

Statement of Basis

**Permit to Construct No. P-2012.0032
Project ID 61067**

**Ash Grove Cement Company
Inkom, Idaho**

Facility ID 005-00004

Final



**October 1, 2012
Ken Hanna
Permit Writer**

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

CAM	Compliance Assurance Monitoring
CEMS	continuous emission monitoring systems
cfm	cubic feet per minute
CMS	continuous monitoring systems
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	CO ₂ equivalent emissions
COMS	continuous opacity monitoring systems
DEQ	Department of Environmental Quality
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gases
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pounds per hour
MACT	Maximum Achievable Control Technology
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance
PM	particulate matter
PM _{2.5}	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
PW	process weight rate
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
SCL	significant contribution limits
SM	synthetic minor
SO ₂	sulfur dioxide
SO _x	sulfur oxides
T/yr	tons per consecutive 12 calendar month period
TAP	toxic air pollutants
VOC	volatile organic compounds
µg/m ³	micrograms per cubic meter

FACILITY INFORMATION

Description

Ash Grove Cement Company (Ash Grove) manufactures Portland cement. The Inkom facility is located adjacent to the quarry from which raw materials may be mined (e.g., limestone). The raw materials are removed from the bedrock by blasting with explosives, then bulldozing the rock to the quarry floor, hauling the rock to the jaw crusher and screening until the appropriate size is obtained as needed.

Stored clinker is transported from the storage areas to the three finish ball mills where it is ground with gypsum to make cement. Separators are used to return oversized particles back to the mills for additional grinding. The plant can grind 450,000 tons of clinker per year. The cement is then pneumatically conveyed to the cement storage silos. Upon withdrawal from the silos, the cement is shipped in bulk to customers. Cement may also be received from offsite, stored and then shipped to customers.

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A), superseded (S), or terminated (T).

October 1, 2012	PTC No. P-2012.0032, PROJ 61067; revision to remove requirements for the two kilns that have been permanently shut down and to establish requirements for a new cement unloading facility. As a result of closure of the kilns, this facility will no longer be a major facility under the Title V program or under the PSD program, and T1-2007.0035 will be terminated. This permit replaces P-020326, PROJ 0326, issued 12/23/10. (A)
December 23, 2010	PTC No. P-020326, PROJ 0326; site-wide permit issued to incorporate and streamline the existing permit requirements into a single permit, to improve the manner in which fugitive dust is controlled on a facility-wide basis, and to fulfill requirements of the June 10, 2002 Consent Order requirements including PSD requirements for the kilns. This permit replaced the following permits: T2/PTC No. 005-00004, issued 11/27/02; P-060322 issued 11/6/06; P-060304, issued 11/6/06; P-060325, issued 5/25/07; and P-2007.0177, issued 12/24/07. This permit was superseded by P-2012.0032, PROJ 61067, issued 10/1/12. (S)
December 24, 2007	PTC No. P-2007.0177; modification of clinker unloading system. Superseded by P-020326 issued 12/23/10. (S)
May 25, 2007	Tier I No. T1-2007.0035, administrative amendment to incorporate PTC P-060325. After the kilns were shut down the Inkom facility was no longer a "Tier I source" and the Tier I permit was officially terminated upon issuance of PTC P-2012.0032 PROJ 61067. (T)
May 25, 2007	PTC No. P-060325; modify kiln dust handling system and increase on-site storage; this permit was superseded by P-020326 issued 12/23/10 (S)
November 6, 2006	Tier I No. T1-060305; administrative amendment to incorporate PTCs P-060304 and P-060322; superseded by T1-2007.0035 (S)
November 6, 2006	PTC No. P-060322; modification of the coal handling system; this permit was superseded by P-020326 (S)
November 6, 2006	PTC No. P-060304; modification to increase processing rates for limestone, clay, shale, gypsum and finished cement; this permit was superseded by P-020326 (S)
January 5, 2006	T1-050315, administrative amendment to incorporate P-050314, superseded by T1-060305 (S)
November 10, 2005	PTC No. P-050314; modification of clinker unloading system to receive clinker shipments from off-site; superseded by PTC No. P-2007.0177 (S)

