



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blairstone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor
Jeff Kottkamp
Lt. Governor
Michael W. Sole
Secretary - Designee

December 17, 2007

Electronically sent – Received Receipt Requested

jimmy.rabon@cemex.com

Mr. Jimmy L. Rabon, Plant Manager
Brooksville Cement Plant
CEMEX Cement, Inc.
16301 Ponce De Leon Boulevard
Brooksville, Florida 34614-0849

Re: DEP File No. 0530010-030-AC
CEMEX Cement Inc. Brooksville Cement Plant
Best Available Retrofit Technology (BART) Project

Dear Mr. Rabon:

On February 1, 2007, you submitted an application to satisfy the requirements of BART in Rule 62-296.340, Florida Administrative Code for the eligible units at the facility identified above. Enclosed are the following documents:

- The Technical Evaluation and Preliminary Determination summarizes the Permitting Authority's technical review of the application and provides the rationale for making the preliminary determination to issue a Draft Permit.
- The proposed Draft Permit includes the specific conditions that regulate the emissions units covered by the proposed project.
- The Written Notice of Intent to Issue Air Permit provides important information regarding: the Permitting Authority's intent to issue an air permit for the proposed project; the requirements for publishing a Public Notice of the Permitting Authority's intent to issue an air permit; the procedures for submitting comments on the Draft Permit; the process for filing a petition for an administrative hearing; and the availability of mediation.
- The Public Notice of Intent to Issue Air Permit is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project.

If you have any questions, please contact the Project Engineer, Teresa Heron, at 850-921-9529.

Sincerely,

Trina Vielhauer, Chief
Bureau of Air Regulation

Enclosures

TLV/aal/th

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

*In the Matter of an
Application for Air Permit by:*

Mr. Jimmy L. Rabon, Plant Manager
Brooksville Cement Plant
CEMEX Cement, Inc.
16301 Ponce De Leon Boulevard
Brooksville, Florida 34614-0849

DEP File No. 0530010-030-AC
Brooksville Cement Plant
Best Available Retrofit Technology Project
Hernando County

Facility Location: The applicant, CEMEX Cement, Inc. (CEMEX) operates the existing Brooksville Cement Plant, which is located in Hernando County at 16301 Ponce De Leon Boulevard northwest of Brooksville, Florida.

Project: On February 1, 2007, CEMEX submitted an application to satisfy the requirements of Best Available Retrofit Technology (BART) in Rule 62-296.340, Florida Administrative Code (F.A.C.) for the eligible units at the facility identified above. Details of the project are provided in the application and the enclosed Technical Evaluation and Preliminary Determination.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters F.A.C. 62-4, 62-210, and 62-212. The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite 4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, Mail Station (MS) 5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above. In addition, electronic copies of these documents are available by entering the file number provided above where indicated on the following web site: <http://www.dep.state.fl.us/air/eproducts/apds/default.asp>

Notice of Intent to Issue Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Public Notice: Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Permit (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at above address or phone number. Pursuant to Rule 62-110.106(5) and (9), F.A.C., the applicant shall provide

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

proof of publication to the Permitting Authority at the above address within 7 days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 30 days from the date of publication of the Public Notice. Written comments must be postmarked by the Permitting Authority by close of business (5:00 p.m.) on or before the end of this 30-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the attached Public Notice or within 14 days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Intent to Issue Air Permit package (including the Written Notice of Intent to Issue Air Permit, Public Notice of Intent to Issue Air Permit, the Technical Evaluation and Preliminary Determination, and the Draft Permit) was sent by electronic mail with received receipt requested before the close of business on 12-17-07 to the persons listed below.

- Jimmy L. Rabon, CEMEX: jimmy.rabon@cemexusa.com
- Charles Walz, CEMEX: charles.walz@cemexusa.com
- Amarjits Gill, CEMEX: amarjits.gill@cemexusa.com
- Mara Nasca, DEP SWD: mara.nasca@dep.state.fl.us
- Max Lee, P.E., Koogler and Associates: mlee@kooglerassociates.com
- Jim Little, EPA Region 4: little.james@epamail.epa.gov
- Katy Forney, U.S. EPA Region 4: forney.kathleen@epa.gov
- Dee Morse, National Park Service: dee_morse@nps.gov

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.


(Clerk)

12-17-07
(Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection
Division of Air Resource Management, Bureau of Air Regulation
Draft Air Construction Permit No. 0530010-030-AC
CEMEX Cement, Inc.
Hernando County, Florida

Applicant: The applicant for this project is CEMEX Cement, Inc. The applicant's authorized representative and mailing address is: Mr. Jimmy L. Rabon at 16301 Ponce De Leon Boulevard northwest of Brooksville, Florida 34614-0849.

Facility and Location: The applicant, CEMEX, operates the existing Brooksville Cement Plant, which is located in Hernando County at 16301 Ponce De Leon Boulevard northwest of Brooksville, Florida. The plant currently consists of: two portland cement lines designated as Lines 1 and 2, including two Polysius GEPOL preheater kilns (Kilns 1 and 2), two clinker coolers, associated raw mills, finish mills, cement and clinker handling equipment, coal handling equipment, silos, air pollution control devices, raw material extraction and receiving facilities and product shipping facilities.

Project: On February 1, 2007, CEMEX submitted an application to satisfy the requirements of Best Available Retrofit Technology (BART) in Rule 62-296.340, Florida Administrative Code (F.A.C.) for the existing Brooksville Cement Plant. The purpose of the BART regulation is to improve visibility in the Class I areas, which include six national parks and federal wildlife areas in and around Florida. The BART provisions apply to emissions units built between 1962 and 1977 at one of the 26 specified industrial categories that have the potential to emit more than 250 tons a year of visibility-impairing pollutants, which are defined as nitrogen oxides (NO_x), particulate matter (PM₁₀), and sulfur dioxide (SO₂). Many of these units previously have been exempt from pollution control requirements under the Clean Air Act.

The BART regulation requires a control technology review to establish a BART standard, which is an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by a BART-eligible source. The emission limitation must be established, on a case-by case basis, taking into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

The existing facility is a cement plant, which is one of the 26 specified categories subject to regulation. The BART-eligible units at this facility consist of several components related to Line 1 including the kiln, cooler, a blending silo, finish mills and other materials transfer and storage equipment. The Department of Environmental Protection (Department) reviewed the application and makes a preliminary determination regarding the BART controls and emissions standards in the draft air construction permit. Summarizing, the control equipment and techniques determined include the following: an ammonia-based selective non-catalytic reduction system (SNCR), a low NO_x burner and indirect firing system for NO_x control; inherent scrubbing by alkali species, finely divided lime and limestone within the pyroprocessing system for SO₂; and baghouses for PM/PM₁₀. The draft air construction permit establishes BART standards based on these control methods. Some of the BART requirements (e.g. the SNCR system) have already been implemented pursuant to recent permits and insure that the reductions will occur at an early date.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and F.A.C. Chapters 62-4, 62-210, and 62-212. The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, Mail Station 5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records

(Public Notice to be Published in the Newspaper)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. In addition, electronic copies of these documents are available by entering the file number provided above where indicated on the following web site: <http://www.dep.state.fl.us/air/eproducts/apds/default.asp> .

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 30 days from the date of publication of the Public Notice. Written comments must be postmarked by the Permitting Authority by close of business (5:00 p.m.) on or before the end of this 30-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the agency determination; (c) A statement of when and how the petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available for this proceeding.

**TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION**

PROJECT

Draft Permit No. 0530010-030-AC
Best Available Retrofit Technology (BART)

CEMEX Cement Brooksville Plant
Portland Cement Line 1
Hernando County, Florida

APPLICANT

CEMEX Cement, Inc.
16301 Ponce De Leon Boulevard
Brooksville, Florida 34614-0849

PERMITTING AUTHORITY

Air Permitting South Section
Bureau of Air Regulation
Division of Air Resource Management
Florida Department of Environmental Protection



December 17, 2007

1. GENERAL PROJECT INFORMATION

Facility Description and Location

The applicant, CEMEX, operates an existing portland cement plant with two portland cement lines (Lines 1 and 2). These include: two Polysius GEPOL preheater kilns (Kilns 1 and 2); two clinker coolers and associated raw mills; finish mills; cement and clinker handling equipment; coal handling equipment; silos; and air pollution control devices. The nominal capacity of each kiln is 780,000 tons per year (TPY) of clinker.

The Standard Industrial Classification (SIC) code for this type of plant is SIC No. 3241. The facility is located at the existing plant which is located on highway 98, northwest of Brooksville, in Hernando County, Florida. The UTM coordinates are Zone 17, 357.47 km East, and 3169 km North.

The following figure shows the location of the facility, the nearby Chassahowitzka National Wildlife Refuge (NWR) and an aerial photograph of the facility.

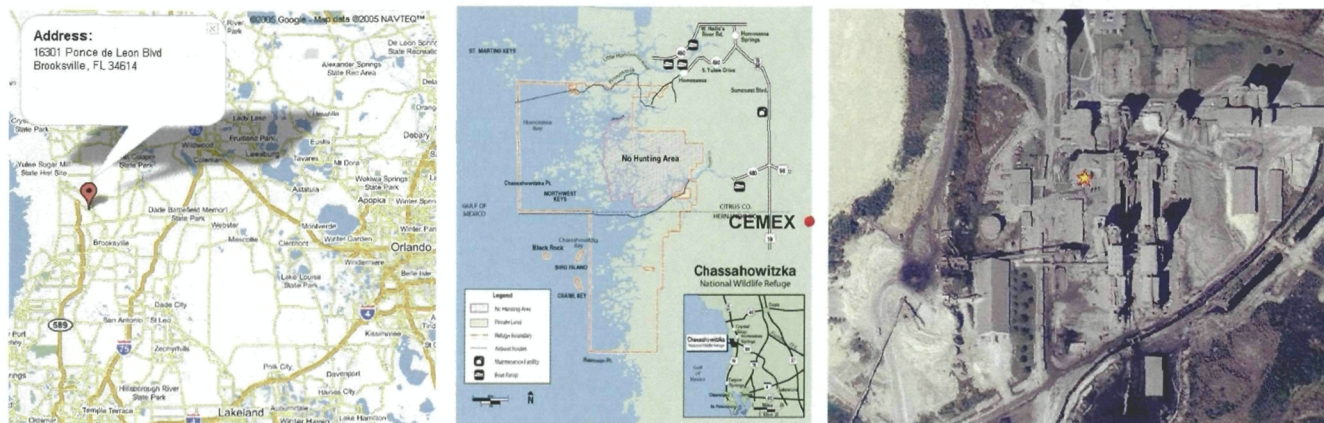


Figure 1. Location of CEMEX Brooksville Cement Plant, Chassahowitzka NWR, Aerial Photo

The Kiln 1 stack reference point is less than 15 kilometers east from the Chassahowitzka NWR that is the nearest Class I Area potentially affected by the existing facility. A picture of Kiln No. 1, along with the associated preheater tower and raw meal homogenizing silo can be seen in Figure 2. Kiln No. 1 and Cooler No. 1 exhaust through separate stacks.

