MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
OPERATING PERMIT TECHNICAL REVIEW DOCUMENT

Permitting and Compliance Division
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Oldcastle Materials Cement Holdings, Inc.
NE ¼ Section 9, SE ¼ Section 4, SW ¼ Section 3, NW ¼ Section 10, Township 2 North, Range 2 East, Gallatin County, MT
4070 Trident Road
Three Forks, MT 59752

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

Facility Compliance Requirements	Yes	No	Comments
Source Tests Required	X		Visual surveys, Methods 5, 6, 9, and 23
Ambient Monitoring Required		X	
COMS Required	X		Kiln Stack
CEMS Required	X		PM, SO_2, NO_x, THC, Hg and Inlet Temp to PMCD
Schedule of Compliance Required		X	
Annual Compliance Certification and Semiannual Reporting Required	X		
Monthly Reporting Required		X	
Quarterly Reporting Required		X	
Applicable Air Quality Programs			
ARM Subchapter 7 Preconstruction Permitting	X		MAQP #0982-12
New Source Performance Standards (NSPS)	X		40 CFR 60 Subparts F, Y, OOO, and IIII
National Emission Standards for Hazardous Air Pollutants (NESHAPS)	X		40 CFR 61, Subpart M
Maximum Achievable Control Technology (MACT)	X		40 CFR 63, Subpart LLL, ZZZZ
Major New Source Review (NSR)/ Prevention of Significant Deterioration (PSD)	X		MAQP #0982-12
Risk Management Plan Required (RMP)		X	
Acid Rain Title IV		X	

Applicable Air Quality Programs			
Compliance Assurance Monitoring (CAM)	X		Appendix F of Permit OP0982-05
Montana Regional Haze Federal Implementation Plan (FIP)	X		40 CFR 52.1396
State Implementation Plan (SIP)	X		General SIP

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SECTION I. GENERAL INFORMATION

A. Purpose

This document establishes the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emission units affected by the operating permit proposed for this facility. The document is intended for reference during review of the proposed permit by the EPA and the public. It is also intended to provide background information not included in the operating permit and to document issues that may become important during modifications or renewals of the permit. Conclusions in this document are based on information provided in the original application submitted by Holnam, Inc. (Holnam), the predecessor of Oldcastle Materials Cement Holdings, Inc. (Oldcastle) on May 30, 1996, and an additional submittal on July 7, 2000. Conclusions in this document are also based on correspondence from Holnam of March 18, April 6, and November 12, 2001, and correspondence from Oldcastle of June 10, 2003, April 12, April 13, August 25, and November 30, 2004, July 6, August 9, and September 22, 2005, the operating permit renewal application submitted on January 26, 2006, and the minor modification application received on November 10, 2008. In addition, a renewal application was received by the Department of Environmental Quality (Department) on April 10, 2012; a revised "Compliance Plan" – Attachment B to the renewal application was received on February 12, 2013, as a result of the Portland Cement MACT revisions; and a revised emission inventory and "emitting unit name" table was received by the Department on February 15, 2013. An administrative amendment request to change the responsible official was received on December 18, 2014. An administrative amendment was received on May 8, 2015, requesting an extension of one year to comply with the applicable Portland Cement NESHAP Mercury (Hg) Emission Standards and Monitoring requirements as well as de minimis changes to the facility.

B. Facility Location

The facility is located at 4070 Trident Road, approximately 5 miles northeast of Three Forks, Montana. The legal description is the Northeast ¼ of Section 9, the Southeast ¼ of Section 4, and the Southwest ¼ of Section 10, Township 2 North, Range 2 East, in Gallatin County, Montana.

C. Facility Background Information

Montana Air Quality Permit Background

On April 27, 1971, the Ideal Cement Company received **Permit #282-072171**. This permit approved the construction of ten pieces of control equipment, as follows:

a. An electrostatic precipitator (ESP) to control kiln emissions - sized for 300,000 cubic feet per minute (cfm) @ 700 degrees Fahrenheit (°F), 15 grains per actual cubic feet per minute (gr/acfm) inlet, 0.15 gr/acfm outlet, 99.9% efficient;

b. A pulsejet type baghouse to control clinker cooler emissions - sized for 100,000 cfm @ 350 °F, 8.3:1 air to cloth ratio, Nomex bags;

c. Four Micro-pulsaire dust collectors on the rock silos:

1. 2 @ 7.4:1 air to cloth ratio, 843 square feet (ft^2) cloth area, Model IF124; and

2. 2 @ 7.8:1 air to cloth ratio, 670 ft^2 cloth area.

d. Two Micro-pulsaire dust collectors to control emissions from crushing and screening:

1. Crushing - Micro-pulsaire model IFI-48, 7200-cfm capacity fan; and

2. Screening - Micro-pulsaire model IFI-24, 7400-cfm capacity fan.

e. One small baghouse to control emissions at the clinker belt conveyor; and

f. One small baghouse to control emissions at the dustbin near the precipitator.

On May 3, 1971, the Ideal Cement Company received **Permit #293-080471** to construct the following five pieces of equipment:

a. Primary Crusher, 450 tons per hour (TPH);

b. Vibrating Screen, 6 foot (ft) x 12 ft, Missouri-Rodgers;

c. Raw Mill, 11 ft x 34 ft, Ball Mill, 2,000 horsepower (hp), F.L. Smith;

d. Kiln, 12 ft x 450 ft, Wet Process Rotary Kiln, F.L. Smith, 400 hp, kiln draft fan; and

e. Clinker Cooler, Folax Grates, F.L. Smith.

