooler system was sized so that either cooler #1 or cooler #2 could 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 would not be 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 installed 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. BE-6 may also be used for railcar loading of clinker in response to production shortages to other Ash Grove 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 would be controlled by a new dust collector. The new dust collector would be called DA-19 and is a W.W. Sly model with a BHA pulse jet conversion. DA-19 would be operated at 2500 cfm. This project would result in a slight increase in emissions of approximately 0.18 tons/yr.

In addition, this permitting action incorporated **MAQP #853**, originally issued to Kaiser Cement and Gypsum Corporation for the renewal of the permit for the coal grinding plant at the facility, into MAQP #2005-02. MAQP #2005-02 replaced MAQP #853 and MAQP #2005-00.

On August 10, 1996, Ash Grove was issued **MAQP #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 would be loaded into trucks for in-plant usage or customer sale. Clinker transported on this conveyor would either be loaded into trucks for stockpiling outside or loaded into railcars for customer shipments. A 1000-cfm pulse jet baghouse (DA-20) would be used to control particulate emissions from the conveyor-to-truck material transfer point. This alteration would result in an increase in particulate emissions of 0.75 tons per year (TPY). MAQP #2005-03 replaced MAQP #2005-02.

On July 25, 1996, Ash Grove applied for **MAQP #2005-04** to install a portable crusher at their Clark's Gulch Quarry. On September 12, 1996, Department of Environmental Quality (Department) staff met with Ash Grove to discuss the application. The Department had prepared an emission inventory for this project and the initial determination by the Department indicated that the proposal increased emissions of particulate matter in an amount that appeared to exceed the PSD significance levels. The application was withdrawn on July 15, 1997.

On July 22, 1997, Ash Grove was issued **MAQP #2005-05** to use 250 TPY of post-consumer recycled container glass as a raw material substitute in the cement kiln. Ash Grove cannot use more than 250 TPY of the glass because it may cause quality problems with the cement product. The Department determined that this activity met the statutory definition of an incinerator contained in Montana Code Annotated 75-2-103 and the intent of House Bill 380; therefore, Ash Grove was required to demonstrate that this activity posed no more than a negligible risk to human health and the environment. This permitting action resulted in an increase in minor amounts (<2 pound per year (lb/year)) of hazardous air pollutants emitted from the kiln.

In addition, as part of this permitting action, the Department identified the Standards of Performance for New Stationary Sources (NSPS) notification requirements for BC-0 and BE-6. These requirements were inadvertently left out of the previous MAQP. MAQP #2005-05 replaced MAQP #2005-03.

On November 11, 1998, **MAQP #2005-06** was issued to Ash Grove. The permit allowed the 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 added to control particulate emissions from the separator and to collect "on-spec" product. The product is forwarded on to cement cooler #2. The controlled emission rate from the air separator is approximately 6.75 tons per year of particulate matter with an aerodynamic diameter of 10 microns or less ($PM_{10}$). MAQP #2005-06 replaced MAQP #2005-05.

Ash Grove submitted a complete permit application on December 20, 2000, for the installation and operation of seven temporary, diesel-fired generators at their facility. This application was assigned **MAQP #2005-07**. These generators were necessary because the high cost of electricity forced Ash Grove to curtail operations at their facility. The operation of the generators did 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 to acquire a permanent, more economical supply of power.

Because these generators were only to be used when commercial power is too expensive to obtain, the amount of emissions expected during the actual operation of these generators was minor. In addition, the installation of these generators qualified as a "temporary source" under the Prevention of Significant Deterioration (PSD) permitting program because the permit limited the operation of these generators to a time period of less than 2 years. Therefore, Ash Grove did not need to comply with Administrative Rule of Montana (ARM) 17.8.804, 17.8 820, 17.8.822, and 17.8.824. Even though the portable generators were considered temporary, the Department required compliance with Best Available Control Technology (BACT) and public notice requirements; therefore, compliance with ARM 17.8.819 and

17.8.826 was ensured. In addition, Ash Grove was responsible for complying with all applicable ambient air quality standards. MAQP #2005-07 replaced MAQP #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. The dust collector is an insignificant emitting unit listed in Ash Grove's Title V Operating Permit #OP2005-05. **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 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 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 will include 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.

