KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 • FAX/377-7158

Al Linero, FDEP
Division of Air Resource Management
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

January 31, 2007

SUBJECT: BART Application for Cemex-Brooksville Cement Plant: ID 0530010

Dear Al,

Please find the enclosed the air construction permit application to incorporate Best Achievable Retrofit Technology (BART) requirements for the above facility. A faxed copy of the RO signature page is enclosed with this hardcopy application submission. As well, an electronic version was attached to the emailed application submitted to your attention with copy to Tom Rogers on January 31, 2007. As mentioned in the emailed application text, the EPSAP application was not submitted by internet due to technical problems with EPSAP. I will electronically submit the application, if needed, after we correct the problems.

If you have any questions regarding this information or any related matter, please contact me (352) 377-5822.

Sincerely,

Max Lee, Ph.D., P.E.

Enc:

Cc: Charles Walz, Cemex

CEMEX

RECEIVED
FEB 01 2007
BUREAU OF AIR REGULATION

January 31, 2007

Via UPS Overnight

Al Linero, FDEP
Division of Air Resource Management
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

SUBJECT: RO Signature Page for CEMEX Brooksville Plant BART Application

Please find the enclosed Responsible Official signature page for the facility ID: 0530010 air construction permit application for incorporation of Best Achievable Retrofit Technology (BART). A faxed copy of this signature page was enclosed with the hardcopy application submission submitted January 31, 2007. As well, an electronic version was attached to the emailed application submitted to your attention with copy to Tom Rogers on January 31, 2007. As mentioned in the emailed application text, the EPSAP application was not submitted by internet due to technical problems with EPSAP.

If you have any questions regarding this information or any related matter, please contact me at 352-799-2011 or Max Lee of Koogler & Associates, Inc. (352) 377-5822.

Sincerely;

Charles E Walz

Charles E Walz

Plant Environmental Manager
File

Brooksville Plant
16301 Ponce De Leon Boulevard, Brooksville, FL 34614, USA, (352) 796-7241, Fax (352) 754-3836

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name:
   Michael Gonzales – Plant Manager

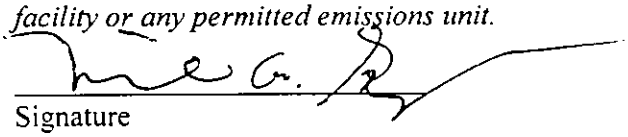
2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **CEMEX Cement, Inc.**
   Street Address or Other Locator: **16301 Ponce De Leon Boulevard**
   City: **Brooksville** State: **Florida** Zip Code: **34614-0849**

3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(352) 796-7241** ext. Fax: **(352) 754-9836**

4. Owner/Authorized Representative Email Address:
   michaelanthony.gonzales@cemexusa.com

5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.



Signature

1/31/2007

Date

SIGNATURE PAGE FOR BART APPLICATION- Submitted 1/31/2007

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name:
   Michael Gonzales – Plant Manager

2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **CEMEX Cement, Inc.**
   Street Address or Other Locator: **16301 Ponce De Leon Boulevard**
   City: **Brooksville** State: **Florida** Zip Code: **34614-0849**

3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(352) 796-7241** ext. Fax: **(352) 754-9836**

4. Owner/Authorized Representative Email Address:
   michaelanthony.gonzales@cemexusa.com

5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.

   Signature

   Date: 1/31/2007

SIGNATURE PAGE FOR BART APPLICATION- Submitted 1/31/2007

Professional Engineer Certification

1. Professional Engineer Name: Maxwell Lee
   Registration Number: 58091
2. Professional Engineer Mailing Address...
   Organization/Firm: Koogler & Associates, Inc.
   Street Address: 4014 NW 13th St
   City: Gainesville State: FL Zip Code: 32609
3. Professional Engineer Telephone Numbers...
   Telephone: (352) 377-5822 ext. Fax: (352) 377-7158
4. Professional Engineer Email Address: mlee@kooglerassociates.com
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here , if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature

1/31/2007
Date

(seal)

* Attach any exception to certification statement.

Department of
Environmental Protection
Division of Air Resource Management
APPLICATION FOR AIR PERMIT - LONG FORM
--- Detail Report ---

Application not submitted. Data current as of 1/31/2007

I. APPLICATION SECTION

APPLICATION IDENTIFICATION INFORMATION

Application Number: 1462-1
Application Name: CEMEX-BROOKSVILLE BART APPLICATION
Purpose of Application: AIR CONSTRUCTION PERMIT.
Application Comment: Application to incorporate BART to applicable units.

SCOPE OF APPLICATION

EU ID	Description	Permit Type
002	NO. 1 KILN FEED SYSTEM (BAGHOUSE D-31)	AC1F
003	CEMENT KILN NO. 1 BAGHOUSE(E-55);REVISED OIL CONCENTRATIONS	AC1F
004	CEMENT PLANT CLINKER COOLER NO. 1 (BAGHOUSE F-18)	AC1F
005	FINISH MILLS #1 & #2 WITH TWO DUST COLLECTORS	AC1F
006	CLINKER STORAGE SILO NOS. 1&2 (BAGHOUSE F-31)	AC1F
008	NO. 1 KILN BLENDING SILOS (BAGHOUSE NOS. E-36,F-17)	AC1F
009	Portland Cement Storage Silos Nos. 1-5	AC1F
011	RAW MAT'L STORAGE SILOS & FEED SYST. W/BAGHOUSES (C-11,C-11A	AC1F
024	RAW MATERIAL PRE-MIX BIN W/BAGHOUSE (M-2280)	AC1F
025	ADD MAT'L BIN + Outsized/Outside Clinker Hoppers (BH M-1171)	AC1F

Note: Submit any required permit application fee, which you must calculate according to 62-4.050(4), F. A. C.. Contact the appropriate Permitting Office if you have any questions.

APPLICATION CONTACT INFORMATION

First Name: MAXWELL
Last Name: LEE
Job Title: Senior Project Engineer
Name of Organization/Firm: KOOGLER & ASSOCIATES, INC.
Telephone: 352 - 377 - 5822
Fax: 352 - 377 - 7158
E-mail: mlee@kooglerassociates.com
Street Address: 4014 NW 13TH ST

City: GAINESVILLE
State: FL
Zip: 32609

OWNER/AUTHORIZED REPRESENTATIVE INFORMATION

First Name: MICHAEL
Last Name: GONZALES
Job Title: Plant Manager
Name of Organization/Firm: CEMEX CEMENT INC.
Telephone: 352 - 796 - 7241

Fax: 352 - 754 - 9836
E-mail: michaelanthony.gonzales@cemexusa.com
Street Address: 16301 PONCE DE LEON BOULEVARD

City: BROOKSVILLE
State: FL
Zip: 34614

RESPONSIBLE OFFICIAL INFORMATION

First Name: MICHAEL
Last Name: GONZALES
Primary RO? YES
Job Title: Plant Manager
Name of Organization/Firm: CEMEX CEMENT INC.
Telephone: 352 - 796 - 1415
Fax:
E-mail:
Street Address: 16301 PONCE DE LEON BOULEVARD

City: BROOKSVILLE
State: FL
Zip: 34614
RO Qualification: For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.

PROFESSIONAL ENGINEER INFORMATION

PE UserName: MLEE
Registration Number: 58091
First Name: MAX
Last Name: LEE
Job Title: Senior Project Engineer
Name of Organization/Firm: KOOGLER AND ASSOCIATES, INC.
Telephone: 352 - 377 - 5822 Ext. 13
Fax: 352 - 377 - 7158
E-mail: MLEE@KOOGLERASSOCIATES.COM
Street Address: 4014 NW 13TH ST

City: GAINESVILLE
State: FL
Zip: 32609

II. FACILITY SECTION

FACILITY IDENTIFICATION INFORMATION

Facility ID: 0530010
Owner/Company Name: CEMEX
Site Name: CEMEX
Description of Location: US 98 NW OF BROOKSVILLE
Street Address: 16301 Ponce de Leon Blvd.
City: BROOKSVILLE
County: HERNANDO
ZIP: 34614
Relocatable: NO
Existing Title V Permitted Facility? NO
Facility Status: A - ACTIVE
Comment: FORMERLY SOUTHDOWN, INC. D/B/A FLORIDA MINING AND MATERIALS
Lat/long verified by GPS 5/18/04

FACILITY LOCATION AND TYPE

Facility UTM Coordinates: Zone: 17 East(km): 357.47 North(km): 3169.19
Facility Latitude: Degrees: 28 Minutes: 38 Seconds: 36.7
Facility Longitude: Degrees: 82 Minutes: 28 Seconds: 22.5
Facility SIC Codes: Primary: 3241 - STONE, CLAY, GLASS AND CONCRETE PRODUCTS
CEMENT, HYDRALIC
CEMENT, HYDRAULIC
Governmental Facility Code: 0 - NONE (NON-GOVERNMENTAL FACILITY)
Facility Status: A - ACTIVE
Facility Major Group SIC: 32 - STONE, CLAY, GLASS AND CONCRETE PRODUCTS

FACILITY CONTACT INFORMATION

First Name: CHARLES
Middle Name: E.
Last Name: WALZ
Name Suffix:
Job Title: ENVIRONMENTAL MANAGER
Name of Organization/Firm: CEMEX CEMENT , INC.
Telephone: 352 - 799 - 2011
Fax: 352 - 754 - 9836
E-mail:
Street Address: P.O. BOX 6

City: BROOKSVILLE
State: FL
Zip: 34605

FACILITY REGULATORY CLASSIFICATIONS

Small Business Stationary Source: Not Applicable
Synthetic Non-Title V Source: No
Title V Source: Yes
Major Source of Air Pollutants Other than Hazardous Air Pollutants (HAPs): Yes
Synthetic Minor Source of Air Pollutants Other than Hazardous Air Pollutants (HAPs): No
Major Source of Hazardous Air Pollutants (HAPs): No
Synthetic Minor Source of HAPs: No
One or More Emissions Units Subject to NSPS (40 CFR Part 60): Yes

One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60): No
One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63): No
Title V Source by EPA Designation (40 CFR 70.3(a)(5)): No
Facility Regulatory Classifications Comment:

FACILITY POLLUTANT INFORMATION

Code	Description	Class	Requested Emissions Cap		Basis for Emissions Cap	Comment
			(lb/hour)	(tons/year)		
CO	Carbon Monoxide	A			OTHER	PSD-FL-233 ISSUED 6-26-97
DIOX	Dioxin/Furan	C				
H106	Hydrogen chloride (Hydrochloric acid)	C				
NOX	Nitrogen Oxides	A			OTHER	PSD-FL-233 ISSUED 6-26-97
PB	Lead - Total (elemental lead and lead compounds)	B				
PM	Particulate Matter - Total	A				
PM10	Particulate Matter - PM10	B				
SO2	Sulfur Dioxide	A				
VOC	Volatile Organic Compounds	B				

FACILITY ADDITIONAL INFORMATION

Description	Applicable?	Attachment?
AREA MAP SHOWING FACILITY LOCATION	No	No
FACILITY PLOT PLAN Previously submitted? NO Submittal Date:		No
PROCESS FLOW DIAGRAM(s) Previously submitted? NO Submittal Date:		No
PRECAUTIONS TO PREVENT EMISSIONS OF UNCONFINED PARTICULATE MATTER Previously submitted? NO Submittal Date:		No
LIST OF EXEMPT EMISSIONS UNITS (RULE 62-210.300(3),F.A.C.)	No	No
LIST OF INSIGNIFICANT ACTIVITIES	No	No
IDENTIFICATION OF APPLICABLE REQUIREMENTS	No	No
COMPLIANCE REPORT AND PLAN	No	No
LIST OF EQUIPMENT/ACTIVITIES REGULATED UNDER TITLE VI Equipment/Activities On Site but Not Required to be Individually Listed? NO	No	No
VERIFICATION OF RISK MANAGEMENT PLAN SUBMISSION TO EPA	No	No
REQUESTED CHANGES TO CURRENT TITLE V AIR OPERATION PERMIT	No	No
DESCRIPTION OF PROPOSED CONSTRUCTION, MODIFICATION, or PLANTWIDE APPLICABILITY LIMIT (PAL)	No	No
RULE APPLICABILITY ANALYSIS	No	No
LIST OF EXEMPT EMISSIONS UNITS (RULE 62-210.300(3),F.A.C.)	No	No
FUGITIVE EMISSIONS IDENTIFICATION	No	No
AIR QUALITY ANALYSIS (RULE 62-212.400(7),F.A.C.)	No	No
SOURCE IMPACT ANALYSIS (RULE 62-212.400(5),F.A.C.)	No	No
AIR QUALITY IMPACT SINCE 1977 (RULE 62-212.400(4)(e),F.A.C.)	No	No
ADDITIONAL IMPACT ANALYSES (RULES 62-212.400(8) and 62-212.500(4)(e),F.A.C.)	No	No
ALTERNATIVE ANALYSIS REQUIREMENTS (RULE 62-212.500(4)(g),F.A.C.)	No	No
OTHER FACILITY INFORMATION	No	No

Facility Additional Items Comment:

FACILITY ATTACHMENTS
*** No Facility Attachments Found ***

III. EMISSIONS UNIT SECTION

EU 002: DESCRIPTION AND DETAIL INFORMATION

Regulated/Unregulated: REGULATED
Type of EU: THIS EU INFORMATION SECTION ADDRESSES, AS A SINGLE EMISSIONS UNIT, A SINGLE PROCESS OR PRODUCTION UNIT, OR ACTIVITY, WHICH PRODUCES ONE OR MORE AIR POLLUTANTS AND WHICH HAS AT LEAST ONE DEFINABLE EMISSION POINT (STACK OR VENT).
EU Description: NO. 1 KILN FEED SYSTEM (BAGHOUSE D-31)
EU Status: A - ACTIVE
Commence Construction Date:

Initial Startup Date:
EU Major Group SIC: 32 - STONE, CLAY, GLASS AND CONCRETE PRODUCTS
Acid Rain Unit: No
Package Unit Manufacturer:
Package Unit Model #:
Generator Nameplate Rating:
EU Comment:

EU 002: CONTROL EQUIPMENT/METHOD (CE) INFORMATION

CE Code	Control Equipment/Method Name	Description
17	FABRIC FILTER MEDIUM TEMPERATURE (180F	

EU 002: OPERATING CAPACITY AND SCHEDULE

Maximum Process or Throughput Rate: 165
Maximum Process or Throughput Rate Units: TPH
Maximum Production Rate:
Maximum Production Rate Units:
Maximum Heat Input Rate:
Maximum Incineration Rate:
Requested Maximum Operating Schedule: 8760 hours/year
Operating Capacity and Schedule Comment: MAX THROUGHPUT = 150 TPH (30-DAY AVG.) & 165 TPH (HOURLY)

EU 002: POINT (STACK/VENT) INFORMATION

Identification of Point on Plot Plan or Flow Diagram?
Emission Point Type Code: 1 - A SINGLE EMISSION POINT SERVING A SINGLE EMISSIONS UNIT
Discharge Type Code: V - A STACK WITH AN UNOBSTRUCTED OPENING DISCHARGING IN A VERTICAL, OR NEARLY VERTICAL DIRECTION
Stack Height: 75 feet
Exit Diameter: 3 feet
Exit Temperature: 85 Fahrenheit
Actual Volumetric Flow Rate: 10000 acfm
Water Vapor:
Maximum Dry Standard Flow Rate:

Nonstack Emission Point

Height:
Emission Point UTM Coordinates: Zone: 17 East(km): 356.24 North(km): 3168.44
Emission Point Latitude:
Emission Point Longitude:
Emission Point Comment:

EU 002: SEGMENT (PROCESS/FUEL) INFORMATION

SCC Code: 30500613
Units: Tons Cement Produced
Description 1: Industrial Processes
Description 2: Mineral Products
Description 3: Cement Manufacturing (Dry Process)
Description 4: Raw Material Grinding and Drying
Is this a Valid Segment? YES
Segment Description (Process/Fuel Type):
Maximum Hourly Rate: 165
Maximum Annual Rate: 1314000
Estimated Annual Activity Factor:
Maximum % Sulfur:
Maximum % Ash:
Million Btu per SCC Unit:
Segment Comment: LIMIT IS 150 TPH/165 TPH FEED MATERIAL TRANSFER

EU 002: EMISSIONS UNIT POLLUTANT DETAIL INFORMATION

Pollutant Code: CO
Pollutant Description: Carbon Monoxide
Is this a Valid Pollutant? NO
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device:
Secondary Control Device:
Total % Efficiency of Control:
Potential Emissions:
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units:
Emission Factor Reference:
Emissions Method Code:
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment:

Pollutant Code: NOX

Pollutant Description: Nitrogen Oxides
Is this a Valid Pollutant? NO
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device:
Secondary Control Device:
Total % Efficiency of Control:
Potential Emissions:
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units:
Emission Factor Reference:
Emissions Method Code:
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment:

Pollutant Code: PB
Pollutant Description: Lead - Total (elemental lead and lead compounds)
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device:
Secondary Control Device:
Total % Efficiency of Control:
Potential Emissions:
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units:
Emission Factor Reference:
Emissions Method Code:
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment:

Pollutant Code: PM
Pollutant Description: Particulate Matter - Total
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT

Primary Control Device: FABRIC FILTER MEDIUM TEMPERATURE (180F
Secondary Control Device:
Total % Efficiency of Control: 99.9
Potential Emissions: 1.02 lb/hour 4.47 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units:
Emission Factor Reference:
Emissions Method Code:
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment:

Pollutant Code: PM10
Pollutant Description: Particulate Matter - PM10
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device: FABRIC FILTER MEDIUM TEMPERATURE (180F
Secondary Control Device:
Total % Efficiency of Control:
Potential Emissions: 0.857 lb/hour 3.75 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor: 0.84
Emission Factor Units: LB/HR (021)
Emission Factor Reference: AP42 11.6-5
Emissions Method Code:
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment: Permit limit of PM x 0.84 (ap42 11.6-5)emission data used for initial haz model condition

Pollutant Code: SO2
Pollutant Description: Sulfur Dioxide
Is this a Valid Pollutant? NO
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device:
Secondary Control Device:
Total % Efficiency of Control:
Potential Emissions:
Synthetically Limited?

Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units:
Emission Factor Reference:
Emissions Method Code:
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment:

EU 002: POLLUTANT ALLOWABLE EMISSIONS INFORMATION

Pollutant Code: PM
Pollutant Description: Particulate Matter - Total
Basis for Allowable Emissions Code: OTHER - REQUESTED BY APPLICANT FOR OTHER REASONS
Future Effective Date of Allowable Emissions:
Allowable Emissions: 1.02
Allowable Emissions Unit: POUNDS/HOUR (PH)
Equivalent Allowable Emissions: 1.02 lb/hour 4.47 tons/year
Method of Compliance: Annual Compliance Test
Comment/Description of Operating Method: See TV Permit Condition A.6 for Freq Base Date.

EU 002: VISIBLE EMISSIONS INFORMATION

Visible Emissions Subtype: VE05
Basis for Allowable Opacity: OTHER
Requested Allowable Opacity in Normal Conditions: 005 %
Requested Allowable Opacity in Exceptional Conditions:
Maximum Period of Excess Opacity Allowed: 30 min/hour
Compliance Test Method(s):
Visible Emissions Comment: Test Frequency Base date changed with TV permit from IAW Consent Order 97-2003. NSPS OPACITY IS 10%. 5% IS IN LEU OF STACKTEST.