Commitments to the construction of this equipment were made prior to August 17, 1971, so the equipment is not subject to New Source Performance Standards (NSPS) 40 Code of Federal Regulations (CFR), Part 60, Subpart F.

On April 16, 1975, the Ideal Cement Company was issued **Permit #811-050475** to combust coal in their cement kiln.

On July 19, 1976, Ideal Basic Industries was issued **Permit #982** to construct four Portland cement storage silos. These silos are controlled by a baghouse.

On January 6, 1984, a modification to **Permit #811-050475** was issued to Ideal Basic Industries, which allowed the gas/coal-fired cement kiln to burn a coal/coke combination fuel.

On August 9, 1990, Holnam submitted a Permit Application #0982-01 for use of alternative fuels in the cement kiln. This permit application was withdrawn.

On November 22, 1993, Holnam submitted Permit Application #0982-02 for replacement of sections of the cement kiln. The changes proposed in the application were determined to be maintenance and did not require a permit change.

Permit #0982-03 was issued to Holnam on July 29, 1995. Holnam proposed the following: upgrade the existing cement Finish Mill #2 baghouse to a modern baghouse; replace the Finish Mill #2 air slide; replace two existing dust collectors on the coal/coke process with one unit; and construct a separate coke grinding, storage, and transport system with dust collection.

The Finish Mill #2 baghouse, which replaced an existing baghouse, controls the emission units listed below.

a. A replacement air slide;

b. The clinker/gypsum feed belt via a booster fan;

c. The Finish Mill #2;

d. The bucket elevator; and

e. The product separator.

The air slide is totally enclosed and is necessary for the transport of cement from the elevator to the product separator (air separator).

The replacement of two existing dust collectors with the coal/coke baghouse on the existing coal/coke diversion, crushing, and storage system controls the equipment listed below.

a. A diverter valve at the top of the existing coal/coke storage silo;

b. A 24-inch covered screw conveyor that transports the coke from the above diverter valve;

c. A 290-ton "raw" coke storage silo;

d. Two diverter valves;

e. The hammermill;

f. The bucket elevator;

g. The coal/coke storage silo; and

h. The covered screw conveyor.

The separate coke system transports coke on the existing path up to the point of delivery into the top of the coal/coke storage silo. At this point, the system incorporates a gate that discharges into a 290-ton capacity "raw" coke storage silo. Coal is diverted into the existing coal/coke storage silo. The raw coke storage silo gravity feeds onto a covered belt assembly, where the material is weighed before it is gravity fed into the coke grinding mill. The ground coke fines are then evacuated from the grinding mill by a 15,400-cfm fan that pneumatically transports the crushed coke to the coke system baghouse where the gas and solid phases are separated. The ground, "fine" coke material discharges from this dust collector into a 220-ton "fine" coke storage silo. Pneumatic transport of the fine coke particles from this silo to the kiln hood are facilitated by a coke blower system.

The coke system baghouse and fan controls the equipment listed below.

a. A belt conveyor with weighing system at the base of the raw coke storage silo;

b. A coke grinding mill;

c. A 220-ton "fine" coke storage silo.

The emission increases due to the proposed changes were estimated at 10.84 tons per year of particulate matter (PM).

MAQP Background

Permit #0982-04 was issued on May 8, 1998. Holnam submitted a complete permit application on March 30, 1998. The application proposed a pozzolan material (fly ash) system that included the following new equipment: pozzolan material storage silo with bin vent dust collector; rotary feeder; weighbelt conveyor; and screw line conveyor. Holnam intended to introduce pozzolan material at the finish mill to produce Holnam Performance Cement (HPC). Controlled particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) emissions from the proposed equipment was approximately 2.10 tons per year. The permit was also updated to reflect compliance demonstrations and notifications that were completed and rule references that were outdated.

Permit #0982-03 had included conditions from Permits #282-072171, #293-080471, #811-050475, #982, and modification #811-050475. Therefore, Permit #0982-04 also replaced these permits.

Permit modification #0982-05 was issued on September 3, 1998, to allow Holnam to conduct a test burn that exceeds the operational limit in Section II.B.1. The amount of petroleum coke burned in the kiln was limited so that 15 tons per year of sulfur dioxide (SO_2) was not exceeded; therefore, this test burn could be completed according to ARM 17.8.705(1)(q).

However, as described in ARM 17.8.733(1)(c), the permit needed to be modified to allow the temporary burning of petroleum coke in excess of the limitation in Section II.B.1. Holnam was required to comply with the sulfur-in-fuel requirements contained in ARM 17.8.322(6)(c) and to maintain records to demonstrate compliance with the petroleum coke limitation in Section II.F.1.b of the permit. In addition, testing was required to determine emissions at the maximum rate of petroleum coke burned. Permit #0982-05 replaced Permit #0982-04.

Permit #0982-06 was issued on January 24, 1999. The 99.9% control efficiency for removal of particulate emissions from the kiln exhaust through the use of an ESP in Section II.A.4 of the permit was removed. The change did not result in an increase in allowable particulate emission rates from the kiln. Permit #0982-06 replaced Permit #0982-05.

