

1                                   BEFORE THE BOARD OF ENVIRONMENTAL REVIEW  
2                                   OF THE STATE OF MONTANA

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3 In the Matter of an Order Setting Air  
4 Pollutant Emission Limits that the State  
5 of Montana may Submit to the Federal  
6 Environmental Protection Agency for  
7 Revision of the State Implementation Plan  
8 Concerning Protection of Visibility,  
9 Affecting the Following Facilities:  
10 Ash Grove Cement Company’s Montana  
11 City Plant, and GCC Three Forks, LLC’s  
12 Trident Plant

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**FINDINGS OF FACT,  
CONCLUSIONS OF  
LAW, AND ORDER**

10           The Montana Department of Environmental Quality, Ash Grove Cement  
11 Company, and GCC Three Forks, LLC (the Parties) hereby agree to the following  
12 Findings of Fact and Conclusions of Law:

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14                                   **FINDINGS OF FACT**

15           1.     In the 1977 Amendments to the Federal Clean Air Act (Act),  
16 Congress set as a national goal the prevention of any future, and the remedying of  
17 any existing, impairment of visibility resulting from manmade air pollution in  
18 mandatory Federal Class I Areas. § 169A of the Act; 42 U.S.C. § 7491.

1           2.     On July 1, 1999, the United States Environmental Protection Agency  
2 (EPA) promulgated the Regional Haze Rule (Rule) for the protection of visibility.

3           3.     The purpose of the Rule is to reduce or eliminate manmade  
4 impairment of visibility at 156 Class I Areas, working toward a goal of natural  
5 visibility conditions by the year 2064. EPA promulgated the Rule under Section  
6 169A of the Act, 42 U.S.C. § 7491.

7           4.     The Rule requires each state to submit a State Implementation Plan  
8 (SIP) to EPA for the control of air pollutants that contribute to haze. 40 C.F.R. §  
9 51.308. The State of Montana was required to submit a SIP by December 17,  
10 2007.

11          5.     In 2006, the Montana Department of Environmental Quality  
12 (Department) notified EPA that Montana would not submit a SIP by the prescribed  
13 due date. On January 15, 2009, EPA finalized a finding that 37 states, including  
14 Montana, had failed to submit SIPs required by the Rule. 74 Fed. Reg. 2,392,  
15 2,393.

16          6.     Section 110(c)(1) of the Act, 42 U.S.C. § 7410(c)(1), requires EPA to  
17 promulgate a Federal Implementation Plan (FIP) when it finds that a state has  
18 failed to make a required submission.

19          7.     On September 18, 2012, EPA finalized a FIP (77 Fed. Reg. 57,863) to  
20 address regional haze in Montana. The FIP, codified at 40 C.F.R. § 52.1396,

1 described visibility conditions at each Class I Area in Montana for the baseline  
2 years of 2000-2004 and established a set of visibility goals to be achieved by the  
3 year 2018. The FIP contains emission limitations and other requirements intended  
4 to improve visibility.

5 8. As part of the program to reduce existing contributions to visibility  
6 impairment, the FIP required certain industrial sources, including the cement kiln  
7 in Montana City, then owned by Ash Grove Cement Company (Ash Grove), and  
8 the Trident cement kiln in Three Forks, then owned by Holcim (US), Inc., to meet  
9 specific emission limitations for particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), and  
10 nitrogen oxides (NO<sub>x</sub>). The FIP also required the installation and operation of a  
11 continuous emission monitoring system (CEMS) at each facility to determine  
12 compliance with the emission limitations.

13 9. On September 12, 2017, EPA finalized revisions to the FIP regarding  
14 the NO<sub>x</sub> emission limit at Oldcastle. 82 Fed. Reg. 42,738. The final revision  
15 resulted from conversations between EPA, Oldcastle, and the Department about  
16 Oldcastle's concerns that the original FIP limit on NO<sub>x</sub> may not be able to be  
17 achieved consistently, particularly without a visible detached plume at the site.  
18 Oldcastle also expressed concerns about EPA's method of calculation of the FIP  
19 limit.

1           10.    On November 7, 2017, the Department submitted a report to EPA  
2 detailing the progress made toward reducing emissions and improving visibility  
3 since the FIP was promulgated. The report noted that as of October 18, 2017, the  
4 final compliance date in the FIP, Ash Grove was complying with all emission  
5 limitations and other requirements. At the time, Oldcastle was complying with  
6 both PM and SO<sub>2</sub> emission limitations and other requirements.

7           11.    In compliance reports received by the Department on February 1,  
8 2018, Oldcastle reported compliance with the 2017 revised FIP limitations for  
9 NO<sub>x</sub>, based on continuous monitoring from November 20 through December 31,  
10 2017.