EU 002: CONTINUOUS MONITOR INFORMATION

Parameter Code: TEMP - Flue gas temperature
CMS Requirement:
Monitor Manufacturer:
Model Number:
Serial Number:
Installation Date:
Performance Specification Test

Date:
Status: ACTIVE
Continuous Monitor
Comment:

EU 002: ADDITIONAL ITEMS		
Description	Applicable?	Attachment?
PROCESS FLOW DIAGRAM Previously submitted? NO Submittal Date:	No	No
FUEL ANALYSIS OR SPECIFICATION Previously submitted? NO Submittal Date:	No	No
DETAILED DESCRIPTION OF CONTROL EQUIPMENT Previously submitted? NO Submittal Date:	No	No
DESCRIPTION OF STACK SAMPLING FACILITIES	No	No
PROCEDURES FOR STARTUP AND SHUTDOWN Previously submitted? NO Submittal Date:	No	No
OPERATION AND MAINTENANCE PLAN Previously submitted? NO Submittal Date:	No	No
COMPLIANCE DEMONSTRATION REPORTS/RECORDS Previously submitted? NO Submittal Date: Previously Submitted Test Date(s)/Pollutants Tested: To Be submitted? NO Submittal Date: To Be Submitted Test Date(s)/Pollutants Tested:	No	No
OTHER INFORMATION REQUIRED BY RULE OR STATUTE	No	No
IDENTIFICATION OF APPLICABLE REQUIREMENTS	No	No
COMPLIANCE ASSURANCE MONITORING PLAN	No	No
ALTERNATIVE METHODS OF OPERATION	No	No
ACID RAIN PART (FORM NO. 62-210.900(1)(a)) Previously submitted? NO Submittal Date:	No	No
CONTROL TECHNOLOGY REVIEW AND ANALYSIS (RULES 62-212.400(10) and 62-212.500(7), F.A.C.;40 CFR 63.43(d) and (e))	No	No
GOOD ENGINEERING PRACTICE STACK HEIGHT ANALYSIS (RULE 62-212.400 (4)(d),F.A.C., and RULE 62-212.500(4)(f),F.A.C.)	No	No
ALTERNATIVE MODES OF OPERATION (EMISSIONS TRADING)	No	No
REPOWERING EXTENSION PLAN (FORM NO. 62-210.900(1)(a)1.) Previously submitted? NO Submittal Date:	No	No
NEW UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)2.) Previously submitted? NO Submittal Date:	No	No
RETIRED UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)3.) Previously submitted? NO Submittal Date:	No	No
PHASE II NOx COMPLIANCE PLAN (FORM NO. 62-210.900(1)(a)4. Previously submitted? NO Submittal Date:	No	No
PHASE II NOx AVERAGING PLAN (FORM NO. 62-210.900(1)(a)5.) Previously submitted? NO Submittal Date:	No	No
CERTIFICATE OF REPRESENTATION (EPA FORM NO. 7610-1)	No	No
OTHER EMISSIONS UNIT INFORMATION	No	No
EU Additional Items Comment:		

EU 002: ATTACHMENTS
*** No Emissions Unit Additional Attachments Found ***

EU 003: DESCRIPTION AND DETAIL INFORMATION

Regulated/Unregulated: REGULATED
Type of EU: THIS EU INFORMATION SECTION ADDRESSES, AS A SINGLE EMISSIONS UNIT, A SINGLE PROCESS OR PRODUCTION UNIT; OR ACTIVITY, WHICH PRODUCES ONE OR MORE AIR POLLUTANTS AND WHICH HAS AT LEAST ONE DEFINABLE EMISSION POINT (STACK OR VENT).
EU Description: CEMENT KILN NO. 1 BAGHOUSE(E-55);REVISED OIL CONCENTRATIONS
EU Status: A - ACTIVE
Commence Construction Date:

Initial Startup Date:
EU Major Group SIC: 32 - STONE, CLAY, GLASS AND CONCRETE PRODUCTS
Acid Rain Unit: No
Package Unit Manufacturer:
Package Unit Model #:
Generator Nameplate Rating:
EU Comment: MOD. ALLOWS CONTINUOUS FIRING OF WHOLE TIRES @ MAX. RATE OF 2.14 TPH OR 20.0% OF TTL. HEAT INPUT. Mod. 026 allows installation of indirect firing system.

EU 003: CONTROL EQUIPMENT/METHOD (CE) INFORMATION

CE Code	Control Equipment/Method Name	Description
17	FABRIC FILTER MEDIUM TEMPERATURE (180F	
107	SELECTIVE NONCATALYTIC REDUCTION FOR NOX	Authorized with project 026. New NOx limit Beginning 6/07 compliance by CEMS.
205	LOW NOX BURNERS	Project 026 is after-the-fact authorization for replacement of burners. This is as part of the indirect firing system also auth. by 026.

EU 003: OPERATING CAPACITY AND SCHEDULE

Maximum Process or Throughput Rate: 165
Maximum Process or Throughput Rate Units: TPH MATLS WET
Maximum Production Rate:
Maximum Production Rate Units:
Maximum Heat Input Rate: 300 mmBtu/hr
Maximum Incineration Rate:
Requested Maximum Operating Schedule: 8760 hours/year
Operating Capacity and Schedule Comment: Feed Rate = 165 TPH (1-HR MAX) & 150 TPH (30-DAY ROLLING AVG.) And 1,300,000 tons during any consecutive 12-month period.

EU 003: POINT (STACK/VENT) INFORMATION

Identification of Point on Plot Plan or Flow Diagram?
Emission Point Type Code: 2 - AN EMISSION POINT SERVING 2 OR MORE EU'S CAPABLE OF SIMULTANEOUS OPERATION
Discharge Type Code: V - A STACK WITH AN UNOBSTRUCTED OPENING DISCHARGING IN A VERTICAL, OR NEARLY VERTICAL DIRECTION

Stack Height:	150 feet
Exit Diameter:	13 feet
Exit Temperature:	285 Fahrenheit
Actual Volumetric Flow Rate:	275000 acfm
Water Vapor:	
Maximum Dry Standard Flow Rate:	175400 dscfm
Nonstack Emission Point Height:	
Emission Point UTM Coordinates:	Zone: 17 East(km): 356 North(km): 3169.09
Emission Point Latitude:	DD: 28 MM: 38 SS: 33
Emission Point Longitude:	DD: 82 MM: 29 SS: 17
Emission Point Comment:	

EU 003: SEGMENT (PROCESS/FUEL) INFORMATION

SCC Code: 30500606

Units:	Tons Cement Produced
Description 1:	Industrial Processes
Description 2:	Mineral Products
Description 3:	Cement Manufacturing (Dry Process)
Description 4:	Kilns
Is this a Valid Segment?	YES
Segment Description (Process/Fuel Type):	
Maximum Hourly Rate:	165
Maximum Annual Rate:	1314000
Estimated Annual Activity Factor:	
Maximum % Sulfur:	
Maximum % Ash:	
Million Btu per SCC Unit:	
Segment Comment:	1-hr Max = 165 TPH; 30-day AVG = 150 TPH

SCC Code: 39000201

Units:	Tons Bituminous Coal Burned
Description 1:	Industrial Processes
Description 2:	In-process Fuel Use
Description 3:	Bituminous Coal
Description 4:	Cement Kiln/Dryer (Bituminous Coal)
Is this a Valid Segment?	YES
Segment Description (Process/Fuel Type):	
Maximum Hourly Rate:	12
Maximum Annual Rate:	
Estimated Annual Activity Factor:	
Maximum % Sulfur:	1
Maximum % Ash:	12
Million Btu per SCC Unit:	25
Segment Comment:	

SCC Code: 39000402

Units:	1000 Gallons Residual Oil Burned
Description 1:	Industrial Processes
Description 2:	In-process Fuel Use
Description 3:	Residual Oil
Description 4:	Cement Kiln/Dryer
Is this a Valid Segment?	YES

Segment Description (Process/Fuel Type):
Maximum Hourly Rate: 1.982
Maximum Annual Rate:
Estimated Annual Activity Factor:
Maximum % Sulfur:
Maximum % Ash:
Million Btu per SCC Unit: 151
Segment Comment: Information in hourly rate field is approximate value for No. 6 fuel oil

SCC Code: 39000602
Units: Million Cubic Feet Natural Gas Burned
Description 1: Industrial Processes
Description 2: In-process Fuel Use
Description 3: Natural Gas
Description 4: Cement Kiln/Dryer
Is this a Valid Segment? YES
Segment Description (Process/Fuel Type):
Maximum Hourly Rate: 0.29
Maximum Annual Rate: 2564
Estimated Annual Activity Factor:
Maximum % Sulfur:
Maximum % Ash:
Million Btu per SCC Unit: 1025
Segment Comment: based on max heat input of 300 mmbtu/hr (daily average)

SCC Code: 39001299
Units: Tons Solid Waste Burned
Description 1: Industrial Processes
Description 2: In-process Fuel Use
Description 3: Solid Waste
Description 4: General
Is this a Valid Segment? YES
Segment Description (Process/Fuel Type):
Maximum Hourly Rate: 2.14
Maximum Annual Rate: 18746
Estimated Annual Activity Factor:
Maximum % Sulfur:
Maximum % Ash:
Million Btu per SCC Unit:
Segment Comment: Max hourly rate based daily average.

SCC Code: 39001389
Units: 1000 Gallons Liquid Waste Burned
Description 1: Industrial Processes
Description 2: In-process Fuel Use
Description 3: Liquid Waste
Description 4: General
Is this a Valid Segment? YES
Segment Description (Process/Fuel Type):
Maximum Hourly Rate: 2.069
Maximum Annual Rate: 5
Estimated Annual Activity Factor:
Maximum % Sulfur: 1

Maximum % Ash:
Million Btu per SCC Unit: 145
Segment Comment: Max hourly field based on No. 4 oil to represent FLOLITE (USED OIL)

EU 003: EMISSIONS UNIT POLLUTANT DETAIL INFORMATION

Pollutant Code: CO
Pollutant Description: Carbon Monoxide
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device:
Secondary Control Device:
Total % Efficiency of Control:
Potential Emissions: 198 lb/hour 788 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor: 1.2
Emission Factor Units: LB/TON (032)
Emission Factor Reference:
Emissions Method Code: 1 - CALCULATED BASED ON SOURCE TEST OR CONTINUOUS EMISSION MEASUREMENTS.
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment: PSD-FL-233 ISSUED 6-26-97. factor is lb/ton of dry feed.

Pollutant Code: DIOX
Pollutant Description: Dioxin/Furan
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device:
Secondary Control Device:
Total % Efficiency of Control:
Potential Emissions:
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units:
Emission Factor Reference:
Emissions Method Code: 1 - CALCULATED BASED ON SOURCE TEST OR CONTINUOUS EMISSION MEASUREMENTS.
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:

Potential, Fugitive, and Actual Emissions Comment: test every 30 months - APCD inlet TEMPERATURE SET BY LAST TEST separately for RM UP AND RM DOWN

Pollutant Code: H106

Pollutant Description: Hydrogen chloride (Hydrochloric acid)
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device:
Secondary Control Device:
Total % Efficiency of Control:
Potential Emissions:
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units:
Emission Factor Reference:
Emissions Method Code:
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment:

Pollutant Code: NOX

Pollutant Description: Nitrogen Oxides
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device: LOW NOX BURNERS
Secondary Control Device: SELECTIVE NONCATALYTIC REDUCTION FOR NOX
Total % Efficiency of Control:
Potential Emissions: 181.5 lb/hour 786 tons/year
Synthetically Limited? Y
Range of Estimated Fugitive Emissions:
Emission Factor: 1.21
Emission Factor Units: LB/TON (032)
Emission Factor Reference:
Emissions Method Code: 1 - CALCULATED BASED ON SOURCE TEST OR CONTINUOUS EMISSION MEASUREMENTS.
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment: Lb/ton of dry feed. This requirement in project 026 issued 12/06. TPY based on 1,300,000 TPY preheater feed rate limitation.

Pollutant Code: PB

Pollutant Description: Lead - Total (elemental lead and lead compounds)

Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device:
Secondary Control Device:
Total % Efficiency of Control:
Potential Emissions:
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units:
Emission Factor Reference:
Emissions Method Code:
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment:

Pollutant Code: PM
Pollutant Description: Particulate Matter - Total
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device: FABRIC FILTER MEDIUM TEMPERATURE (180F
Secondary Control Device:
Total % Efficiency of Control: 99
Potential Emissions: 29.7 lb/hour 118 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor: 0.18
Emission Factor Units: LB/TON (032)
Emission Factor Reference: NSPS
Emissions Method Code: 5 - CALCULATED USING EMISSION FACTOR OTHER THAN AP-42/FIRE SYSTEM.
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions: LB/TON DRY FEED
Potential, Fugitive, and Actual Emissions Comment: PSD-FL-233 ISSUED 6-26-97 SUED 2/11/94.

Pollutant Code: PM10
Pollutant Description: Particulate Matter - PM10
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device: FABRIC FILTER MEDIUM TEMPERATURE (180F

Secondary Control Device:
Total % Efficiency of Control:
Potential Emissions: 29.7 lb/hour 118 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor: 0.18
Emission Factor Units: LB/TON (032)
Emission Factor Reference:
Emissions Method Code: 5 - CALCULATED USING EMISSION FACTOR OTHER THAN AP-42/FIRE SYSTEM.
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions: LB/ TON DRY KILN FEED
Potential, Fugitive, and Actual Emissions Comment: PSD-FL-233 ISSUED 6-26-97.

Pollutant Code: SO2
Pollutant Description: Sulfur Dioxide
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device:
Secondary Control Device:
Total % Efficiency of Control:
Potential Emissions: 16.5 lb/hour 66 tons/year
Synthetically Limited? Y
Range of Estimated Fugitive Emissions:
Emission Factor: 0.1
Emission Factor Units: LB/TON (032)
Emission Factor Reference:
Emissions Method Code: 1 - CALCULATED BASED ON SOURCE TEST OR CONTINUOUS EMISSION MEASUREMENTS.
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment: lb/ton of dry feed. PSD-FL-233 ISSUED 6-26-97

Pollutant Code: VOC
Pollutant Description: Volatile Organic Compounds
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device:
Secondary Control Device:
Total % Efficiency of Control:
Potential Emissions: 14.9 lb/hour 60 tons/year
Synthetically Limited? N
Range of Estimated Fugitive

Emissions:
Emission Factor: 0.09
Emission Factor Units: LB/TON (032)
Emission Factor Reference:
Emissions Method Code: 1 - CALCULATED BASED ON SOURCE TEST OR CONTINUOUS EMISSION MEASUREMENTS.
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment: lb/ton of dry feed. PSD-FL-233 ISSUED 6-26-97

EU 003: POLLUTANT ALLOWABLE EMISSIONS INFORMATION

Pollutant Code: CO
Pollutant Description: Carbon Monoxide
Basis for Allowable Emissions Code: OTHER - REQUESTED BY APPLICANT FOR OTHER REASONS
Future Effective Date of Allowable Emissions:
Allowable Emissions: 1.2
Allowable Emissions Unit: POUNDS PER TON OF FEED MATERIAL (08)
Equivalent Allowable Emissions: 198 lb/hour 788 tons/year
Method of Compliance: Annual Compliance Test
Comment/Description of Operating Method: Test Frequency Base date changed with TV permit from IAW Consent Order 97-2003; 30-day rolling avg = 180 lb/hr NOx

Pollutant Code: DIOX
Pollutant Description: Dioxin/Furan
Basis for Allowable Emissions Code: RULE - NUMERICAL EMISSIONS LIMITATION REQUIRED BY RULE
Future Effective Date of Allowable Emissions:
Allowable Emissions: 0.2
Allowable Emissions Unit: NANOGRAMS PER DRY STANDARD CUBIC METER @ 7% O2 (30)
Equivalent Allowable Emissions:
Method of Compliance:
Comment/Description of Operating Method:

Pollutant Code: DIOX
Pollutant Description: Dioxin/Furan
Basis for Allowable Emissions Code: RULE - NUMERICAL EMISSIONS LIMITATION REQUIRED BY RULE
Future Effective Date of Allowable Emissions:
Allowable Emissions: 0.4
Allowable Emissions Unit: NANOGRAMS PER DRY STANDARD CUBIC METER @ 7% O2 (30)
Equivalent Allowable Emissions:
Method of Compliance: KILN EXHAUST TEMPERATURE MONITORING
Comment/Description of Operating Method: TEMPERATURE <400 DEG F WHEN RAW MILL NOT OPERATING

Pollutant Code: NOX
Pollutant Description: Nitrogen Oxides
Basis for Allowable Emissions Code: RULE - NUMERICAL EMISSIONS LIMITATION REQUIRED BY RULE
Future Effective Date of Allowable Emissions: 6/27/1997
Allowable Emissions: 1.83
Allowable Emissions Unit: POUNDS PER TON OF FEED MATERIAL (08)
Equivalent Allowable Emissions: 301 lb/hour 1204.5 tons/year
Method of Compliance: Annual Compliance Test
Comment/Description of Operating Method: 30-day average emission rate limited to 275 lb/hr.

Pollutant Code: NOX
Pollutant Description: Nitrogen Oxides
Basis for Allowable Emissions Code: ESCPSD - REQUESTED BY APPLICANT TO ALLOW FACILITY OR MODIFICATION TO ESCAP PSD REVIEW
Future Effective Date of Allowable Emissions: 6/30/2007
Allowable Emissions: 1.21
Allowable Emissions Unit: POUNDS PER TON OF FEED MATERIAL (08)
Equivalent Allowable Emissions: 181.5 lb/hour 786.5 tons/year
Method of Compliance: NOx CEMS rolling 30-operating day average.
Comment/Description of Operating Method: This requirement in project 026 issued 12/06. TPY based on 1,300,000 TPY preheater feed rate limitation.

Pollutant Code: PM
Pollutant Description: Particulate Matter - Total
Basis for Allowable Emissions Code: RULE - NUMERICAL EMISSIONS LIMITATION REQUIRED BY RULE
Future Effective Date of Allowable Emissions:
Allowable Emissions: 0.18
Allowable Emissions Unit: POUNDS PER TON OF FEED MATERIAL (08)
Equivalent Allowable Emissions: 29.7 lb/hour 118.3 tons/year
Method of Compliance: Annual Compliance Test
Comment/Description of Operating Method: Test Frequency Base date changed with TV Permit from IAW Consent Order 97-2003; 30-day rolling avg = 27 lb/hr

Pollutant Code: PM10
Pollutant Description: Particulate Matter - PM10
Basis for Allowable Emissions Code: RULE - NUMERICAL EMISSIONS LIMITATION REQUIRED BY RULE
Future Effective Date of Allowable Emissions:
Allowable Emissions: 0.18
Allowable Emissions Unit: POUNDS PER TON OF FEED MATERIAL (08)
Equivalent Allowable Emissions: 29.7 lb/hour 118.3 tons/year
Method of Compliance: Annual Compliance Test
Comment/Description of Operating Method: FREQ BASE DATE FROM TV PERMIT; 30-day rolling avg = 27 lb/hr

Pollutant Code: SO2
Pollutant Description: Sulfur Dioxide
Basis for Allowable Emissions Code: OTHER - REQUESTED BY APPLICANT FOR OTHER REASONS

Future Effective Date of Allowable Emissions: 6/27/1997
Allowable Emissions: 0.1
Allowable Emissions Unit: POUNDS PER TON OF FEED MATERIAL (08)
Equivalent Allowable Emissions: 16.5 lb/hour 66 tons/year
Method of Compliance: Annual Compliance Test
Comment/Description of Operating Method: FREQ BASE DATE CHANGED BY TV PERMIT; 30-day rolling avg = 15 lb/hr

Pollutant Code: VOC
Pollutant Description: Volatile Organic Compounds
Basis for Allowable Emissions Code: OTHER - REQUESTED BY APPLICANT FOR OTHER REASONS
Future Effective Date of Allowable Emissions: 6/27/1997
Allowable Emissions: 0.09
Allowable Emissions Unit: POUNDS PER TON OF FEED MATERIAL (08)
Equivalent Allowable Emissions: 14.9 lb/hour 59.57 tons/year
Method of Compliance: CO EMISSIONS
Comment/Description of Operating Method: SEE CONDITION B.7 FOOTNOTE (4) REGARDING VOC COMPLIANCE; 30-day rolling avg = 13.6 lb/hr

EU 003: VISIBLE EMISSIONS INFORMATION

Visible Emissions Subtype: VE20
Basis for Allowable Opacity: RULE
Requested Allowable Opacity in Normal Conditions: 020 %
Requested Allowable Opacity in Exceptional Conditions:
Maximum Period of Excess Opacity Allowed: 0 min/hour
Compliance Test Method(s):
Visible Emissions Comment: Test Frequency Base date changed by TV Permit from IAW Consent Order 97-2003.