Permit #0982-07 was issued on September 23, 1999. Holnam proposed (in Permit Application #0982-07) to use 800 tons per year of post-consumer recycled container glass in the kiln and handle 85,000 ton per year of landfilled cement kiln dust. Holnam submitted an emission inventory that identified 5.13 pounds (lb) per year of emissions of hazardous air pollutants being emitted as a result of using post-consumer recycled container glass. Holnam submitted a health risk assessment, which demonstrated that this proposal would constitute a negligible risk to human health and the environment. Handling 85,000 tons per year of landfilled cement kiln dust involved moving landfilled dust from the landfill with a front-end loader to a truck. The cement kiln dust would be

sold for use in reclamation projects. Handling the cement kiln dust would result in an emission increase of approximately 23.8 tons per year of total PM and 11.9 tons per year of PM_{10}. Permit #0982-07 replaced Permit #0982-06.

Permit #0982-08 was issued on December 29, 1999, to correct condition II.B.5, which was intended to limit the use of pozzolan material fed through the pozzolan material system. This is specific to the pozzolan material storage silo, rotary feeder, weighbelt conveyor, screw line conveyor, and bin vent dust collector, and not the entire facility. Also, condition II.E.3 of Permit #0982-08 was updated to reflect this correction. Permit #0982-08 replaced Permit #0982-07.

Permit #0982-09 was issued on October 20, 2000. On August 10, 2000, Holnam submitted a permit application to request federally enforceable permit conditions to limit potential PM emissions. Holnam requested the federally enforceable conditions to ensure that the facility's potential emissions would be within the "area source" definition as defined in the Portland Cement Maximum Achievable Control Technology (PC MACT). Although this permit action could have been accomplished through a permit modification, an alteration was requested by Holnam to allow the public to comment on the permit. De minimis changes were also included in the permit (Department Decision) during the comment period. Permit #0982-09 replaced Permit #0982-08.

On April 6, 2001, Holnam submitted **permit application #0982-10** to the Department requesting a change to the fuel mixture to provide operational flexibility at the Trident facility. Holnam's current Permit #0982-09 authorized Holnam to burn up to 100% natural gas, 100% coal, up to 25% coke, or any combination of these fuels for the kiln, providing the coke limit was not exceeded. Holnam requested to remove the limit on the amount of petroleum coke burned in the kiln, to place emissions limits on the amount of SO_2 and nitrogen oxides (NO_x) emitted from the kiln, and to monitor emissions of those pollutants through the use of continuous emissions monitors (CEMs). This request would be accomplished through a modification to Permit #0982-05 performed on September 3, 1998. The modification was issued to Holnam to conduct a temporary test burn that exceeded the operational limit of 25% petroleum coke. Additional equipment or significant modification of existing equipment at the facility was not required. In November 2000, source testing was performed during the coke test burn to evaluate NO_x and SO_2 emissions as the coke feed exceeded 25%. The amount of emissions from the test burn was restricted to less than 15 tons per year of SO_2 in accordance with ARM 17.8.745. Holnam was also required to comply with the sulfur-in-fuel requirements and maintain applicable records during the test. Analysis of the November 2000 source test data, provided by Holnam, suggested that NO_x and SO_2 emissions would not increase as a result of the increase in coke up to approximately 45% coke. However, in order to ensure that NO_x and SO_2 emissions from the kiln would not increase above significant levels, the Department established an emission limit for NO_x and SO_2.

On February 20, 2001, the Department received a letter from Holnam requesting a de minimis change to Permit #0982-09 for the recycling of cement kiln dust (CKD) directly back into the kiln. The Department agreed that emissions from the transfer of CKD would be a de minimis change to Permit #0982-09. Holnam, therefore, was not required to obtain a permit modification to commence with this project.

On April 11, 2001, Holnam submitted a request to modify the Permit #0982-09 to change or modify language in the permit. In general, the request included the removal of detailed equipment names and facility documentation requirements for pozzolan material, post consumer recycled container glass, and the amount of cement kiln dust handled from the "3rd day of each month" to the "10th day of each month."

On June 19, 2001, Permit #0982-10 for an increase in petroleum coke, was appealed by The Sierra Club, Montanan's Against Toxic Burning, and Montana Environmental Information Center. The appeal of Permit #0982-10 was dismissed before the Montana Board of Environmental Review (BER) on November 16, 2001. Permit **#**0982-10 was issued final with modifications on December 4, 2001. Permit #0982-10 replaced Permit #0982-09.

On October 3, 2001, Holnam submitted an application for an alteration to Montana Air Quality Permit #0982-10. After submittal of additional supporting information, the Department deemed the application to be complete on February 12, 2003. The permit application requested that the mid-kiln combustion of scrap/waste tires be added to the list of potential fuels for the facility. The tires would comprise up to 15 percent of the total fuel heat input to the kiln on a British Thermal Unit (Btu) basis. Holcim is currently authorized to burn natural gas, coal, petroleum coke, or any combination of these as a fuel for the kiln. This project would entail some limited modification to the kiln shell and would require additional miscellaneous equipment to handle and store tires at the facility. **Permit #0982-11** has not yet become final as an Environmental Impact Statement is being prepared for the proposed action.

On November 14, 2001, the Department received a letter from Holnam requesting a name change from Holnam, Inc. to Holcim (US) Inc. (Holcim) effective December 12, 2001.

On March 19, 2015, Holcim applied to amend MAQP #0982-10 to incorporate changes that have occurred since the most recent permit revision in 2001. **Permit #0982-12** was issued final on June 16, 2015.

On June 23, 2015, the Department received a letter from Oldcastle Law Group requesting a name change from Holcim (US) Inc. to Oldcastle Materials Cement Holdings, Inc. (Oldcastle) effective August 1, 2015.