C. Current Permit Action

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 asks for clarification and changes related to the solid fuel mill stack CEMS and CPMS requirements.

**MAQP #2005-11** replaces MAQP #2005-10.

D. Response to Public Comments (None received).

E. Response to Ash Grove Comments

| Permit Reference | Comment | Department Response |
|---|---|---|
| Section II.A.11 | Please remove reference to Bucket Elevator 6. This source was never constructed when originally permitted. | Removed as requested |
| Sections II.A.12, 13, 14, 15, 17, 21; II.B.1, 2, 4, 6, 7; II.C.1, 2, 3, 4, 6,7 | These sections all refer to dates which have passed. For clarity Ash Grove requests these expired dates are removed. | Many of the dates were removed but some were left to help the compliance inspector determine when each of these was required. On a future modification the remaining date references can likely be removed as they will be well beyond the reference dates. |
| Section II.A.19 | 40 CFR 63.1346(g) also contains work practice requirements and should be referenced here. | 63.1346(g) was added as a reference. |
| Section II.B.5 | Ash Grove did not provide notice to USEPA by the required date; therefore, this section is not applicable and should be removed. | This was removed. |
| Section II.D.4 | The Consent Decree does not require the installation of an $O_2$ analyzer. Reference to the analyzer should be removed from the second line. | The reference to the $O_2$ analyzer was removed. |
| Sections II.D.4, III.H. 4 and 5 | These sections discuss data substitution when the CEMS are inoperable by using the average emission rate from the most recent valid hour. Ash Grove requests this condition be reviewed Paragraphs 36 and 54 of the Consent Decree state:<br>"During any time when CEMs are inoperable and otherwise not measuring emissions of $SO_2$ (NOx) from any Kiln, Defendant shall apply the missing data substitution procedures used by the Affected State or the missing data substitution procedures in 40 C.F.R. Part 75, Subpart D, whichever is deemed appropriate by the Affected State."<br>In addition, Section 52.1396(e)(4)(ii) of the Regional Haze Rules state: "For each kiln operating hour for which the owner/operator does not have at least one valid 15-minute CEMS data value, the owner/operator must use the average emissions rate (lb/hr) from the most recent previous hour for which valid data are available." The Regional Haze requirements and the requirements in the PD are similar but both are very different from Part 75. Obviously, Ash Grove would prefer not to be subject to two different methods of data substitution for the same pollutants; however, this is currently | The Department would rather use the most previous one-hour valid data for substitution for both the Consent Decree and Regional Haze Reporting. And therefore, the language in these sections says use the last good hour of available data. |

| | | |
|---|---|---|
| | happening. Ash Grove is using Part 75 data substitution for Consent Decree reporting and the Regional Haze method for that reporting. Since the Regional Haze rules would not be alterable without additional rule making, there seems to be a couple of options. If MTDEQ prefers that Ash Grove use the substitution method listed in the Regional Haze Rule and the PD, Ash Grove can change the current practice and begin using that method for Consent Decree reporting . If MTDEQ prefers Part 75 data substitution methods, Ash Grove can continue to perform Part 75 data substitution for the Consent Decree and would request Sections III.H.4 and 5 be changed to require Part 75. Ash Grove would then continue to perform the Regional Haze data substitution for that rule. | |
| Section 111.B. Paragraph below "$SO_2$ Limits | The language in this paragraph duplicates the language in later permit conditions. For clarification, Ash Grove suggests replacing "For clarification ... shall be applied thereafter" with "The contribution of S02 from the solid fuel mill will be determined in accordance with Section G.5" | Department agrees this was redundant and deleted this paragraph. |
| Section 111.B. Paragraph below "NOx Limits"- | As above, Ash Grove suggests replacing "For clarification.... more than 10 percent" with "The contribution of NOx from the solid fuel mill will be determined in accordance with Section G.6". | Department agrees this was redundant and deleted this paragraph. |
| Section III.C | 63.1350(g) provides requirements for monitoring the temperature of the inlet to the particulate matter control device to demonstrate continuous compliance with the Dioxin/Furan limits which do not appear to be included in the current permit. In addition, 63.1346(a) provides additional clarification of the applicability of temperature limitation. Ash Grove suggests Section III.C be renamed as "Kiln Stack (331.SK410) CMS Requirements" and include a section with a summary of these requirements. | A new condition was added to the end of Section III.C. to address Dioxin/Furans and Section III.C. was renamed as requested. |
| Section III.F.13 | Minor typo. "on an 8-hr ... " | Corrected |