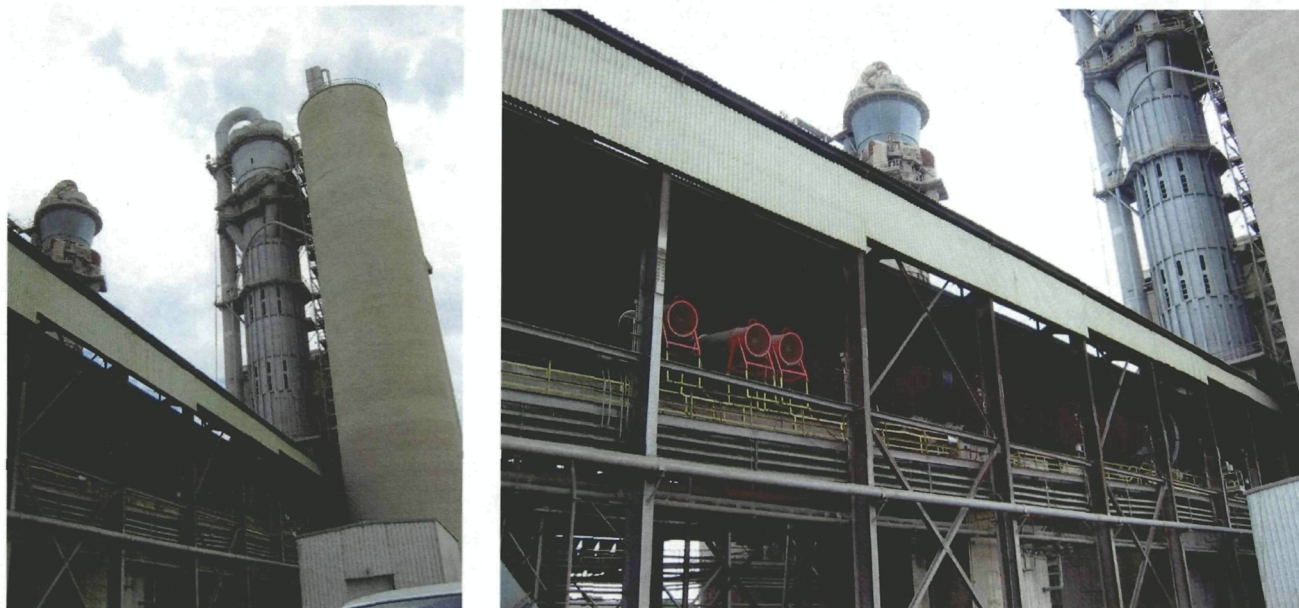


Figure 2. Preheater Kiln 1 and Homogenizing Silo. Top of Preheater for Kiln 2 in Background.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Limestone rock is mined at a quarry as shown below. In Florida, the top layers (overburden) are removed and the limestone is usually mined under the water line. The rock is crushed in one or two stages to the size of gravel. It is transported by conveyor to the cement plant material storage building (MSB) where it is stored with other raw materials to await further processing. The secondary crusher, if needed, is typically located near the cement plant rather than at the quarry. Photographs of the primary and secondary crushers at the CEMEX Brooksville Plant are shown in the figure below. Depending on local characteristics, the overburden is often used to provide some of the sand and clay needed in the process.

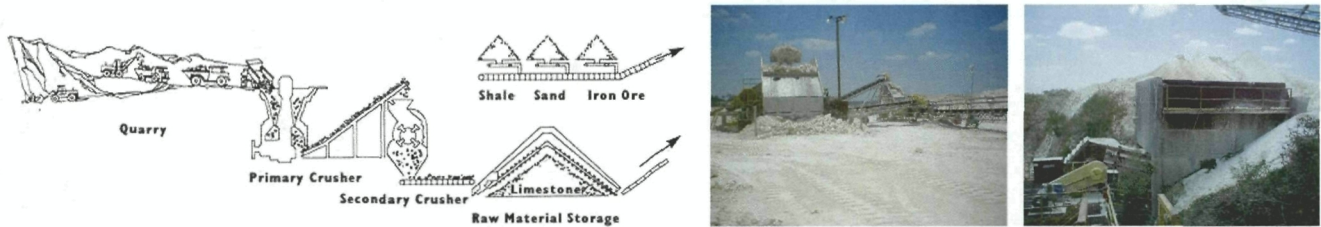
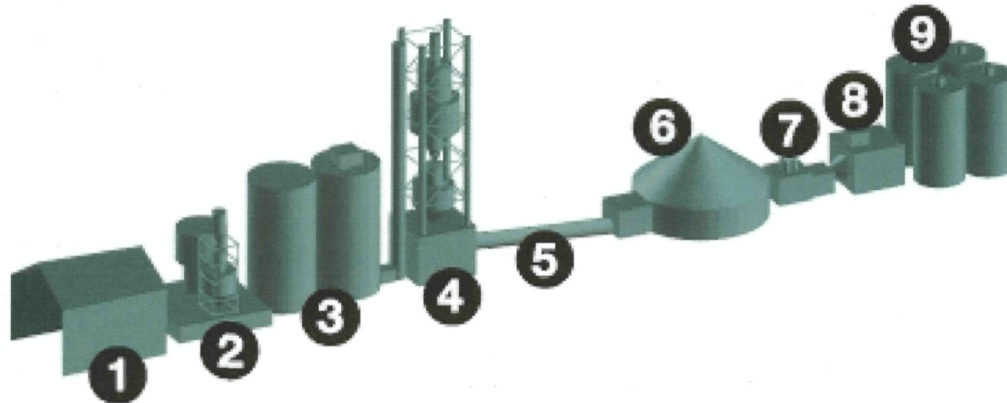


Figure 3. Quarrying, Crushing, and Storage.

Photographs of Primary and Secondary Crusher

The following diagram represents the key components of a typical cement plant and steps involved in making Portland cement. Quarrying and solid fuel grinding are not shown in the figure.



- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Raw Material Storage 2. Grinding (Raw Mill) 3. Blending, Feed 4. Preheater | <ol style="list-style-type: none"> 5. Rotary Kiln 6. Clinker Cooler and Storage 7. Additions (e.g. Gypsum) 8. Cement Grinding (Finish Mills) 9. Bulk Storage & Loadout |
|--|---|

Figure 4. Components, Key Operations of a Cement Plant

An excellent virtual tour of a cement plant is available at the Portland Cement Association website: www.cement.org/basics/images/flashtour.html

The Kiln 1 process is limited to 150 tons dry preheater feed per hour (30 day average) with a maximum of 165 tons preheater feed in any given hour. The kiln is permitted to burn a variety of fuels, including coal, No. 2 fuel oil, No. 4 fuel oil, No. 5 fuel oil, No. 6 fuel oil, natural gas, and on-site generated, non-hazardous waste used oil, grease, and rags. Kiln No. 1 is also permitted to fire whole tire derived fuel (WTDF) at a rate up to 20 percent of the total heat input.

Regulatory Categories

This project is subject to the applicable environmental laws in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection (Department) to establish rules regarding air quality in the Florida Administrative Code (F.A.C.). The facility is classified according to the following major regulatory categories.

- The facility is a major source of hazardous air pollutants (HAP).

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

- The facility does not operate units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source pursuant to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.
- The facility operates BART-eligible units subject to Rule 62-296.340, F.A.C.

Project Description

CEMEX submitted an application to satisfy the requirements of Rule 62-296.340 (BART), F.A.C., which addresses the certain BART-eligible emissions units as detailed in Table 1. This Technical Evaluation and Preliminary Determination details the project, provides the top-down BART analysis, and identifies the preliminary BART determinations.

Table 1. Line 1 Emission Units Subject to BART

EU No.	Emission Unit Description
002	No.1 Kiln Feed System (Baghouse D-31) – Pyroprocessing/Raw Mill System
003	Cement Kiln No. 1 (Baghouse E-55) – Pyroprocessing/Raw Mill System
004	Cement Plant Clinker Cooler No. 1 (Baghouse F-18) – Clinker Handling System
005	Finish Mills No. 1 and No. 2 with two dust collectors (Baghouse G-23) – Finish Mill System
006	Clinker Storage Silo Nos. 1 & 2 (Baghouse F-31) – Clinker Handling System
008	Baghouse No. F-17 of Kiln No.1 Blending Silo No. 1 – Cement Products is <u>not</u> BART-eligible
	Baghouse No. E-36 of Kiln No 1. Blending Silo No. 2 – Cement Products is <u>is</u> BART-eligible
009	Cement Plant STG Silos Dust Unit (Baghouse H-3) – Cement Products
011	Raw Material Storage Silos & Feed System (Baghouses C-11, C-11A)

Processing Schedule

February 1, 2007: Department received the BART application for an air pollution construction permit.

March 1 and August 2, 2007: Department requested additional information.

July 3 and September 5, 2007: Department received additional information; application complete.

December 3, 2007: Applicant waived the 90 day processing clock until December 17, 2007.

2. APPLICABLE BART REGULATIONS

Regulatory Authority

This project is subject to the applicable regulatory requirements in the following Chapters of the F.A.C.: 62-4 (Permitting Requirements); 62-204 (Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference); 62-210 (Permits Required, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, and Forms); 62-212 (Preconstruction Review, PSD Review and BACT, and Non-attainment Area Review and LAER); 62-296 (Emission Limiting Standards); and 62-297 (Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures). It is also subject to the applicable provisions in Title 40 of the Code of Federal Regulations (CFR) as adopted in Chapter 62-204 and 62-296, F.A.C.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Specifically, this project is subject to Rule 62-296.340 (BART), F.A.C. for determining and applying the Best Available Retrofit Technology for each BART-eligible source as defined in 40 CFR 51.301. The Department previously identified all BART-eligible sources through a series of notifications, workshops, and rule making efforts. The state rule implements the federal provisions of Appendix Y in 40 CFR Part 51, "Guidelines for BART Determinations Under the Regional Haze Rule".

Affected Pollutants

In accordance with Appendix Y in 40 CFR 51, the affected visibility-impairing pollutants include the following: nitrogen oxides (NO_x), particulate matter (PM), and sulfur dioxide (SO₂). Although ammoniated nitrates and sulfates are among the key species contributing to regional haze, BART does not directly address or require a review of ammonia (NH₃) as a visibility-impairing pollutant.

With respect to particulate emissions, Rule 62-210.200, F.A.C. defines PM as, "... all finely divided solid or liquid material, other than uncombined water, emitted to the atmosphere as measured by applicable reference methods, or an equivalent or alternative method ..." PM with an aerodynamic diameter less than or equal to a nominal 10 micrometers is defined as PM₁₀ and PM with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers is defined as PM_{2.5}. Emissions of PM, PM₁₀ and PM_{2.5} are all regulated pollutants. For the existing emissions units and air pollution control equipment, the control strategy specified in the BART determinations directly reduces PM emissions, which serves as a surrogate to also reduce PM₁₀ and PM_{2.5} emissions.

BART Definition

Pursuant to 40 CFR 51.301, *Best Available Retrofit Technology (BART)* means, "... an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by ... [a BART-eligible source]. The emission limitation must be established, on a case-by case basis, taking into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology." In accordance with Rule 62-296.340(3), F.A.C., the Department shall determine BART for each affected source in an air construction permit.

Relevant Rules, Permits, and Determinations

The focus of BART relates to emissions of PM, SO₂ and NO_x. Following are some of the key historical rules, permits, and determinations affecting Line 1 (i.e. Kiln No. 1, Cooler No. 1 that are clearly relevant in making a BART determination at this time for Line No. 1 and certain associated units as detailed in Table 2).

- The rating of Kiln 1 was 120 tons per hour (TPH) of *dry kiln feed*. Dry kiln feed is not directly measured. The rating is equivalent to approximately 132 TPH of *kiln preheater feed* (kiln_{ph} feed). Kiln 1 exhausted through a 14 compartment baghouse system with separate vents but no stack. Cooler 1 had a baghouse system and stack.
- PM limitations of 0.3 and 0.1 pounds per ton (lb/ton) of *dry kiln feed* applied to Kiln 1 and Cooler 1 respectively pursuant to Subpart F. Visible emissions (VE) limits of 20 and 10 percent opacity to Kiln 1 and Cooler 1 respectively. Compliance was specified by an observer-based methodology (EPA Method 9). Continuous opacity monitoring systems (COMS) were also specified. NO_x and SO₂ were not limited by Subpart F or by Line 1 permits.
- The Line 2 PSD permit contained a Best Available Control Technology (BACT) determination for NO_x. The SO₂ limit was set much lower than necessary (3 lb/hr) to avoid a PSD review and BACT determination. It also set a PM limit for Kiln 2 of 0.2 lb/ton of kiln feed (less than Subpart F) and limited Cooler 2 to the NSPS limit of 0.1 lb/ton feed. A VE limit of 10% opacity was specified for both Kiln 2 and Cooler 2.