On August 18, 2015, Holcim requested that language regarding reporting limit day be changed from "By the 10th day of each month" to "By the 25th day of each month".

On October 13, 2015, the Department received an Application for an Air Quality Permit Modification from Bison Engineering, Inc. Detailed in the application, Oldcastle requests that the electro-static precipitator (ESP) be removed from the Permitted Equipment Table in Section I.A as well as deletion condition II.A.3. Oldcastle also requested a modified testing frequency for select emitting units based on actual emissions data.

Operating Permit Background

On June 6, 1996, the Department received an Operating Permit Application from Holnam. On July 26, 2001, Holnam was issued final and effective **Operating Permit #OP0982-00**.

On January 26, 2006, the Department received a Title V Operating Permit Renewal Application (OP0982-01) from Holcim. The application was assigned Permit Application #OP0982-01 and was deemed administratively complete on February 24, 2006 and technically complete on March 24, 2006. Operating Permit #OP0982-01 incorporates all applicable source changes since the issuance of Operating Permit #OP0982-00. In addition, the facility name was changed from Holnam to Holcim and the responsible official information was updated. Furthermore, the permit was updated to reflect current Department Title V operating permit language and format. **Operating Permit #OP0982-01** replaced Operating Permit #OP0982-00.

On November 10, 2008, the Department received an application for a minor operating permit modification for Holcim (US) Inc. (Permit #OP0982-01). The application was assigned Permit Application #OP0982-02 and was deemed administratively complete on December 10, 2008, and technically complete on January 6, 2009. The purpose of the permit modification was to change the differential pressure (dP) indicator range in the required Compliance Assurance Monitoring (CAM) plan for EU022, clinker cooler baghouse. Differential pressure data collected indicated that the 24-hour average for the low pressure (2.5 inches of water) was set too high for normal operating conditions. In July 2008, the baghouse was thoroughly inspected internally and the bags were found in good condition. The low value of the dP indicator range was adjusted to 1.0 inch of water. **Operating Permit #OP0982-02** replaced Operating Permit #OP0982-01.

On April 10, 2012, the Department received a renewal application for Operating Permit #OP0982-02. The application was assigned #OP0982-03 and was deemed administratively completely on April 10, 2012, and technically complete on April 10, 2012. The purpose of the request was to satisfy Title V renewal requests no later than six months prior to expiration of the current permit set to expire on October 10, 2012. Also included in the application was a request to change the responsible official. Additional requested changes also included removal of the kiln alternative operating scenario, minor CAM Plan changes and updates to the Pollution Control Device Inspection and Maintenance Plan. Additional submittals were also received on February 12, 2013, and February 15, 2013, providing a revised "Compliance Plan" attachment B to the renewal application and updates to the emitting unit names as well as an updated emission inventory. The permit action also included updates related to applicable provisions of 40 CFR 63, Subpart LLL – National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry and also for the Regional Haze FIP. **Operating Permit #OP0982-03** replaced Operating Permit #OP0982-02.

On December 18, 2014, the Department received an administrative amendment request to update the Title V Operating Permit to reflect a change in responsible official. Roland Bachmann replaced John Goetz as the responsible official. . **Operating Permit #OP0982-04** replaced #OP0982-03.

D. Current Permit Action

On May 8, 2015, the Department received a letter from Holcim requesting an extension of one calendar year to comply with the applicable Portland Cement NESHAP Mercury (Hg) Emission Standards and Monitoring requirements. The current permit action also updates Holcim's emitting unit inventory to reflect new and current operational equipment and control technology.

On June 23, 2015, the Department received a letter from Oldcastle Law Group requesting a name change from Holcim (US) Inc. to Oldcastle Materials Cement Holdings, Inc. (Oldcastle) effective August 1, 2015.

On August 5, 2015, Oldcastle requested that the Department update the kiln and clinker cooler PM CAM plans to reflect new requirements contained in 40 CFR 63.1343, PC MACT, and that the current CAM plans be modified to reflect the new monitoring requirements.

The permit action dated May 8, 2015, is a significant modification and will be subject to public comment (ARM 17.8.1227(3)). The name change request dated June 23, 2015, is an Administrative Amendment and is not subject to public comment (ARM 17.8.1225(1)(a)). The permit action dated August 5, 2015, is being incorporated into the current significant modifications which include the Administrative Amendment dated May 8, 2015.

On October 9, 2015, the Department received an Application for and Air Quality Permit Modification. Oldcastle requested that permit language pertaining to the electro-static precipitator (ESP) be removed and that the operating permit be modified to show that Oldcastle is no longer using the ESP. Oldcastle also requested a modified testing frequency for select emitting units based on actual emissions data along with all references to the CAM plan be removed as it applies to the ESP. **Operating Permit #OP0982-05** replaces OP#0982-04.

E. Taking and Damaging Analysis

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

F. Compliance Designation

The Department last inspected Holcim on August 13, 2013, and the Department found Holcim to be in compliance with applicable requirements.

SECTION II. SUMMARY OF EMISSION UNITS

A. Facility Process Description

The production of Portland cement begins at the quarry. Most of the raw material used in the cement process is combined high- and low-grade limestone quarried from Oldcastle quarry. Limestone rock and other raw materials are blasted and loaded onto trucks and transported to the crusher or to stockpiles. The raw materials are conveyed from the primary crushers and delivered by belt conveyors to the storage bins.