EU 003: CONTINUOUS MONITOR INFORMATION

Parameter Code: EM - EMISSION
Pollutant(s) Monitored: NOX - Nitrogen Oxides
CMS Requirement: OTHER
Monitor Manufacturer: SERVOMEX
Model Number:
Serial Number:
Installation Date:
Performance Specification Test Date:
Status: ACTIVE
Continuous Monitor Comment: Project 026 CEMS is MOC for lower NOX limits to avoid PSD.

Parameter Code: EM - EMISSION
Pollutant(s) Monitored: CO - Carbon Monoxide
CMS Requirement: OTHER
Monitor Manufacturer: SERVOMEX

Model Number:
Serial Number:
Installation Date:
Performance Specification Test Date:
Status: ACTIVE
Continuous Monitor Comment: Project 026 CEMS is MOC for lower NOX limits to avoid PSD.

Parameter Code: FLOW - Volumetric flow rate
CMS Requirement: OTHER
Monitor Manufacturer:
Model Number:
Serial Number:
Installation Date:
Performance Specification Test Date:
Status: ACTIVE
Continuous Monitor Comment: Required by project 026 in conjunction with NOx CEMS to calculate NOx mass emissions.

Parameter Code: TEMP - Flue gas temperature
CMS Requirement: RULE
Monitor Manufacturer: THERMOCOUPLE
Model Number: RAW MILL ON
Serial Number:
Installation Date:
Performance Specification Test Date:
Status: ACTIVE
Continuous Monitor Comment: REQUIRED BY SUBPART LLL TO MONITOR KILN EXHAUST--------RAW MILL ON

Parameter Code: TEMP - Flue gas temperature
CMS Requirement: RULE
Monitor Manufacturer: THERMOCOUPLE
Model Number: RAW MILL DOWN
Serial Number:
Installation Date:
Performance Specification Test Date:
Status: ACTIVE
Continuous Monitor Comment: REQUIRED BY SUBPART LLL TO MONITOR TEMPERATURE----------RAW MILL DOWN (<400 F)

Parameter Code: VE - Visible emissions (opacity)
CMS Requirement:
Monitor Manufacturer: LEAR SIEGLER
Model Number: 1100M
Serial Number: 1287
Installation Date: 12/1/1991
Performance Specification Test Date: 12/1/1991
Status: ACTIVE
Continuous Monitor Comment:

EU 003: ADDITIONAL ITEMS

Description	Applicable?	Attachment?
PROCESS FLOW DIAGRAM Previously submitted? NO Submittal Date:	No	No
FUEL ANALYSIS OR SPECIFICATION Previously submitted? NO Submittal Date:	No	No
DETAILED DESCRIPTION OF CONTROL EQUIPMENT Previously submitted? NO Submittal Date:	No	No
DESCRIPTION OF STACK SAMPLING FACILITIES	No	No
PROCEDURES FOR STARTUP AND SHUTDOWN Previously submitted? NO Submittal Date:	No	No
OPERATION AND MAINTENANCE PLAN Previously submitted? NO Submittal Date:	No	No
COMPLIANCE DEMONSTRATION REPORTS/RECORDS Previously submitted? NO Submittal Date: Previously Submitted Test Date(s)/Pollutants Tested: To Be submitted? NO Submittal Date: To Be Submitted Test Date(s)/Pollutants Tested:	No	No
OTHER INFORMATION REQUIRED BY RULE OR STATUTE	No	No
IDENTIFICATION OF APPLICABLE REQUIREMENTS	No	No
COMPLIANCE ASSURANCE MONITORING PLAN	No	No
ALTERNATIVE METHODS OF OPERATION	No	No
ACID RAIN PART (FORM NO. 62-210.900(1)(a)) Previously submitted? NO Submittal Date:	No	No
CONTROL TECHNOLOGY REVIEW AND ANALYSIS (RULES 62-212.400(10) and 62-212.500(7), F.A.C.;40 CFR 63.43(d) and (e))	No	No
GOOD ENGINEERING PRACTICE STACK HEIGHT ANALYSIS (RULE 62-212.400 (4)(d),F.A.C., and RULE 62-212.500(4)(f),F.A.C.)	No	No
ALTERNATIVE MODES OF OPERATION (EMISSIONS TRADING)	No	No
REPOWERING EXTENSION PLAN (FORM NO. 62-210.900(1)(a)1.) Previously submitted? NO Submittal Date:	No	No
NEW UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)2.) Previously submitted? NO Submittal Date:	No	No
RETIRED UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)3.) Previously submitted? NO Submittal Date:	No	No
PHASE II NOx COMPLIANCE PLAN (FORM NO. 62-210.900(1)(a)4. Previously submitted? NO Submittal Date:	No	No
PHASE II NOx AVERAGING PLAN (FORM NO. 62-210.900(1)(a)5.) Previously submitted? NO Submittal Date:	No	No
CERTIFICATE OF REPRESENTATION (EPA FORM NO. 7610-1)	No	No
OTHER EMISSIONS UNIT INFORMATION	No	No
EU Additional Items Comment:		

EU 003: ATTACHMENTS
*** No Emissions Unit Additional Attachments Found ***

EU 004: DESCRIPTION AND DETAIL INFORMATION

Regulated/Unregulated: REGULATED
Type of EU: THIS EU INFORMATION SECTION ADDRESSES, AS A SINGLE EMISSIONS UNIT, A SINGLE PROCESS OR PRODUCTION UNIT, OR ACTIVITY, WHICH PRODUCES ONE OR MORE AIR POLLUTANTS AND WHICH HAS AT LEAST ONE DEFINABLE EMISSION POINT (STACK OR VENT).
EU Description: CEMENT PLANT CLINKER COOLER NO. 1 (BAGHOUSE F-18)
EU Status: A - ACTIVE
Commence Construction Date:

Initial Startup Date:
EU Major Group SIC: 32 - STONE, CLAY, GLASS AND CONCRETE PRODUCTS
Acid Rain Unit: No
Package Unit Manufacturer:
Package Unit Model #:
Generator Nameplate Rating:
EU Comment:

EU 004: CONTROL EQUIPMENT/METHOD (CE) INFORMATION		
CE Code	Control Equipment/Method Name	Description
17	FABRIC FILTER MEDIUM TEMPERATURE (180F	

EU 004: OPERATING CAPACITY AND SCHEDULE

Maximum Process or Throughput Rate:
Maximum Process or Throughput Rate Units:
Maximum Production Rate: 90
Maximum Production Rate Units: TPH
Maximum Heat Input Rate:
Maximum Incineration Rate:
Requested Maximum Operating Schedule: 8760 hours/year
Operating Capacity and Schedule Comment:

EU 004: POINT (STACK/VENT) INFORMATION

Identification of Point on Plot Plan or Flow Diagram?
Emission Point Type Code: 1 - A SINGLE EMISSION POINT SERVING A SINGLE EMISSIONS UNIT
Discharge Type Code: V - A STACK WITH AN UNOBSTRUCTED OPENING DISCHARGING IN A VERTICAL, OR NEARLY VERTICAL DIRECTION
Stack Height: 50 feet
Exit Diameter: 10 feet
Exit Temperature: 340 Fahrenheit
Actual Volumetric Flow Rate: 140000 acfm
Water Vapor:
Maximum Dry Standard Flow Rate:
Nonstack Emission Point Height:
Emission Point UTM Coordinates: Zone: 17 East(km): 356.25 North(km): 3168.56

Emission Point Latitude:
Emission Point Longitude:
Emission Point Comment:

EU 004: SEGMENT (PROCESS/FUEL) INFORMATION

SCC Code: 30500614
Units: Tons Cement Produced
Description 1: Industrial Processes
Description 2: Mineral Products
Description 3: Cement Manufacturing (Dry Process)
Description 4: Clinker Cooler
Is this a Valid Segment? YES
Segment Description (Process/Fuel Type):
Maximum Hourly Rate: 90
Maximum Annual Rate:
Estimated Annual Activity Factor:
Maximum % Sulfur:
Maximum % Ash:
Million Btu per SCC Unit:
Segment Comment: NUMBER #1 CLINKER COOLER F-18

EU 004: EMISSIONS UNIT POLLUTANT DETAIL INFORMATION

Pollutant Code: PM
Pollutant Description: Particulate Matter - Total
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device: FABRIC FILTER MEDIUM TEMPERATURE (180F
Secondary Control Device:
Total % Efficiency of Control: 99.9
Potential Emissions: 14.9 lb/hour 59.6 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units: LB/TON (032)
Emission Factor Reference: NSPS
Emissions Method Code: 5 - CALCULATED USING EMISSION FACTOR OTHER THAN AP-42/FIRE SYSTEM.
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions: LB/TON DRY KILN FEED
Potential, Fugitive, and Actual Emissions Comment: PSD-FL-233 ISSUED 6-26-97

Pollutant Code: PM10
Pollutant Description: Particulate Matter - PM10
Is this a Valid Pollutant? YES
Include in the Facility

Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device: FABRIC FILTER MEDIUM TEMPERATURE (180F
Secondary Control Device:
Total % Efficiency of Control:
Potential Emissions: 14.9 lb/hour 59.6 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor: 0.09
Emission Factor Units: LB/TON (032)
Emission Factor Reference: NSPS
Emissions Method Code: 5 - CALCULATED USING EMISSION FACTOR OTHER THAN AP-42/FIRE SYSTEM.
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment: PSD-FL-233 ISSUED 6-26-97. Max of 2001-2003 stack test data used for initial haz model condition

EU 004: POLLUTANT ALLOWABLE EMISSIONS INFORMATION

Pollutant Code: PM
Pollutant Description: Particulate Matter - Total
Basis for Allowable Emissions Code: OTHER - REQUESTED BY APPLICANT FOR OTHER REASONS
Future Effective Date of Allowable Emissions:
Allowable Emissions: 0.09
Allowable Emissions Unit: POUNDS PER TON OF FEED MATERIAL (08)
Equivalent Allowable Emissions: 14.9 lb/hour 59.6 tons/year
Method of Compliance: Annual Compliance Test
Comment/Description of Operating Method: Freq. Base Date changed in TV Permit;30-day rolling avg. = 13.6 lb/hr

Pollutant Code: PM10
Pollutant Description: Particulate Matter - PM10
Basis for Allowable Emissions Code: OTHER - REQUESTED BY APPLICANT FOR OTHER REASONS
Future Effective Date of Allowable Emissions:
Allowable Emissions: 0.09
Allowable Emissions Unit: POUNDS PER TON OF FEED MATERIAL (08)
Equivalent Allowable Emissions: 14.9 lb/hour 59.6 tons/year
Method of Compliance: Annual Compliance Test
Comment/Description of Operating Method: Freq. Base Date by TVPermit;30-day rolling avg. 13.6 lb/hr

EU 004: VISIBLE EMISSIONS INFORMATION

Visible Emissions Subtype: VE10

Basis for Allowable Opacity: RULE
Requested Allowable Opacity in Normal Conditions: 010 %
Requested Allowable Opacity in Exceptional Conditions:
Maximum Period of Excess Opacity Allowed:
Compliance Test Method(s):
Visible Emissions Comment: Title V permit changed Freq. Base Date to July 2.

EU 004: CONTINUOUS MONITOR INFORMATION

Parameter Code: VE - Visible emissions (opacity)
CMS Requirement:
Monitor Manufacturer: LEAR SIEGLER/DYNATRO
Model Number: 1100M
Serial Number: 0821
Installation Date: 6/1/1989
Performance Specification Test Date: 11/1/1989
Status: ACTIVE
Continuous Monitor Comment:

EU 004: ADDITIONAL ITEMS

Description	Applicable?	Attachment?
PROCESS FLOW DIAGRAM Previously submitted? NO Submittal Date:	No	No
FUEL ANALYSIS OR SPECIFICATION Previously submitted? NO Submittal Date:	No	No
DETAILED DESCRIPTION OF CONTROL EQUIPMENT Previously submitted? NO Submittal Date:	No	No
DESCRIPTION OF STACK SAMPLING FACILITIES	No	No
PROCEDURES FOR STARTUP AND SHUTDOWN Previously submitted? NO Submittal Date:	No	No
OPERATION AND MAINTENANCE PLAN Previously submitted? NO Submittal Date:	No	No
COMPLIANCE DEMONSTRATION REPORTS/RECORDS Previously submitted? NO Submittal Date: Previously Submitted Test Date(s)/Pollutants Tested. To Be submitted? NO Submittal Date: To Be Submitted Test Date(s)/Pollutants Tested:	No	No
OTHER INFORMATION REQUIRED BY RULE OR STATUTE	No	No
IDENTIFICATION OF APPLICABLE REQUIREMENTS	No	No
COMPLIANCE ASSURANCE MONITORING PLAN	No	No
ALTERNATIVE METHODS OF OPERATION	No	No
ACID RAIN PART (FORM NO. 62-210.900(1)(a)) Previously submitted? NO Submittal Date:	No	No
CONTROL TECHNOLOGY REVIEW AND ANALYSIS (RULES 62-212.400(10) and 62-212.500(7), F.A.C.;40 CFR 63.43(d) and (e))	No	No
GOOD ENGINEERING PRACTICE STACK HEIGHT ANALYSIS (RULE 62-212.400 (4)(d),F.A.C., and RULE 62-212.500(4)(f),F.A.C.)	No	No
ALTERNATIVE MODES OF OPERATION (EMISSIONS TRADING)	No	No
REPOWERING EXTENSION PLAN (FORM NO. 62-210.900(1)(a)1.) Previously submitted? NO Submittal Date:	No	No
NEW UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)2.) Previously submitted? NO Submittal Date	No	No

RETIRED UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)3.) Previously submitted? NO Submittal Date:	No	No
PHASE II NOx COMPLIANCE PLAN (FORM NO. 62-210.900(1)(a)4. Previously submitted? NO Submittal Date:	No	No
PHASE II NOx AVERAGING PLAN (FORM NO. 62-210.900(1)(a)5.) Previously submitted? NO Submittal Date:	No	No
CERTIFICATE OF REPRESENTATION (EPA FORM NO. 7610-1)	No	No
OTHER EMISSIONS UNIT INFORMATION	No	No
EU Additional Items Comment:		

EU 004; ATTACHMENTS
*** No Emissions Unit Additional Attachments Found ***

EU 005: DESCRIPTION AND DETAIL INFORMATION

Regulated/Unregulated: REGULATED
Type of EU: THIS EU INFORMATION SECTION ADDRESSES, AS A SINGLE EMISSIONS UNIT, A SINGLE PROCESS OR PRODUCTION UNIT, OR ACTIVITY, WHICH PRODUCES ONE OR MORE AIR POLLUTANTS AND WHICH HAS AT LEAST ONE DEFINABLE EMISSION POINT (STACK OR VENT).
EU Description: FINISH MILLS #1 & #2 WITH TWO DUST COLLECTORS
EU Status: A - ACTIVE
Commence Construction Date:

Initial Startup Date:
EU Major Group SIC: 32 - STONE, CLAY, GLASS AND CONCRETE PRODUCTS
Acid Rain Unit: No
Package Unit Manufacturer:
Package Unit Model #:
Generator Nameplate Rating:
EU Comment:

EU 005: CONTROL EQUIPMENT/METHOD (CE) INFORMATION

CE Code	Control Equipment/Method Name	Description
17	FABRIC FILTER MEDIUM TEMPERATURE (180F	

EU 005: OPERATING CAPACITY AND SCHEDULE

Maximum Process or Throughput Rate:
Maximum Process or Throughput Rate Units:
Maximum Production Rate: 98
Maximum Production Rate Units: TPH
Maximum Heat Input Rate:
Maximum Incineration Rate:
Requested Maximum Operating Schedule: 24 hours/day 7 days/week 52 weeks/year 8760 hours/year
Operating Capacity and Schedule Comment:

EU 005: POINT (STACK/VENT) INFORMATION

Identification of Point on Plot Plan or Flow Diagram?
Emission Point Type Code: 3 - A CONFIGURATION OF MULTIPLE EMISSION POINTS SERVING A SINGLE EMISSIONS UNIT
Discharge Type Code: V - A STACK WITH AN UNOBSTRUCTED OPENING DISCHARGING IN A VERTICAL, OR NEARLY VERTICAL DIRECTION
Stack Height: 70 feet
Exit Diameter: 2.6 feet
Exit Temperature: 200 Fahrenheit
Actual Volumetric Flow Rate: 15000 acfm
Water Vapor:
Maximum Dry Standard Flow Rate:
Nonstack Emission Point Height:
Emission Point UTM

Coordinates: Zone: 17 East(km): 356.2 North(km): 3168.6
Emission Point Latitude:
Emission Point Longitude:
Emission Point Comment:
VE Tracking Description # 1: G-23 No. 1 finish mill
VE Tracking Description # 2: g-23 No. 2 finish mill

EU 005: SEGMENT (PROCESS/FUEL) INFORMATION

SCC Code: 30500617
Units: Tons Cement Produced
Description 1: Industrial Processes
Description 2: Mineral Products
Description 3: Cement Manufacturing (Dry Process)
Description 4: Clinker Grinding
Is this a Valid Segment? YES
Segment Description (Process/Fuel Type):
Maximum Hourly Rate: 98
Maximum Annual Rate:
Estimated Annual Activity Factor:
Maximum % Sulfur:
Maximum % Ash:
Million Btu per SCC Unit:
Segment Comment:

EU 005: EMISSIONS UNIT POLLUTANT DETAIL INFORMATION

Pollutant Code: PM
Pollutant Description: Particulate Matter - Total
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device: FABRIC FILTER MEDIUM TEMPERATURE (180F
Secondary Control Device:
Total % Efficiency of Control: 99.9
Potential Emissions: 36 lb/hour 157.7 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units:
Emission Factor Reference:
Emissions Method Code:
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment:

Pollutant Code: PM10
Pollutant Description: Particulate Matter - PM10

Is this a Valid Pollutant?	YES
Include in the Facility Emissions Cap?	NO
Pollutant Regulatory Code:	NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device:	FABRIC FILTER MEDIUM TEMPERATURE (180F
Secondary Control Device:	
Total % Efficiency of Control:	
Potential Emissions:	30.66 lb/hour
Synthetically Limited?	N
Range of Estimated Fugitive Emissions:	
Emission Factor:	0.84
Emission Factor Units:	LB/HR (021)
Emission Factor Reference:	AP42 11.6-5
Emissions Method Code:	3 - CALCULATED USING EMISSION FACTOR FROM AP-42/FIRE SYSTEM.
Baseline Actual Emissions (if required):	
Baseline 24-Month Period:	
Projected Actual Emissions (if required):	
Projected Monitoring Period:	
Calculation of Emissions:	
Potential, Fugitive, and Actual Emissions Comment:	Permit limit 36.5 lb/hr x 0.84 (AP42, 11.6-5)emission data used for initial haz model condition

EU 005: POLLUTANT ALLOWABLE EMISSIONS INFORMATION

Pollutant Code: PM

Pollutant Description:	Particulate Matter - Total
Basis for Allowable Emissions Code:	RULE - NUMERICAL EMISSIONS LIMITATION REQUIRED BY RULE
Future Effective Date of Allowable Emissions:	
Allowable Emissions:	36
Allowable Emissions Unit:	POUNDS/HOUR (PH)
Equivalent Allowable Emissions:	36 lb/hour 157.7 tons/year
Method of Compliance:	Annual Compliance Test
Comment/Description of Operating Method:	Freq. Base Date included in TV Permit

EU 005: VISIBLE EMISSIONS INFORMATION

Visible Emissions Subtype: VE10

Basis for Allowable Opacity:	RULE
Requested Allowable Opacity in Normal Conditions:	005 %
Requested Allowable Opacity in Exceptional Conditions:	
Maximum Period of Excess Opacity Allowed:	
Compliance Test Method(s):	
Visible Emissions Comment:	Test Frequency Base date changed by TV Permit.