June 13, 2003 Stipulation for Dismissal with Prejudice, Docket No. 0101-03-04; specifies enforceable Tier I permit requirements

January 16, 2003 Stipulation for Dismissal with Prejudice, Docket No. 0101-02-08; specifies enforceable Tier I permit requirements

December 17, 2002 Tier I No. 005-00004; initial Tier I OP; superseded by T1-050315 (S)

November 27, 2002 Tier II/PTC No. 005-00004; modification to modify the Operating Permit issued 12/8/97 and to incorporate and replace PTCs issued 5/17/99 and 1/29/99; it also incorporates requirements from the 6/10/02 Consent Order. This permit was superseded by P-020326 (S).

September 12, 2002 PTC Exemption, P-010316; No. 3 Finish Mill Dust Collector (A)

April 19, 2001 PTC Exemption, P-000348; #2 Kiln Dust Scoops(A)

March 22, 2001 PTC Exemption, P-000347; Coal Weighfeeder (A)

May 17, 1999 PTC No. 005-00004; Dust Scoop System on Kiln No. 1; superseded by Tier II No. 005-00004 issued 11/27/02 (S)

January 29, 1999 PTC No. 005-00004; No.s 1 & 2 Clinker Coolers, Clinker Handling System and Clinker Reclaim. This PTC replaced/superseded "the Sections titled #1 and #2 Clinker Coolers and Clinker Handling System, Clinker Reclaim, and Appendices A & B in the facility's Tier II Operating Permit dated December 8, 1997. The pages of the Operating Permit which are superseded by this PTC are pages 18-22, 32 and 33. All other provisions of the Tier II remain unchanged"; superseded by Tier II No. 005-00004, issued 11/27/02 (S)

December 8, 1997 Tier II Operating Permit No. 005-00004; "PM10 SIP Operating Permit" renewal. This permit was be replaced by Tier II/PTC No. 005-00004 issued on November 27, 2002, as described in item no. 2 of the Stipulation for Dismissal with Prejudice signed on 6/13/03 (S).

December 4, 1995 PM10 SIP Tier II Operating Permit No. 005-00004; emission inventory in the 6/20/95 Operating Permit was modified; superseded by Tier II Operating Permit No. 005-00004, issued 12/8/97 (S)

June 30, 1995 PM10 SIP Tier II Operating Permit No. 005-00004; Facility-wide permit issued for control of PM10 emissions to meet NAAQS; superseded by Tier II Operating Permit No. 005-00004, issued 12/4/95 (S)

June 30, 1995 "Agreement between Ash Grove Cement, EPA and DEQ"; "This document identifies the actions that must be completed to revise the Power-Bannock Counties PM10 Nonattainment Area ("PBNA") boundary to exclude Inkom. ... IDEQ will issue a Tier II operating permit by June 30, 1995. PM10 emissions limits will be based upon representative historic levels of PM10 emissions, as discussed on June 15, 1995, provided that an adequate technical demonstration is made."

May 5, 1995 PTC Exemption; approval to burn approx. 12,775 pounds of bundled FBI paper documents as a replacement fuel for whole tire/TDF; exemption is no longer active since this project was completed (A)

April 4, 1995 PTC No. 005-00004; modification of PTC for "#1 and #2 Rotary Kilns - Whole Tire/Tire Derived Fuel". Contains detailed requirements for all fuels used in Kilns. Increased Tire/TDF firing limit to 25%; superseded by Tier II permit issued 6/30/95 (S)

January 13, 1995	PTC No. 005-00004; PTC for “#1 and #2 Rotary Kilns - Whole Tire/Tire Derived Fuel”. This is an “amended PTC with the increase in TDF for the #2 kiln, the addition of CO emissions for the #1 and #2 kilns, the reduction of SO2 emissions, alterations for the operation of the ESPs, and the installation of the auxiliary drag chain. The spark rate monitoring requirements of the ESPs in Section 3.2.5 and 3.3.2.5 are removed. The monitoring of the pressure drop of the ESPs, however, shall not be removed.” Superseded by PTC issued 4/4/95 (S).
February 28, 1994	PTC Exemption; conditional approval for destruction of up to 6500 lb/yr of FBI audio tapes was given so long as specific operating and monitoring requirements were followed. (A)
January 14, 1993	PTC No. 005-00004; modification of PTC for #1 and #2 Rotary Kilns to burn Tire Derived Fuel; superseded by PTC issued 1/13/95 (S)
April 29, 1992	PTC No. 005-00004; modification of PTC for #1 and #2 Rotary Kilns for a waste oil fuel increase; superseded by PTC issued 1/14/93 (S)