11           12.    On February 27, 2018, Oldcastle applied to renew the Title V  
12 operating permit for the Trident facility. The application included a request that  
13 the Department incorporate the revised NO<sub>x</sub> limit into the permit.

14           13.    On September 4, 2018, the Department received a Notice of Intent to  
15 Transfer Ownership of the Trident plant from GCC Three Forks, Inc. (GCC),  
16 which had acquired it from Oldcastle on June 23, 2018. The Department issued a  
17 final permit to GCC on October 11, 2018.

18           14.    GCC has expressed continued concern that the emission control  
19 technology and the NO<sub>x</sub> limit in the revised FIP, which have been incorporated  
20 into the Title V permit, were not properly established. Nevertheless, for purposes

1 of this Memorandum and Order, GCC has agreed that the revised NOx limit will  
2 remain in the Title V permit. GCC asserts the right to seek to revise the Title V  
3 permit and contest the NOx limit at a future date.

4 15. The emission control strategy outlined in the FIP and included in  
5 Exhibit A would continue to assure protection of visibility should the State of  
6 Montana gain authority for its implementation and enforcement. Additionally,  
7 more stringent requirements may exist now or be put in place in the future as a  
8 result of rules, regulations, orders, or analyses that are not directly related to the  
9 Rule but that may supersede the emission control strategy in Exhibit A.

10 16. 40 C.F.R. Part 51, Appendix V, prescribes the criteria for determining  
11 completeness of a SIP submission. Appendix V, ¶ 2.1(b) requires that the state  
12 submit “[e]vidence that the State has adopted the plan in the State code or body of  
13 regulations; or issued the permit, order, consent agreement [...] in final form.”

14 17. In this proceeding, the parties are seeking a Board Order approving  
15 and adopting the emission control strategy incorporated here as Exhibit A, which  
16 would fulfill the state adoption requirements of a SIP submission.

17 18. The parties intend that, if Exhibit A is adopted and incorporated by  
18 Board Order, the State of Montana will submit it to EPA for review and approval  
19 as part of the Regional Haze SIP, replacing any existing FIP requirements.

**CONCLUSIONS OF LAW**

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2       1.     The Board has authority under § 75-2-203, Montana Code Annotated  
3 (MCA), to set air pollutant emission levels.

4       2.     The Department is responsible for preparing and developing a  
5 comprehensive plan for the prevention, abatement, and control of air pollution in  
6 the State of Montana. § 75-2-112(2)(c), MCA.

7       3.     The Board is authorized to issue orders necessary to effectuate the  
8 purposes of the Montana Clean Air Act. § 75-2-111(3), MCA.

9       4.     A Board Order adopting and incorporating the requirements of  
10 Exhibit A is necessary to create an enforceable mechanism that may be submitted  
11 by the State of Montana to EPA for inclusion into the SIP.

12       5.     All Findings of Fact in this Memorandum and Order are incorporated  
13 into these Conclusions of Law.

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1           6.     The undersigned parties request the Board to issue an order adopting  
2 the requirements of Exhibit A. Effective on adoption in and issuance of a Board  
3 Order, such requirements will be enforceable by the Department.

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5 ASH GROVE CEMENT COMPANY

GCC THREE FORKS, LLC

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By: \_\_\_\_\_

By: Adam DeVoe  
\_\_\_\_\_

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8 By: \_\_\_\_\_  
Attorney

By:   
\_\_\_\_\_ Attorney

9

Date: \_\_\_\_\_

Date: 8/8/19  
\_\_\_\_\_

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11 DEPARTMENT OF ENVIRONMENTAL  
12 QUALITY

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13 By: \_\_\_\_\_

14

15 By: \_\_\_\_\_  
Attorney

15

16 Date: \_\_\_\_\_

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1 6. The undersigned parties request the Board to issue an order adopting  
2 the requirements of Exhibit A. Effective on adoption in and issuance of a Board  
3 Order, such requirements will be enforceable by the Department.  
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5 ASH GROVE CEMENT COMPANY

GCC THREE FORKS, LLC

6 By:   
7 Curtis Lesstie, VP Env. Affairs

By: \_\_\_\_\_

8 By:   
9 Attorney Allen Jones, Ass. Gen. Counsel

By: \_\_\_\_\_  
Attorney

10 Date: 8/13/19

Date: \_\_\_\_\_

11 DEPARTMENT OF ENVIRONMENTAL  
12 QUALITY

13 By:   
14 \_\_\_\_\_

15 By:   
16 Attorney N.J. Mullen

17 Date: Aug. 29, 2019

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ORDER

The Board adopts the Findings of Fact and Conclusions of Law and Orders that the emission control strategy in Exhibit A is adopted.