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the ARM and are available, upon request, from the Department. Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

   Ash Grove shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for $PM_{10}$
11. ARM 17.8.230 Fluoride in Forage

Ash Grove must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under

this rule, Ash Grove may not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. (4) Commencing July 1, 1972, no person shall burn liquid or solid fuels containing sulfur in excess of 1 pound of sulfur per million Btu fired. (5) Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions.

6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.

7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). Ash Grove is considered an NSPS affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.

   a. 40 CFR 60 Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below:

   b. 40 CFR 60 Subpart F – Standards of Performance for Portland Cement Plants applies to emitting units as noted in Section IV (General Conditions)(I) of MAQP #2005-11.

   c. 40 CFR 60 Subpart Y – Standards of Performance for Coal Preparation Plants and Processing Plants applies specifically to the coal fuel process units as noted in Section IV (General Conditions)(I) of MAQP #2005-11.

   d. 40 CFR 60 Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants applies to emitting units as noted in Section IV (General Conditions)(I) of MAQP #2005-11.

   e. 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Combustion Engines applies to emitting unit EG1.SK1.

8. ARM 17.8.341 Emission Standards for Hazardous Air Pollutants. This source shall comply with the standards and provisions of 40 CFR Part 61, as appropriate.

a. 40 CFR 61, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAP Subpart as listed below:

9. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as listed below:

a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to an NESHAP Subpart as listed below:

b. 40 CFR 63 Subpart LLL –NESHAPs from the Portland Cement Manufacturing Industry. Ash Grove must comply with all applicable requirements of this Subpart as noted in Section IV (General Conditions)(I) of MAQP #2005-11.

c. 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines applies to emitting unit EG1.SK1.

D. ARM 17.8, Subchapter 4 – Stack Height and Dispersion Techniques, including, but not limited to:

1. ARM 17.8.401 Definitions. This rule includes a list of definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.402 Requirements. Ash Grove must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP). Ash Grove included an analysis in their application using the U.S. EPA Building Profile Input Program (BPIP) to calculate the GEP. The modeled stack heights were consisted with ARM 17.8.401(2)(b)(ii).

E. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. Ash Grove submitted the appropriate permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

F. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Ash Grove has the PTE greater than 25 tons per year of carbon monoxide (CO), oxides of nitrogen ($NO_x$), $PM_{10}$, particulate matter (PM), and sulfur oxides ($SO_x$); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. Ash Grove submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. Ash Grove submitted an affidavit of publication of public notice for the October 1, 2014, issue of the *Helena Independent Record*, a newspaper of general circulation in the City of Helena in Lewis and Clark County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Ash Grove of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.

12. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

13. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

14. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

15. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.

16. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to the Department for incineration facilities subject to 75-2-215, Montana Code Annotated (MCA).

17. ARM 17.8.771 Mercury Emission Standards for Mercury-Emitting Generating Units. This rule identifies mercury emission limitation requirements, mercury control strategy requirements, and application requirements for mercury-emitting generating units. Ash Grove is subject to new mercury emission limits under 40 CFR 63 Subpart LLL.

G. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

   Ash Grove is defined as a "major stationary source" because it is a listed source and does have the potential to emit more than 100 tons of any pollutant.

   This permitting action is not considered a PSD action.

H. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

   a. PTE > 100 tons/year of any pollutant;

   b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

   c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less ($PM_{10}$) in a serious $PM_{10}$ nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #2005-11, the following conclusions were made:

   a. The facility's PTE is greater than 100 tons/year for several pollutants.

   b. The facility's PTE is less than 10 tons/year of any one HAP and less than 25 tons/year of all HAPs.

   c. This source is not located in a serious $PM_{10}$ nonattainment area.

   d. This facility is subject to a current NSPS standard (40 CFR 60 Subpart A, Subpart F, Subpart IIII, Subpart Y and Subpart OOO).

   e. This facility is subject to a current NESHAP standard (40 CFR 63, Subpart A , Subpart LLL and Subpart ZZZZ).

   f. This source is not a Title IV affected source.

   g. This source is an EPA designated Title V source.

Based on these facts, the Department has determined that Ash Grove is a major source of emissions as defined under Title V. Title V Operating Permit #OP2005-08 will need to be revised to include new requirements included in this MAQP.

III. BACT Determination

A BACT determination is required for each new or modified source. Ash Grove shall install on the new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized.

A BACT analysis was not required for this permit action as it is not adding or modifying emissions source under this action.

IV. Emission Inventory

The future plant-wide potential to emit for criteria pollutants is listed below. There is no emission change associated with the current permit action but the net emissions change associated with the previous MAQP #2005-10 is included for completeness.

**Project - Net Emissions Change Calculations - Criteria Pollutants**

**Ash Grove Cement, Montana City, Montana**

| Pollutant | Future Plantwide Potential to Emit (tpy) | Baseline (two year avg. actual emissions for sources remaining) (tpy) | Project Emissions Increase prior to netting[1] (tpy) | Contem - poraneous Increases[2] (tpy) | Contem - poraneous Decreases[3] (tpy) | Net Emissions Increase (tpy) | Significant Emission Increase Threshold (tpy) | PSD Triggered |
|---|---|---|---|---|---|---|---|---|
| PM | 197.90 | 93.99 | 103.91 | - | 139.55 | (35.64) | 25 | No |
| $PM_{10}$ | 137.92 | 31.17 | 106.75 | - | 123.53 | (16.77) | 15 | No |
| $PM_{2.5}$ | 106.27 | 8.05 | 98.22 | - | 115.00 | (16.78) | 10 | No |
| $SO_2$ | 150.96 | 0.12 | 150.84 | - | 399.98 | (249.14) | 40 | No |
| NOx | 571.26 | 0.99 | 570.27 | - | 1,388.42 | (818.15) | 40 | No |
| CO | 477.31 | 3.90 | 473.41 | - | 24.37 | 449.03 | 100 | **Yes** |
| VOC | 117.85 | 0 | 117.85 | - | 3.92 | 113.92 | 40 | **Yes** |
| Lead | 0.04 | 0 | 0.04 | - | 0.01 | 0.03 | 0.6 | No |
| **GHGs** | | | | | | | | |
| CO2 | 717,385 | 0 | 717,385 | - | 337,268 | 380,117 | 75,000 | **Yes** |
| CH4 | 42 | 0 | 42 | - | 18 | 23.94 | 75,000 | No |
| N2O | 6 | 0 | 6 | - | 3 | 3.49 | 75,000 | No |
| CO2e | 720,256 | 0 | 720,256 | - | 338,500 | 381,756 | 75,000 | **Yes** |

[1] Difference between Potential Emissions and Baseline Emissions (two year avg actual of existing sources remaining after project).

[2] Actual emission increases from projects in the Contemporaneous Period (2008 - thru project completion)

[3] Actual emission decreases from sources shut down in the Contemporaneous Period (2008 - thru project completion).