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- During subsequent years, lower PM mass emission limits were set for Kiln 1 and Cooler 1 during several reviews to increase production or burn waste fuels such as WTDF and a refined waste oil product known as Flolite. A limit of 15 lb SO₂/hr was set for Kiln 1 to avoid PSD applicability. NO_x was not limited. Two baghouse compartments and a stack were added to Kiln 1.
- In 1997, the Department issued permit No. 0530010-002-AC (PSD-FL-233) pursuant to PSD allowing process increases from Lines 1 and 2 to 165 TPH of kiln_{ph} feed. BACT determinations were included for PM, SO₂ and NO_x from Kiln 1 and PM from Cooler 1.
- Continuous emissions monitoring systems (CEMS) were not required and standard annual EPA stack testing methods were specified to demonstrate compliance for SO₂ and NO_x. The VE limit for Kiln 1 was 20% opacity whereas the VE limit for the nearly identical Kiln 2 remained at 10% opacity.
- In June 1999 the U.S. Environmental Protection Agency issued 40 CFR 63, Subpart LLL - National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry (Subpart LLL). Subpart LLL (implemented June 2002) imposed no substantial changes to the PM and VE requirements for Kiln No. 1 and Cooler No. 1. It did not address SO₂ or NO_x emissions.
- In December 2006 (after the BART baseline years), the Department issued after-the-fact permit No. 0530010-026-AC that authorized conversion of the kiln to indirect firing (IF), installation of ammonia (NH₃)-based selective non-catalytic reduction systems (SNCR) and a low NO_x burner (LNB) on Kilns 1 and 2. A NO_x limit of 1.21 lb/ton kiln_{ph} feed (less than the earlier BACT determination) was specified on a 30-day basis with compliance by CEMS) to avoid triggering PSD and a BACT determination.
- In August 2007 (after the BART baseline years), the Department issued draft permit No. 0530010-018-AC to decrease the emission limits from Finish Mills 1 and 2 from 18 lb PM/hr each to 9 lb/hr each.

BART Analysis Procedure

There are five basic steps in the case-by-case BART analysis:

- Step 1. Identify all available retrofit control technologies. A comprehensive list of available technologies for analysis must be identified that includes the most stringent option and a reasonable set of available options. It is not necessary to list all permutations of available control levels that exist for a given technology. The list is complete if it includes the maximum level of control each technology is capable of achieving.
- Step 2. Eliminate technically infeasible options. Control technologies are technically feasible if either (1) they have been installed and operated successfully for the type of source under review under similar conditions, or (2) the technology could be applied to the source under review. "Availability" and "applicability" are two key concepts in determining whether a technology could be applied. A technology is considered "available" if the source owner may obtain it through commercial channels, or it is otherwise available within the common sense meaning of the term. An available technology is "applicable" if it can reasonably be installed and operated on the source type under consideration. A technology that is available and applicable is technically feasible.
- Step 3. Evaluate control effectiveness of remaining control technologies. There are two key issues in this process, including (1) expressing the degree of control in consistent terms to ensure an "apples-to-apples" comparison of emissions performance levels among options, and (2) giving appropriate treatment and consideration of control techniques that can operate over a wide range of emission performance levels.
- Step 4. Evaluate the impacts and document the results. The evaluation will consider the costs of compliance, energy impacts, non-air quality environmental impacts, and remaining useful life.
- Step 5. Evaluate visibility impacts. Use CALPUFF or other appropriate dispersion model to determine the visibility improvement expected at a Class I area from the potential BART control technology applied to

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the source. Note that if the most stringent BART control option available is selected, it is not necessary to conduct an air quality modeling analysis for the purpose of determining its visibility impacts.

BART Determination: In making a final BART determination, the following will be considered: (1) technically feasible options; (2) the average and incremental costs of each option; (3) the energy and non-air quality environmental impacts of each option; (4) the remaining useful life; and (5) the modeled visibility impacts. A justification for selecting a technology as the “best” level of control must be provided and include an explanation of these factors that led to the BART determination. When a BART determination is made for two regulated pollutants on the same source, if the result is two different BART technologies that do not work well together, it may be reasonable to substitute a different technology or combination of technologies.

Summary of Applicant’s Initial Modeling Analysis

The CEMEX Brooksville BART modeling analysis methodology followed the VISTAS (Visibility Improvement State and Tribal Association of the Southeast) common air modeling protocol, Version 3.2. The BART-eligible emission units for CEMEX are subject to a visibility impairment analysis as dictated by the modeling protocol. The analysis includes visibility impairment at all PSD Class I areas within 300 km of the CEMEX Brooksville facility. These Class I areas are the Chassahowitzka National Wildlife Refuge (CNWR), the Okefenokee National Wildlife Refuge (ONWR) and the St. Marks National Wildlife Refuge (SNWR). These Class I areas are 10, 245 and 230 kilometers (km) away from CEMEX respectively.

The CALPUFF modeling system (CALPUFF Version 5.756) was used to predict the maximum visibility impairment. The Department provided the applicant with 4-km “CALPUFF-ready” CALMET meteorological data for the period 2001-2003. Class I receptor locations were obtained from the National Park Service (NPS) and a Lambert Conformal Conic (LCC) coordinate system was used. Modeling results are based on the 8th highest 24-hour average impairment value in one year, for 3 years.

The applicant performed initial modeling to determine whether the CEMEX Brooksville facility contributes to visibility impairment. Modeled concentrations were then compared to the visibility impairment threshold of 0.5 deciviews (dv), based on the final BART rule 70 FR 39118. A dv is a standard visibility index. The Interagency Monitoring of Protected Visual Environments (IMPROVE) states that the dv scale is linear to humanly-perceived changes in visual air quality. A dv near zero is considered a “pristine” atmosphere and a dv increase with visibility impairment. This initial analysis concluded that the CEMEX Brooksville facility contributes to visibility impairment at the CNWR only and therefore, all BART-eligible sources are subject to a BART determination analysis for the CNWR.

The BART-eligible sources for the CEMEX Brooksville facility are listed in Table 2 below. The existing BART-eligible sources modeled emission rates for PM/PM₁₀, SO₂, and sulfuric acid mist (H₂SO₄) were determined from either stack test data or permit limits to reflect the maximum 24-hour average normal operation for the most recent 3 to 5 years. NO_x emission rates were determined by the maximum 24-hour concentrations for the most recent 3 to 5 years, not taking into account a recently permitted limit of 1.21 lb/ton of kiln_{ph} feed. The maximum visibility impact of the existing BART-eligible sources, prior to any proposed BART control technologies, is 1.457dv. The total number days above the visibility impairment threshold for the nearby CNWR are shown in Table 2 below.

Table 2. CEMEX Brooksville Visibility Impact to CNWR from all BART-Eligible Units Combined Prior to BART Controls

Percent Contribution to 8 th Highest Visibility Impacts (dv)		
Year	Deciviews	Days Above Visibility Threshold
2001	1.457	93
2002	1.341	123
2003	1.354	96

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The applicant proposed that the current BART-eligible sources “represent the most stringent available technologies” and therefore the current controls represent BART. The basis was primarily the 1997 BACT determinations on Kiln 1 and Cooler 1 as well as use of baghouses on the other BART-eligible sources. Additionally, the applicant took credit for the visibility reductions from the December 2006 SNCR permit that further reduced NO_x emissions and from the pending permit that will reduce PM emissions from Finish Mills 1 and 2.

The results of the post-BART visibility analysis are detailed in subsequent sections.

3. BART-ELIGIBLE UNIT DESCRIPTION

This section provides the control technology review and BART determination for the emissions units identified by the applicant and shown in Table 1 (repeated below). In the case of EU 008, only one emission point requires a BART determination.

EU No.	Emission Unit Description
002	No.1 Kiln Feed System (Baghouse D-31) – Pyroprocessing/Raw Mill System
003	Cement Kiln No. 1 (Baghouse E-55) – Pyroprocessing/Raw Mill System
004	Cement Plant Clinker Cooler No. 1 (Baghouse F-18) – Clinker Handling System
005	Finish Mills No. 1 and No. 2 with two dust collectors (Baghouse G-23) – Finish Mill System
006	Clinker Storage Silo Nos. 1 & 2 (Baghouse F-31) – Clinker Handling System
008	Baghouse No. F-17 of Kiln No.1 Blending Silo No. 1 – Cement Products is <u>not</u> BART-eligible
	Baghouse No. E-36 of Kiln No. 1. Blending Silo No. 2 – Cement Products <u>is</u> BART-eligible
009	Cement Plant STG Silos Dust Unit (Baghouse H-3) – Cement Products
011	Raw Material Storage Silos & Feed System (Baghouses C-11, C-11A)

The Department previously identified all BART-eligible sources through a series of notifications, workshops, and rule making efforts. The list for CEMEX Line 1 included the following emissions units or emissions points within an EU as listed in Table 3 that are not actually subject to BART and will not be considered.

A review by the applicant (confirmed by the Department) of the permitting history revealed that one emissions point of EU 008 as well as all of EU 024 and EU 025 were permitted for physical construction after August 7, 1977. They were included within the permitting of Line 2 (the non-BART line) or were constructed after Line 2 to further support both lines. The original rationale for inclusion in the BART review was that they support Line 1 and it was assumed they were permitted and constructed with the first line.

Table 3. Emission Units/Emissions Points related to Line 1 and Excluded from BART

EU No.	Emission Unit Description
008	Emission Point: Baghouse No. F-17 of Kiln No. 1 Blending Silo No. 1 – Cement Products
024	Raw Materials Pre-Mix Bin with Baghouse (M-2280)
025	Additive Material Storage Bin with Baghouse (M-1171)

4. EMISSIONS UNIT 003 – CEMENT KILN NO. 1 – PYROPROCESSING/RAW MILL SYSTEM

In conducting the BART determination, it will be useful to refer to Table 4 that is a compilation of relevant rule and permit based limitations on NO_x, SO₂ and PM in lb/ton of clinker. PM values include kiln plus cooler emissions. Values in parentheses denote lb/ton of kiln_{ph} feed and are also included for CEMEX Line 1 (and several other installations) because the permit limits are actually specified in those terms.

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Several of the projects (most of which have BACT determinations) specify SNCR and include ammonia (NH₃) injection limitations to minimize stack VE, PM emissions or other environmental effects of NH₃ emissions.

Table 4. Emission Limits in various Rules and Recent Permitting Actions in lb/ton of clinker

Project	NO _x (lb/ton)	SO ₂ (lb/ton)	PM (lb/ton)
40 CFR 60, Subpart F and 40 CFR 63, Subpart LLL	No limit	No limit	~0.67 (0.40)
Eastern States Ozone SIP Call	2.8	No limit	No limit
CEMEX Brooksville Kiln 1 BART proposal	2.0 (1.2)	0.17 (0.10)	0.46 (0.27)
CEMEX Brooksville Kiln 1 permits	2.0 (1.2)	0.17 (0.10)	0.46 (0.27)
CEMEX Brooksville Kiln 3 (2007, withdrawn)	1.50	0.20	0.15
Drake Cement LLC, AZ (2006)	1.14/1.95	0.06	0.21
Ash Grove/Moapa, NV (2007, withdrawn)	1.95	0.42	0.095
Sumter Cement, Center Hill (2006)	1.95	0.20	0.15
American Cement, Sumterville (2006)	1.95	0.20	0.15
Suwannee American, Branford Kiln 2 (2006)	1.95	0.20	0.17
Suwannee American, Branford Kiln 1 (2000, rev. 2005)	2.4	0.20	0.28 (0.17)
Florida Rock, Newberry Kiln 2 (2005)	1.95	0.28	0.28
Florida Rock, Newberry Kiln 1 ((1996, rev. 2003)	2.45	0.16	0.37 (0.22)
Rinker/FCS, Brooksville Kiln 2 (2005)	1.95	0.23	0.20
Holcim Lee, Missouri (2004)	2.4/1.6	1.26	0.35
Titan Florida Medley (1999, rev. 2006)	2.17	0.50	0.10

Note: Values in parentheses denote lb/ton of kiln_{ph} feed

SO₂ Control Technology Review for Kiln 1 - EU 003

The Department conducted a BACT determination for SO₂ in 1997 for Kiln No. 1 of 0.10 lb/ton kiln_{ph} feed (equivalent to 0.17 lb/ton of clinker). The technology employed and the limits set and achieved are approximately the same or more stringent as BACT determinations for new cement kilns in Florida.