EU 005: CONTINUOUS MONITOR INFORMATION

*** NO CONTINUOUS MONITOR INFORMATION FOUND FOR THIS EU ***

EU 005: ADDITIONAL ITEMS		
Description	Applicable?	Attachment?
PROCESS FLOW DIAGRAM Previously submitted? NO Submittal Date:	No	No
FUEL ANALYSIS OR SPECIFICATION Previously submitted? NO Submittal Date:	No	No
DETAILED DESCRIPTION OF CONTROL EQUIPMENT Previously submitted? NO Submittal Date:	No	No
DESCRIPTION OF STACK SAMPLING FACILITIES	No	No
PROCEDURES FOR STARTUP AND SHUTDOWN Previously submitted? NO Submittal Date:	No	No
OPERATION AND MAINTENANCE PLAN Previously submitted? NO Submittal Date:	No	No
COMPLIANCE DEMONSTRATION REPORTS/RECORDS Previously submitted? NO Submittal Date. Previously Submitted Test Date(s)/Pollutants Tested: To Be submitted? NO Submittal Date: To Be Submitted Test Date(s)/Pollutants Tested:	No	No
OTHER INFORMATION REQUIRED BY RULE OR STATUTE	No	No
IDENTIFICATION OF APPLICABLE REQUIREMENTS	No	No
COMPLIANCE ASSURANCE MONITORING PLAN	No	No
ALTERNATIVE METHODS OF OPERATION	No	No
ACID RAIN PART (FORM NO. 62-210.900(1)(a)) Previously submitted? NO Submittal Date:	No	No
CONTROL TECHNOLOGY REVIEW AND ANALYSIS (RULES 62-212.400(10) and 62-212.500(7), F.A.C.;40 CFR 63.43(d) and (e))	No	No
GOOD ENGINEERING PRACTICE STACK HEIGHT ANALYSIS (RULE 62-212.400 (4)(d),F.A.C., and RULE 62-212.500(4)(f),F.A.C.)	No	No
ALTERNATIVE MODES OF OPERATION (EMISSIONS TRADING)	No	No
REPOWERING EXTENSION PLAN (FORM NO. 62-210.900(1)(a)1.) Previously submitted? NO Submittal Date:	No	No
NEW UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)2.) Previously submitted? NO Submittal Date:	No	No
RETIRED UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)3.) Previously submitted? NO Submittal Date:	No	No
PHASE II NOx COMPLIANCE PLAN (FORM NO. 62-210.900(1)(a)4. Previously submitted? NO Submittal Date:	No	No
PHASE II NOx AVERAGING PLAN (FORM NO. 62-210.900(1)(a)5.) Previously submitted? NO Submittal Date:	No	No
CERTIFICATE OF REPRESENTATION (EPA FORM NO. 7610-1)	No	No
OTHER EMISSIONS UNIT INFORMATION	No	No
EU Additional Items Comment:		

EU 005: ATTACHMENTS
*** No Emissions Unit Additional Attachments Found ***

EU 006: DESCRIPTION AND DETAIL INFORMATION

Regulated/Unregulated: REGULATED
Type of EU: THIS EMISSIONS UNIT INFORMATION SECTION ADDRESSES, AS A SINGLE EMISSIONS UNIT, A GROUP OF PROCESS OR PRODUCTION UNITS AND ACTIVITIES WHICH HAS AT LEAST ONE DEFINABLE EMISSION POINT (STACK OR VENT) BUT MAY ALSO PRODUCE FUGITIVE EMISSIONS.
EU Description: CLINKER STORAGE SILO NOS. 1&2 (BAGHOUSE F-31)
EU Status: A - ACTIVE
Commence Construction Date:

Initial Startup Date:
EU Major Group SIC: 32 - STONE, CLAY, GLASS AND CONCRETE PRODUCTS
Acid Rain Unit: No
Package Unit Manufacturer:
Package Unit Model #:
Generator Nameplate Rating:
EU Comment:

EU 006: CONTROL EQUIPMENT/METHOD (CE) INFORMATION

CE Code	Control Equipment/Method Name	Description
17	FABRIC FILTER MEDIUM TEMPERATURE (180F	

EU 006: OPERATING CAPACITY AND SCHEDULE

Maximum Process or Throughput Rate: 90
Maximum Process or Throughput Rate Units: TPH
Maximum Production Rate:
Maximum Production Rate Units:
Maximum Heat Input Rate:
Maximum Incineration Rate:
Requested Maximum Operating Schedule: 8760 hours/year
Operating Capacity and Schedule Comment:

EU 006: POINT (STACK/VENT) INFORMATION

Identification of Point on Plot Plan or Flow Diagram?
Emission Point Type Code: 1 - A SINGLE EMISSION POINT SERVING A SINGLE EMISSIONS UNIT
Discharge Type Code: V - A STACK WITH AN UNOBSTRUCTED OPENING DISCHARGING IN A VERTICAL, OR NEARLY VERTICAL DIRECTION
Stack Height: 150 feet
Exit Diameter: 2 feet
Exit Temperature: 85 Fahrenheit
Actual Volumetric Flow Rate: 15000 acfm
Water Vapor:
Maximum Dry Standard Flow Rate:
Nonstack Emission Point Height:
Emission Point UTM

Coordinates: Zone: 17 East(km): 356.26 North(km): 3168.6
Emission Point Latitude:
Emission Point Longitude:
Emission Point Comment:

EU 006: SEGMENT (PROCESS/FUEL) INFORMATION

SCC Code: 30500616
Units: Tons Cement Produced
Description 1: Industrial Processes
Description 2: Mineral Products
Description 3: Cement Manufacturing (Dry Process)
Description 4: Clinker Transfer
Is this a Valid Segment? YES
Segment Description (Process/Fuel Type):
Maximum Hourly Rate: 90
Maximum Annual Rate:
Estimated Annual Activity Factor:
Maximum % Sulfur:
Maximum % Ash:
Million Btu per SCC Unit:
Segment Comment:

EU 006: EMISSIONS UNIT POLLUTANT DETAIL INFORMATION

Pollutant Code: PM
Pollutant Description: Particulate Matter - Total
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device: FABRIC FILTER MEDIUM TEMPERATURE (180F
Secondary Control Device:
Total % Efficiency of Control: 99.9
Potential Emissions: 1.45 lb/hour 5.72 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units:
Emission Factor Reference:
Emissions Method Code:
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment:

Pollutant Code: PM10
Pollutant Description: Particulate Matter - PM10
Is this a Valid Pollutant? YES
Include in the Facility

Emissions Cap?	NO
Pollutant Regulatory Code:	NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device:	FABRIC FILTER MEDIUM TEMPERATURE (180F
Secondary Control Device:	
Total % Efficiency of Control:	
Potential Emissions:	
Synthetically Limited?	N
Range of Estimated Fugitive Emissions:	
Emission Factor:	
Emission Factor Units:	
Emission Factor Reference:	
Emissions Method Code:	
Baseline Actual Emissions (if required):	
Baseline 24-Month Period:	
Projected Actual Emissions (if required):	
Projected Monitoring Period:	
Calculation of Emissions:	
Potential, Fugitive, and Actual Emissions Comment:	

EU 006: POLLUTANT ALLOWABLE EMISSIONS INFORMATION

Pollutant Code:	PM
Pollutant Description:	Particulate Matter - Total
Basis for Allowable Emissions Code:	OTHER - REQUESTED BY APPLICANT FOR OTHER REASONS
Future Effective Date of Allowable Emissions:	
Allowable Emissions:	1.45
Allowable Emissions Unit:	POUNDS/HOUR (PH)
Equivalent Allowable Emissions:	1.45 lb/hour 5.72 tons/year
Method of Compliance:	Annual Compliance Test
Comment/Description of Operating Method:	Freq. Base Date in TV Permit

EU 006: VISIBLE EMISSIONS INFORMATION

Visible Emissions Subtype:	VE05
Basis for Allowable Opacity:	OTHER
Requested Allowable Opacity in Normal Conditions:	005 %
Requested Allowable Opacity in Exceptional Conditions:	
Maximum Period of Excess Opacity Allowed:	
Compliance Test Method(s):	
Visible Emissions Comment:	Freq. Base Date changed by TV Permit. NSPS VE LIMIT 10% OPACITY 5% IN LIEU OF A STACKTEST

EU 006: CONTINUOUS MONITOR INFORMATION

*** NO CONTINUOUS MONITOR INFORMATION FOUND FOR THIS EU ***

EU 006: ADDITIONAL ITEMS		
Description	Applicable?	Attachment?
PROCESS FLOW DIAGRAM Previously submitted? NO Submittal Date:	No	No
FUEL ANALYSIS OR SPECIFICATION Previously submitted? NO Submittal Date:	No	No
DETAILED DESCRIPTION OF CONTROL EQUIPMENT Previously submitted? NO Submittal Date:	No	No
DESCRIPTION OF STACK SAMPLING FACILITIES	No	No
PROCEDURES FOR STARTUP AND SHUTDOWN Previously submitted? NO Submittal Date:	No	No
OPERATION AND MAINTENANCE PLAN Previously submitted? NO Submittal Date:	No	No
COMPLIANCE DEMONSTRATION REPORTS/RECORDS Previously submitted? NO Submittal Date: Previously Submitted Test Date(s)/Pollutants Tested: To Be submitted? NO Submittal Date: To Be Submitted Test Date(s)/Pollutants Tested:	No	No
OTHER INFORMATION REQUIRED BY RULE OR STATUTE	No	No
IDENTIFICATION OF APPLICABLE REQUIREMENTS	No	No
COMPLIANCE ASSURANCE MONITORING PLAN	No	No
ALTERNATIVE METHODS OF OPERATION	No	No
ACID RAIN PART (FORM NO. 62-210.900(1)(a)) Previously submitted? NO Submittal Date:	No	No
CONTROL TECHNOLOGY REVIEW AND ANALYSIS (RULES 62-212.400(10) and 62-212.500(7), F.A.C.;40 CFR 63.43(d) and (e))	No	No
GOOD ENGINEERING PRACTICE STACK HEIGHT ANALYSIS (RULE 62-212.400 (4)(d),F.A.C., and RULE 62-212.500(4)(f),F.A.C.)	No	No
ALTERNATIVE MODES OF OPERATION (EMISSIONS TRADING)	No	No
REPOWERING EXTENSION PLAN (FORM NO. 62-210.900(1)(a)1.) Previously submitted? NO Submittal Date:	No	No
NEW UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)2.) Previously submitted? NO Submittal Date:	No	No
RETIRED UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)3.) Previously submitted? NO Submittal Date:	No	No
PHASE II NOx COMPLIANCE PLAN (FORM NO. 62-210.900(1)(a)4. Previously submitted? NO Submittal Date:	No	No
PHASE II NOx AVERAGING PLAN (FORM NO. 62-210.900(1)(a)5.) Previously submitted? NO Submittal Date:	No	No
CERTIFICATE OF REPRESENTATION (EPA FORM NO. 7610-1)	No	No
OTHER EMISSIONS UNIT INFORMATION	No	No
EU Additional Items Comment:		

EU 006: ATTACHMENTS
*** No Emissions Unit Additional Attachments Found ***

EU 008: DESCRIPTION AND DETAIL INFORMATION

Regulated/Unregulated: REGULATED
Type of EU: THIS EMISSIONS UNIT INFORMATION SECTION ADDRESSES, AS A SINGLE EMISSIONS UNIT, A GROUP OF PROCESS OR PRODUCTION UNITS AND ACTIVITIES WHICH HAS AT LEAST ONE DEFINABLE EMISSION POINT (STACK OR VENT) BUT MAY ALSO PRODUCE FUGITIVE EMISSIONS.
EU Description: NO. 1 KILN BLENDING SILOS (BAGHOUSE NOS. E-36,F-17)
EU Status: A - ACTIVE
Commence Construction Date:

Initial Startup Date:
EU Major Group SIC: 32 - STONE, CLAY, GLASS AND CONCRETE PRODUCTS
Acid Rain Unit: No
Package Unit Manufacturer:
Package Unit Model #:
Generator Nameplate Rating:
EU Comment:

EU 008: CONTROL EQUIPMENT/METHOD (CE) INFORMATION

CE Code	Control Equipment/Method Name	Description
17	FABRIC FILTER MEDIUM TEMPERATURE (180F	

EU 008: OPERATING CAPACITY AND SCHEDULE

Maximum Process or Throughput Rate: 160
Maximum Process or Throughput Rate Units: TPH
Maximum Production Rate:
Maximum Production Rate Units:
Maximum Heat Input Rate:
Maximum Incineration Rate:
Requested Maximum Operating Schedule: 8760 hours/year
Operating Capacity and Schedule Comment:

EU 008: POINT (STACK/VENT) INFORMATION

Identification of Point on Plot Plan or Flow Diagram?
Emission Point Type Code: 3 - A CONFIGURATION OF MULTIPLE EMISSION POINTS SERVING A SINGLE EMISSIONS UNIT
Discharge Type Code: V - A STACK WITH AN UNOBSTRUCTED OPENING DISCHARGING IN A VERTICAL, OR NEARLY VERTICAL DIRECTION
Stack Height: 216 feet
Exit Diameter: 2 feet
Exit Temperature: 85 Fahrenheit
Actual Volumetric Flow Rate: 15000 acfm
Water Vapor:
Maximum Dry Standard Flow Rate:
Nonstack Emission Point Height:

Emission Point UTM Coordinates: Zone: 17 East(km): 356.23 North(km): 3168.469
Emission Point Latitude:
Emission Point Longitude:
Emission Point Comment:
VE Tracking Description # 1: E-36 Baghouse
VE Tracking Description # 2: F-17 Baghouse

EU 008: SEGMENT (PROCESS/FUEL) INFORMATION

SCC Code: 30500612
Units: Tons Material Handled
Description 1: Industrial Processes
Description 2: Mineral Products
Description 3: Cement Manufacturing (Dry Process)
Description 4: Raw Material Transfer
Is this a Valid Segment? YES
Segment Description (Process/Fuel Type):
Maximum Hourly Rate: 160
Maximum Annual Rate:
Estimated Annual Activity Factor:
Maximum % Sulfur:
Maximum % Ash:
Million Btu per SCC Unit:
Segment Comment:

EU 008: EMISSIONS UNIT POLLUTANT DETAIL INFORMATION

Pollutant Code: PM
Pollutant Description: Particulate Matter - Total
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device: FABRIC FILTER MEDIUM TEMPERATURE (180F
Secondary Control Device:
Total % Efficiency of Control: 99.9
Potential Emissions: 3.74 lb/hour 163 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units:
Emission Factor Reference:
Emissions Method Code: 3 - CALCULATED USING EMISSION FACTOR FROM AP-42/FIRE SYSTEM.
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment: %5VE IN LIEU OF STACKTEST

Pollutant Code: PM10

Pollutant Description:	Particulate Matter - PM10
Is this a Valid Pollutant?	YES
Include in the Facility Emissions Cap?	NO
Pollutant Regulatory Code:	NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device:	FABRIC FILTER MEDIUM TEMPERATURE (180F
Secondary Control Device:	
Total % Efficiency of Control:	
Potential Emissions:	
Synthetically Limited?	N
Range of Estimated Fugitive Emissions:	
Emission Factor:	
Emission Factor Units:	
Emission Factor Reference:	
Emissions Method Code:	
Baseline Actual Emissions (if required):	
Baseline 24-Month Period:	
Projected Actual Emissions (if required):	
Projected Monitoring Period:	
Calculation of Emissions:	
Potential, Fugitive, and Actual Emissions Comment:	

EU 008: POLLUTANT ALLOWABLE EMISSIONS INFORMATION

Pollutant Code: PM

Pollutant Description:	Particulate Matter - Total
Basis for Allowable Emissions Code:	OTHER - REQUESTED BY APPLICANT FOR OTHER REASONS
Future Effective Date of Allowable Emissions:	
Allowable Emissions:	2.47
Allowable Emissions Unit:	POUNDS/HOUR (PH)
Equivalent Allowable Emissions:	2.47 lb/hour 10.81 tons/year
Method of Compliance:	Annual Compliance Test
Comment/Description of Operating Method:	Freq. Base Date included in TV Permit

EU 008: VISIBLE EMISSIONS INFORMATION

Visible Emissions Subtype: VE05

Basis for Allowable Opacity:	OTHER
Requested Allowable Opacity in Normal Conditions:	005 %
Requested Allowable Opacity in Exceptional Conditions:	
Maximum Period of Excess Opacity Allowed:	30 min/hour
Compliance Test Method(s):	
Visible Emissions Comment:	Test Frequency Base date changed by TV Permit. NSPS VE LIMIT 10% OPACITY

EU 008: CONTINUOUS MONITOR INFORMATION

*** NO CONTINUOUS MONITOR INFORMATION FOUND FOR THIS EU ***

EU 008: ADDITIONAL ITEMS		
Description	Applicable?	Attachment?
PROCESS FLOW DIAGRAM Previously submitted? NO Submittal Date:	No	No
FUEL ANALYSIS OR SPECIFICATION Previously submitted? NO Submittal Date:	No	No
DETAILED DESCRIPTION OF CONTROL EQUIPMENT Previously submitted? NO Submittal Date:	No	No
DESCRIPTION OF STACK SAMPLING FACILITIES	No	No
PROCEDURES FOR STARTUP AND SHUTDOWN Previously submitted? NO Submittal Date:	No	No
OPERATION AND MAINTENANCE PLAN Previously submitted? NO Submittal Date:	No	No
COMPLIANCE DEMONSTRATION REPORTS/RECORDS Previously submitted? NO Submittal Date: Previously Submitted Test Date(s)/Pollutants Tested: To Be submitted? NO Submittal Date: To Be Submitted Test Date(s)/Pollutants Tested.	No	No
OTHER INFORMATION REQUIRED BY RULE OR STATUTE	No	No
IDENTIFICATION OF APPLICABLE REQUIREMENTS	No	No
COMPLIANCE ASSURANCE MONITORING PLAN	No	No
ALTERNATIVE METHODS OF OPERATION	No	No
ACID RAIN PART (FORM NO. 62-210.900(1)(a)) Previously submitted? NO Submittal Date:	No	No
CONTROL TECHNOLOGY REVIEW AND ANALYSIS (RULES 62-212.400(10) and 62-212.500(7), F.A.C.;40 CFR 63.43(d) and (e))	No	No
GOOD ENGINEERING PRACTICE STACK HEIGHT ANALYSIS (RULE 62-212.400 (4)(d),F.A.C., and RULE 62-212.500(4)(f),F.A.C.)	No	No
ALTERNATIVE MODES OF OPERATION (EMISSIONS TRADING)	No	No
REPOWERING EXTENSION PLAN (FORM NO. 62-210.900(1)(a)1.) Previously submitted? NO Submittal Date:	No	No
NEW UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)2.) Previously submitted? NO Submittal Date:	No	No
RETIRED UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)3.) Previously submitted? NO Submittal Date:	No	No
PHASE II NOx COMPLIANCE PLAN (FORM NO. 62-210.900(1)(a)4. Previously submitted? NO Submittal Date:	No	No
PHASE II NOx AVERAGING PLAN (FORM NO. 62-210.900(1)(a)5.) Previously submitted? NO Submittal Date:	No	No
CERTIFICATE OF REPRESENTATION (EPA FORM NO. 7610-1)	No	No
OTHER EMISSIONS UNIT INFORMATION	No	No
EU Additional Items Comment:		