From the storage bins, the raw materials are conveyed to the ball mill where the ore is ground with water to form a slurry and sent to storage tanks. In the tanks, the slurry is blended thoroughly before entering the kiln.

Slurry is pumped to the uphill end of the kiln and heated in the kiln, evaporating water (H_2O) from the slurry and turning it into clinker. The plant uses a combination of natural gas, coal and/or coke as fuel sources for the clinker production.

When the clinker leaves the kiln, it is cooled, transported by drag chains, pan conveyor and bucket elevator to the clinker bins or outside storage. From there, clinker and gypsum go to the finish ball mill, where it is ground to produce Portland cement. The final cement product is conveyed to storage silos where it is loaded into railroad cars, bulk trucks, or bagged and loaded onto trucks.

B. Emission Units and Pollution Control Device Identification

Emissions Unit ID	Description	Pollution Control Device/Practice
EU001	Fugitive Emissions: Disturbed Areas	None
EU002	Quarry Drilling	None
EU003	Quarry Blasting	None
EU004	Limestone, Sand and Shale Removal	None
EU005	Raw Material Transfer and Conveying	Baghouses
EU006	Raw Material Storage Piles	Water and/or Chemical Dust Suppressant
EU007	Fugitive Emissions: Haul Roads	Water and/or Chemical Dust Suppressant
EU008	Primary Crusher	Baghouse
EU009	Crusher Screen	Baghouse
EU010	Raw Material Silo #1	Baghouse
EU011	Raw Material Silos #2 & #3	Baghouse
EU012	Raw Material Silos #4 & #5	Baghouse
EU013	Raw Material Silos #6 & #7	Baghouse
EU014	Fuel Unloading	None
EU015	Fuel Transfer/Crushing	Baghouse
EU016	Coal Outside Storage Piles	None
EU017	Coke Outside Storage Piles	None
EU018	Coal Silo	Baghouse
EU019	Fuel Elevator	Baghouse
EU020	Coke Silo	Baghouse

Emissions Unit ID	Description	Pollution Control Device/Practice
EU021	Kiln	Baghouse
EU022	Clinker Cooler	Baghouse
EU023	Main Clinker Elevator	Baghouse
EU024	Finish Mill Feed Silos	Baghouse
EU025	CKD Silo	Baghouse
EU026	CKD Silo to Landfill	Water and/or Chemical Dust Suppressant
EU027	Outside Clinker Bins	Baghouse
EU028-031	Outside Clinker Storage Silos 1-4	None
EU032	Finish Mill #2	Baghouse
EU033	Clinker Transfer to #3 Finish Mill	Baghouse
EU034	Finish Mill #3	Baghouse
EU035	Clinker Transfer to #4 Finish Mill	Baghouse
EU036	Finish Mill #4 Separator	Baghouse
EU037	Finish Mill #4	Baghouse
EU038	Dust Discharge between Kiln and Precipitator	3-Sided Enclosure
EU039	Transfer of Reclaimed Clinker to Ground	None
EU040	Import Clinker Unloading & Transfer	Baghouse
EU041	Gypsum Unloading & Transfer	Baghouse
EU042	Outside Clinker Transfer to Pile	None
EU043	Outside Clinker Transfer to Reclaim Building	Baghouse
EU044	Cement Silos #1-7, 10, 11, & 13	2 Baghouses
EU045	Cement Silos #8, 9 , & 12	2 Baghouses
EU046	Cement Transferred from Silos #1-13 to Bulk Load Silos #14-25	Baghouse
EU047	Cement Silos #14-25	2 Baghouse
EU048	Cement Silos #26-30	Baghouse
EU049	Cement Truck Loadout #1	Baghouse
EU050	Cement Truck Loadout #2	Baghouse
EU051	Cement Railcar Transfer/Loadout	2 Baghouses
EU052	Fuel Tanks	None
EU053	Pozzolan Silo	Baghouse
EU054	Landfilled Cement Kiln Dust Extraction	None
EU055	Slag Feeders to Finish Mills	2 Baghouses
EU056	Space Heating	None
EU057	Slag Feeder Storage Piles	None
EU058	Post Consumer Recycled Glass Piles	None
EU059	Post Consumer Recycled Glass Handling	None
EU060	Overflow Gypsum Transfer to Ground	None
EU061	Overflow Gypsum Transfer to Reclaim Building	Feed Hopper Enclosed in Building
EU062	CKD Dust Scoops	Baghouse
EU063	Emergency Generators	None
EU064	Secondary Crusher	Baghouse
EU065	Recycle Sorbent Silo	Bin Vent
EU066	Fresh Sorbent Silo	Bin Vent

C. Categorically Insignificant Sources/Activities

Appendix A of Permit #OP0982-05 lists insignificant emission units at the facility. The permittee is not required to update a list of insignificant emission units; therefore, the emission units and/or activities may change from those specified in Appendix A of Permit #OP0982-05.

Emissions Unit ID	Description	Pollution Control Device/Practice
EU002	Quarry Drilling	None
EU004	Limestone, Sand and Shale Removal	None
EU016	Coal Outside Storage Piles	None
EU017	Coke Outside Storage Piles	None
EU039	Transfer of Reclaimed Clinker to Ground	None
EU042	Outside Clinker Transfer to Pile	None
EU052	Fuel Tanks	None
EU056	Space Heating	None
EU057	Slag Feeder Storage Piles	None
EU058	Post Consumer Recycled Glass Piles	None

SECTION III. PERMIT CONDITIONS

A. Emission Limits and Standards

Oldcastle shall comply with the general applicable requirements as well as some specific requirements. Oldcastle shall comply with the 20% and 40% opacity limitations, which is dependent on the year of installation. Oldcastle is also required to comply with the sulfur in fuel limitation, including the exemption contained in ARM 17.8.322(6)(c) for the Kiln.