Preliminary SO₂ BART Determination

The Department has determined that 0.17 lb SO₂/ton of clinker (equating to 0.10 lb/ton of kiln_{ph} feed) on a 24-hour basis is BART for the CEMEX Brooksville project and has reasonable assurance that this value can be met by: use of low sulfur raw materials; inherent self scrubbing of fuel SO₂ by alkali species in the burning zone; inherent self scrubbing by finely divided lime in the calcination zone; further self scrubbing by moisture and finely divided limestone in the raw mill; and ultimate incorporation into the clinker within the kiln.

Compliance shall be demonstrated by an SO₂ continuous emission monitoring system (SO₂-CEMS). The SO₂-CEMS shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 2. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F. The required RATA tests shall be performed using EPA Method 6C in Appendix A of 40 CFR 60. The SO₂ monitor span values shall be set appropriately, considering the expected range of emissions and corresponding emission standards.

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NO_x Control Technology Review for Kiln 1 - EU 003

The Department conducted a BACT determination for NO_x in 1997 for Kiln No: 1 of 1.83 lb/ton kiln_{ph} feed (equivalent to 3.05 lb/ton of clinker) through process and combustion controls. Since that time the limit was lowered to 1.21 lb/ ton kiln_{ph} feed (equivalent to 2.0 lb/ton of clinker) through an after-the-fact construction permit. The applicant installed an SNCR system to meet the lower limit. The SNCR technology employed and the most recent limit set are approximately the same as most of the recent BACT determinations for new cement kilns in Florida.

Preliminary NO_x BART Determination

The SNCR technology coupled with a limit of 1.21 lb/ton of feed would seem to meet BACT standards through early 2006 (though not actually achieved through the full BACT process) and thus also satisfies BART.

The Department has determined that 2.0 lb/ton of clinker (equivalent to 1.21 lb NO_x/ton of kiln_{ph} feed) and 181.5 lb/hr on a 30-operating day basis is BART for the CEMEX Brooksville project. The value compares well with the listing in Table 4 above. Compliance shall be demonstrated by the existing NO_x continuous emission monitoring system (NO_x-CEMS). Conversion to IF will be made a requirement of the permit and a long term molar less than 1.0 will be required to minimize NH₃ emissions. Also, CEMEX will be required to optimize the NH₃ injection to minimize the simple molar ratio.

Selective catalytic reduction (SCR) is an alternative technology to SNCR. While it has greater capital costs than SNCR, there are potential multi-pollutant benefits that can be realized at certain kilns. These benefits include destruction of volatile organic compounds (VOC) and dioxin/furan, lower ammonia (NH₃) emissions, and ultimately emissions of less ozone and PM precursors. SCR can also convert mercury (Hg) to more collectable forms. CEMEX can choose to install a small SCR system after the preheater that can reduce the NH₃ injection requirements and emissions as well as provide some multipollutant benefits as described in Table 5.

The referenced table is reproduced from a November 2007 publication by EPA on Alternative Control Technologies (ACT) for NO_x controls on cement kilns. It shows in a qualitative manner the relative effects of SNCR and SCR on other pollutants.

Table 5. Potential Multipollutant Effects of SNCR and SCR (EPA 2007)

Pollutant	SNCR	SCR
NH ₃	I	I (lower slippage than SNCR)
N ₂ O	I	
CO	I	D (debatable)
CO ₂	I	
PM ₁₀	I (due to ammonia slip)	I (due to ammonia slip; typically low)
SO ₂		D
H ₂ SO ₄ (or SO ₃)		I/D (SO ₃ created, but removed by PM control device prior to exhaust)
Hg		D (Hg ⁰ oxidized in the presence of chlorides)
VOC		D
Dioxin/Furan		D

Note: I - indicates a potential increase of the pollutant. D - indicates a potential decrease in the emissions of the pollutant.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

For reference the most recent BACT determination conducted by the Department set an emission limit of 1.5 lb NO_x/ton of clinker and considered SCR and SNCR as cost-effective alternatives. SNCR and SCR can be used together to minimize reagent use and catalyst size while achieving very low emissions. In a new kiln, either technology (or both) would be installed in conjunction with LNB and SC in the calciner.

PM Control Technology Review for Kiln 1 - EU 003

The previously described measures (SO₂ and NO_x controls) reduce emissions of species that tend to form fine PM in the environment and contribute significantly to regional visibility. This section discusses the direct control by the PM control device (PMCD) through which all kiln exhaust gases pass prior to emission to the atmosphere.

PM from the kiln system consists of the direct products of fuel combustion, products of reactions between vaporized raw materials and reagents with exhaust gases, and products of material abrasion. A great deal of PM is generated by the raw mill where raw mix is ground to talcum-like particles that are swept by exhaust gases and separated by a series of mechanical collection devices such as cyclones and culminating in the main PMCD. All of the collected material comprises process feed (raw meal) so that there is a major economic incentive to minimize PM emissions.

The Department conducted a BACT determination for NO_x in 1997. Prior to the 1997 BACT determination, the PM limits for Kiln 1 were 39 lb/hr and equated to the Subpart F limit of 0.3 lb/ton of dry kiln feed. The 1997 BACT determination reduced the limits to 29.7 lb/hr and 0.18 lb/ton kiln_{ph} feed. This equates to 0.20 lb/ton of dry kiln feed for comparison with Subpart F and to 0.31 lb/ton of clinker for comparison with other BACT determinations.

In 1998, the operator further upgraded the Kiln 1 PMCD by adding four more compartments that further insure compliance with the 1997 BACT determination on Kiln 1. The Department reviewed emission test results reported by the operator since the issuance of the BACT determination on Kiln 1. The results of those tests are presented in Table 6 below. The results for Cooler 1 are also included to facilitate the review further below.

All of the reported values for Kiln 1 are equal to or less than 50% of the established limits whether expressed in terms of hourly mass or process-based factors. The mean value of nine tests since 2001 is 0.05 lb/ton kiln_{ph} feed. At a standard deviation of 0.03 lb/ton kiln_{ph} feed, approximately 97.5% of measurements will be less than or equal to 0.11 lb/ton kiln_{ph} feed and 99.85% of measurements will be less than or equal to 0.14 lb/ton of kiln_{ph} feed all other factors being equal. Notably, among the highest recorded values occurred *after* CEMEX installed and used the NH₃-based SNCR system to achieve NO_x values less than required by previous permits.

The VE limit of 20% opacity applicable to Kiln 1 was not changed in the 1997 BACT determination. However the review reaffirmed EPA's VE limitation of 10% opacity on Kiln 2 although the operator asked to have it raised to the same value as applicable to Kiln 1. Beginning with issuance of the Florida Rock Kiln 1 permit in 1996, the Department has required compliance with a VE limitation of 10% opacity for all new kilns, including all of the Florida projects listed in Table 4. In the most recent projects, the demonstration has been required on a continuous basis by the required COMS.

The proposed control technology of a baghouse is reasonable based on the control technologies chosen nationwide for this kind of process.

Preliminary PM BART Determination for Kiln 1

The Department accepts the CEMEX BART proposal for Kiln 1 that is equal to the 1997 BACT determination for PM. Additionally, the Department will require adherence to the same VE standard of 10% opacity that presently applies to Kiln 2. Together with the requirement to complete the conversion to an IF system, the lower VE limit will insure good operation that will yield qualitative improvements in visibility if not modeled visibility improvements in the nearby Class I CNWR.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Table 6. PM Emission Test Results from CEMEX Brooksville Kiln 1 and Cooler 1 since 1997.

	Kiln 1			Cooler 1		
	lb/ton kiln _{ph} feed	lb/hr	lb/ton clinker	lb/ton kiln _{ph} feed	lb/hr	lb/ton clinker
Present Limit	0.18	29.7	0.30	0.09	14.9	0.15
Proposal	0.18	29.7	0.30	0.09	14.9	0.15
1997		5.26			3.07	
1998		11.17			2.87	
1999		10.72			1.44	
2000		8.27			7.74	
2001	0.06		0.10		8.6	
2002	0.04		0.07	0.03		0.05
2003 (Aug)	0.01		0.02			
2003 (Sept)	0.05		0.08	0.05		0.08
2004	0.05		0.08	0.02		0.03
2005 (Sept)	0.04		0.07	0.03		0.05
2005 (Dec)	0.01		0.02	0.07		0.12
2006 (Sept)	0.06		0.1	0.04		0.07
2006 (Dec)	0.09		0.15			
Mean	0.05		0.08	0.04		0.07
SD	0.03		0.04	0.02		0.03

The Department has determined that 0.31 lb/ton of clinker (equivalent to 0.18 lb PM/ton of kiln_{ph} feed) and 10% opacity is BART for Kiln 1. When combined with the estimate from Cooler 1 the total equals 0.46 lb/ton of clinker. This is at the high side when compared with the subsequent new kilns constructed since 1997, but is still a BACT level determination for an existing facility and more stringent than the Subpart F and Subpart LLL limitation on PM.

Compliance with the PM limits shall be demonstrated by the existing permit requirements requiring an annual EPA Method 5 test and that also incorporate the Subpart F and Subpart LLL test requirements applicable to Kiln 1. Compliance with the VE limitation of 10% will be continuously demonstrated by the COMS. Subpart LLL includes a requirement for operations and maintenance (O&M) plans for all baghouses. This will further insure compliance with the PM and VE standards.

5. EMISSIONS UNIT 004 – CLINKER COOLER 1 – CLINKER HANDLING SYSTEM

PM Control Technology Review for Cooler 1 - EU 004

PM from the cooler system does not include combustion products or reaction products and primarily consists of entrained products of material abrasion (basically clinker dust) swept away by forced cooling of the clinker product. All of the material collected by the cooler PMCD comprises product so there is a major economic incentive to minimize PM emissions. Cooler 1 has its own baghouse with four sections and approximately 300 bags per section.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Prior to the 1997 BACT determination, the PM limits for Cooler 1 were 7.1 lb/hr and equated to approximately 0.05 lb/ton of dry kiln feed. The 1997 BACT determination increased the limits to 13.6 lb/hr and 0.09 lb/ton kiln_{ph} feed. This equates to 0.10 lb/ton of dry kiln feed for comparison with Subpart F and to 0.15 lb/ton of clinker for comparison with other BACT determinations. For all practical purposes, the Cooler 1 PM emission rate is identical to the Subpart F and Subpart LLL limitations. There are a few projects listed in table 4 that have lower PM limits for the kiln and cooler combined when compared with the limit applicable to Cooler 1 alone.

The Department reviewed emission test results reported by the operator since the issuance of the BACT determination on Cooler 1. They are included in Table 9 above. All of the reported values for Cooler 1 are equal to or less than 80% of the established limits whether expressed in terms of hourly mass or process-based factors. The mean value of six tests since 2001 is 0.04 lb/ton kiln_{ph} feed. At a standard deviation of 0.02 lb/ton kiln_{ph} feed, approximately 97.5% of measurements will be less than or equal to 0.08 lb/ton kiln_{ph} feed and 99.85% of measurements will be less than or equal to 0.10 lb/ton of kiln_{ph}. Some of the measured values would have exceeded the limits applicable to Cooler 1 prior to the 1997 BACT determination.

The Subpart F-based VE limit of 10% opacity applicable to Kiln 1 was not changed in the 1997 BACT determination. Beginning with issuance of the Suwannee American Line 1 permit in 2000, the Department has required compliance with a VE limitation of 10% opacity for all new coolers by use of the required COMS.

Preliminary PM BART Determination for Cooler 1

The Department accepts the CEMEX BART proposal for Cooler 1 that is equal to the 1997 BACT determination for PM and equivalent to the Subpart F and Subpart LLL requirements for coolers.

The Department has determined that 0.15 lb/ton of clinker (equivalent to 0.09 lb PM/ton of kiln_{ph} feed) and 10% opacity is BART for Cooler 1. The value when combined with the estimate from Kiln 1 equals 0.46 lb/ton of clinker. This is at the high side when compared with the subsequent new coolers constructed since 1997, but is still a BACT level determination for an existing facility and slightly more stringent than the Subpart F and Subpart LLL limitation on PM.

Compliance with the PM limits shall be demonstrated by the existing permit requirements requiring an annual EPA Method 5 test and that also incorporate the Subpart F and Subpart LLL test requirements applicable to Cooler 1. Compliance with the VE limitation of 10% will be continuously demonstrated by the COMS. Subpart LLL includes a requirement for O&M plans for all baghouses. This will further insure compliance with the PM and VE standards.