BOARD OF ENVIRONMENTAL REVIEW

\_\_\_\_\_  
Date

By: \_\_\_\_\_  
CHRISTINE DEVENY  
Chair

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## EXHIBIT A

### EMISSION LIMITATIONS AND CONDITIONS FOR THE PROTECTION OF VISIBILITY

#### Section 1 Applicability

(1) This document applies to the owner/operator of cement kilns at the following cement production plants:

- a. Ash Grove Cement, Montana City Plant.

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. GCC Three Forks, LLC, Trident Plant.

Plant Location:

The facility is located in the Northeast ¼ of Section 9, Southeast ¼ of Section 4, Southwest ¼ of Section 3, and Northwest ¼ of Section 10, Township 2 North, Range 2 East, approximately 5 miles northeast of Three Forks in Gallatin County, Montana.

#### Section 2 Definitions

(1) Terms not defined below shall have the meaning given them in the Federal Clean Air Act or EPA's regulations implementing the Clean Air Act. For purposes of this section:

- a. *Continuous emission monitoring system or CEMS* means the equipment required by this section to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a

permanent record of SO<sub>2</sub> and NO<sub>x</sub> emissions, other pollutant emissions, diluent, or stack gas volumetric flow rate.

- b. *Kiln operating day* means a 24-hour period between 12 midnight and the following midnight during which the kiln operates.
- c. *NO<sub>x</sub>* means nitrogen oxides.
- d. *Owner/operator* means any person who owns or who operates, controls, or supervises a unit identified in Section 1 of this document.
- e. *PM* means filterable total particulate matter.
- f. *SO<sub>2</sub>* means sulfur dioxide.
- g. *Unit* means the cement kiln identified in Section 1 of this document.

### Section 3 Emissions Limitations

(1) The owner/operator shall not emit or cause to be emitted PM, SO<sub>2</sub> or NO<sub>x</sub> in excess of the following limitations, in pounds per ton of clinker produced, averaged over a rolling 30-day period for SO<sub>2</sub> and NO<sub>x</sub>:

<b>Source Name</b>	<b>PM Emission Limit</b>	<b>SO<sub>2</sub> Emission Limit (lb/ton clinker)</b>	<b>NO<sub>x</sub> Emission Limit (lb/ton clinker)</b>
Ash Grove, Montana City	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 $E = 4.10p^{0.67}$ where E = rate of emission in pounds per hour and p = process weight rate in tons per hour; however if the process weight rate of the kiln is greater than 30 tons per hour, then the emission limit shall be calculated using $E = 55.0p^{0.11}-40$ , where E = rate of emission in pounds per hour and p = process weight rate in tons per hour	11.5	8.0
GCC, Trident	0.77 lb/ton clinker	1.3	7.6

- (2) These emission limitations shall apply at all times, including startups, shutdowns, emergencies, and malfunctions.

#### Section 4 Compliance Date

- (1) The owner or operator shall comply with the emission limitations and other requirements of this section as follows, unless otherwise indicated in specific paragraphs: Compliance with PM emission limits is required by November 17, 2012. Compliance with SO<sub>2</sub> and NO<sub>x</sub> emission limits is required by April 16, 2013, unless installation of additional emission controls is necessary to comply with emission limitations under this rule, in which case compliance is required by October 18, 2017.

#### Section 5 Compliance Determinations

- (1) Compliance determinations for SO<sub>2</sub> and NO<sub>x</sub>
- a. At all times after the compliance date specified in Section 4 of this document, the owner/operator of each unit shall maintain, calibrate, and operate a CEMS, in full compliance with the requirements found at 40 CFR 60.63(f) and (g), to accurately measure concentration by volume of SO<sub>2</sub> and NO<sub>x</sub> emissions into the atmosphere from each unit. The CEMS shall be used by the owner/operator to determine compliance with the emission limitations in Section 3 of this document for each unit, in combination with data on actual clinker production. The owner/operator must operate the monitoring system and collect data at all required intervals at all times the affected unit is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).

b. Method

- i. The owner/operator of each unit shall record the daily clinker production rates.
- ii. The owner/operator of each unit shall calculate and record the 30-operating day rolling emission rates of SO<sub>2</sub> and NO<sub>x</sub>, in lb/ton of clinker produced, 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:

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

Where:

ED = 30 kiln operating day average emission rate of NO<sub>x</sub> or SO<sub>2</sub>, lb/ton of clinker;

C<sub>i</sub> = Concentration of SO<sub>2</sub> or NO<sub>x</sub> for hour i, ppm;

Q<sub>i</sub> = volumetric flow rate of effluent gas for hour i, where

C<sub>i</sub> and Q<sub>i</sub> are on the same basis (either wet or dry), scf/hr;

P<sub>i</sub> = total kiln clinker produced during production hour i, ton/hr;

k = conversion factor, 1.194 × 10<sup>-7</sup> for NO<sub>x</sub> and 1.660 × 10<sup>-7</sup> for SO<sub>2</sub>; and

n = number of kiln operating hours over 30 kiln operating days, n = 1 to 720.