For monitoring pertaining to the opacity and particulate matter limitations, Oldcastle shall inspect and maintain an ESP in accordance with Appendix E of the operating permit. Emission testing may be required pursuant to ARM 17.8.106; however, the Department does not intend for Oldcastle to conduct testing every time post-consumer recycled container glass is used in the kiln. Furthermore, the Department has not required Oldcastle to test on a regular basis to demonstrate compliance.

The facility-wide applicable requirements are contained in Section III.A of the operating permit. The insignificant emission units, which are still subject to the generally applicable facility-wide requirements, are listed in Appendix A of the operating permit. The Emission unit specific requirements are contained in Sections III.B through III.V of the operating permit. Each condition has the specific rule reference in parentheses after the condition. The rule references are an indicator of the Department's authority to subject the emission unit(s) to the respective condition(s). Authorities include the Administrative Rules of Montana, New Source Performance Standards, Maximum Achievable Control Technologies, and the State Implementation Plan.

B. Monitoring Requirements

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

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

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

New monitoring requirements were added in OP0982-03 which came from the Regional Haze FIP 40 CFR 52 and from the finalized Portland Cement MACT 40 CFR 63.

Oldcastle has been granted an extension of one calendar year to comply with the applicable Portland Cement NESHAP Mercury Emission Standards and Monitoring requirements for Emitting Unit (EU) 021 – Kiln. The extension is granted to provide Oldcastle additional time to complete validation and optimization of the Mercury Continuous Emission Monitoring System. This extension is specific for Mercury Emission Standards and Monitoring requirements listed under 40 CFR 63.1343(b) and 40 CFR 63.1350(k), as well as all other Subpart LLL requirements associated with the Hg CEM. Oldcastle shall comply with all applicable Portland Cement NESHAP Mercury Emission Standards and Monitoring requirements for EU 021, no later than September 9, 2016.

C. Test Methods and Procedures

The operating permit may not require testing for all sources if routine monitoring is used to determine compliance, but the Department has the authority to require testing if deemed necessary to determine compliance with an emission limit or standard. In addition, the permittee may elect to voluntarily conduct compliance testing to confirm its compliance status.

The Department determined the frequency of emission testing for particulate and opacity based on the potential to emit of each emission unit as well as the requirements applicable to each emission unit. Particulate and opacity testing were revised in OP0982-03 to comply with new visual survey requirements and any requirements from the Regional Haze FIP 40 CF52 and from the finalized Portland Cement MACT 40 CFR 63.

D. Recordkeeping Requirements

The permittee is required to keep all records listed in the operating permit as a permanent business record for at least 5 years following the date of the generation of the record.

E. Reporting Requirements

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

F. Public Notice

In accordance with ARM 17.8.1232, a public notice was published in the Bozeman Daily Chronicle newspaper on or before January 11, 2016. The Department provided a 30-day public comment period on the draft operating permit from January 11, 2016 to February 10, 2016. ARM 17.8.1232 requires the Department to keep a record of both comments and issues raised during the public participation process. The comments and issues received by February 10, 2016 will be summarized, along with the Department's responses, in the following table. All comments received during the public comment period will be promptly forwarded to Oldcastle so they may have an opportunity to respond to these comments as well.

Summary of Public Comments

Person/Group Commenting	Comment	Department Response
No Public Comments Submitted		

G. Draft Permit Comments

Summary of Permittee Comments

Permit Reference	Permittee Comment	Department Response
Section III.G	Please revise the Section III.G requirements summary table, second row, by replacing "Operation and maintenance of ESP" with "Operation and maintenance of baghouse."	The Department made the suggested correction to the Operating Permit
Section III.G.13	As requested, Section III.G.13 was updated with the currently applicable deadline date for achieving the noted kiln NOX emission limit. This date should also be updated in the Section III.G requirements summary table.	The Department made the suggested correction to the Operating Permit
Section III.G & Section III.G.10	Please update Section III.G.10 and the Section III.G requirements summary table with the currently applicable deadline for achieving the noted kiln SO_2 emission limit. Like the related revision to Section III.G.3, this change would clarify the requirement.	The Department made the suggested correction to the Operating Permit
Section III.G	Please update Section III.G.10 and the Section III.G requirements summary table and within the conditions themselves require updating to correspond with the revised numbering of conditions.	The Department made the suggested correction to the Operating Permit

Permit Reference	Permittee Comment	Department Response
III.N.8 and III.X.7	The Department added appendix G to identify three groups of baghouse-controlled emitting units and to identify one individual unit to represent each group of demonstrating emission limit compliance. Additionally, the particulate emissions testing condition within relevant sections of the permit was revised to reference the Appendix G "approved testing/monitoring schedule." This referencing of the approved alternative testing schedule was inserted in all the relevant section except Section III.N.8 and III.X.7. Please revise these sections accordingly.	The Department made the suggested correction to the Operating Permit
Appendix G	Oldcastle appreciates permit revisions that allow emissions testing of select emitting units form groups of similar units rather than testing every unit. We suggest, however, that the language added in the new Appendix G be modified to clarify the Department's intent. For example, the following revision would more explicitly express the intention that *only* the three identified emitting units must be periodically tested: "The Department… determined that Oldcastle may test one <u>representative</u> emitting unit per group of emitting units <u>in lieu of testing all units in the group.</u>" (Suggested additions are underlined.)	The Department made the suggested correction to the Operating Permit