Application Scope

This PTC is a revision of an existing PTC. The applicant has proposed to:

- Install and operate equipment to allow for the importing and storage of cement from offsite. Cement would be received from other plants by railcar. This action alone meets PTC exemption requirements.
- Remove all requirements for the kiln systems which have been permanently shut down. A permit revision is necessary to complete this action.

Application Chronology

June 11, 2012	DEQ received an application and an application fee.
July 10, 2012	DEQ determined that the application was complete.
August 31, 2012	DEQ made available the draft permit and statement of basis for peer and regional office review.
August 31, 2012	DEQ made available the draft permit and statement of basis for applicant review.
September 10, 2012	DEQ received the permit processing fee.
September 11, 14 & 19, 2012	DEQ received comments on the draft permit from the facility

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

For this permit, detailed emission unit and control equipment descriptions are included in the permit itself. Refer to the detailed “summary descriptions” in Section 3, 4, and 5 of the permit and control equipment tables 3.1, 4.1, and 5.1 in the permit.

Emissions Inventories

The proposed new cement unloading equipment utilizes fully enclosed material transfer systems such as the railcar unloading boot-lift system and existing material transfer system such as the pneumatic system for transferring cement into the cement storage silos that are controlled by baghouse #9. In addition to the small increase in emissions from the new cement unloading equipment, there is a very large reduction in emissions resulting from closure of the cement kiln systems. Following is a summary of the emission increases from the new cement unloading facility as presented in the permit application and verified by DEQ.

Table 1 INCREASES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM		PM ₁₀		PM _{2.5}	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Rail Car Unloading	0.25	0.20	0.11	0.09	0.02	0.02
Bin Vent for Screw conveyor to FK pump air seal	0.06	0.06	0.06	0.06	0.06	0.06
Kiln No 1 removed from service	-11.6	-50.8	-9.9	-43.2	>1	>1
Kiln No 2 removed from service	-16.9	-73.9	-14.3	-62.8		
Increases in Potential to Emit	-11.3	-124	-24.0	-106	0.00	0.00

Non-Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of non-carcinogenic toxic air pollutants (TAP) is provided in the following table.

Table 2 INCREASES IN POTENTIAL TO EMIT FOR NON-CARCINOGENIC TOXIC AIR POLLUTANTS

Non-Carcinogenic Toxic Air Pollutants	Increase in 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Portland Cement	0.31	0.667	No

None of the PTEs for non-carcinogenic TAP were exceeded as a result of this project. Therefore, modeling is not required for any non-carcinogenic TAP because none of the 24-hour average carcinogenic screening ELs identified in IDAPA 58.01.01.586 were exceeded.

Ambient Air Quality Impact Analyses

As presented in the permit application and as verified by DEQ, the estimated emission rates of criteria pollutants and Portland cement from this project were below applicable screening emission levels (EL) and published DEQ modeling thresholds established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline¹. Therefore, modeling was not required. Refer to the Emissions Inventories section for additional information concerning the emission inventories.

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in the Inkom area of Bannock County, which is designated as attainment or unclassifiable for PM_{2.5}, PM₁₀, SO₂, NO₂, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

Facility Classification

“Synthetic Minor” classification for criteria pollutants is defined as the uncontrolled Potential to Emit for criteria pollutants are above the applicable major source thresholds and the Potential to Emit for criteria pollutants fall below the applicable major source thresholds. With closure of the kilns, the combustion emissions of PM₁₀, PM_{2.5}, SO₂, NO_x, CO, VOC and greenhouse gases (GHG) from the kilns are reduced to zero. The remaining GHG equivalent for heating equipment is shown as 249 tons (i.e., 226 metric tons). Sources that emit or have the PTE of at least 100,000 tons-per-year (T/yr) of carbon dioxide equivalent (CO₂e) and emit or have the PTE 100 T/yr

¹ Criteria pollutant thresholds in Table 1, State of Idaho Air Quality Modeling Guideline, Doc ID AQ-011, rev. 1, December 31, 2002.