6. EMISSIONS UNIT 005 – FINISH MILLS 1 AND 2 – FINISH MILL SYSTEM

Clinker, with gypsum and/or limestone, enters the finish mill area where the material is interground in a large ball mill. The ground product (now cement) from the ball mills is transferred to cement separators for sizing of the product, using a high efficiency air separator and cyclones, then conveyed to storage.

PM from the finish mills does not include combustion products or reaction products and primarily consists of entrained products of material abrasion (basically cement). All of the material collected by the finish mill control devices comprises product so there is a major economic incentive to minimize PM emissions.

The baghouse system to control PM emissions from Finish Mills 1 and 2 is smaller than the two PMCD used on the kiln and cooler but are significantly larger than most of the other baghouses required throughout the process. The present PM emission limits are 18 lb/hr per finish mill. The Department recently issued a draft permit (0530100-018-AC) requiring a reduction to 9 lb/hr per finish mill effective upon issuance of the final permit. The modeling performed by CEMEX is premised on the lower limits.

The draft permit contains a provision that requires CEMEX to conduct stack tests to confirm compliance with the revised emission limits of 9 lb/hr per finish mill and then comply with a low VE limit of 5% opacity that provides reasonable assurance of compliance with the numerical mass rate PM emission limit.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Preliminary PM BART Determination for Finish Mills 1 and 2

The Department accepts the CEMEX BART proposal for Finish Mills 1 and 2 of 9 lb/hr per finish mill by EPA Method 5 and a VE limitation of 5% opacity by EPA Method 9. The VE standard is less than the specified limit of 10% opacity given in Subpart LLL. Subpart LLL includes a requirement for O&M plans for all baghouses. This will further insure compliance with the PM and VE standards.

7. EMISSIONS UNITS 002, 006, 008, 009 and 011 – SILOS AND FEED SYSTEMS

All of the raw material and product silos and feed systems are adequately controlled by baghouses. Except for the cement plant storage silos dust unit (EU 009), the same lb/hr limit will continue to apply at each emissions unit in the future as presently applies.

EU 009 has a limit of 36.05 lb PM/hr. The company generally reports the results of visible emissions testing to comply with a 5% opacity value in lieu of PM testing. Reported stack test results indicate actual emissions less than 1 lb/hr.

In the case of EU 009, the Department will require an initial PM stack test and a simultaneous opacity test to demonstrate compliance with the revised PM/PM₁₀ emission limits of 5 lb/hr. After demonstrating compliance by the stack test, the applicant may thereafter request to satisfy the test requirement by meeting a 5% opacity limit as provided by Department rules 62-297.620(4) together with 62-310(7)(c) F.A. C. Until such a demonstration is made, the Department will require PM stack tests on an annual basis.

Table 7. PM BART Determination for CEMEX Brooksville Silos and Feed Systems

EU No.	Description	Existing limit lb/hr	BART limit lb/hr (3-hr)	BART Opacity
002	No.1 Kiln Feed System (Baghouse D-31) Pyroprocessing / Raw Mill System	1.02	1.02	5%
006	Clinker Storage Silo Nos. 1 & 2 (Baghouse F-31) Clinker Handling System	1.45	1.45	5%
008	Kiln No 1. Blending Silos [Baghouse No. (E-36)(silo 2)] Cement Products	1.02	1.02	5%
009	Cement Plant Storage Silos Dust Unit [Baghouse No. (H-3)(silos 1-5)] – Cement Products	36.05	5.0	5%
011	Raw Material Storage Silos (Baghouse C-11) – Raw Material Handling	1.29	1.29	5%
	Transfer Belt (Baghouse C-11A) – Raw Material Handling	0.86	0.86	5%

8. MODELING ANALYSIS WITH BART REDUCED EMISSION RATES

With regards to PM/PM₁₀, BART is a reduction of the finish mills emissions by 9 lb/hr. The Post-Control/BART visibility impacts include the particulate matter reductions along with reductions of NO_x due to SNCR and Indirect Firing permitted in 2006. The results of these lower emissions provide a maximum total visibility impact of 0.933dv. The modeling results show a reduction of the number of days above the visibility threshold in the CNWR by approximately 45%.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Table 8. CEMEX Brooksville Visibility Impact to CNWR from all BART-Eligible Units Combined

Percent Contribution to 8th Highest Visibility Impacts (dv)				
Year	Visibility Impact with BART	Days Above Visibility Threshold	Total Reduction of Days Above Visibility Threshold	Total Visibility Reduction
2001	0.933	52	41	0.524
2002	0.841	60	63	0.500
2003	0.848	57	39	0.506

9. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with the applicable state and federal air pollution regulations regarding BART as conditioned by the draft permit.

DRAFT PERMIT

PERMITTEE:

CEMEX Cement, Inc.
16301 Ponce De Leon Boulevard
Brooksville, Florida 34614-0849

Authorized Representative:

Jimmy L. Rabon, Plant Manager

Air Permit No 0530010-030-AC
Brooksville Cement Plant
Facility ID No. 0530010
BART Project
Permit Expires: June 30, 2014

PLANT AND LOCATION

CEMEX Cement, Inc. operates the existing CEMEX Cement Brooksville Plant, which is located in Hernando County at 16301 Ponce De Leon Boulevard northwest of Brooksville, Florida. The facility is an existing cement plant, which is identified by Standard Industrial Classification code No. 3241.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). Pursuant to Rule 62-296.340, F.A.C., the permittee shall install the air pollution control equipment and/or implement the air pollution control measures that are specified by this permit as the Best Available Retrofit Technology (BART).

EFFECTIVE DATE

Unless otherwise specified by this permit, the BART-eligible sources shall comply with the conditions of this permit as expeditiously as practicable, but not later than December 31, 2013. [Rule 62-296.340(3)(b)2, F.A.C.]

Executed in Tallahassee, Florida

Joseph Kahn, Director
Division of Air Resource Management

(Date)

SECTION 1. GENERAL INFORMATION

FACILITY DESCRIPTION

CEMEX Cement Company, Inc operates the Brooksville Cement Plant which is a portland cement facility (SIC 3241 Cement, Hydraulic). The plant currently consists of: two portland cement lines designated as Lines 1 and 2, including two Polysius GEPOL preheater kilns (Kilns 1 and 2); two clinker coolers; associated raw mills and finish mills; cement and clinker handling equipment; coal handling equipment; silos; air pollution control devices; raw material extraction and receiving facilities; and product shipping facilities.

FACILITY REGULATORY CLASSIFICATIONS

- The facility is a major source of hazardous air pollutants (HAP).
- The facility does not operate units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source pursuant to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

BART-ELIGIBLE EMISSIONS UNITS

This permitting action affects the following BART-eligible emissions units at the plant.

EU No.	Emission Unit Description
002	No.1 Kiln Feed System (Baghouse D-31) – Pyroprocessing/Raw Mill System
003	Cement Kiln No. 1 (Baghouse E-55) – Pyroprocessing/Raw Mill System
004	Cement Plant Clinker Cooler No. 1 (Baghouse F-18) – Clinker Handling System
005	Finish Mills No. 1 and No. 2 with two dust collectors (Baghouse G-23) – Finish Mill System
006	Clinker Storage Silo Nos. 1 & 2 (Baghouse F-31) – Clinker Handling System
008	Baghouse No. E-36 of Kiln No 1. Blending Silo No. 2 – Cement Products (<u>is</u> BART-eligible)
	Baghouse No. F-17 of Kiln No.1 Blending Silo No. 1 – Cement Products (<u>is not</u> BART-eligible)
009	Cement Plant STG Silos Dust Unit (Baghouse H-3) – Cement Products
011	Raw Material Storage Silos & Feed System (Baghouses C-11, C-11A)

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SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The Permitting Authority for this project is the Bureau of Air Regulation (BAR) in the Division of Air Resource Management (DARM) of the Florida Department of Environmental Protection (FDEP), i.e., Department. The mailing address for the Bureau of Air Regulation is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resources Section of the FDEP Southwest District Office. The mailing address and phone number of the Southwest District Office are: 13051 N. Telecom Parkway, Temple Terrace, Florida 33637-0926 and (813) 632-7600.
3. Appendices: The following Appendices are attached as part of this permit: Appendix A (Citation Formats), Appendix B (General Conditions), Appendix C (Standard Testing Requirements), and Appendix D (Standard CEMS Requirements for SO₂ Monitoring).
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to the applicable provisions of: Chapter 403, F.S.; Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C.; and the applicable parts and subparts of Title 40, Code of Federal Regulations (CFR). Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. Title V Permit: This permit authorizes specific modifications and/or new construction on the affected emissions units as well as initial operation to determine compliance with conditions of this permit. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a revised Title V permit **on or before December 31, 2013**. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to each Compliance Authority.
[Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]
6. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least 5 years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request.
[Rule 62-213.440(1)(b)2, F.A.C.]
7. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(3), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Emissions Units (EU-003 and 004)

This subsection addresses the following affected emissions units.

Emissions Units 003 and 004 (Kiln and Cooler No. 1)

Description: Dry preheater process kiln and clinker cooler systems employing the Polysius GEPOL preheater design.

Fuels: The kiln is limited to a fuel heat input of 300 million British thermal units (MMBtu) per hour. Allowable fuels include: coal, Nos. 2, 4, 5, and 6 fuel oils, natural gas, and on-site generated non-hazardous waste used oil and grease. Kiln No. 1 is also permitted to fire whole tire derived fuel (WTDF).

Capacity: The kiln is limited to 150 tons per hour (TPH) of preheater feed on a rolling 30-day average, with a maximum of 165 tons in any one hour, and a maximum annual limit of 1,300,000 tons per year (TPY).

Controls: A baghouse (E-55) is used on the kiln (EU 003) for the control of PM emissions. A baghouse (F-18) is used to control the PM emissions from the cooler (EU 004). Raw material properties, chemical reactions in the kiln, absorption into the clinker, and combustion controls minimize emissions of nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOC). An aqueous ammonia (NH₃) injection system operating on the principle of selective non-catalytic reduction (SNCR) and a low NO_x burner (LNB) have been installed to augment NO_x control.

Monitors: Emissions of CO, NO_x, and SO₂ are continuously monitored on the kiln.

Stack Parameters:

The stack for Kiln No. 1 has the following characteristics: stack height is 75 feet, exit diameter is 13 feet, exit temperature is 285 °F, and actual volumetric flow rate is approximately 315,000 acfm. There is a separate stack for Cooler No. 1 with the following characteristics: stack height is 50 feet, exit diameter is 10 feet, and exit temperature is 340°F.

1. Relation to Other Permits: The conditions of this permit subsection, unless otherwise noted, are in addition to those of any other air construction or operation permits.
[Rules 62-296.340 (BART), 62-4.030, 62-4.210, and 62-210.300(1)(b), F.A.C.]
2. BART Determinations: A determination of the BART was made for NO_x, SO₂ and PM/PM₁₀. To satisfy the BART requirements for these units the visible emissions limits act as surrogate standards for PM.
[Rule 62-296.340 (BART), F.A.C.]

CONTROL EQUIPMENT AND METHODS

3. NO_x Controls: To control emissions of nitrogen oxides (NO_x), the permittee shall implement one of the following strategies:
 - a. Operate the installed SNCR system and convert the kiln to indirect firing (IF) as previously authorized by Permits 0530010-026-AC and 0530010-34-AC.
 - b. In lieu of 1.a., the applicant is authorized to install a selective catalytic reduction (SCR) system between the preheater and the raw mill to augment or replace the existing SNCR system. In the event the applicant chooses to install the SCR, installation and compliance with limit of 1.2 lb/ton of kiln preheater feed must be completed by October 31, 2013. The SNCR system shall be used in the interim to meet the compliance dates and limits in Permits 0530010-026 and 0530010-34-AC. The injectors may be rearranged as needed to optimize the final configuration.