EU 008: ATTACHMENTS
*** No Emissions Unit Additional Attachments Found ***

EU 009: DESCRIPTION AND DETAIL INFORMATION

Regulated/Unregulated: REGULATED
Type of EU: THIS EMISSIONS UNIT INFORMATION SECTION ADDRESSES, AS A SINGLE EMISSIONS UNIT, A GROUP OF PROCESS OR PRODUCTION UNITS AND ACTIVITIES WHICH HAS AT LEAST ONE DEFINABLE EMISSION POINT (STACK OR VENT) BUT MAY ALSO PRODUCE FUGITIVE EMISSIONS.
EU Description: Portland Cement Storage Silos Nos. 1-5
EU Status: A - ACTIVE
Commence Construction Date:

Initial Startup Date:
EU Major Group SIC: 32 - STONE, CLAY, GLASS AND CONCRETE PRODUCTS
Acid Rain Unit: No
Package Unit Manufacturer:
Package Unit Model #:
Generator Nameplate Rating:
EU Comment:

EU 009: CONTROL EQUIPMENT/METHOD (CE) INFORMATION

CE Code	Control Equipment/Method Name	Description
17	FABRIC FILTER MEDIUM TEMPERATURE (180F	
18	FABRIC FILTER LOW TEMPERATURE (T<180F)	Western Precipitation Pulse Flow

EU 009: OPERATING CAPACITY AND SCHEDULE

Maximum Process or Throughput Rate: 210
Maximum Process or Throughput Rate Units: TPH
Maximum Production Rate:
Maximum Production Rate Units:
Maximum Heat Input Rate:
Maximum Incineration Rate:
Requested Maximum Operating Schedule: 8760 hours/year
Operating Capacity and Schedule Comment: Per Construction Permit 0530010-008-AC

EU 009: POINT (STACK/VENT) INFORMATION

Identification of Point on Plot Plan or Flow Diagram?
Emission Point Type Code: 1 - A SINGLE EMISSION POINT SERVING A SINGLE EMISSIONS UNIT
Discharge Type Code: V - A STACK WITH AN UNOBSTRUCTED OPENING DISCHARGING IN A VERTICAL, OR NEARLY VERTICAL DIRECTION
Stack Height: 140 feet
Exit Diameter: 2.2 feet
Exit Temperature: 150 Fahrenheit
Actual Volumetric Flow Rate: 20000 acfm
Water Vapor: 2 %
Maximum Dry Standard Flow Rate:
Nonstack Emission Point Height:

Emission Point UTM Coordinates: Zone: 17 East(km): 356.19 North(km): 3168.7
Emission Point Latitude:
Emission Point Longitude:
Emission Point Comment:

EU 009: SEGMENT (PROCESS/FUEL) INFORMATION

SCC Code: 30500618
Units: Tons Cement Produced
Description 1: Industrial Processes
Description 2: Mineral Products
Description 3: Cement Manufacturing (Dry Process)
Description 4: Cement Silos
Is this a Valid Segment? YES
Segment Description (Process/Fuel Type):
Maximum Hourly Rate: 210
Maximum Annual Rate: 1839600
Estimated Annual Activity Factor:
Maximum % Sulfur:
Maximum % Ash:
Million Btu per SCC Unit:
Segment Comment: Storage Silos Nos. 1 -5

EU 009: EMISSIONS UNIT POLLUTANT DETAIL INFORMATION

Pollutant Code: PM
Pollutant Description: Particulate Matter - Total
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device: FABRIC FILTER LOW TEMPERATURE (T<180F)
Secondary Control Device:
Total % Efficiency of Control: 99.9
Potential Emissions: 36.05 lb/hour 25 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units:
Emission Factor Reference:
Emissions Method Code:
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment: 0530010-008-AC Changed Emission Limit to 36.05 PPH/25 TPY

Pollutant Code: PM10
Pollutant Description: Particulate Matter - PM10
Is this a Valid Pollutant? YES

Include in the Facility Emissions Cap?	NO
Pollutant Regulatory Code:	NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device:	FABRIC FILTER LOW TEMPERATURE (T<180F)
Secondary Control Device:	
Total % Efficiency of Control:	
Potential Emissions:	
Synthetically Limited?	N
Range of Estimated Fugitive Emissions:	
Emission Factor:	
Emission Factor Units:	
Emission Factor Reference:	
Emissions Method Code:	
Baseline Actual Emissions (if required):	
Baseline 24-Month Period:	
Projected Actual Emissions (if required):	
Projected Monitoring Period:	
Calculation of Emissions:	
Potential, Fugitive, and Actual Emissions Comment:	

EU 009: POLLUTANT ALLOWABLE EMISSIONS INFORMATION

Pollutant Code: PM

Pollutant Description:	Particulate Matter - Total
Basis for Allowable Emissions Code:	OTHER - REQUESTED BY APPLICANT FOR OTHER REASONS
Future Effective Date of Allowable Emissions:	
Allowable Emissions:	36.05
Allowable Emissions Unit:	POUNDS/HOUR (PH)
Equivalent Allowable Emissions:	36.05 lb/hour 25 tons/year
Method of Compliance:	Annual Compliance Test
Comment/Description of Operating Method:	Freq. Base Test from TV Permit; 5% VE in place of PM test per Cond. F.4 of Title V Permit

EU 009: VISIBLE EMISSIONS INFORMATION

Visible Emissions Subtype: VE05

Basis for Allowable Opacity:	OTHER
Requested Allowable Opacity in Normal Conditions:	005 %
Requested Allowable Opacity in Exceptional Conditions:	
Maximum Period of Excess Opacity Allowed:	
Compliance Test Method(s):	
Visible Emissions Comment:	5% VE IN LIEU OF PM STACK TEST; NSPS and NESHAP VE = 10%

EU 009: CONTINUOUS MONITOR INFORMATION

Parameter Code: VE - Visible emissions (opacity)
CMS Requirement:
Monitor Manufacturer: LEAR SIEGLER/ DYNATR
Model Number: 1100M OPACITY M
Serial Number:
Installation Date:
Performance Specification Test Date:
Status: ACTIVE
Continuous Monitor Comment:

EU 009: ADDITIONAL ITEMS

Description	Applicable?	Attachment?
PROCESS FLOW DIAGRAM Previously submitted? NO Submittal Date:	No	No
FUEL ANALYSIS OR SPECIFICATION Previously submitted? NO Submittal Date:	No	No
DETAILED DESCRIPTION OF CONTROL EQUIPMENT Previously submitted? NO Submittal Date:	No	No
DESCRIPTION OF STACK SAMPLING FACILITIES	No	No
PROCEDURES FOR STARTUP AND SHUTDOWN Previously submitted? NO Submittal Date:	No	No
OPERATION AND MAINTENANCE PLAN Previously submitted? NO Submittal Date:	No	No
COMPLIANCE DEMONSTRATION REPORTS/RECORDS Previously submitted? NO Submittal Date: Previously Submitted Test Date(s)/Pollutants Tested: To Be submitted? NO Submittal Date: To Be Submitted Test Date(s)/Pollutants Tested:	No	No
OTHER INFORMATION REQUIRED BY RULE OR STATUTE	No	No
IDENTIFICATION OF APPLICABLE REQUIREMENTS	No	No
COMPLIANCE ASSURANCE MONITORING PLAN	No	No
ALTERNATIVE METHODS OF OPERATION	No	No
ACID RAIN PART (FORM NO. 62-210.900(1)(a)) Previously submitted? NO Submittal Date:	No	No
CONTROL TECHNOLOGY REVIEW AND ANALYSIS (RULES 62-212.400(10) and 62-212.500(7), F.A.C.;40 CFR 63.43(d) and (e))	No	No
GOOD ENGINEERING PRACTICE STACK HEIGHT ANALYSIS (RULE 62-212.400 (4)(d),F.A.C., and RULE 62-212.500(4)(f),F.A.C.)	No	No
ALTERNATIVE MODES OF OPERATION (EMISSIONS TRADING)	No	No
REPOWERING EXTENSION PLAN (FORM NO. 62-210.900(1)(a)1.) Previously submitted? NO Submittal Date:	No	No
NEW UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)2.) Previously submitted? NO Submittal Date:	No	No
RETIRED UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)3.) Previously submitted? NO Submittal Date:	No	No
PHASE II NOx COMPLIANCE PLAN (FORM NO. 62-210.900(1)(a)4. Previously submitted? NO Submittal Date:	No	No
PHASE II NOx AVERAGING PLAN (FORM NO. 62-210.900(1)(a)5.) Previously submitted? NO Submittal Date:	No	No
CERTIFICATE OF REPRESENTATION (EPA FORM NO. 7610-1)	No	No
OTHER EMISSIONS UNIT INFORMATION	No	No

EU Additional Items Comment:

EU 009: ATTACHMENTS

*** No Emissions Unit Additional Attachments Found ***

EU 011: DESCRIPTION AND DETAIL INFORMATION

Regulated/Unregulated: REGULATED
Type of EU: THIS EMISSIONS UNIT INFORMATION SECTION ADDRESSES, AS A SINGLE EMISSIONS UNIT, A GROUP OF PROCESS OR PRODUCTION UNITS AND ACTIVITIES WHICH HAS AT LEAST ONE DEFINABLE EMISSION POINT (STACK OR VENT) BUT MAY ALSO PRODUCE FUGITIVE EMISSIONS.
EU Description: RAW MAT'L STORAGE SILOS & FEED SYST. W/BAGHOUSES (C-11,C-11A
EU Status: A - ACTIVE
Commence Construction Date:

Initial Startup Date:
EU Major Group SIC: 32 - STONE, CLAY, GLASS AND CONCRETE PRODUCTS
Acid Rain Unit: No
Package Unit Manufacturer:
Package Unit Model #:
Generator Nameplate Rating:
EU Comment: EMISSION POINT C-11 & C-1A

EU 011: CONTROL EQUIPMENT/METHOD (CE) INFORMATION

CE Code	Control Equipment/Method Name	Description
18	FABRIC FILTER LOW TEMPERATURE (T<180F)	

EU 011: OPERATING CAPACITY AND SCHEDULE

Maximum Process or Throughput Rate: 290
Maximum Process or Throughput Rate Units: TPH
Maximum Production Rate:
Maximum Production Rate Units:
Maximum Heat Input Rate:
Maximum Incineration Rate:
Requested Maximum Operating Schedule: 8760 hours/year
Operating Capacity and Schedule Comment:

EU 011: POINT (STACK/VENT) INFORMATION

Identification of Point on Plot Plan or Flow Diagram?
Emission Point Type Code: 3 - A CONFIGURATION OF MULTIPLE EMISSION POINTS SERVING A SINGLE EMISSIONS UNIT
Discharge Type Code: V - A STACK WITH AN UNOBSTRUCTED OPENING DISCHARGING IN A VERTICAL, OR NEARLY VERTICAL DIRECTION
Stack Height: 80 feet
Exit Diameter: 2.5 feet
Exit Temperature: 77 Fahrenheit
Actual Volumetric Flow Rate: 15000 acfm
Water Vapor:
Maximum Dry Standard Flow Rate:
Nonstack Emission Point Height:

Emission Point UTM Coordinates: Zone: 17 East(km): 356.31 North(km): 3168.45
Emission Point Latitude:
Emission Point Longitude:
Emission Point Comment:
VE Tracking Description # 1: C-11 baghouse
VE Tracking Description # 2: C-11A baghouse

EU 011: SEGMENT (PROCESS/FUEL) INFORMATION

SCC Code: 30500612
Units: Tons Material Handled
Description 1: Industrial Processes
Description 2: Mineral Products
Description 3: Cement Manufacturing (Dry Process)
Description 4: Raw Material Transfer
Is this a Valid Segment? YES
Segment Description (Process/Fuel Type):
Maximum Hourly Rate: 290
Maximum Annual Rate:
Estimated Annual Activity Factor:
Maximum % Sulfur:
Maximum % Ash:
Million Btu per SCC Unit:
Segment Comment:

EU 011: EMISSIONS UNIT POLLUTANT DETAIL INFORMATION

Pollutant Code: PM
Pollutant Description: Particulate Matter - Total
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device: FABRIC FILTER LOW TEMPERATURE (T<180F)
Secondary Control Device:
Total % Efficiency of Control: 99.8
Potential Emissions: 2.15 lb/hour 9.43 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor:
Emission Factor Units:
Emission Factor Reference:
Emissions Method Code: 3 - CALCULATED USING EMISSION FACTOR FROM AP-42/FIRE SYSTEM.
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment: 5% VE IN LIEU OF A STACKTEST

Pollutant Code: PM10

Pollutant Description:	Particulate Matter - PM10
Is this a Valid Pollutant?	YES
Include in the Facility Emissions Cap?	NO
Pollutant Regulatory Code:	NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device:	FABRIC FILTER LOW TEMPERATURE (T<180F)
Secondary Control Device:	
Total % Efficiency of Control:	
Potential Emissions:	
Synthetically Limited?	N
Range of Estimated Fugitive Emissions:	
Emission Factor:	
Emission Factor Units:	
Emission Factor Reference:	
Emissions Method Code:	
Baseline Actual Emissions (if required):	
Baseline 24-Month Period:	
Projected Actual Emissions (if required):	
Projected Monitoring Period:	
Calculation of Emissions:	
Potential, Fugitive, and Actual Emissions Comment:	

EU 011: POLLUTANT ALLOWABLE EMISSIONS INFORMATION

Pollutant Code: PM

Pollutant Description:	Particulate Matter - Total
Basis for Allowable Emissions Code:	OTHER - REQUESTED BY APPLICANT FOR OTHER REASONS
Future Effective Date of Allowable Emissions:	
Allowable Emissions:	2.15
Allowable Emissions Unit:	POUNDS/HOUR (PH)
Equivalent Allowable Emissions:	2.15 lb/hour 9.43 tons/year
Method of Compliance:	Annual Compliance Test
Comment/Description of Operating Method:	Freq. Base Date set in TV Permit

EU 011: VISIBLE EMISSIONS INFORMATION

Visible Emissions Subtype: VE05

Basis for Allowable Opacity:	OTHER
Requested Allowable Opacity in Normal Conditions:	005 %
Requested Allowable Opacity in Exceptional Conditions:	
Maximum Period of Excess Opacity Allowed:	30 min/hour
Compliance Test Method(s):	
Visible Emissions Comment:	Test Frequency Base date changed by TV Permit.

EU 011: CONTINUOUS MONITOR INFORMATION

*** NO CONTINUOUS MONITOR INFORMATION FOUND FOR THIS EU ***

EU 011: ADDITIONAL ITEMS		
Description	Applicable?	Attachment?
PROCESS FLOW DIAGRAM Previously submitted? NO Submittal Date:	No	No
FUEL ANALYSIS OR SPECIFICATION Previously submitted? NO Submittal Date:	No	No
DETAILED DESCRIPTION OF CONTROL EQUIPMENT Previously submitted? NO Submittal Date:	No	No
DESCRIPTION OF STACK SAMPLING FACILITIES	No	No
PROCEDURES FOR STARTUP AND SHUTDOWN Previously submitted? NO Submittal Date:	No	No
OPERATION AND MAINTENANCE PLAN Previously submitted? NO Submittal Date:	No	No
COMPLIANCE DEMONSTRATION REPORTS/RECORDS Previously submitted? NO Submittal Date: Previously Submitted Test Date(s)/Pollutants Tested: To Be submitted? NO Submittal Date: To Be Submitted Test Date(s)/Pollutants Tested:	No	No
OTHER INFORMATION REQUIRED BY RULE OR STATUTE	No	No
IDENTIFICATION OF APPLICABLE REQUIREMENTS	No	No
COMPLIANCE ASSURANCE MONITORING PLAN	No	No
ALTERNATIVE METHODS OF OPERATION	No	No
ACID RAIN PART (FORM NO. 62-210.900(1)(a)) Previously submitted? NO Submittal Date:	No	No
CONTROL TECHNOLOGY REVIEW AND ANALYSIS (RULES 62-212.400(10) and 62-212.500(7), F.A.C.;40 CFR 63.43(d) and (e))	No	No
GOOD ENGINEERING PRACTICE STACK HEIGHT ANALYSIS (RULE 62-212.400 (4)(d),F.A.C., and RULE 62-212.500(4)(f),F.A.C.)	No	No
ALTERNATIVE MODES OF OPERATION (EMISSIONS TRADING)	No	No
REPOWERING EXTENSION PLAN (FORM NO. 62-210.900(1)(a)1.) Previously submitted? NO Submittal Date:	No	No
NEW UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)2.) Previously submitted? NO Submittal Date:	No	No
RETIRED UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)3.) Previously submitted? NO Submittal Date:	No	No
PHASE II NOx COMPLIANCE PLAN (FORM NO. 62-210.900(1)(a)4. Previously submitted? NO Submittal Date:	No	No
PHASE II NOx AVERAGING PLAN (FORM NO. 62-210.900(1)(a)5.) Previously submitted? NO Submittal Date:	No	No
CERTIFICATE OF REPRESENTATION (EPA FORM NO. 7610-1)	No	No
OTHER EMISSIONS UNIT INFORMATION	No	No
EU Additional Items Comment:		

EU 011: ATTACHMENTS
*** No Emissions Unit Additional Attachments Found ***

EU 024: DESCRIPTION AND DETAIL INFORMATION

Regulated/Unregulated: REGULATED
Type of EU: THIS EU INFORMATION SECTION ADDRESSES, AS A SINGLE EMISSIONS UNIT, A SINGLE PROCESS OR PRODUCTION UNIT, OR ACTIVITY, WHICH PRODUCES ONE OR MORE AIR POLLUTANTS AND WHICH HAS AT LEAST ONE DEFINABLE EMISSION POINT (STACK OR VENT).
EU Description: RAW MATERIAL PRE-MIX BIN W/BAGHOUSE (M-2280)
EU Status: A - ACTIVE
Commence Construction Date:

Initial Startup Date:
EU Major Group SIC: 32 - STONE, CLAY, GLASS AND CONCRETE PRODUCTS
Acid Rain Unit: No
Package Unit Manufacturer:
Package Unit Model #:
Generator Nameplate Rating:
EU Comment:

EU 024: CONTROL EQUIPMENT/METHOD (CE) INFORMATION

CE Code	Control Equipment/Method Name	Description
18	FABRIC FILTER LOW TEMPERATURE (T<180F)	

EU 024: OPERATING CAPACITY AND SCHEDULE

Maximum Process or Throughput Rate: 330
Maximum Process or Throughput Rate Units: TPH RAW MATL
Maximum Production Rate:
Maximum Production Rate Units:
Maximum Heat Input Rate:
Maximum Incineration Rate:
Requested Maximum Operating Schedule: 8760 hours/year
Operating Capacity and Schedule Comment:

EU 024: POINT (STACK/VENT) INFORMATION

Identification of Point on Plot Plan or Flow Diagram?
Emission Point Type Code: 1 - A SINGLE EMISSION POINT SERVING A SINGLE EMISSIONS UNIT
Discharge Type Code: V - A STACK WITH AN UNOBSTRUCTED OPENING DISCHARGING IN A VERTICAL, OR NEARLY VERTICAL DIRECTION
Stack Height: 81 feet
Exit Diameter: 1.7 feet
Exit Temperature: 107 Fahrenheit
Actual Volumetric Flow Rate: 5380 acfm
Water Vapor:
Maximum Dry Standard Flow Rate: 4176 dscfm
Nonstack Emission Point Height:
Emission Point UTM Coordinates: Zone: 17 East(km): 356.31 North(km): 3168.45

Emission Point Latitude:
Emission Point Longitude:
Emission Point Comment:

EU 024: SEGMENT (PROCESS/FUEL) INFORMATION

SCC Code: 30500612
Units: Tons Material Handled
Description 1: Industrial Processes
Description 2: Mineral Products
Description 3: Cement Manufacturing (Dry Process)
Description 4: Raw Material Transfer
Is this a Valid Segment? YES
Segment Description (Process/Fuel Type):
Maximum Hourly Rate: 330
Maximum Annual Rate:
Estimated Annual Activity Factor:
Maximum % Sulfur:
Maximum % Ash:
Million Btu per SCC Unit:
Segment Comment:

EU 024: EMISSIONS UNIT POLLUTANT DETAIL INFORMATION

Pollutant Code: PM
Pollutant Description: Particulate Matter - Total
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code: EL - EMISSION-LIMITED POLLUTANT
Primary Control Device: FABRIC FILTER LOW TEMPERATURE (T<180F)
Secondary Control Device:
Total % Efficiency of Control: 99.9
Potential Emissions: 0.6 lb/hour 2.54 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor: 0.02
Emission Factor Units: GRAINS/DSCF (002)
Emission Factor Reference: TEST
Emissions Method Code: 1 - CALCULATED BASED ON SOURCE TEST OR CONTINUOUS EMISSION MEASUREMENTS.
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment: ANNUAL TEST REQUIRED

Pollutant Code: PM10
Pollutant Description: Particulate Matter - PM10
Is this a Valid Pollutant? YES
Include in the Facility

Emissions Cap?	NO
Pollutant Regulatory Code:	NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device:	FABRIC FILTER LOW TEMPERATURE (T<180F)
Secondary Control Device:	
Total % Efficiency of Control:	
Potential Emissions:	
Synthetically Limited?	N
Range of Estimated Fugitive Emissions:	
Emission Factor:	
Emission Factor Units:	
Emission Factor Reference:	
Emissions Method Code:	
Baseline Actual Emissions (if required):	
Baseline 24-Month Period:	
Projected Actual Emissions (if required):	
Projected Monitoring Period:	
Calculation of Emissions:	
Potential, Fugitive, and Actual Emissions Comment:	

EU 024: POLLUTANT ALLOWABLE EMISSIONS INFORMATION

Pollutant Code: PM

Pollutant Description:	Particulate Matter - Total
Basis for Allowable Emissions Code:	OTHER - REQUESTED BY APPLICANT FOR OTHER REASONS
Future Effective Date of Allowable Emissions:	
Allowable Emissions:	0.6
Allowable Emissions Unit:	POUNDS/HOUR (PH)
Equivalent Allowable Emissions:	0.6 lb/hour 2.54 tons/year
Method of Compliance:	VE 5%/Annual Compliance Test
Comment/Description of Operating Method:	

EU 024: VISIBLE EMISSIONS INFORMATION

Visible Emissions Subtype: VE05

Basis for Allowable Opacity:	RULE
Requested Allowable Opacity in Normal Conditions:	005 %
Requested Allowable Opacity in Exceptional Conditions:	
Maximum Period of Excess Opacity Allowed:	30 min/hour
Compliance Test Method(s):	
Visible Emissions Comment:	Frequency Base date changed by TV Permit.5% opacity in lieu of stack test.

EU 024: CONTINUOUS MONITOR INFORMATION

*** NO CONTINUOUS MONITOR INFORMATION FOUND FOR THIS EU ***

EU 024: ADDITIONAL ITEMS		
Description	Applicable?	Attachment?
PROCESS FLOW DIAGRAM Previously submitted? NO Submittal Date:	No	No
FUEL ANALYSIS OR SPECIFICATION Previously submitted? NO Submittal Date:	No	No
DETAILED DESCRIPTION OF CONTROL EQUIPMENT Previously submitted? NO Submittal Date:	No	No
DESCRIPTION OF STACK SAMPLING FACILITIES	No	No
PROCEDURES FOR STARTUP AND SHUTDOWN Previously submitted? NO Submittal Date:	No	No
OPERATION AND MAINTENANCE PLAN Previously submitted? NO Submittal Date:	No	No
COMPLIANCE DEMONSTRATION REPORTS/RECORDS Previously submitted? NO Submittal Date: Previously Submitted Test Date(s)/Pollutants Tested: To Be submitted? NO Submittal Date: To Be Submitted Test Date(s)/Pollutants Tested:	No	No
OTHER INFORMATION REQUIRED BY RULE OR STATUTE	No	No
IDENTIFICATION OF APPLICABLE REQUIREMENTS	No	No
COMPLIANCE ASSURANCE MONITORING PLAN	No	No
ALTERNATIVE METHODS OF OPERATION	No	No
ACID RAIN PART (FORM NO. 62-210.900(1)(a)) Previously submitted? NO Submittal Date:	No	No
CONTROL TECHNOLOGY REVIEW AND ANALYSIS (RULES 62-212.400(10) and 62-212.500(7), F.A.C.;40 CFR 63.43(d) and (e))	No	No
GOOD ENGINEERING PRACTICE STACK HEIGHT ANALYSIS (RULE 62-212.400 (4)(d),F.A.C., and RULE 62-212.500(4)(f),F.A.C.)	No	No
ALTERNATIVE MODES OF OPERATION (EMISSIONS TRADING)	No	No
REPOWERING EXTENSION PLAN (FORM NO. 62-210.900(1)(a)1.) Previously submitted? NO Submittal Date:	No	No
NEW UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)2.) Previously submitted? NO Submittal Date:	No	No
RETIRED UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)3.) Previously submitted? NO Submittal Date:	No	No
PHASE II NOx COMPLIANCE PLAN (FORM NO. 62-210.900(1)(a)4. Previously submitted? NO Submittal Date:	No	No
PHASE II NOx AVERAGING PLAN (FORM NO. 62-210.900(1)(a)5.) Previously submitted? NO Submittal Date:	No	No
CERTIFICATE OF REPRESENTATION (EPA FORM NO. 7610-1)	No	No
OTHER EMISSIONS UNIT INFORMATION	No	No
EU Additional Items Comment:		

EU 024: ATTACHMENTS
*** No Emissions Unit Additional Attachments Found ***

EU 025: DESCRIPTION AND DETAIL INFORMATION

Regulated/Unregulated: REGULATED
Type of EU: THIS EU INFORMATION SECTION ADDRESSES, AS A SINGLE EMISSIONS UNIT, A SINGLE PROCESS OR PRODUCTION UNIT, OR ACTIVITY, WHICH PRODUCES ONE OR MORE AIR POLLUTANTS AND WHICH HAS AT LEAST ONE DEFINABLE EMISSION POINT (STACK OR VENT).
EU Description: ADD MAT'L BIN + Outsized/Outside Clinker Hoppers (BH M-1171)
EU Status: A - ACTIVE
Commence Construction Date:

Initial Startup Date:
EU Major Group SIC: 32 - STONE, CLAY, GLASS AND CONCRETE PRODUCTS
Acid Rain Unit: No
Package Unit Manufacturer:
Package Unit Model #:
Generator Nameplate Rating:
EU Comment: Additive Material Storage Bin - FLYASH & OTHER MATERIAL IS LOADED INTO A STORAGE BIN FOR LATER USE IN MAKING CEMENT

EU 025: CONTROL EQUIPMENT/METHOD (CE) INFORMATION

CE Code	Control Equipment/Method Name	Description
18	FABRIC FILTER LOW TEMPERATURE (T<180F)	

EU 025: OPERATING CAPACITY AND SCHEDULE

Maximum Process or Throughput Rate: 30
Maximum Process or Throughput Rate Units: TPH MATERIAL
Maximum Production Rate:
Maximum Production Rate Units:
Maximum Heat Input Rate:
Maximum Incineration Rate:
Requested Maximum Operating Schedule: 24 hours/day 7 days/week 52 weeks/year 8760 hours/year
Operating Capacity and Schedule Comment:

EU 025: POINT (STACK/VENT) INFORMATION

Identification of Point on Plot Plan or Flow Diagram?
Emission Point Type Code: 1 - A SINGLE EMISSION POINT SERVING A SINGLE EMISSIONS UNIT
Discharge Type Code: V - A STACK WITH AN UNOBSTRUCTED OPENING DISCHARGING IN A VERTICAL, OR NEARLY VERTICAL DIRECTION
Stack Height: 32 feet
Exit Diameter: 2 feet
Exit Temperature: 70 Fahrenheit
Actual Volumetric Flow Rate: 15000 acfm
Water Vapor:
Maximum Dry Standard Flow Rate: 14700 dscfm
Nonstack Emission Point Height:
Emission Point UTM

Coordinates: Zone: 17 East(km): 356.24 North(km): 3168.6
Emission Point Latitude:
Emission Point Longitude:
Emission Point Comment:

EU 025: SEGMENT (PROCESS/FUEL) INFORMATION

SCC Code: 30500612
Units: Tons Material Handled
Description 1: Industrial Processes
Description 2: Mineral Products
Description 3: Cement Manufacturing (Dry Process)
Description 4: Raw Material Transfer
Is this a Valid Segment? YES
Segment Description (Process/Fuel Type):
Maximum Hourly Rate: 30
Maximum Annual Rate:
Estimated Annual Activity Factor:
Maximum % Sulfur:
Maximum % Ash:
Million Btu per SCC Unit:
Segment Comment: Max. Hourly Rate (Daily Average Basis)

EU 025: EMISSIONS UNIT POLLUTANT DETAIL INFORMATION

Pollutant Code: PM
Pollutant Description: Particulate Matter - Total
Is this a Valid Pollutant? YES
Include in the Facility Emissions Cap? NO
Pollutant Regulatory Code:
Primary Control Device: FABRIC FILTER LOW TEMPERATURE (T<180F)
Secondary Control Device:
Total % Efficiency of Control: 99.9
Potential Emissions: 0.0086 lb/hour 0.028 tons/year
Synthetically Limited? N
Range of Estimated Fugitive Emissions:
Emission Factor: 0.029
Emission Factor Units: OTHER (SPECIFY IN COMMENT) (099)
Emission Factor Reference: AP42
Emissions Method Code: 3 - CALCULATED USING EMISSION FACTOR FROM AP-42/FIRE SYSTEM.
Baseline Actual Emissions (if required):
Baseline 24-Month Period:
Projected Actual Emissions (if required):
Projected Monitoring Period:
Calculation of Emissions:
Potential, Fugitive, and Actual Emissions Comment: EF UNITS: LB/TONM//

Pollutant Code: PM10
Pollutant Description: Particulate Matter - PM10
Is this a Valid Pollutant? YES
Include in the Facility

Emissions Cap?	NO
Pollutant Regulatory Code:	NS - POLLUTANT NOT EMISSIONS-LIMITED NOT SUBJECT TO WORK PRACTICE
Primary Control Device:	FABRIC FILTER LOW TEMPERATURE (T<180F)
Secondary Control Device:	
Total % Efficiency of Control:	
Potential Emissions:	
Synthetically Limited?	N
Range of Estimated Fugitive Emissions:	
Emission Factor:	
Emission Factor Units:	
Emission Factor Reference:	
Emissions Method Code:	
Baseline Actual Emissions (if required):	
Baseline 24-Month Period:	
Projected Actual Emissions (if required):	
Projected Monitoring Period:	
Calculation of Emissions:	
Potential, Fugitive, and Actual Emissions Comment:	

EU 025: POLLUTANT ALLOWABLE EMISSIONS INFORMATION

Pollutant Code: PM

Pollutant Description:	Particulate Matter - Total
Basis for Allowable Emissions Code:	RULE - NUMERICAL EMISSIONS LIMITATION REQUIRED BY RULE
Future Effective Date of Allowable Emissions:	
Allowable Emissions:	0.02
Allowable Emissions Unit:	GRAINS PER DRY STANDARD CUBIC FOOT (02)
Equivalent Allowable Emissions:	2.57 lb/hour 11.3 tons/year
Method of Compliance:	
Comment/Description of Operating Method:	EF UNITS: LB/TONM

EU 025: VISIBLE EMISSIONS INFORMATION

Visible Emissions Subtype: VE05

Basis for Allowable Opacity:	RULE
Requested Allowable Opacity in Normal Conditions:	5 %
Requested Allowable Opacity in Exceptional Conditions:	
Maximum Period of Excess Opacity Allowed:	
Compliance Test Method(s):	
Visible Emissions Comment:	Frequency Base date changed by TV Permit.

EU 025: CONTINUOUS MONITOR INFORMATION

*** NO CONTINUOUS MONITOR INFORMATION FOUND FOR THIS EU ***

EU 025: ADDITIONAL ITEMS		
Description	Applicable?	Attachment?
PROCESS FLOW DIAGRAM Previously submitted? NO Submittal Date:	No	No
FUEL ANALYSIS OR SPECIFICATION Previously submitted? NO Submittal Date:	No	No
DETAILED DESCRIPTION OF CONTROL EQUIPMENT Previously submitted? NO Submittal Date:	No	No
DESCRIPTION OF STACK SAMPLING FACILITIES	No	No
PROCEDURES FOR STARTUP AND SHUTDOWN Previously submitted? NO Submittal Date:	No	No
OPERATION AND MAINTENANCE PLAN Previously submitted? NO Submittal Date:	No	No
COMPLIANCE DEMONSTRATION REPORTS/RECORDS Previously submitted? NO Submittal Date: Previously Submitted Test Date(s)/Pollutants Tested. To Be submitted? NO Submittal Date: To Be Submitted Test Date(s)/Pollutants Tested:	No	No
OTHER INFORMATION REQUIRED BY RULE OR STATUTE	No	No
IDENTIFICATION OF APPLICABLE REQUIREMENTS	No	No
COMPLIANCE ASSURANCE MONITORING PLAN	No	No
ALTERNATIVE METHODS OF OPERATION	No	No
ACID RAIN PART (FORM NO. 62-210.900(1)(a)) Previously submitted? NO Submittal Date:	No	No
CONTROL TECHNOLOGY REVIEW AND ANALYSIS (RULES 62-212.400(10) and 62-212.500(7), F.A.C.;40 CFR 63.43(d) and (e))	No	No
GOOD ENGINEERING PRACTICE STACK HEIGHT ANALYSIS (RULE 62-212.400 (4)(d),F.A.C., and RULE 62-212.500(4)(f),F.A.C.)	No	No
ALTERNATIVE MODES OF OPERATION (EMISSIONS TRADING)	No	No
REPOWERING EXTENSION PLAN (FORM NO. 62-210.900(1)(a)1.) Previously submitted? NO Submittal Date:	No	No
NEW UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)2.) Previously submitted? NO Submittal Date:	No	No
RETIRED UNIT EXEMPTION (FORM NO. 62-210.900(1)(a)3.) Previously submitted? NO Submittal Date:	No	No
PHASE II NOx COMPLIANCE PLAN (FORM NO. 62-210.900(1)(a)4. Previously submitted? NO Submittal Date:	No	No
PHASE II NOx AVERAGING PLAN (FORM NO. 62-210.900(1)(a)5.) Previously submitted? NO Submittal Date:	No	No
CERTIFICATE OF REPRESENTATION (EPA FORM NO. 7610-1)	No	No
OTHER EMISSIONS UNIT INFORMATION	No	No
EU Additional Items Comment:		

EU 025: ATTACHMENTS
*** No Emissions Unit Additional Attachments Found ***

***** End of Application for Air Permit - Long Form *****
Printed on 1/31/2007

REPORT IN SUPPORT OF
AN APPLICATION FOR A
CONSTRUCTION PERMIT

BEST ACHIEVABLE
RETROFIT TECHNOLOGY

CEMEX
BROOKSVILLE CEMENT PLANT
FACILITY ID: 0530010
HERNANDO COUNTY, FLORIDA

January 31, 2007

TABLE OF CONTENTS

TABLE OF ATTACHMENTS

ELECTRONIC COPIES OF CALPUFF/CALPOST FILES

1. Introduction

This report is in support of an application for an air construction permit for the Cemex Cement Plant, Facility ID: 0350010 to incorporate requirements of Best Achievable Retrofit Technology (BART) per 62-296.340(3)(b), F.A.C.

This cement plant facility is one of the 26 subject categories. The applicable units listed below began startup on January 12, 1975 and potential emissions of one or more pollutants of NOx, SO2, or PM exceeds 250 tons per year.

	CEMEX-Brooksville Cement Plant
002	NO. 1 KILN FEED SYSTEM (BAGHOUSE D-31)
003	CEMENT KILN NO. 1 BAGHOUSE(E-55);REVISED OIL CONCENTRATIONS
004	CEMENT PLANT CLINKER COOLER NO. 1 (BAGHOUSE F-18)
005	FINISH MILLS #1 & #2 WITH TWO DUST COLLECTORS
006	CLINKER STORAGE SILO NOS. 1&2 (BAGHOUSE F-31)
008	NO. 1 KILN BLENDING SILOS (BAGHOUSE NOS. E-36,F-17)
009	CEMENT PLT STG SILOS DUST UNIT H-3
011	RAW MAT'L STORAGE SILOS & FEED SYST. W/BAGHOUSES (C-11,C-11A
024	RAW MATERIAL PRE-MIX BIN W/BAGHOUSE (M-2280
025	ADDITIVE MATERIAL STORAGE BIN W/BAGHOUSE M-1171

2. Best Available Retrofit Technology Analysis – Rule 62-296.340, F.A.C.

The owner or operator of a BART-eligible source shall perform a BART evaluation for each emissions unit comprising the BART-eligible source and for each pollutant for which a BART determination is required. The BART evaluation shall be performed in accordance with the criteria of 40 CFR 51.308(e) and the procedures and guidelines contained in 40 CFR Part 51, Appendix Y. The BART evaluation and proposed BART determination(s) shall be submitted to the Department in an application for an air construction permit not later than January 31, 2007.

The Five Basic Steps of a Case-by-Case BART Analysis

STEP 1—Identify All Available Retrofit Control Technologies,

STEP 2—Eliminate Technically Infeasible Options,

STEP 3—Evaluate Control Effectiveness of Remaining Control Technologies,

STEP 4—Evaluate Impacts and Document the Results, and

STEP 5—Evaluate Visibility Impacts.

In a similar manner of a BACT determination, these BART determinations follow the "top-down" method. The "top-down" method provides that all available control technologies be ranked in descending order of control effectiveness. The most stringent control technology is considered BART until the applicant can eliminate that technology based on technical infeasibility, control effectiveness, energy impacts, environmental impacts, and economic impacts. The most effective control technique that is not rejected is considered to be BART.

The BART determinations address separately air pollution controls for each emissions unit for each regulated pollutant. Therefore, in the case of the proposed cement plant a BART analysis must be performed for PM, SO_2, and NO_X for the Cement Kiln No. 1 (EU003), and for PM/PM_{10} for the Clinker Cooler (EU004), the Finish Mills 1&2 (EU005), and Material Handling Equipment (EU002, 006, 008, 009, 011, 024, and 025). A detailed "top-down" analysis is described below for these emissions units for these pollutants.

As state in Appendix Y of 40 CFR Part 51,

"The BART provision in the regional haze rule contains no explicit treatment of modifications or how modified emissions units, previously subject to the requirement to install best available control technology (BACT), lowest achievable emission rate (LAER) controls, and/or NSPS are treated under the rule. As the BART requirements in the CAA do not appear to provide any exemption for sources which have been modified since 1977, the best interpretation of the CAA visibility provisions is that a subsequent modification does not change a unit's construction date for the purpose of BART applicability. Accordingly, if an emissions unit began operation before 1962, it is not BART-eligible if it was modified between 1962 and 1977, so long as the modification is not also a "reconstruction." On the other hand, an emissions unit which began operation within the 1962–1977 time window, but was modified after August 7, 1977, is BART-eligible. **We note, however, that if such a modification was a major modification that resulted in the installation of controls, the State will take this into account during the review process and may find that the level of controls already in place are consistent with BART.**"

Thus, recent BACT determinations for the subject units are discussed and recommended to satisfy BART.