GHG on a mass basis are classified as a major source that is subject to Title V permitting requirements. In this case, since the CO₂e PTE is less than 100,000 T/yr then this facility is not classified as a major facility for GHG.

For the previous permit, when determining if the CAM requirements applied, it was determined that the combined uncontrolled PM emissions from the sources controlled by baghouses could exceed the major source threshold for PM/PM10. However, with controls, emission from these sources are well below the major source threshold. Therefore, this facility is now designated as a Synthetic Minor facility.

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 Permit to Construct Required

The permittee has requested that a PTC be issued to the facility to remove the kiln requirements from the permit that no longer apply since the kilns have been permanently closed, and to add the cement unloading equipment to the permit. The project would meet exemption requirements because of the substantial reduction in emissions from closure of the kilns, however, a permit revision is necessary to remove the kiln requirements from the permit. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228. Note that this permit action is a “revision” in accordance with IDAPA 58.01.01.209.04 because no increase in emissions from the facility will occur as a result of issuance of this permit.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401 Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301 Requirement to Obtain Tier I Operating Permit

Following the substantial emissions reductions from closure of the kilns, post-project facility-wide emissions from this facility do not have a potential to emit (PTE) greater than 100 tons per year for PM₁₀, SO₂, NO_x, CO, or VOC, it is not a major source of GHG (as described in the Facility Classification above), and it does not have a PTE greater than 10 tons per year for any one HAP or 25 tons per year for all HAP combined. Therefore, the facility is no longer a Tier I source in accordance with IDAPA 58.01.01.006 and the requirements of IDAPA 58.01.01.301 do not apply. For this reason, on page 8 of the PTC permit application Ash Grove has requested that the Tier I operating permit be terminated. DEQ concurs and a statement has been added to the Permit cover letter to indicate that the Tier I permit is terminated upon issuance of the PTC.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 Prevention of Significant Deterioration of Air Quality

In addition to no longer being a major facility under the Title V program, this facility is no longer a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action.

NSPS Applicability (40 CFR 60), Subpart F

As described in the statement of basis for the previous permit, opacity requirements under 40 CFR 60 Subpart F apply to affected facilities other than kilns or clinker coolers. The list of affected facilities includes finished product storage, conveyor transfer points, bagging and bulk loading and unloading systems. The new cement unloading equipment falls under the definition of affected facilities, therefore, opacity requirements apply to these sources and they have been added to the list of affected facilities in Permit Condition 2.10 of the permit.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

MACT Applicability (40 CFR 63)

Applicability of the Portland Cement (PC) MACT, 40 CFR 63 Subpart LLL still needs to be confirmed. In the permit application, the following determination was proposed: "The Inkom plant is currently classified as an area source under the current MACT standards for portland cement plants (Subpart LLL). Since Ash Grove has made the commitment to retire the kilns, remaining operations at the Inkom facility are not affected sources under the current Subpart LLL rule (see 40 CFR 63.1340(b) due the facility classification as an area source." The permit was drafted under the presumption that this interpretation is correct. However, additional time is needed to confirm this determination, therefore, a condition was added to the permit as a placeholder to indicate that, if it turns out that Subpart LLL applies, then the permittee will be required to comply with the applicable sections of Subpart LLL and Subpart A.

CAM Applicability (40 CFR 64)

Since the Ash Grove facility is no longer a major source under the Title V program, the compliance assurance monitoring (CAM) program requirements under 40 CFR Part 64 no longer apply and have been removed from the permit.

Permit Conditions Review

This section describes the permit conditions for this initial permit or only those permit conditions that have been added, revised, modified or deleted as a result of this permitting action.