The complete emission inventory submitted with the application is on file with the Department

| Plantwide Future PTE - Gaseous Pollutant & HAP Sources<br>Ash Grove Cement, Montana City, Montana | | | | | |
|---|---|---|---|---|---|
| Pollutant | Kiln System and Solid Fuel Mill System<br>tpy | Cement Mill / Air Heater (531.SK590)<br>tpy | Emergency Generator (EG1.SK1)<br>tpy | Blasting - ANFO Combustion (Q3)<br>tpy | Totals (tpy) |
| $SO_2$ | 150.00 | 0.03 | 0.53 | 0.40 | 150.96 |
| NOx | 562.50 | 4.37 | 0.99 | 3.40 | 571.26 |
| CO | 459.38 | 3.67 | 0.86 | 13.40 | 477.31 |
| VOC | 114.00 | 3.76 | 0.09 | | 117.85 |
| Lead | 0.04 | | | | 0.04 |
| H2SO4 | N/A | | | | - |
| **GHGs** | | | | | - |
| CO2 | 712,500 | 4,713.67 | 171.29 | | 717,385 |
| CH4 | 41.87 | 0.09 | 0.01 | | 41.97 |
| N2O | 6.10 | 0.01 | 0.00 | | 6.11 |
| CO2e | 715,366 | 4,718.53 | 171.87 | | 720,256 |
| **HAPs regulated by Portland Cement NESHAP** | | | | | - |
| HCl | 11.94 | | | | 11.94 |
| D/F | N/A | | | | - |
| Hg | 0.01 | | | | 0.01 |

V. Existing Air Quality

This permit is for clarification of requirements for CEMS and CPMS on the Solid Fuel Mill Stack and to correct minor permitting language. The previous permit before this was for an increase in the cement production capacity at the existing Ash Grove facility by installing new equipment to convert from a "wet" to a "dry" manufacturing process. This action does not result in an increase in emissions and air quality is not impacted.

Currently, Ash Grove is in an area designated as "Unclassifiable/Attainment" for all air quality criteria pollutants (40 CFR 81.327). There are two nonattainment areas near the main Ash Grove facility. The East Helena, Montana (MT), lead and sulfur dioxide ($SO_2$) nonattainment area (NAA) boundaries are about 1.8 miles and 1.9 miles north, respectively, of Ash Grove. The NAA address the primary 1978 lead National Ambient Air Quality Standard (NAAQS), and the primary (24-hour and annual) and secondary (3-hour) $SO_2$ NAAQS.

Ash Grove is located about 1.5 km (0.9 mi) east of the Interstate 15 (I-15) interchange at Montana City on Highway 518. The main facility is located in the Southeast ¼ of Section 12 and Northeast ¼ of Section 13, Township 9 North, Range 3 West, Jefferson County. The old quarry and silos are located in Sections 7 and 18 of Township 9 North, Range 2 West in Jefferson County. The current quarry is located in Sections 10 and 15, Township 9 North, Range 3 West, Jefferson County. The closest Class I area is the Gates of the Mountains

Wilderness Area which is about 19 miles north of the main Ash Grove facility. Class I areas were created by the Clean Air Act of 1977 and are provided the highest level of air quality protection by USEPA and include areas such as wilderness areas and national parks (http://www.epa.gov/visibility/class1.html).

VI. Ambient Air Impact Analysis

The Department determined, based on the modification request that there are no emission increases associated with this action. The Department believes it will not cause or contribute to a violation of any ambient air quality standard and the overall emissions from the project will result in an improvement in air quality versus the current operating condition.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, 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.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

Analysis Prepared By: Craig Henrikson
Date: October 19, 2015

**DEPARTMENT OF ENVIRONMENTAL QUALITY**
**Permitting and Compliance Division**
**Air Resources Management Bureau**
**P.O. Box 200901, Helena, Montana 59620**
**(406) 444-3490**

# FINAL ENVIRONMENTAL ASSESSMENT (EA)

*Issued To*: Ash Grove Cement Company

*Montana Air Quality Permit Number*: #2005-11

*Preliminary Determination Issued*: November 4, 2015
*Department Decision:* November 23, 2015
*Permit Final*:

1. *Legal Description of Site*: All existing sources of emissions at Ash Grove Cement Company (Ash Grove's) Portland cement manufacturing facility 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 plant's legal location is Sections 12 and 13, Township 9 North, Range 3 West in Jefferson County. The old quarry and silos are located in Sections 7 and 18 of Township 9 North, Range 2 West in Jefferson County. The quarry is located in Sections 9, 10, 15, and 16 of Township 9 North, Range 3 West, in Jefferson County.