[Rule 62-296.340 (BART), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Emissions Units (EU-003 and 004)

4. SO₂ Controls: The present SO₂ control system consisting of dry alkali and lime scrubbing in the kiln system and limestone scrubbing in the raw mill constitutes BART for EU 003. The permittee shall continue to operate and maintain Kiln No. 1 as indicated in Permit 0530010-003-AC (PSD-FL-233) and the current Title V permit and shall also comply with additional time-averaged limits and monitoring requirements discussed further below. [Rule 62-296.340 (BART), F.A.C.]
5. PM/PM₁₀ Standards:
 - a. To control emissions of PM from Kiln No. 1 the permittee shall continue to operate and maintain baghouse E-55 as required by Permit 0530010-003-AC (PSD-FL-233) and the current Title V permit.
 - b. To control emissions of PM from Cooler No. 1 the permittee shall continue to operate and maintain baghouse F-18 as required by Permit 0530010-003-AC (PSD-FL-233) and the current Title V permit.[Rule 62-296.340 (BART), F.A.C.]
6. NO_x Continuous Emission Monitoring System (CEMS) Operation: In accordance with the requirements of Permit No. 0530010-026-AC, the permittee shall continue to properly calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) to measure and record emissions of NO_x. The emissions data collected with the CEMS shall be used to demonstrate compliance with the corresponding emissions standards. [Rules 62-296.340 (BART) and 62-4.070(3), F.A.C.; Permit 0530010-026-AC]
7. Continuous Opacity Monitoring System (COMS) for Kiln and Cooler No. 1: A COMS shall be used to demonstrate continuous compliance with the opacity standards and limitations specified in this section.
 - a. In accordance with the NSPS (40 CFR 60, Subpart F), NESHAP (MACT 40 CFR 63, Subpart LLL) and the PSD-FL-233 requirements for cement kilns, the permittee shall continue to properly calibrate, maintain, and operate a COMS to measure and record opacity emissions.
 - b. The COMS shall comply with: 40 CFR 60, Appendix B, Performance Specification 1 (PS-1); 40 CFR 60 Subpart A, General Provisions; and, the requirements of MACT 40 CFR 63, Subpart LLL. Reports demonstrating compliance with PS-1 shall be submitted to the Department prior to January 1, 2014.
 - c. Effective January 1, 2014, the emissions data collected with the certified COMS shall be used to demonstrate continuous compliance with the opacity standards and limitations specified in this section.
 - d. Opacity shall be based on a 6-minute block average computed from at least one observation (measurement) every 15 seconds. An average value shall be computed and recorded at least every 60 seconds. For the COMS, the 6-minute block averages shall begin at the top of each hour.[Rules 62-296.340 (BART) and 62-4.070(3), F.A.C.]
8. SO₂ CEMS Installation: In accordance with the requirements in Appendix D (Standard CEMS Requirements for SO₂ Monitoring) of this permit, the permittee shall properly install, calibrate, maintain, and operate a CEMS to measure and record emissions of SO₂ from Kiln No. 1. Effective January 1, 2014 the emissions data collected with the CEMS shall be used to demonstrate compliance with the corresponding emissions standards. [Rules 62-296.340 (BART) and 62-4.070(3), F.A.C.]

BART EMISSIONS STANDARDS

9. NO_x Emissions Standard:
 - a. Beginning July 1, 2007 until 30 operating days after installation of the IF system or October 31, 2008, whichever is earlier, NO_x emissions from Kiln No. 1 shall exceed neither 1.50 lb/ton of dry preheater feed nor 225 lb/hour on a rolling 30-operating day average as measured by the required CEMS.

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Emissions Units (EU-003 and 004)

- b. Beginning 30 operating days after installation of the IF system, or October 31, 2008, whichever is earlier, NO_x emissions from Kiln No. 1 shall not exceed the following emissions standards for NO_x.

Pollutant	Emission Limit	Averaging Time	Compliance Method	Basis
NO _x	2.0 lb/ton clinker	30-operating day rolling	CEMS	Applicant Request, PSD Avoidance and BART
	181.5 lb/hr (as NO ₂)			

[Applicant Request; Rule 62-296.340 (BART), F.A.C.; Permits 0530010-026-AC and 0530010-34-AC]

10. SO₂ Emissions Standard: SO₂ emissions from Kiln No. 1 shall not exceed the following emissions standards.

Pollutant	Emission Limit	Averaging Time	Compliance Method	Basis
SO ₂	0.17 lb/ton clinker	24-operating hour rolling	CEMS	BART
	15 lb/hr @ 150 TPH of feed 16.5 lb/hr @ 165 TPH of feed			

[Rule 62-296.340 (BART), F.A.C.; Permits AC27-258571 and 0530010-002-AC (PSD-FL-233)]

11. PM/PM₁₀ Standards: Particulate matter emissions shall not exceed the following emissions standards as determined by EPA Method 5.

EU No.	Description	Emission Limit	lb/hr at 150 dry preheater feed	lb/hr at 165 TPH dry preheater feed
003	Kiln No. 1	0.31 lb/ton clinker	27.0	29.7
004	Cooler No. 1	0.15 lb/ton clinker	13.6	14.9

[Rule 62-296.340 (BART), F.A.C. and Permit 0530010-003-AC (PSD-FL-233)]

12. Visible Emissions Standards:

- a. Beginning January 1, 2014 and thereafter, visible emissions from Kiln No. 1 as measured by a COMS shall not exceed 10 % opacity based on a 6-minute average. Until that date, the opacity standards, including the monitoring and compliance requirements of presently applicable permits continue to apply to Kiln No. 1.
- b. Beginning January 1, 2014 and thereafter, visible emissions from Cooler No. 1 as measured by a COMS shall not exceed 10% opacity based on a 6-minute average. Until that date, the opacity standards, including the monitoring and compliance requirements of presently applicable permits continue to apply to Cooler No. 1.

[Rule 62-296.340 (BART), F.A.C. and Permit AC27-258571]

EXCESS EMISSIONS

13. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Emissions Units (EU-003 and 004)

14. Excess Emissions Allowed: Unless specified by this permit or Title V Permit No. 0530010-015-AV, excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period. [Rule 62-210.700(1), F.A.C.]
15. Allowable Data Exclusions: Continuous monitoring data collected during periods of startup, shutdown, and malfunction may be excluded from the compliance demonstrations only in accordance with the following requirements, provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions are minimized. As provided by the authority in Rule 62-210.700(5), F.A.C., the following conditions replace the provisions in Rule 62-210.700(1), F.A.C.
- a. *SO₂ Data*. Refer to Appendix D, Standard CEMS Requirements for SO₂ Monitoring.
 - b. *NO_x Data*: Refer to Permit No. 0530010-026-AC.

The permittee shall notify the Compliance Authority within one working day of discovering any emissions in excess of a CEMS standard subject to the specified averaging period. Within one working day of occurrence, the owner or operator shall notify the Compliance Authority of any malfunction resulting in the exclusion of CEMS data. All such reasonably preventable emissions shall be included in any CEMS compliance determinations. All valid emissions data (including data collected during startup, shutdown and malfunction) shall be used to report emissions for the Annual Operating Report.

[Rules 62-210.200, 62-212.400(BACT), 62-340 (BART) and 62-210.700, F.A.C.]

16. Excess Emissions Notification: In case of excess emissions resulting from malfunctions, the permittee shall notify the Compliance Authority in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]

MONITORING REQUIREMENTS

17. CEMS Compliance Demonstration: For the SO₂ CEMS required by this permit, the permittee shall comply with the monitoring provisions in Appendix D (Standard CEMS Requirements for SO₂ Monitoring), part of this permit. The requirements related to NO_x CEMS compliance demonstration for this Kiln are stated in Permit 0530010-026-AC. This permit does not change or supersede any of those requirements. [Rules 62-296.340 (BART) and 62-4.070(3), F.A.C.]
18. COMS Compliance Demonstration: The requirements related to the opacity COMS compliance demonstration for Kiln and Cooler No.1 are stated in Specific Condition No. 8. [Rules 62-296.340 (BART) and 62-4.070(3), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Emissions Units (EU-003 and 004)

EMISSIONS PERFORMANCE TESTING

19. Test Methods: The following reference methods (or more recent versions) shall be used to conduct any required emissions tests.

Method	Description of Method and Comments
1 - 4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5	Determination of PM Emissions from Stationary Sources
7E	Determination of NO _x Emissions from Stationary Sources
6C	Determination of SO ₂ Emissions from Stationary Sources
9	Visual Determination of Opacity from Stationary Sources
19	Determination of SO ₂ Removal Efficiency and PM, SO ₂ , and NO _x Emission Rates
201A	Determination of PM with a Mean Diameter of 10 Microns or Less (PM ₁₀)

EPA Methods 1, 2, 3, 4, and 19 shall be used as necessary to support the other test methods. The above methods are described in 40 CFR 60, Appendix A, which is adopted by reference in Rule 62-204.800, F.A.C. No other methods shall be used without prior written approval from the Permitting Authority. [Rules 62-204.800 and 62-297.100, F.A.C.; and 40 CFR 60, Appendix A]

20. Standard Testing Requirements: All required emissions tests shall be conducted in accordance with the requirements specified in Appendix D (Standard Testing Requirements) of this permit. [Rules 62-204.800 and 62-297.100, F.A.C.; and 40 CFR 60, Appendix A]
21. Compliance Test Schedule: In accordance with the following schedule, the permittee shall have stack tests conducted to demonstrate compliance with the emissions standards specified in this permit.
- Initial Tests*: On or before January 1, 2014, initial tests shall be conducted for PM/PM₁₀. [Rules 62-296.340 (BART) and 62-297.310(7)(a)1, F.A.C.]
 - Annual Tests*: During each federal fiscal year (October 1st to September 30th), tests shall be conducted for PM/PM₁₀. [Rules 62-296.340 (BART) and 62-297.310(7)(a)4, F.A.C.]
 - Tests Prior to Renewal*: Within the 12-month period prior to renewing the Title V air operation permit, tests shall be conducted for PM/PM₁₀. [Rules 62-296.340 (BART) and 62-297.310(7)(a)3, F.A.C.]

No initial or annual tests or tests prior to renewal of the Title V Permit are necessary for NO_x and SO₂ since these pollutants are monitored by CEMS.

RECORDS AND REPORTS

22. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]
23. Operation and Maintenance Requirements for BART Controls: The requirements related to operation and maintenance requirements are stated in Title V permit 0530010-015-AV. This permit does not change or supersede any of those requirements. [Rule 62-4.070(3) F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Emissions Units (EU-003 and 004)

24. Baghouse Operation and Maintenance Requirements: For the Kiln and Cooler baghouses the permittee shall have an operation and maintenance plan to address proper operation, parametric monitoring, and a schedule for conducting periodic inspections and preventive maintenance. Baghouse inspections and maintenance activities shall be recorded in a written log. The operation and maintenance logs shall be submitted to the Compliance Authority upon request. [Rule 62-4.070(3), and 40 CFR 63.1350, Subpart LLL]
25. Control Equipment Monitoring Recordkeeping and Reports: The requirements related to control equipment monitoring for NO_x are stated in Permit 0530010-026-AC. This permit does not change or supersede any of those requirements. The requirements related to control equipment monitoring for SO₂ are provided in Appendix D (Standard CEMS requirements for SO₂ Monitoring), part of this permit. [Rule 62-296.340(3)(b)2, F.A.C.]
26. Records: The permittee shall comply with the records requirements stated in Title V Permit 0530010-015-AV and all the issued construction permits not yet incorporated in this Title V permit. [Rule 62-4.070(3) F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

B. Emissions Units (EU-002, 005, 006, 008, 009 and 011)

This permitting action affects the following BART-eligible emissions units at the plant.

EU No.	Emission Unit Description
002	No.1 Kiln Feed System (Baghouse D-31) – Pyroprocessing/Raw Mill System
005	Finish Mills #1 and #2 with two dust collectors (Baghouse G-23) – Finish Mill System
006	Clinker Storage Silo Nos. 1 & 2 (Baghouse F-31) – Clinker Handling System
008	Kiln No 1. Blending Silos [Baghouse Nos. (E-36)(silo 2)] – Cement Products
009	Cement Plant STG Silos Dust Unit (Baghouse H-3(silos 1-5)) – Cement Products
011	Raw Material Storage Silos (Baghouse C-11) – Raw Material Handling
011	Transfer Belt (Baghouse C-11A) – Raw Material Handling

1. Relation to Other Permits: The conditions of this permit subsection, unless otherwise noted, are in addition to those of any other air construction or operation permits.
[Rules 62-296.340 (BART), 62-4.030, 62-4.210, and 62-210.300(1)(b), F.A.C.]
2. BART Determinations: A determination of the BART was made for particulate matter (PM/PM₁₀). To satisfy the BART requirements for these units the visible emissions limits act as surrogate standards for PM.
[Rule 62-296.340 (BART), F.A.C.]