Revised Permit Conditions 2.10 and 5.7

The new Cement Unloading equipment meets the definition of an "affected facility" under 40 CFR 60 Subpart F, therefore, this equipment was added to the list of affected facilities in this permit condition. Operation of this equipment must comply with the NSPS requirements included in permit conditions 2.10, 2.11 and 2.12. Permit Condition 5.7 was changed to add the "initial" performance test requirement for new affected facilities "within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial startup" of the source per 40 CFR 60.8. Also, sources associated with the kiln dust handling system were removed from the list of affected sources since these sources no longer exist since the kilns were taken out of service. The descriptions of some affected units were revised to provide a better description of the units.

Revised Permit Condition 2.13

The term "applicable requirements" was added to the bullet statements to make it clear this applies only to applicable requirements under the federal rules. Also, under Part 63 it was noted that this applies only if it later determined that Part 63 requirements still apply to the facility after the kilns were shut down.

New Permit Condition 2.15

As described above under "MACT Applicability", additional time is needed to confirm applicability of the PC MACT, therefore, this permit condition was added to the permit as a placeholder to indicate that, if it turns out that Subpart LLL applies, then the permittee will be required to comply with the applicable sections of Subpart LLL and Subpart A.

Summary Description in Section 3 and emission control descriptions in Table 3.1

The summary descriptions of emission sources and the control equipment descriptions were revised to remove sources that will no longer exist as a result of closure of the kilns such as the sources associated with the storage and transfer of iron ore.

Summary Description in Section 4 and emission control descriptions in Table 4.1

The summary descriptions of emission sources and the control equipment descriptions were revised to remove sources that will no longer exist as a result of closure of the kilns such as the sources associated with the clinker coolers.

Summary Description in Section 5 and emission control descriptions in Table 5.1

The summary descriptions of emission sources and the control equipment descriptions were revised to add information for new sources installed for "cement unloading." Also, "the transfer of cement to cement silos 21 through No. 25" as controlled by baghouse 3 (BH3) was removed from the summary description and Table 5.1.

Sections 4 and 7 of the Existing Permit

These sections specified requirements for the kiln systems, including the kiln dust handling system. The kiln systems have been removed from service, therefore, the kiln system permit conditions no longer apply and these two entire sections of the permit (i.e., Permit Conditions 4.1 - 4.35 and 7.1 - 7.9), and the associated permit appendices, have been removed from the permit.

Permit Appendices

The permit Appendices were revised to remove references to emission sources that no longer exist and to remove the appendices associated with operation of the kilns (e.g., Appendix G, CAM Plan for Kiln ESPs).

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was not required in accordance with IDAPA 58.01.01.209.01.c because this is a permit "revision" under IDAPA 58.01.01.209.04 which results in no increase in emissions. There is a substantial reduction in emissions associated with closure of the kilns at this facility.

APPENDIX A – FACILITY DRAFT COMMENTS

The following comments were received from the facility on September 11, 2012, September 14, 2012, and September 19, 2012:

Facility Comment: Typographical error: Permit Condition 1.1 should read as “. . . revision is to establish...”.

DEQ Response: The error was corrected.

Facility Comment: In Permit Condition 2.10, remove the following text from the first bullet since the source(s) no longer exists: “drags to no. 1 elevator controlled by baghouse no. 1” and “dust scoops controlled by baghouse no. 11”. Remove the following text from the 2nd bullet: “iron ore conveyor transfer points”. Revise the fourth bullet to read as follows: “two screw conveyors of FK screw pump bin vent”.

DEQ Response: The affected source descriptions were revised as requested.

Facility Comment: In Permit Conditions 2.10 and 2.12, remove Kiln No. 1 and Kiln No. 2 from list of affected sources.

DEQ Response: Kilns No. 1 and 2 were removed from the list.

Facility Comment: In the Summary Description at the beginning of Section 5 and in Table 5.1, in the section for “Finish Grinding and Associate Cement Handling”, remove “emissions associated with the transfer of cement to cement silos No. 21 through No. 25 are controlled by Baghouse 3 (BH3)”.

DEQ Response: The sources were removed.

Facility Comment: Revise Section 4 to remove sources that no longer exist per the revised permit text provided via email.

DEQ Response: Section 4 was revised to only include the sources that continue to exist. The clinker handling system no longer is used and the clinker reclaim system continues to be operational.