2. *Description of Project*: Under the proposed action, Ash Grove has requested to clarify the requirement for continuous emission monitors (CEMS) and continuous parametric monitoring systems (CPMS) on the Solid Fuel Mill stack for the plant. The change in permit conditions would provide for demonstration of compliance through other regulatory means, including testing and monitoring.

3. *Objective of Project*: Clarify CEMS and CPMS requirements on the Solid Fuel Mill Stack.

4. *Alternatives Considered*: In addition to the proposed action, the Department also considered the "no-action" alternative. The "no-action" alternative would deny issuance of the air quality preconstruction permit to the proposed facility and leave all the CEMS and CPMS requirements for the Solid Fuel Mill Stack. The "no-action" alternative could prevent a decision from being made to construct a new kiln which would prevent a future reduction in air emissions. Additionally, the "no-action" alternative would not result in any construction related jobs associated with a possible new kiln. However, the Department of Environmental Quality (Department) does not consider the "no-action" alternative to be appropriate because Ash Grove demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a BACT analysis, would be included in MAQP #2005-11.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. *The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.*

| | | Major | Moderate | Minor | None | Unknown | Comments Included |
|---|---|---|---|---|---|---|---|
| A | Terrestrial and Aquatic Life and Habitats | | | | X | | Yes |
| B | Water Quality, Quantity, and Distribution | | | | X | | Yes |
| C | Geology and Soil Quality, Stability and Moisture | | | | X | | Yes |
| D | Vegetation Cover, Quantity, and Quality | | | | X | | Yes |
| E | Aesthetics | | | | X | | Yes |
| F | Air Quality | | | | X | | Yes |
| G | Unique Endangered, Fragile, or Limited Environmental Resources | | | | X | | Yes |
| H | Demands on Environmental Resource of Water, Air and Energy | | | | X | | Yes |
| I | Historical and Archaeological Sites | | | | X | | Yes |
| J | Cumulative and Secondary Impacts | | | | X | | Yes |

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS:
The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

The proposed elimination of any CEMS and CPMS monitoring on the Solid Fuel Mill Stack would not be expected to have any impacts on terrestrial and aquatic life and habitats.

B. Water Quality, Quantity, and Distribution

The proposed elimination of any CEMS and CPMS monitoring on the Solid Fuel Mill Stack would not be expected to have any impacts on water quality, quantity and distribution.

C. Geology and Soil Quality, Stability, and Moisture

The proposed elimination of any CEMS and CPMS monitoring on the Solid Fuel Mill Stack would not be expected to have any impacts on the geology and soil quality, stability and moisture.

D. Vegetation Cover, Quantity, and Quality

The proposed elimination of any CEMS and CPMS monitoring on the Solid Fuel Mill Stack would not be expected to have any impacts on vegetation cover, quantity and quality.

E. Aesthetics

The proposed elimination of any CEMS and CPMS monitoring on the Solid Fuel Mill Stack would not be expected to have any impacts on aesthetics.

F. Air Quality

The proposed elimination of any CEMS and CPMS monitoring on the Solid Fuel Mill Stack would not be expected to have any impacts on air quality. Other means will be required by Ash Grove to demonstrate compliance. Air quality impacts from the operation of the proposed modernization project under MAQP #2005-10 (and carried forward under MAQP #2005-11) would be minor because most emissions will decrease with the replacement of the older equipment.

G. Unique Endangered, Fragile, or Limited Environmental Resources

The proposed elimination of any CEMS and CPMS monitoring on the Solid Fuel Mill Stack would not be expected to have any impacts on unique endangered, fragile or any limited environmental resources.

H. Demands on Environmental Resource of Water, Air, and Energy

The proposed elimination of any CEMS and CPMS monitoring on the Solid Fuel Mill Stack would not be expected to have any impacts on the demands on environmental resources of water, air or energy. The elimination of CEMS and CPMS systems will reduce the need for electricity and equipment.