EQUIPMENT AND CONTROL TECHNOLOGY

3. Equipment Description: The permittee is authorized to operate, and maintain equipment needed for the handling, conveying and grinding of clinker from Line 1 storage silos together with gypsum, slag or limestone dust from their respective silos to make the final cement product. Equipment will include associated conveyors, and control equipment. [Rule 62-4.070(3) F.A.C.]
4. Baghouse Controls: Each emissions unit identified above shall be controlled by a baghouse system. Each required baghouse shall be operated, and maintained to achieve a PM design specification of 0.01 grain (gr) per dry standard cubic foot (dscf) and a PM₁₀ design specification of 0.007 gr/dscf.
[Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]
5. Circumvention: The permittee shall not circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly.
[Rule 62-210.650, F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

B. Emissions Units (EU-002, 005, 006, 008, 009 and 011)

EMISSIONS AND TESTING REQUIREMENTS

6. Particulate Matter (PM/PM₁₀) and Visible Emissions Standards (VE):

EU No.	Description	BART limit lb/hr (3-hr)	BART Opacity
002	No.1 Kiln Feed System (Baghouse D-31) Pyroprocessing / Raw Mill System	1.02	5%
005	Finish Mill No. 1 and No. 2 with two bag collectors (Baghouse G-23) – Finish Mill System	9.0 (for each mill)	5%
006	Clinker Storage Silo Nos. 1 & 2 (Baghouse F-31) Clinker Handling System	1.45	5%
008	Kiln No 1. Blending Silos [Baghouse No. (E-36)(silo 2)] Cement Products	1.02	5%
009	Cement Plant Storage Silos Dust Unit [Baghouse No. (H-3)(silos 1-5)] – Cement Products	5.0	5%
011	Raw Material Storage Silos (Baghouse C-11) – Raw Material Handling	1.29	5%
	Transfer Belt (Baghouse C-11A) – Raw Material Handling	0.86	5%

The presently applicable visible emissions standard of 5% opacity and testing requirements in lieu of stack testing in Title V permit continue to apply. Exceedance of the 5% opacity limit shall be deemed an exceedance of this permit condition and not necessarily an exceedance of the opacity limitations given in 40 CFR 63, Subpart LLL. [Rules 62-4.070(3); 62-297.620(4) F.A.C. and 40 CFR 63.1348]

7. Testing and Compliance Demonstrations: During each federal fiscal year (October 1st to September 30th), the permittee shall conduct visible emissions tests on each baghouse exhaust in accordance with EPA Method 9 to demonstrate compliance with the opacity standard. This method is described in 40 CFR 60, Appendix A, which is adopted by reference in Rule 62-204.800, F.A.C. Initial compliance tests shall be conducted during federal fiscal year 2012/2013 and a test report demonstrating compliance shall be submitted before October 1, 2013. [Rules 62-4.070(3), 62-204.800, 62-296.340(3)(b)2; 62-297.310(7)(a)4, F.A.C.; and 40 CFR 60, Appendix A, Method 9 and 40 CFR 63.1349(b)(2)]
8. Periodic Monitoring Requirements: Each affected unit subject to an opacity standard shall be periodically monitored using the procedures described in 40 CFR 63.1350(a) (4) (i) through (vii) to ensure compliance with the above emissions limits. [Rule 62-4.070(3) and 40 CFR, 63.1350, Subpart LLL]
9. Test Methods: Any required tests shall be performed in accordance with the following reference methods and the applicable requirements of Appendix C of this permit, and the applicable NESHAP provisions. [Rule 62-297.310(7)(a)9, F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

B. Emissions Units (EU-002, 005, 006, 008, 009 and 011)

Method	Description of Method and Comments
1 - 4	Determination of Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content. Methods shall be performed as necessary to support other methods.
5	Determination Particulate Matter from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
22	Visual Determination of Fugitive Emissions From Material Sources

REPORTING AND RECORD KEEPING

10. Baghouse Operation and Maintenance Requirements: For each baghouse the permittee shall have an operation and maintenance plan to address proper operation, parametric monitoring, and a schedule for conducting periodic inspections and preventive maintenance. Baghouse inspections and maintenance activities shall be recorded in a written log. The operation and maintenance logs shall be submitted to the Compliance Authority upon request. [Rule 62-4.070(3), and 40 CFR 63.1350, Subpart LLL]
11. Test Reports: For each test conducted, the permittee shall file a test report including the information specified in Rule 62-297.310(8), F.A.C. with the compliance authority no later than 45 days after the last run of each test is completed. [Rules 62-297.310(8), F.A.C.]
12. Records: The permittee shall comply with the records requirements stated in Title V Permit 0530010-015-AV and all the issued construction permits not yet incorporated in this Title V permit. [Rule 62-4.070(3) F.A.C]

SECTION 4. APPENDICES

CONTENTS

- Appendix A. Citation Formats
- Appendix B. General Conditions
- Appendix C. Standard Testing Requirements
- Appendix D. Standard CEMS Requirements for SO₂ Monitoring

SECTION 4. APPENDIX A
CITATION FORMATS

The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.

REFERENCES TO PREVIOUS PERMITTING ACTIONS

Old Permit Numbers

Example: Permit No. AC50-123456 or Air Permit No. AO50-123456

Where: “AC” identifies the permit as an Air Construction Permit
“AO” identifies the permit as an Air Operation Permit
“123456” identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AO, or 099-2222-001-AV

Where: “099” represents the specific county ID number in which the project is located
“2222” represents the specific facility ID number
“001” identifies the specific permit project
“AC” identifies the permit as an air construction permit
“AO” identifies the permit as a minor source air operation permit
“AV” identifies the permit as a Title V Major Source Air Operation Permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: “PSD” means issued pursuant to the Prevention of Significant Deterioration of Air Quality
“FL” means that the permit was issued by the State of Florida
“317” identifies the specific permit project

RULE CITATION FORMATS

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CFR 60.7]

Means: Title 40, Part 60, Section 7

SECTION 4. APPENDIX B
GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
 - a. Have access to and copy and records that must be kept under the conditions of the permit;
 - b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
 - a. A description of and cause of non-compliance; and
 - b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

SECTION 4. APPENDIX B
GENERAL CONDITIONS

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
 - a. Determination of Best Available Control Technology (Not Applicable);
 - b. Determination of Prevention of Significant Deterioration (Not Applicable); and
 - c. Compliance with New Source Performance Standards (Not Applicable).
14. The permittee shall comply with the following:
 - a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - c. Records of monitoring information shall include:
 - 1) The date, exact place, and time of sampling or measurements;
 - 2) The person responsible for performing the sampling or measurements;
 - 3) The dates analyses were performed;
 - 4) The person responsible for performing the analyses;
 - 5) The analytical techniques or methods used; and
 - 6) The results of such analyses.
15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SECTION 4. APPENDIX C
STANDARD TESTING REQUIREMENTS

Unless otherwise specified by permit, all emissions units that require testing are subject to the following conditions as applicable.

1. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]
2. Operating Rate During Testing: Unless otherwise stated in the applicable emission limiting standard rule, testing of emissions shall be conducted with the emissions unit operating at permitted capacity as defined below. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity.
 - a. *Combustion Turbines*. (Reserved)
 - b. *All Other Sources*. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit.
[Rule 62-297.310(2), F.A.C.]
3. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]
4. Applicable Test Procedures:
 - a. *Required Sampling Time*.
 - 1) Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes.
 - 2) *Opacity Compliance Tests*. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:
 - a) For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation

SECTION 4. APPENDIX C
STANDARD TESTING REQUIREMENTS

shall be equal to the duration of the batch cycle or operation completion time.

- b) The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.
- c) The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.
- b. *Minimum Sample Volume.* Unless otherwise specified in the applicable rule, the minimum sample volume per run shall be 25 dry standard cubic feet.
- c. *Required Flow Rate Range.* For EPA Method 5 particulate sampling, acid mist/sulfur dioxide, and fluoride sampling which uses Greenburg Smith type impingers, the sampling nozzle and sampling time shall be selected such that the average sampling rate will be between 0.5 and 1.0 actual cubic feet per minute, and the required minimum sampling volume will be obtained.
- d. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1.
- e. *Allowed Modification to EPA Method 5.* When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.

TABLE 297.310-1 CALIBRATION SCHEDULE			
Item	Minimum Frequency	Reference Instrument	Tolerance
Liquid in glass thermometer	Annually	ASTM Hg in glass ref. thermometer or equivalent or thermometric points	± 2%
Bimetallic thermometer	Quarterly	Calib. liq. in glass	5° F
Thermocouple	Annually	ASTM Hg in glass ref. thermometer, NBS calibrated reference and potentiometer	5° F
Barometer	Monthly	Hg barometer or NOAA station	± 1% scale
Pitot Tube	When required or when damaged	By construction or measurements in wind tunnel D greater than 16" and standard pitot tube	See EPA Method 2, Fig. 2-2 & 2-3
Probe Nozzles	Before each test or when nicked, dented, or corroded	Micrometer	± 0.001" mean of at least three readings; maximum deviation between readings, 0.004"
Dry Gas Meter and Orifice Meter	1. Full Scale: When received, when 5% change observed, annually	Spirometer or calibrated wet test or dry gas test meter	2%
	2. One Point: Semiannually		
	3. Check after each test series	Comparison check	5%

[Rule 62-297.310(4), F.A.C.]

SECTION 4. APPENDIX C
STANDARD TESTING REQUIREMENTS

5. Determination of Process Variables:

- a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
- b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

[Rule 62-297.310(5), F.A.C.]

6. Required Stack Sampling Facilities: Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must meet any Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E.

- a. *Permanent Test Facilities.* The owner or operator of an emissions unit for which a compliance test, other than a visible emissions test, is required on at least an annual basis, shall install and maintain permanent stack sampling facilities.
- b. *Temporary Test Facilities.* The owner or operator of an emissions unit that is not required to conduct a compliance test on at least an annual basis may use permanent or temporary stack sampling facilities. If the owner chooses to use temporary sampling facilities on an emissions unit, and the Department elects to test the unit, such temporary facilities shall be installed on the emissions unit within 5 days of a request by the Department and remain on the emissions unit until the test is completed.
- c. *Sampling Ports.*
 - 1) All sampling ports shall have a minimum inside diameter of 3 inches.
 - 2) The ports shall be capable of being sealed when not in use.
 - 3) The sampling ports shall be located in the stack at least 2 stack diameters or equivalent diameters downstream and at least 0.5 stack diameter or equivalent diameter upstream from any fan, bend, constriction or other flow disturbance.
 - 4) For emissions units for which a complete application to construct has been filed prior to December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 15 feet or less. For stacks with a larger diameter, four sampling ports, each 90 degrees apart, shall be installed. For emissions units for which a complete application to construct is filed on or after December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 10 feet or less. For stacks with larger diameters, four sampling ports, each 90 degrees apart, shall be installed. On horizontal circular ducts, the ports shall be located so that the probe can enter the stack vertically, horizontally or at a 45 degree angle.
 - 5) On rectangular ducts, the cross sectional area shall be divided into the number of equal areas in accordance with EPA Method 1. Sampling ports shall be provided which allow access to each sampling point. The ports shall be located so that the probe can be inserted perpendicular to the gas flow.