Permit Reference	Permittee Comment	Department Response
Appendix F	As Oldcastle proposed, the Department revised Appendix F, Compliance Assurance Monitoring (CAM), to refer to PC MACT monitoring requirements for the kiln and clinker cooler rather than expressly detailing monitoring requirements. However CAM requirements for emitting units EU032, EU034, and EU037, which were previously provided in Section III of Appendix F, were inadvertently removed as well. Appendix F, Section III should be restored. Note that compliance conditions for these three units within the permit still refer to Appendix F.	The Department made the suggested correction to the Operating Permit
Section III.G.29	Section III.G.29 requires using a CEMS to demonstrate compliance with kiln SO_2 emission limits provided in Section III.G.8, 9, and 10. In summarizing these requirements, the Section III.G requirements summary table notes that compliance with the SO_2 limit based on the ARM 17.8.332 sulfur-in-fuel will be demonstrated by conduction an emissions test every five years. This should be corrected. (Note that this suggested correction was not included in a modification application.)	The Department made the suggested correction to the Operating Permit

Summary of EPA Comments

Permit Reference	EPA Comment	Department Response

SECTION IV. NON-APPLICABLE REQUIREMENT ANALYSIS

Oldcastle requested a permit shield in Operating Permit Application #OP0982-03. The Department granted a shield for all non-applicable requirements listed in Attachment C of the application that the Department agreed were non-applicable. The discussion below lists the requirements that the permittee identified as non-applicable and the reason(s) that the Department did not provide a shield for the requirement.

Table 4. Regulations Not Identified as Non-Applicable By the Department. *Table 4 lists the requirements that the Department did not provide a shield for the requirement.*

Reason	Rule Citation	
These rules do not have specific requirements for major sources because they are requirements for EPA of state and local authorities. These rules can be used as authority to impose specific requirements on a major source.	40 CFR 50 40 CFR 51 40 CFR 53 40 CFR 54 40 CFR 56 ARM 17.8.130 ARM 17.8.510 ARM 17.8.1222-1223 ARM 17.8.1228	40 CFR 58 40 CFR 62 40 CFR 65 40 CFR 67 40 CFR 81 ARM 17.8.142 ARM 17.8.1210-1215 ARM 17.8.1225 ARM 17.8.1231-1232
These regulations may not be applicable to the source at this time, however, these regulations may become applicable during the life of the permit.	40 CFR 60.13-60.18 ARM 17.8.107-109 ARM 17.8.131 ARM 17.8.303 ARM 17.8.311-314 ARM 17.8.327-329 ARM 17.8.502-503 ARM 17.8.511-515 ARM 17.8.607-609 ARM 17.8.701-734 ARM 17.81216-1219 ARM 17.8.1226-1227	ARM 17.8.104 ARM 17.8.112-129 ARM 17.8.133-141 ARM 17.8.305-307 ARM 17.8.317-319 ARM 17.8.335-339 ARM 17.8.507-509 ARM 17.8.603 ARM 17.8.611-615 ARM 17.8.1208-1209 ARM 17.8.1224
These Rules do not have specific requirements and are always relevant to a major source.	40 CFR 52	
These rules may or may not be relevant but the Department will not be granting a shield for these rules.	40 CFR 60 Subpart FF 40 CFR 60 Subpart CCC 40 CFR 60 Subpart EEE 40 CFR 60 Subpart MMM 40 CFR 60 Subpart GGGG 40 CFR 60 Appendix E 40 CFR 61 Subparts A, G, S, U, X, Z, AA, and CC-EE 40 CFR 63 Subpart A-E, K, P, V, Z, FF, ZZ, FFF, SSS, 40 CFR 66 40 CFR 69-71 40 CFR 98-99	

Reason	Rule Citation
Rules that are always applicable to a major source and may contain specific requirements for compliance.	ARM 17.8.326
These rules include either a statement of purpose, applicability statement, regulatory definitions, or a statement of incorporation by reference. Therefore, facility wide permit shields will not be granted for these rules.	ARM 17.8.301-302 ARM 17.8.401 ARM 17.8.740 ARM 17.8.901 ARM 17.8.1101 ARM 17.8.1234 ARM 17.8.1401 ARM 17.8.330 ARM 17.8.501 ARM 17.8.801 ARM 17.8.1001 ARM 17.8.1201-1203 ARM 17.8.1301
Repealed Regulations	ARM 17.8.323 ARM 17.8.315

SECTION V. FUTURE PERMIT CONSIDERATIONS

A. MACT Standards

Oldcastle is now subject to 40 CFR 63, Subpart LLL-National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry.

Permit #0982-09, issued on October 20, 2000, provided Oldcastle with federally enforceable permit conditions to limit potential particulate matter emissions. Oldcastle requested the federally enforceable conditions to ensure that the facility's potential emissions would be within the "area source" definition. Consequently, the kiln at Oldcastle is the only affected source and must meet the appropriate emission limits and operating limits. As identified in Subpart LLL, the kiln is subject to the dioxin and furan emission limits and the Particulate Matter Control Device (PMCD) inlet temperature operating limit to control dioxin and furan emissions.