Particulate Matter (PM/PM_{10})

Identify All Available Retrofit Control Technologies

A summary of PM/PM_{10} control devices, including the control efficiencies, is detailed in Table 1. These types include the following:

Precleaners;

Wet scrubbers;

Electrostatic precipitators (ESPs);

Fabric filters;

Paper/nonwoven filters.

The various types of control techniques are described in detail below.

Table 1. Summary of Available PM Control Technologies and the Associated Control Efficiency and Technical Feasiblity

Control Technique	Control Efficiency (%)	Ranking Based on Efficiency	Proven and Technically Feasible? (Y/N)	Proposed Technology for the Cement Kiln and Clinker Cooler? (Y/N)	Proposed Technology for the Other PM Sources[a]? (Y/N)
Precleaners					
Cyclones	70 - 90	6	Y	N	N
Mechanically-aided Separators	< 30	11	Y	N	N
Momentum Separators	5 - 99	10	Y	N	N
Settling Chambers	10 - 99	9	Y	N	N
Wet Scrubbers					
Spray Tower Scrubber	70 - 99	5	Y	N	N
Cyclonic Spray Tower	60 - 95	7	Y	N	N
Dynamic/Mechanically-aided Scrubbers	80 - 99	4	Y	N	N
Impingement Plate/Tray Tower Scrubbers	50 - 99	8	Y	N	N
Venturi Scrubbers	70 - 99	5	Y	N	N
Orifice Scrubber	80 - 99	4	Y	N	N
Condensation Scrubber	> 99	3	N	N	N
Mist Eliminators (Fiber-Bed)	70 - 99	5	Y	N	N
Electrostatic Precipitators (ESP)	99 - 99.9	3	Y	N	N
Fabric Filters	99 - 99.9	3	Y	Y	Y
Paper/Nonwoven Filters					
HEPA or ULPA Filter	> 99.9	2	N	N	N
Cartridge Collector Filter	> 99.99	1	N	N	N

[a] Includes the Finish Mills and Material Handling equipment.

Precleaners

This type of technology reduces the inlet loading of PM to downstream collection devices by removing larger, abrasive particles. Precleaners include cyclones, mechanically-aided separators, momentum separators, and settling chambers.

Cyclones remove PM by centrifugal and inertial forces, induced by forcing particle-laden gas to change direction. Cyclones are also referred to as cyclone collectors, cyclone separators, centrifugal separators, and inertial separators. Cyclones are primarily used to control PM and PM greater than 10 micrometers in aerodynamic diameter.

Mechanically-aided separators remove PM by centrifugal and inertial forces, induced by mechanically accelerating particulate-laden gas. They are used primarily to control PM and PM greater than 8 to 10 micrometers in aerodynamic diameter.

Momentum separators remove PM by gravitational settling and inertial collection. The particles are separated from the moving gas stream by providing a sharp change in the direction of gas flow so that momentum carries the particle across the gas stream lines and into a hopper. They are used primarily to control larger sized PM.

Settling chambers remove PM by reducing the gas velocity to enable to dust to settle out by the action of gravity. They are also used primarily to control larger sized PM.

Wet Scrubbers

Wet scrubbers remove PM and acid gas from a waste stream. The pollutants are removed primarily through the impaction, diffusion, interception, and/or absorption of the pollutant onto droplets of liquid. The liquid containing the pollutant is then collected for disposal. The types of PM wet scrubbers include:

- Spray tower;
- Cyclonic spray tower;
- Dynamic scrubber (mechanically-aided);
- Tray tower;
- Venturi scrubber;
- Orifice scrubber;
- Condensation scrubber; and
- Mist eliminators (fiber-bed).

These types of scrubbers are described below.

In a spray tower, particulate-laden air passed into a chamber it comes in contact with a liquid spray from spray nozzles. The gas stream enters at the bottom of the tower and flows upward. Spray nozzles are mounted on either the walls of the tower or at the tower center and spray downward on the gas flow. The water droplets capture particles suspended in the gas flow

through impaction, interception, and diffusion. Droplets that are large enough to settle by gravity accumulate at the bottom of the chamber. Droplets that remain in the gas stream are collected by a mist eliminator upstream of the nozzles.

Spray tower scrubbers are not typically used for fine PM applications because high liquid to gas ratios are required. Waste is generated from wet scrubbers in the form of a slurry, from which the solid waste must be treated or disposed.

Cyclonic spray scrubbers are similar to spray scrubbers, except that the gas stream flows through the chamber in a cyclonic motion. The droplets impact on the tower walls and fall to the bottom of the tower. Droplets that remain in the gas stream are removed with a mist eliminator.

Dynamic scrubbers, or mechanically-aided scrubbers, are also similar to spray scrubbers, but have a powered rotor that shears the scrubbing liquid into finely dispersed droplets. A mist eliminator or cyclonic separator removes the liquid and captured PM. These scrubbers typically have higher maintenance and power costs because of the rotor.

Tray tower scrubbers consist of a vertical tower with several perforated trays mounted horizontally inside the tower. The gas flows through the tower from the bottom and flows upward through holes in the trays, while the scrubbing liquid flows from the top and across each tray in the tower. This type of scrubber has a higher gas-liquid contact than spray towers because the gas mixes with the liquid flowing over the tray. The gas velocity stops the liquid from flowing down through the holes in the tray. Tray towers do not effectively remove submicron particles.

Venturi scrubbers have a "converging-diverging" flow channel. The cross-sectional area of the channel decreases then increases along the length of channel, which increases the waste stream velocity and turbulence which improves the gas-liquid contact. The liquid droplets are then separated from the gas stream in an entrainment section. Venturi scrubbers are typically utilized where a high collection efficiency for fine PM is desired.

Venturi scrubbers are more expensive than spray tower, cyclonic, or tray tower scrubbers, but have higher collection efficiencies for fine PM. A venturi scrubber's control efficiency is increased by increasing the pressure drop. This leads to higher operating costs.

Orifice, or impaction, scrubbers direct the gas stream flow over the surface of a pool of scrubbing liquid. As the gas impinges on the water surface, it entrains droplets of the liquid. The waste gas then flows upward and enters an orifice with a narrower opening than the duct. The orifice induces turbulence in the flow which atomizes the entrained droplets. The atomized droplets capture the PM in the gas stream. A series of baffles then removes the droplets, which fall into the liquid below. The disadvantage is the difficulty of removing the waste sludge. Capital and operation and maintenance costs are significantly higher than spray towers.

Condensation scrubbers remove PM by use of condensation to increase pollutant particle size followed by inertial impaction. Although condensation scrubbers have a high collection efficiency, the scrubber can only remove relatively small amounts of dust because of the amount of saturation and condensation that are capable of being maintained in the gas stream. They are intended to be used downstream of another scrubber. Condensation scrubbers are a new technology and have not been proven on a Cement Kiln operation. Therefore, this control technique is not considered further.

Mist eliminators, or fiber-bed scrubbers, operate as moisture-laden gas passes through beds or mats of packing fibers, such as spun glass, fiberglass, or steel. For PM collection, fiber mats must be made of coarse fibers and have a high void fraction, to decrease the tendency to plug.

Electrostatic Precipitators

Electrostatic precipitators (ESP) are control devices that use electrical forces to move the particles out of the gas stream and onto collector plates. The particles are electrically charged by forcing them to pass through a corona, which is where gaseous ions flow. The electrical field is generated from electrodes that are maintained at high voltage in the center of the flow. Once particles are collected on the plates, they must be removed without reentrainment into the gas stream.

There are several types of ESPs including plate-wire (the most common), flat plate, tubular, wet, and the two-stage. For gas streams that have a high loading of large particles, cyclones or fabric filters are used upstream of the ESP to reduce the load on the ESP. ESPs are capable of very high collection efficiencies, even for very small particles. Since the particles are dry when collected it is easier to handle the disposal of the waste material. Operating costs are relatively low and ESPs can handle a wide range of operating temperatures and gas flow rates.

Fabric Filters

In a fabric filter, flue gas is passed through a tightly woven felted fabric, causing PM in the flue gas to be collected on the fabric by sieving and other mechanisms. Fabric filters may be in the form of sheets, cartridges, or bags, with a number of individual fabric filter units housed together in a group. Bags are the most common type of fabric filter, and are referred to as baghouses. Groups of bags are placed in compartments to allow cleaning or replacements of bags without having to shut down the entire system.

Fabric filters can be made of many different types of materials. The type of fabric is based on the operating conditions. Cleaning intensity and frequency are important variables in determining removal efficiency. The dust cake can provide a significant portion of the fine particulate removal efficiency. Therefore, cleaning that is too frequent or too intense will reduce the fine particulate removal efficiency. Also the cleaning cannot be too infrequent or too ineffective because this will increase the pressure drop.

Baghouses are typically categorized by their cleaning method. The different types of cleaning methods of baghouses include shaker cleaning, reverse-air, and pulse-jet.

Paper/Nonwoven Filters

The two common types of paper/nonwoven filters are high efficiency particle air (HEPA) filter/ultra low penetration air (ULPA) filter and cartridge collectors. HEPA/ULPA filters and cartridge collectors generally contain paper media, but may also contain nonwoven media. In HEPA/ULPA filters, the filter media is sometimes made out of matted glass fiber. The small

fiber diameter and high packing density of both the paper and nonwoven media allow for the efficient collection of submicron PM. The gas stream passes through the filter media and the PM collects on the media. The dust cake that accumulates on the filter media can increase the collection efficiency.

HEPA and ULPA filters are usually the final component in a PM removal system since they require larger PM to be removed. HEPA and ULPA filters cannot be operated in moist environments since they will easily plug from "sticky" PM. Therefore, since the moisture content of the gas stream is typically 8-16 percent (varies depending on if the raw mill is running) from the Cement Kiln, this technology is considered to be technically infeasible.

In cartridge filters the media is usually made of natural or synthetic material such as cellulose or fiberglass. The media is supported by inner and outer wire frames. The gas stream is passed through the filter and the PM is collected on the filter. The dust cake that accumulates on the filter media can increase the collection efficiency.

Cartridge filters cannot be operated in moist environments since they will easily plug from "sticky" PM. Therefore, since the moisture content of the gas stream is typically 8-16 percent (varies depending on if the raw mill is running) from the Cement Kiln, this technology is considered to be technically infeasible.

Eliminate Technically Infeasible Options

The control techniques that are considered technically infeasible (refer to discussion above) for PM/PM_{10} control at a Cement Kiln and Clinker Cooler include HEPA/ULPA filters and cartridge collectors. Also, condensation scrubbers have not been proven on this type of operation.

Evaluate Control Effectiveness of Remaining Control Technologies

A summary of the remaining proven and technically feasible control techniques ranked by the order of control efficiency is listed in Table 2. There are two control techniques that have the top ranking (greater than 99% control efficiency): ESPs and fabric filters. These two control techniques are discussed further below.

Table 2. Ranking of Technically Feasible PM Control Technologies Based on Control Efficiency

Control Technique	Control Efficiency (%)	Ranking Based on Efficiency	Proposed Technology for the Cement Kiln and Clinker Cooler? (Y/N)	Proposed Technology for the Other PM Sources[a]? (Y/N)
Fabric Filters	99 - 99.9	1	Y	Y
Electrostatic Precipitators (ESP)	99 - 99.9	1	N	N
Dynamic/Mechanically-aided Scrubbers	80 - 99	2	N	N
Orifice Scrubber	80 - 99	2	N	N
Mist Eliminators (Fiber-Bed)	70 - 99	3	N	N
Spray Tower Scrubber	70 - 99	3	N	N
Venturi Scrubbers	70 - 99	3	N	N
Cyclones	70 - 90	4	N	N
Cyclonic Spray Tower	60 - 95	5	N	N
Impingement Plate/Tray Tower Scrubbers	50 - 99	6	N	N
Settling Chambers	10 - 99	7	N	N
Momentum Separators	5 - 99	8	N	N
Mechanically-aided Separators	< 30	9	N	N

[a] Includes the Finish Mills and Material Handling equipment.

Previous BACT Determinations

Cement Kiln

A review of previous BACT determinations for Preheaters, Precalciners, Calciners, and Cement Kilns at Portland Cement Plants is presented in Table 3. This information was compiled from data on EPA's RACT/BACT/LAER Clearinghouse and represents $PM/PM_{10}/PM_{2.5}$ BACT determinations for the last 10 years. This review indicates that the most common control techniques have been ESPs and baghouses. A few scrubbers have also been used for this type of process.

The BACT emission limits have ranged from 0.02 lb/ton feed to 3.76 lb/ton (dry basis) for PM and 0.09 lb/ton to 3.80 lb/ton (dry basis) for PM_{10}. The most recent BACT determinations have been 0.52 lb/ton, and 0.57 lb/ton (hourly) or 0.46 lb/ton (annual) for PM. The existing PM/PM_{10} emission limits of 29.7 lb/hr @ 150 ton clinker/hr (0.198 lb/ton clinker) are on the low end of the range of previous PM BACT limits.

Table 3. Summary of Previous PAI PM_{10}, $PM_{2.5}$ (OAQPS Determinations from Preheaters, Precalciners, and Kilns at Portland Cement Plants