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. Hourly clinker production shall be determined by the owner/operator in accordance with the requirements found at 40 CFR 60.63(b).

- iii. At the end of each kiln operating day, the owner/operator of each unit shall calculate and record a new 30-day rolling average emission rate in lb/ton clinker from the arithmetic average of all valid hourly emission rates for the current kiln operating day and the previous 29 successive kiln operating days.

(2) Compliance determinations for particulate matter

- a. Compliance with the particulate matter BART emission limits for each cement kiln shall be determined by the owner/operator from annual performance stack tests. Within 60 days of the compliance deadline specified in Section 4 of this document, and on at least an annual basis thereafter, the owner/operator of each unit shall conduct a stack test on each unit to measure particulate matter emissions using EPA Method 5, 5B, 5D, or 17, as appropriate, in 40 CFR part 60, Appendix A. Testing, sampling and data collection, recording, analysis, and transmittal must be performed as specified in the Montana Source Test Protocol and Procedures Manual or an alternative Source Test Protocol that has been approved by the Montana Department of Environmental Quality.
  - i. For Ash Grove Cement, the emission rate of particulate matter shall be computed by the owner/operator for each run in pounds per hour (lb/hr).
  - ii. For Trident, the emission rate (E) of particulate matter shall be computed by the owner/operator for each run in lb/ton clinker, using the following equation:

$$E = (CsQs)/PK$$

Where:

E = emission rate of PM, lb/ton of clinker produced;

Cs = concentration of PM in grains per standard cubic foot (gr/scf);

Qs = volumetric flow rate of effluent gas, where Cs and Qs are on the same basis (either wet or dry), scf/hr;

P = total kiln clinker production, tons/hr; and

K = conversion factor, 7,000 gr/lb.

## Section 6 Recordkeeping

- (1) The owner/operator shall maintain the following records for at least five years:
  - a. All CEMS data, including the date, place, and time of sampling or measurement; parameters sampled or measured; and results.
  - b. All particulate matter stack test results.
  - c. All records of clinker production.
  - d. Records of quality assurance and quality control activities for emissions measuring systems including, but not limited to, any records required by 40 C.F.R. part 60, Appendix F, Procedure 1.
  - e. Records of all major maintenance activities conducted on emission units, air pollution control equipment, CEMS and clinker production measurement devices.
  - f. Any other records required by 40 C.F.R. part 60, subpart F, or 40 CFR part 60, Appendix F, Procedure 1.

## Section 7 Reporting

- (1) All reports under this section, shall be submitted by the owner/operator to the Air Quality Bureau, Montana Department of Environmental Quality, P.O. Box 200901, Helena, Montana 59620-0901.
- (2) The owner/operator of each unit shall submit excess emissions reports for SO<sub>2</sub> and NO<sub>x</sub> BART limits. Reports shall be submitted semiannually, no later than the 30th day following the end of each semiannual period. Excess emissions means emissions that exceed the emissions limits specified in Section 3 of this document. The reports shall include the magnitude, date(s), and duration of each period of excess emissions, specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the unit, the nature and cause of any malfunction (if known), and the corrective action taken or preventative measures adopted.
- (3) The owner/operator of each unit shall submit CEMS performance reports, to include dates and duration of each period during which the CEMS was inoperative (except for zero and span adjustments and calibration checks), reason(s) why the CEMS was inoperative and steps taken to prevent

recurrence, and any CEMS repairs or adjustments. The owner/operator shall submit reports semiannually.

- a. The owner/operator of each unit shall also submit results of any CEMS performance tests required by 40 C.F.R. part 60, appendix F, Procedure 1 (Relative Accuracy Test Audits, Relative Accuracy Audits, and Cylinder Gas Audits).
- (4) When no excess emissions have occurred or the CEMS has not been inoperative, repaired, or adjusted during the reporting period, the owner/operator shall state such information in the quarterly reports required by Section 6 of this document.
- (5) The owner/operator of each unit shall submit results of any particulate matter stack tests conducted for demonstrating compliance with the particulate matter BART limits in Section 3 of this document within 60 days after the completion of the test.
- (6) The owner/operator of each unit shall submit semi-annual reports of any excursions under the approved CAM plan in accordance with the schedule specified in the source's title V permit.

## Section 8 Notifications

- (1) The owner/operator shall submit notification of commencement of construction of any equipment which is being constructed to comply with the SO<sub>2</sub> or NO<sub>x</sub> emission limits in Section 3 of this document.
- (2) The owner/operator shall submit semi-annual progress reports on construction of any such equipment.
- (3) The owner/operator shall submit notification of initial startup of any such equipment.

## Section 9 Equipment Operation

- (1) At all times, the owner/operator shall maintain each unit, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.