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STANDARD TESTING REQUIREMENTS

d. *Work Platforms.*

- 1) Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.
- 2) On circular stacks with 2 sampling ports, the platform shall extend at least 110 degrees around the stack.
- 3) On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.
- 4) All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toeboard, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.

e. *Access to Work Platform.*

- 1) Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.
- 2) Walkways over free-fall areas shall be equipped with safety rails and toeboards.

f. *Electrical Power.*

- 1) A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.
- 2) If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

g. *Sampling Equipment Support.*

- 1) A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.
 - a) The bracket shall be a standard 3 inch × 3 inch × one-quarter inch equal-legs bracket which is 1 and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.
 - b) A three-eighth inch bolt which protrudes 2 inches from the stack may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.
 - c) The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.
- 2) A complete monorail or dualrail arrangement may be substituted for the eyebolt and bracket.
- 3) When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

SECTION 4. APPENDIX C
STANDARD TESTING REQUIREMENTS

7. Frequency of Compliance Tests: The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.
- a. General Compliance Testing.
- 1) The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.
 - 2) For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.
 - 3) The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:
 - a) Did not operate; or
 - b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,
 - 4) During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:
 - a) Visible emissions, if there is an applicable standard;
 - b) Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and
 - c) Each NESHAP pollutant, if there is an applicable emission standard.
 - 5) An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.
 - 6) For fossil fuel steam generators on a semi-annual particulate matter emission compliance testing schedule, a compliance test shall not be required for any six-month period in which liquid and/or solid fuel is not burned for more than 200 hours other than during startup.
 - 7) For emissions units electing to conduct particulate matter emission compliance testing quarterly pursuant to paragraph 62-296.405(2)(a), F.A.C., a compliance test shall not be required for any quarter in which liquid and/or solid fuel is not burned for more than 100 hours other than during startup.
 - 8) Any combustion turbine that does not operate for more than 400 hours per year shall conduct a

SECTION 4. APPENDIX C
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visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.

- 9) The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.
- 10) An annual compliance test conducted for visible emissions shall not be required for units exempted from air permitting pursuant to subsection 62-210.300(3), F.A.C.; units determined to be insignificant pursuant to subparagraph 62-213.300(2)(a)1., F.A.C., or paragraph 62-213.430(6)(b), F.A.C.; or units permitted under the General Permit provisions in paragraph 62-210.300(4)(a) or Rule 62-213.300, F.A.C., unless the general permit specifically requires such testing.
- b. *Special Compliance Tests.* When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.

8. Test Reports:

- a. The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.
- b. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.
- c. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:
 - 1) The type, location, and designation of the emissions unit tested.
 - 2) The facility at which the emissions unit is located.
 - 3) The owner or operator of the emissions unit.
 - 4) The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
 - 5) The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
 - 6) The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
 - 7) A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
 - 8) The date, starting time and duration of each sampling run.

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STANDARD TESTING REQUIREMENTS

- 9) The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
- 10) The number of points sampled and configuration and location of the sampling plane.
- 11) For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
- 12) The type, manufacturer and configuration of the sampling equipment used.
- 13) Data related to the required calibration of the test equipment.
- 14) Data on the identification, processing and weights of all filters used.
- 15) Data on the types and amounts of any chemical solutions used.
- 16) Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
- 17) The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
- 18) All measured and calculated data required to be determined by each applicable test procedure for each run.
- 19) The detailed calculations for one run that relate the collected data to the calculated emission rate.
- 20) The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
- 21) A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

9. The terms stack and duct are used interchangeably in this rule.

[Rule 62-297.310(9), F.A.C.]

SECTION 4. APPENDIX D

STANDARD CEMS REQUIREMENTS FOR SO₂ MONITORING

CEMS OPERATION PLAN

1. SO₂ CEMS Operation Plan: The owner or operator shall create and implement a facility-wide plan for the proper installation, calibration, maintenance and operation of the SO₂ CEMS required by this permit. The owner or operator shall submit the SO₂ CEMS Operation Plan to the Bureau of Air Monitoring and Mobile Sources for approval at least 60 days prior to CEMS installation. The CEMS Operation Plan shall become effective 60 days after submittal or upon its approval. If the CEMS Operation Plan is not approved, the owner or operator shall submit a new or revised plan for approval.

{Permitting Note: The Department maintains both guidelines for developing a CEMS Operation Plan and example language that can be used as the basis for the facility-wide plan required by this permit. Contact the Emissions Monitoring Section of the Bureau of Air Monitoring and Mobile Sources at (850)488-0114.}

INSTALLATION, PERFORMANCE SPECIFICATIONS AND QUALITY ASSURANCE

2. Timelines: For the existing emission unit, the owner or operator shall install the SO₂ CEMS required by this permit and conduct the appropriate performance specification for the CEMS no later than 60 calendar days after completing installation of the CEMS.
3. Installation: The SO₂ CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The owner or operator shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR part 60, Appendix B.
4. Span Values and Dual Range Monitors: The owner or operator shall set appropriate span values for the CEMS. The owner or operator shall install dual range monitors if required by and in accordance with the CEMS Operation Plan.
5. Continuous Flow Monitor: For compliance with mass emission rate standards, the owner or operator shall install a continuous flow monitor to determine the stack exhaust flow rate. The flow monitor shall be certified pursuant to 40 CFR part 60, Appendix B, Performance Specification 6. Alternatively, the owner or operator may install a fuel flow monitor and use an appropriate F-factor computational approach to calculate stack exhaust flow rate.
6. Diluent Monitor: If it is necessary to correct the CEMS output to the oxygen concentrations specified in this permit's emission standards, the owner or operator shall either install an oxygen monitor or install a CO₂ monitor and use an appropriate F-factor computational approach.
7. Moisture Correction: If necessary, the owner or operator shall determine the moisture content of the exhaust gas and develop an algorithm to enable correction of the monitoring results to a dry basis (0% moisture).
{Permitting Note: The CEMS Operation Plan will contain additional CEMS-specific details and procedures for installation.}
8. Performance Specifications: The owner or operator shall evaluate the acceptability of the SO₂ CEMS by conducting the appropriate performance specification, as follows. CEMS determined to be unacceptable shall not be considered installed for purposes of meeting the timelines of this permit. The owner or operator shall conduct Performance Specification 2 of 40 CFR part 60, Appendix B.
9. Quality Assurance: The owner or operator shall follow the quality assurance procedures of 40 CFR part 60, Appendix F for SO₂ Monitors. The required RATA tests shall be performed using EPA Method 6C in Appendix A of 40 CFR part 60.
10. Substituting RATA Tests for Compliance Tests: Data collected during the CEMS quality assurance RATA tests can substitute for annual stack tests, and vice versa, at the option of the owner or operator, provided the

SECTION 4. APPENDIX D

STANDARD CEMS REQUIREMENTS FOR SO₂ MONITORING

owner or operator indicates this intent in the submitted test protocol and follows the procedures outlined in the CEMS Operation Plan.

CALCULATION APPROACH

11. CEMS Used for Compliance: Once adherence to the applicable performance specification for the SO₂ CEMS is demonstrated, the owner or operator shall use the CEMS to demonstrate compliance with the applicable emission standards as specified by this permit.
12. SO₂ CEMS Data: The SO₂ CEMS shall monitor and record emissions during all periods of operation and whenever emissions are being generated, including during episodes of startups, shutdowns, and malfunctions. All data shall be used, except for invalid measurements taken during monitor system breakdowns, repairs, calibration checks, zero adjustments and span adjustments, and except for allowable data exclusions as per **Condition 19** of this Appendix.
13. Operating Hours and Operating Days: For purposes of this appendix, the following definitions shall apply. An hour is the 60-minute period beginning at the top of each hour. Any hour during which an emissions unit is in operation for more than 15 minutes is an operating hour for that emission unit. A day is the 24-hour period from midnight to midnight. Unless otherwise specified by this permit, any day with at least one operating hour for an emissions unit is an operating day for that emission unit.
14. Valid Hourly Averages: The SO₂ CEMS shall be designed and operated to sample, analyze and record data evenly spaced over the hour at a minimum of one measurement per minute. All valid measurements collected during an hour shall be used to calculate a 1-hour block average that begins at the top of each hour.
 - a. Hours that are not operating hours are not valid hours.
 - b. For each operating hour, the 1-hour block average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, there is insufficient data, the 1-hour block average is not valid, and the hour is considered as "monitor unavailable."
15. Calculation Approaches: The owner or operator shall implement the calculation approach specified by this permit for the SO₂ CEMS, as follows:
 - a. *Rolling 24-hour average*. Compliance shall be determined after each valid hourly average is obtained by calculating the arithmetic average of that valid hourly average and the prior 23 valid hourly averages.
 - b. *Block 1-hour average*. Compliance shall be determined for each block averaging period by calculating the arithmetic average of all valid hourly averages occurring within that block averaging period. (Hours 0, 1 and 2 are the first 3-hour block; hours 3, 4 and 5 are the second 3-hour block; etc.)

MONITOR AVAILABILITY

16. Monitor Availability: The quarterly excess emissions report shall identify monitor availability for each quarter in which the unit operated. Monitor availability for the CEMS shall be 95% or greater in any calendar quarter in which the unit operated for more than 760 hours. In the event the applicable availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving the required availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit.

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STANDARD CEMS REQUIREMENTS FOR SO₂ MONITORING

EXCESS EMISSIONS

17. Definitions:

- a. *Startup* is defined as the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions.
- b. *Shutdown* means the cessation of the operation of an emissions unit for any purpose.
- c. *Malfunction* means any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.

18. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited.

19. Data Exclusion Procedures for SIP Compliance: As per the procedures in this condition, limited amounts of CEMS emissions data may be excluded from the corresponding compliance demonstration, provided that best operational practices to minimize emissions are adhered to and the duration of data excluded is minimized. The data exclusion procedures of this condition apply only to SIP-based emission limits.

- a. *Excess Emissions*. Data in excess of the applicable emission standard may be excluded from compliance calculations if the data are collected during periods of permitted excess emissions (for example, during startup, shutdown or malfunction). The maximum duration of excluded data is 2 hours in any 24-hour period, unless some other duration is specified by this permit.
- b. *Limited Data Exclusion*. If the compliance calculation using all valid CEMS emission data, as defined in **Condition 13** of this Appendix, indicates that the emission unit is in compliance, then no CEMS data shall be excluded from the compliance demonstration.
- c. *Event Driven Exclusion*. The underlying event (for example, the startup, shutdown or malfunction event) must precede the data exclusion. If there is no underlying event, then no data may be excluded. Only data collected during the event may be excluded.
- d. *Reporting Excluded Data*. The data exclusion procedures of this condition are not necessarily the same procedures used for excess emissions as defined by federal rules. Quarterly or semi-annual reports required by this permit shall indicate not only the duration of data excluded from SIP compliance calculations but also the number of excess emissions as defined by federal rules.

20. Notification Requirements: The owner or operator shall notify the Compliance Authority within one working day of discovering any emissions that demonstrate noncompliance for a given averaging period. Within one working day of occurrence, the owner or operator shall notify the Compliance Authority of any malfunction resulting in the exclusion of CEMS data. For malfunctions, notification is sufficient for the owner or operator to exclude CEMS data.

ANNUAL EMISSIONS

21. SO₂ CEMS Used for Calculating Annual Emissions: All valid data, as defined in **Condition 14** of this appendix, shall be used when calculating annual emissions.

- a. Annual emissions shall include data collected during startup, shutdown and malfunction periods.
- b. Annual emissions shall include data collected during periods when the emission unit is not operating but emissions are being generated (for example, when firing fuel to warm up a process for some period of

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time prior to the emission unit's startup).

- c. Annual emissions shall not include data from periods of time where the monitor was functioning properly but was unable to collect data while conducting a mandated quality assurance/quality control activity such as calibration error tests, RATA, calibration gas audit or RAA. These periods of time shall be considered missing data for purposes of calculating annual emissions.
 - d. Annual emissions shall not include data from periods of time when emissions are in excess of the calibrated span of the CEMS. These periods of time shall be considered missing data for purposes of calculating annual emissions.
22. Accounting for Missing Data: All valid measurements collected during each hour shall be used to calculate a 1-hour block average. For each hour, the 1-hour block average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, the owner or operator shall account for emissions during that hour using site-specific data to generate a reasonable estimate of the 1-hour block average.
23. Emissions Calculation: Hourly emissions shall be calculated for each hour as the product of the 1-hour block average and the duration of pollutant emissions during that hour. Annual emissions shall be calculated as the sum of all hourly emissions occurring during the year.