I. Historical and Archaeological Sites

The proposed elimination of any CEMS and CPMS monitoring on the Solid Fuel Mill Stack would not be expected to have any impacts on historical and archaeological sites.

J. Cumulative and Secondary Impacts

The proposed elimination of any CEMS and CPMS monitoring on the Solid Fuel Mill Stack would not be expected to have any cumulative and secondary impacts. All other conditions previously approved under MAQP #2005-10 will remain in place. However, future changes associated with this facility would have to apply for and receive the appropriate permits in addition to this MAQP prior to operation. The permits would address the environmental impacts associated with the operations at the site.

8. *The following table summarizes the potential economic and social effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.*

| | | Major | Moderate | Minor | None | Unknown | Comments Included |
|---|---|---|---|---|---|---|---|
| A | Social Structures and Mores | | | | X | | Yes |
| B | Cultural Uniqueness and Diversity | | | | X | | Yes |
| C | Local and State Tax Base and Tax Revenue | | | | X | | Yes |
| D | Agricultural or Industrial Production | | | | X | | Yes |
| E | Human Health | | | | X | | Yes |
| F | Access to and Quality of Recreational and Wilderness Activities | | | | X | | Yes |
| G | Quantity and Distribution of Employment | | | X | | | Yes |
| H | Distribution of Population | | | | X | | Yes |
| I | Demands for Government Services | | | | X | | Yes |
| J | Industrial and Commercial Activity | | | | X | | Yes |
| K | Locally Adopted Environmental Plans and Goals | | | | X | | Yes |
| L | Cumulative and Secondary Impacts | | | | X | | Yes |

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

The elimination of any CEMS and CPMS requirements on the Solid Fuel Mill Stack will have no impacts on the social structures and mores.

B. Cultural Uniqueness and Diversity

The elimination of any CEMS and CPMS requirements on the Solid Fuel Mill Stack will have no impacts on the cultural uniqueness and diversity.

C. Local and State Tax Base and Tax Revenue.

The elimination of any CEMS and CPMS requirements on the Solid Fuel Mill Stack will have no impacts on the local and state tax base and tax revenue.

D. Agricultural or Industrial Production

The elimination of any CEMS and CPMS requirements on the Solid Fuel Mill Stack will have no impact on the agricultural or industrial production.

E. Human Health

The elimination of any CEMS and CPMS requirements on the Solid Fuel Mill Stack will have no impacts on the human health.

F. Access to and Quality of Recreational and Wilderness Activities

The elimination of any CEMS and CPMS requirements on the Solid Fuel Mill Stack will have no impacts on the access to and quality of recreational and wilderness activities.

G. Quantity and Distribution of Employment

The elimination of any CEMS and CPMS requirements on the Solid Fuel Mill Stack will have minor impacts on the quantity and distribution of employment. With the elimination of any future CEMS and CPMS, lower future maintenance level requirements would occur at the facility due to less monitoring equipment to maintain.

H. Distribution of Population

The elimination of any CEMS and CPMS requirements on the Solid Fuel Mill Stack will have no impacts on the distribution of population.

I. Demands of Government Services

The elimination of any CEMS and CPMS requirements on the Solid Fuel Mill Stack will have no impacts on the demands of government services.

J. Industrial and Commercial Activity

The elimination of any CEMS and CPMS requirements on the Solid Fuel Mill Stack will have no impacts on the industrial and commercial activity.

K. Locally Adopted Environmental Plans and Goals

The elimination of any CEMS and CPMS requirements on the Solid Fuel Mill Stack will have no impacts on any locally adopted environmental plans and goals.

L. Cumulative and Secondary Impacts

The elimination of any CEMS and CPMS requirements on the Solid Fuel Mill Stack will have no cumulative and secondary impacts.

Recommendation: No Environmental Impact Statement (EIS) is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the clarification of CEMS and CPMS requirements on the Solid Fuel Mill Stack. MAQP #2005-11 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Quality Bureau.

EA prepared by: Craig Henrikson
Date: October 19, 2015