As of the issuance date of Operating Permit #OP0982-04, the Department is unaware of any future MACT Standards that may be promulgated that will affect this facility.

B. NESHAP Standards

As of the issuance date of Operating Permit #OP0982-04, the Department is unaware of any future NESHAP Standards that may be promulgated that will affect this facility.

C. NSPS Standards

Portions of the Oldcastle facility are subject to 40 CFR 60, Subpart F-Standards of Performance for Portland Cement Plants and 40 CFR, Subpart Y-Standards of Performance for Coal Preparation Plants.

Sources subject to the requirements of Subpart F are applicable if the facility commences construction or modification of that source after August 17, 1971. This Subpart applies to sources at Oldcastle, including, but not limited to, the following:

a. Finish Mill #2;
b. Finish Mill #4; and
c. Storage Silos #26 through 30.

Finish Mill #4 replaced Finish Mill #1 in 1988 and the product storage silos were installed in 1976. Since commencement of construction occurred after August 17, 1971, for both of these sources, 40 CFR 60, Subpart F applies. The replacement of the air slide in the Finish Mill #2 system was considered a modification of the Finish Mill #2 system. Since this modification was proposed to occur after August 17, 1971, then 40 CFR Part 60, Subpart F was also considered applicable to Finish Mill #2.

Equipment in emission units 015 Coal/Coke Transfer and Crushing and 018 Coal Silo Loading and Unloading was constructed or modified after the Subpart Y's applicable date of October 24, 1974. Under 40 CFR 60.252 Standards for Particulate Matter, the applicable standard for the equipment is 20% opacity. However, equipment in emission units 015 and 018 is covered under preconstruction permit condition II.C.7 that limits opacity to 20% via ARM 17.8.752. Therefore, the operating permit does not reference 40 CFR 60, Subpart Y for emission units 015 or 018.

The secondary crusher (EU064) recently added under a de minimis action is subject to 40 CFR 60 OOO.

The emergency generator (EU063) recently added under a de minimis action is subject to 40 CFR 63 Subpart ZZZZ.

D. Risk Management Plan

As of the issuance date of Operating Permit #OP0982-05, this facility does not exceed the minimum threshold quantities for any regulated substance listed in 40 CFR 68.115 for any facility process. Consequently, this facility is not required to submit a Risk Management Plan.

If a facility has more than a threshold quantity of a regulated substance in a process, the facility must comply with 40 CFR 68 requirements no later than June 21, 1999; 3 years after the date on which a regulated substance is first listed under 40 CFR 68.130; or the date on which a regulated substance is first present in more than a threshold quantity in a process, whichever is later.

E. CAM Applicability

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

- The emitting unit is subject to an emission limitation or standard for the applicable regulated air pollutant (unless the limitation or standard that is exempt under ARM 17.8.1503(2));
- The emitting unit uses a control device to achieve compliance with such limit; and
- The emitting unit has potential pre-control device emission of the applicable regulated air pollutant that is greater than major source thresholds.

Unit(s) determination(s): Oldcastle is required to maintain CAM Plans on the Kiln, Clinker Cooler and Finish Mills.

As of September 9, 2015, Trident's kiln and clinker cooler will be subject to new particulate matter (PM) emissions limits in accordance with Portland Cement NESHAP, Subpart LLL, also known as PC MACT Standard (40 CFR 63.1343). The new limits are substantially more stringent than existing PM limits and are accompanied by requirements to continuously monitor compliance using parametric monitor systems that are currently installed and maintained as specified in 40 CFR 63.1350(b). Compliance under PC MACT constitutes sufficient and reasonable assurance of compliance with non-MACT particulate limits.

F. PSD and Title V Greenhouse Tailoring Rule

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

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

Starting on July 1, 2011, PSD permitting requirements would be triggered for modifications that were determined to be major under PSD based on GHG emissions alone, even if no other pollutant triggered a major modification. In addition, sources that are not considered PSD major sources based on criteria pollutant emissions would become subject to PSD review if their facility-wide potential emissions equaled or exceeded 100,000 TPY of CO_2e and 100 or 250 TPY of GHG on a mass basis depending on their listed status in ARM 17.8.801(22) and they undertook a permitting action with increases of 75,000 TPY or more of CO_2e and greater than 0 TPY of GHG on a mass basis. With respect to Title V, sources not currently holding a Title V permit that have potential facility-wide emissions equal to or exceeding 100,000 TPY of CO_2e and 100 TPY of GHG on a mass basis would be required to obtain a Title V Operating Permit.

The Supreme Court of the United States (SCOTUS), in its *Utility Air Regulatory Group v. EPA* decision on June 23, 2014, ruled that the Clean Air Act neither compels nor permits EPA to require a source to obtain a PSD or Title V permit on the sole basis of its potential emissions of GHG. SCOTUS also ruled that EPA lacked the authority to tailor the Clean Air Act's unambiguous numerical thresholds of 100 or 250 TPY to accommodate a CO_2e threshold of 100,000 TPY. SCOTUS upheld that EPA reasonably interpreted the Clean Air Act to require sources that would need PSD permits based on their emission of conventional pollutants to comply with BACT for GHG. As such, the Tailoring Rule has been rendered invalid and sources cannot become subject to PSD or Title V regulations based on GHG emissions alone. Sources that must undergo PSD permitting due to pollutant emissions other than PSD may still be required to comply with BACT for GHG emissions.