RBLC ID	Facility Name	State	Permit No.	Date Issued	Process Type	Fuel Used	Throughput	Emission Limit (as presented in RBLC throughput)	Emission Limit (converted *)	Control Equipment Description	% Eff.
Particulate Matter (PM)											
TX-0070	LEHIGH CEMENT COMPANY - MASON CITY PLANT	TX	17 01 005	12/31/2001	KILN/CALCINER PREHEATER	COAL	550 TPH Clinker	0.516 LB/T	0.516 LB/T	ESP	
VA-0272	ROANOKE CEMENT	VA	20232	6/14/2001	LIME KILN	COAL	1,000,000 T/YR	89.9 LB/H; 297.5 TPY	0.565 lb/ton (hourly); 0.46 lb/ton (annual)	ESP and GCP	
TX-0032	LAFARGE CORPORATION	TX	PROJ - 06-057	7/1/2002	PREHEATER PRECALCINER KILN	COAL	4,000 T/D	0.3 LB/T	0.30 LB/TON Clinker	BAGHOUSE	99.9
WA-0107	PORTLAND CEMENT CLINKERING PLANT	WA	PSD-00-01	10/3/2001	KILN EXHAUST STACK			20.6 LB/H; 4e-tpy		BAGHOUSE	
TX-0155	PORTLAND CEMENT MANUFACTURING PLANT	TX	PSD-TX-745-M1	6/29/2001	GRINDING, PREHEATING, KILN, K-19			42.24 LB/H; 185.41 tpy		ESP	
TX-0155	PORTLAND CEMENT MANUFACTURING PLANT	TX	PSD-TX-745-M1	6/29/2001	GRINDING, PREHEATING, KILN, K-19			16.33 LB/H; 122.5 tpy		ESP	
CO-0041	RIO GRANDE PORTLAND CEMENT CORP	CO	98PDR093	9/25/2000	PREHEATER PRECALCINER, KILN		950,000 TPY Clinker	0.01 gr/dscf; 0.105 lb/ton	0.105 lb/ton	*High-Temp Baghouse*	
IL-0139	SLAG SAND (AMERICAN CEMENT COMPANY, INC	IL	1210045 001- AC	6/1/2001	IN-LINE KILN & RAW MILL	Natural Gas	170 T/H	0.15 LB/T	0.15 LB/T	BAGHOUSE	
MI-0283	HOLNAM INC	MI	66-710	6/29/2000	CEMENT KILNS, WET PROCESS (2)	COAL	160 LB/H; LB/ton	1.90 LB/H; LB/ton	LB/ton	Fabric Filter, Multi-Scrubber	98
CO-0047	HOLNAM, LTD/HOLNCI	CO	98 HR 0895	7/29/1999	KILN PREHEATER BYPASS & CLINKER COOLER ENHANCE			132 T/YR		BAGHOUSE	
IN-0081	LONE STAR IND/NORTH SERIES, INC	IN	153 10 0/92	4/16/1999	KILN OPERATION	COAL	360 T/H	0.016 gr/dscf; 0.5 lb/ton	0.5 lb/ton	ESP	
TX-0279	NORTH TEXAS CEMENT COMPANY	TX	PSD-TX-893	5/4/1999	MAIN KILN SCRUBBER STACK	COAL	350 T/H	0.22 LB/T	0.22 LB/T	Scrubber and Baghouse	
CO-0048	HOLNAM, LTD/HOLNCI, CO	CO	1ST RESUB 1	9/22/1998	CALCINER KILN		581,000 T/YR	22.1 LB/H	0.55 lb/ton	BAGHOUSE	99.9
NA-0112	LONE STAR IND/NORTH SERIES, INC	IN	153-Nonattainment-2-12/9	9/18/1998	CEMENT KILN, WET PROCESS,	COAL	75 TPH Clinker	80.5 LB/H	0.5 LB/T	ESP	
TX-0282	CAPITOL CEMENT DIVISION	TX	PSD-TX-820M1	9/16/1998	DRY/WET KILN & ALKALI BYPASS BAGHOUSE STACK (KS-1)		670,000 TPY DRY KILN	193.53 LB/H; 847.85 tpy	4.46 lb/ton (dry)	BAGHOUSE	
TX-0282	CAPITOL CEMENT DIVISION	TX	PSD-TX-820M1	9/16/1998	DRY KILN EXHAUST BAGHOUSE (KS-2)		740,000 TPY Clinker	25.84 LB/H	0.41 lb/ton clinker	BAGHOUSE	
TX-0282	CAPITOL CEMENT DIVISION	TX	PSD-TX-820M1	9/16/1998	ALKALI BYPASS BAGHOUSE STACK (9A)			5.92 LB/H; 25.63 tpy		BAGHOUSE	
TX-0282	CAPITOL CEMENT DIVISION	TX	PSD-TX-820M1	9/16/1998	WET KILN EXHAUST BAGHOUSE (KS-1B)		670,650 TPY Clinker	0.27 LB/H; 312.8 tpy	1.76 lb/ton	BAGHOUSE	
TX-0282	CAPITOL CEMENT DIVISION	TX	PSD-TX-820M1	9/16/1998	ALKALI BYPASS BAGHOUSE STACK (9A)			1.06 LB/H; 13.41 tpy		BAGHOUSE	
TX-0282	CAPITOL CEMENT DIVISION	TX	PSD-TX-820M1	9/16/1998	DRY KILN EXHAUST BAGHOUSE (KS-1A)		740,000 T/YR CLINKER	18.44 LB/H; 61.24 tpy	0.17 lb/ton clinker	BAGHOUSE (3)	
MI-0154	HOLNAM INC	MI	66-710	6/23/1998	CEMENT KILN SYSTEM (PROCESS 12)	COAL	160 T/H	1.5 LB/T	1.5 lb/ton	Baghouse	
IL-0052	ILLINOIS CEMENT COMPANY	IL	97030016	6/12/1998	KILN, CEMENT, PREHEATER/PRECALCINER		5000 TPD Cement	0.298 LB/T	0.298 LB/T	ESP/BOILER/GCP	99
TN-0086	SIGNAL MOUNTAIN CEMENT COMPANY,	TN	17-0015-9020	5/29/1998	DRY FED KILN	PET COKE	160 T/H	18.5 LB/H	0.5 LB/T	BAGHOUSE	
OR-0036	DURKEE FACILITY	OR	01-0029	2/26/1998	KILN			456 T/D	0.136 lb/ton clin	BAGHOUSE	
OR-0036	DURKEE FACILITY	OR	01-0029	2/26/1998	KILN STEEP FOR PREHEATER			0.019 GR/DSCF; 5 hr/90 lb/day		BAGHOUSE	
FL-0224	FLORIDA ROCK INDUSTRIES, INC	FL	PSD FL-228	12/23/1996	KILN	COAL	14 T/H	0.2 LB/T clinker	0.2 LB/T clinker	ESP	
PA-0059	ASHGROVE CEMENT COMPANY	PA	D-90-95A-2a	10/24/1996	KILN	COAL	176 T/H	25.45 LB/H	0.33 LB/T	BAGHOUSE	
IL-0110	ST. CRUSHED STONE	IL	PSD IL-227	11/17/1995	KILN	COAL	83 T/H	0.02 GR/DSCF	0.02 GR/DSCF	FABRIC FILTER	
WA-0044	ARGOSTAN CEMENT COMPANY, GRAMIL FACILITY	WA	C-1-1-0	1/6/1995	KILN, COAL	COAL	45 T/H; 1,000,000 T/YR	0.9 LB/T; 10.5 TPY	0.9 LB/T; 10.5 TPY	ESP	99.9
Particulate Matter (PM10)											
TX-0070	LEHIGH CEMENT COMPANY - MASON CITY PLANT	TX	17 01 005	12/31/2001	KILN/CALCINER PREHEATER	COAL	550 TPH Clinker	0.516 LB/T	0.516 LB/T	ESP	
VA-0272	ROANOKE CEMENT	VA	20232	6/14/2001	LIME KILN	COAL	1,000,000 T/YR	71.21 LB/H; 252.8 TPY	0.456 lb/ton (hourly); 0.37 lb/ton (annual)	ESP and GCP	
SD-0005	G.C.D. ACQUISITION - DAKOTA AGGREGATES LIMESTONE	SD	28 DHE-PSD	4/30/2001	ROTARY KILN #1	COAL	2.25 T/H	0.01 GR/DSCF		FABRIC FILTER	
MD-0059	CONSPENT CEMENT COMPANY, LLC	MD	2001-02-010	9/24/2002	ROTARY KILN	COAL	165 T/H	99 %		FABRIC FILTER	
TX-0032	LAFARGE CORPORATION	TX	*PREVIOUSLY SUBMITTED*	*PSD-TX-819-PRECALCINER KILN*	COAL	4,000 T/D	0.3 LB/T	0.30 LB/TON clinker	0.30 LB/TON clinker	Baghouse	99.9
TX-0155	PORTLAND CEMENT MANUFACTURING PLANT	TX	PSD-TX-745-M1	6/29/2001	GRINDING, PREHEATING, KILN, K-19			40 LB/H; 168 TPY		ESP	
CO-0041	RIO GRANDE PORTLAND CEMENT CORP	CO	98PDR093	9/25/2000	KILN, CLINKER		950,000 T/YR Clinker	0.01 gr/dscf; 0.097 lb/ton	0.097 lb/ton	High-Temp Fabric Filter	99.9
CO-0041	RIO GRANDE PORTLAND CEMENT CORP	CO	98PDR093	9/25/2000	PREHEATER PRECALCINER, KILN		950,000 T/YR Clinker	45.9 T/YR	0.097 LB/T, 12-month rolling	High-Temp Fabric Baghouse	
MD-0027	LEHIGH PORTLAND CEMENT COMPANY	MD	06-0-0536	6/8/2000	CEMENT MANUFACTURING: PREHEATER/PRECALCINER	COAL	2,214,000 T/YR	506 T/YR	0.457 LB/T	Cyclone, Wet Scrubber, Packed Bed	90
MD-0027	*CEDARFORE MANUFACTURING COMPANY*	MD	06-0-0536	6/8/2000	CEMENT MANUFACTURING: PREHEATER/PRECALCINER	COAL	2,214,000 T/YR	620 T/YR	0.56 LB/T	Baghouse	99
FL-0139	SLAG SAND (AMERICAN CEMENT COMPANY, INC	FL	1210045 001- AC	6/1/2001	IN-LINE KILN & RAW MILL	Natural Gas	170 T/H	0.15 LB/T	0.15 LB/T	BAGHOUSE	
CO-0047	HOLNAM, LTD/HOLNCI	CO	98 HR 0895	7/29/1999	KILN PREHEATER BYPASS & CLINKER COOLER ENHANCE			132 T/YR		BAGHOUSE	
IN-0081	LONE STAR IND/NORTH SERIES, INC	IN	153 10 0/92	4/16/1999	KILN OPERATION	COAL	360 T/H	0.014 GR/DSCF	0.5 lb/ton	ESP	
IN-0081	LONE STAR IND/NORTH SERIES, INC	IN	153 10 0/92	4/16/1999	ALKALI BYPASS DUST BINS			0.01 GR/DSCF; 0.4 lb/hr		BAGHOUSE	
TX-0279	NORTH TEXAS CEMENT COMPANY	TX	PSD-TX-893	5/4/1999	MAIN KILN SCRUBBER STACK	COAL	350 T/H	125 TPY	0.22 lb/ton	Scrubber and Baghouse	
TX-0279	NORTH TEXAS CEMENT COMPANY	TX	PSD-TX-893	5/4/1999	PREHEATER FED			0.2 LB/H; 0.89 TPY			
CO-0048	HOLNAM, LTD/HOLNCI, CO	CO	1ST RESUB 1	9/22/1998	CALCINER KILN		581,000 T/YR	21.1 LB/H; 74.6 TPY	0.52 lb/ton clinker; 0.26 lb/ton (annual)	Baghouse	
NA-0112	LONE STAR IND/NORTH SERIES, INC	IN	153-Nonattainment-2-12/9	9/18/1998	CEMENT KILN, WET PROCESS	COAL	75 T/H	17.3 LB/H	0.24 LB/T	ESP	
TX-0282	CAPITOL CEMENT DIVISION	TX	PSD-TX-820M1	9/16/1998	DRY/WET KILN & ALKALI BYPASS BAGHOUSE STACK (KS-1)		670,650 TPY DRY KILN	164.2 LB/H; 719.34 TPY	3.80 lb/ton clinker	BAGHOUSE	
TX-0282	CAPITOL CEMENT DIVISION	TX	PSD-TX-820M1	9/16/1998	DRY KILN EXHAUST BAGHOUSE (KS-1A)		740,000 T/YR CLINKER	21.37 LB/H	0.26 lb/ton	BAGHOUSE	
TX-0282	CAPITOL CEMENT DIVISION	TX	PSD-TX-820M1	9/16/1998	ALKALI BYPASS BAGHOUSE STACK (9A)			4.54 LB/H; 19.85 TPY		BAGHOUSE	
TX-0282	CAPITOL CEMENT DIVISION	TX	PSD-TX-820M1	9/16/1998	WET KILN EXHAUST BAGHOUSE (KS-1B)		670,650 T/YR CLINKER	0.83 LB/H; 60.99 TPY	1.29 lb/ton	BAGHOUSE (3)	
MO-0048	LAFARGE CORPORATION	MO	0897-049	8/20/1997	RAW MILL, PREHEATER PRECALCINER KILN (P		1,584,000 TONS	19.22 LB/HR; 24 HR	0.15 lb/ton (24 hr)	BAGHOUSE	
FL-0171	SOUTHDOWN, INC	FL	PSD-FL-233	6/27/1997	KILN		165 T/H	0.18 LB/T	0.18 LB/T	FABRIC FILTERS	
FL-0171	SOUTHDOWN, INC	FL	PSD-FL-233	6/27/1997	KILN		165 T/H; 1 hour max	0.38 LB/T	0.38 LB/T	FABRIC FILTERS	
FL-0171	SOUTHDOWN, INC	FL	PSD-FL-233	6/27/1997	KILN		165 T/H; 1 hour max	0.092 LB/T	0.092 LB/T	FABRIC FILTERS	
FL-0224	FLORIDA ROCK INDUSTRIES, INC	FL	PSD FL-228	12/23/1996	KILN, PORTLAND	COAL	14 T/H	0.25 LB/T; clinker	0.25 LB/T; clinker	ESP	
PA-0059	ASHGROVE CEMENT COMPANY	PA	D-90-95A-2a	10/24/1996	KILN	COAL	176 T/H	21.11 LB/H	0.12 LB/T	BAGHOUSE	
FL-0062	HOLNAM DEARBORN STEEL PLANT	FL	D-90-522-06	5/13/1996	KILN	COAL		14 T/H		BAGHOUSE	
KS-0012	GREAT SEAM CARBONATE CORP, UNITED ROCK PRODUCTS	KS	AC-9	*10/24/1995*	*CEMENT KILN*		5,000 TONS/DAY	25.7 lb/hr, 0.015 gr/dscf; 30 TPY		BAGHOUSE	99
Particulate Matter (PM2.5)											
WA-0107	PORTLAND CEMENT CLINKERING PLANT	WA	PSD-00-01	10/3/2001	KILN EXHAUST STACK			0.005 GR/DSCF; 24 HR		BAGHOUSE	

* Based on 8,760 hours per year

Source: EPA's RACT/BACT/LAER Clearinghouse, 2005

Clinker Coolers

A review of previous BACT determinations for Clinker Coolers at Portland Cement Plants is presented in Table 4. This information was compiled from data on EPA's RACT/BACT/LAER Clearinghouse and represents PM/PM_{10}/$PM_{2.5}$ BACT determinations for the last 10 years. This review indicates that the only add-on control techniques have been ESPs and baghouses.

The BACT emission limits have ranged from 0.01 lb/ton feed to 0.16 lb/ton (dry basis) for PM. The most recent BACT determinations have been 0.52 lb/ton, and 0.57 lb/ton (hourly) or 0.46 lb/ton (annual) for PM. The existing control by baghouse and emission limits of 14.9 lb/hr @ 150 ton clinker/hr (0.1 lb/ton clinker) for PM are reasonable based on the previous BACT determinations for Clinker Coolers.

Table 4. Summary of Previous PM/PM_{10} BACT Determinations from Clinker Coolers at Portland Cement Plants

RBLC ID	Facility Name	State	Permit No.	Date Issued	Throughput	Emission Limit (as presented in Clearinghouse)	Emission Limit (converted *)	Control Equipment	% Effic.
Particulate Matter (PM)									
UT-0059	ASH GROVE CEMENT COMPANY	UT	DAQE-958-96	10/24/1996		10.69 LB/H; 0.01 gr dscf		Baghouse	
IA-0070	LEHIGH CEMENT COMPANY - MASON CITY PLANT	IA	17-01-005	12/11/2003	150 TPH Clinker	0.015 GR/DSCF	0.1 LB/T	Baghouse	
MO-0059	CONTINENTAL CEMENT COMPANY, LLC	MO	2002-02-038	9/24/2002	182.60 T/H			Baghouse	
IA-0052	LAFARGE CORPORATION	IA	Proj. No. 00-057	7/1/2002	145.30 TONS OF	0.015 GR/DSCF	0.1 LB/TON	Baghouse	99.9
FL-0139	SUWANNEE AMERICAN CEMENT COMPANY, INC.	FL	*1210465-001-AC*	*6/1/2000*	178 T/H	0.07 LB/T DRY PM	0.07 LB/T DRY PM FEED	ESP	
CO-0047	HOLNAM, FLORENCE	CO	98-FR-0895	7/29/1999		60.2 T/YR		Baghouse	
N-0112	LONE STAR INDUSTRIES, INC.	IN	133-5886-00002-3241	9/18/1998	75 T/H	13.5 LB/H	0.082 LB/T	Baghouse	
OR-0036	DURKEE FACILITY	OR	01-0029	2/26/1998		0.1 GR/DSCF, 3-hr	0.1 LB/T, 6-hr	Baghouse	
FL-0224	FLORIDA ROCK INDUSTRIES, INC.	FL	PSD-FL-228	12/23/1996	14 T/H	0.1 LB/T, dry	0.16 LB/T clinker	ESP	
FL-0110	FL CRUSHED STONE	FL	PSD-FL-227	11/17/1995	83 T/H	*0.01 LB/T, clinker*	0.01 LB/T	FABRIC FILTER	
WY-0044	MOUNTAIN CEMENT COMPANY-LARAMIE FACILITY	WY	CT-1137	3/6/1995		0.01 GR/ACF; 0.09 lb/hr		Baghouse	99.9
Particulate Matter (PM_{10})									
IA-0070	LEHIGH CEMENT COMPANY - MASON CITY PLANT	IA	17-01-005	12/11/2003	150 TPH Clinker	0.015 GR/DSCF	0.092 LB/T	Baghouse	
SD-0003	GCC DACOTAH - DACOTAH QUARRYS LIMESTONE	SD	*28.1101-PSD*	*4/10/2003*	2,250 T/D	0.01 GR/DSCF	0.091 lb/ton	FABRIC FILTER	
IA-0052	LAFARGE CORPORATION	IA	Proj. # 00-057	7/1/2002		0.015 GR/DSCF		Baghouse	99.9
FL-0139	SUWANNEE AMERICAN CEMENT COMPANY, INC.	FL	1210465-001-AC	6/1/2000	178 T/H	0.06 LB/T DRY PH	0.06 LB/T DRY PH FEED	ESP	
CO-0047	HOLNAM, FLORENCE	CO	98-FR-0895	7/29/1999		60.2 T/YR		Baghouse	
IN-0081	LONE STAR INDUSTRIES, INC.	IN	133-10159	4/16/1999	183 T/H CLINKER	0.015 GR/DSCF	0.02 lb/ton	BAGHOUSE	
CO-0048	HOLNAM, LAPORTE CO.	CO	11LR338-1	9/22/1998	581,000 T/YR CLINKER	37.7 T/YR	0.13 LB/T	Baghouse	99.9
N-0112	LONE STAR INDUSTRIES, INC	IN	133-5886-00002-3241	9/18/1998	75 T/H	12.4 LB/H	0.075 LB/T	BAGHOUSE	
TX-0282	CAPITOL CEMENT DIVISION	TX	PSD-TX-120M3	9/16/1998		12.25 LB/H; 53.66 TPY		Baghouse	
MO-0048	LAFARGE CORPORATION	MO	0897-019	8/20/1997	1,028,599 TONS	11.74 LB/HR, 24 HR	0.10 lb/ton	BAGHOUSE	99.9
FL-0224	*FLORIDA ROCK INDUSTRIES, INC.*	FL	PSD-FL-228	12/23/1996	14 T/H	0.13 LB/T, clinker	0.13 LB/T, clinker	ESP	
UT-0059	ASH GROVE CEMENT COMPANY	UT	DAQE-958-96	10/24/1996		9.63 LB/H; 0.009 gr/scf		Baghouse	
NV-0032	GREAT STAR CEMENT CORP./UNITED ROCK PRODUCTS	NV	A139	10/24/1995		21 LB/HR & .015 GR/DSCF		Baghouse	99

* Based on 8,760 hours per year.

Source: EPA's RACT/BACT/LAER Clearinghouse, 2005.

Material Handling Sources

A review of recent BACT determinations was performed for PM/PM_{10} Material Handling sources at Portland Cement Plants from the Clearinghouse. A summary of this review is included in Table 5. From this review it is evident that the only type of add-on control technology that has been applied to this type of operation are baghouses. Other types of particulate control include water sprays, covered conveyors, enclosed buildings, etc., to minimize the generation of fugitive PM/PM_{10} emissions.

Subject units	Method of Control	VE limit (%)*	PM limit (lb/hr)
EU002	BagHouse	10%	1.02
EU 006	BH	10%	1.45
EU 008	BH	10%	2.47
EU 009	BH	10%	36.05
EU 011	BH	10%	2.15
EU 024	BH	10%	0.60
EU 025	BH	10%	2.57

* 5% opacity in lieu of PM stack test.

These units are subject to the NESHAP Subpart LLL requiring periodic visible emissions measures and 5% opacity in lieu of particulate matter stack testing. The existing baghouse controls of these emission units are considered reasonable to previous BACT determinations of controls.

Finish Mills

A review of recent BACT determinations was performed for PM Finish Mills at Portland Cement Plants from the Clearinghouse. A summary of this review is included in Table 6. From this review it is evident that the only type of add-on control technology that has been applied to this type of operation are baghouses. The existing PM emission control is reasonable based on the previous BACT determinations of controls.

Table 6. Summary of Previous PM/PM$_{10}$ BACT Determinations from Finish Mills at Portland Cement Plants

RBLC ID	Facility Name	State	Permit No.	Date Issued	Process Type	Throughput	Control Equipmen	Emission Limit 1	Emission Limit 2	% Effic.
Particulate Matter (PM)										
MO-0059	CONTINENTAL CEMENT COMPANY, LLC	MO	2002-02-038	9/24/2002	FINISH MILL, CLINKER GRINDING, ELEVATOR	114.2 T/H	BAGHOUSE			
CO-0047	*HOLNAM, FLORENCE*	CO	98-FR-0895	7/29/1999	FINISH MILL SYSTEM		BAGHOUSE	70.78 T/YR		
TX-0279	NORTH TEXAS CEMENT COMPANY	TX	PSD-TX-893	9/4/1999	FINISH MILL SYSTEM VENT		BAGHOUSE	9.83 LB/H; 43.1 TPY		
OR-0036	DURKEE FACILITY	OR	01-0029	2/26/1998	FINISH GRINDING MILL FEED BELT		BAGHOUSE	0.1 gr/dscf, 3-hr		
OR-0036	DURKEE FACILITY	OR	01-0029	2/26/1998	FINISH MILL #2		BAGHOUSE	0.017 gr/dscf, 3-hr	69 LB/D	
WY-0044	MOUNTAIN CEMENT COMPANY-LARAMIE FACILITY	WY	C1-1137	9/6/1995	FINISH MILL C* EXISTING GRINDING MILL USED IN		BAGHOUSE	0.01 GR/ACT	3.89 LB/H	99.9
Particulate Matter (PM$_{10}$)										
SD-0003	GCC DACOTAH - DACOTAH QUARRYS LIMESTONE	SD	28.1101-PSD	4/10/2003	*FINISH MILL NO. 3*	35 T/H	FABRIC FILTER	0.01 GR/DSCF		
SD-0003	GCC DACOTAH - DACOTAH QUARRYS LIMESTONE	SD	28.1101-PSD	4/10/2003	FINISH MILL NO. 4	40 T/H	FABRIC FILTER	0.01 GR/DSCF		
SD-0003	GCC DACOTAH - DACOTAH QUARRYS LIMESTONE	SD	28.1101-PSD	4/10/2003	FINISH MILL NO. 5	45 T/H	FABRIC FILTER	0.01 GR/DSCF		
SD-0003	GCC DACOTAH - DACOTAH QUARRYS LIMESTONE	SD	28.1101-PSD	4/10/2003	FINISH MILL NO. 6	45 T/H	FABRIC FILTER	0.01 GR/DSCF		
SD-0003	GCC DACOTAH - DACOTAH QUARRYS LIMESTONE	SD	28.1101-PSD	4/10/2003	FINISH MILL NO. 7 (MILL SWEEP)	85 T/H	FABRIC FILTER	0.01 GR/DSCF		
SD-0003	GCC DACOTAH - DACOTAH QUARRYS LIMESTONE	SD	*28.1101-PSD*	*4/10/2003*	*FINISH MILL NO. 7 (MILL SEPARATOR)*	85 T/H	FABRIC FILTER	0.01 GR/DSCF		
SD-0003	GCC DACOTAH - DACOTAH QUARRYS LIMESTONE	SD	28.1101-PSD	4/10/2003	FINISH MILL NO. 7 (TRANSFER)	500 T/H	FABRIC FILTER	0.01 GR/DSCF		
SD-0003	GCC DACOTAH - DACOTAH QUARRYS LIMESTONE	SD	28.1101-PSD	4/10/2003	FINISH MILL #7 (TRANSFER #2)	500 T/H	FABRIC FILTER	0.01 GR/DSCF		
TX-0355	PORTLAND CEMENT MANUFACTURING PLANT	TX	PSD-TX-145 M1	6/29/2001	FM NO. 1 SEPARATOR, *N-13*		BAGHOUSE	1.26 LB/H	5.29 T/YR	
TX-0355	PORTLAND CEMENT MANUFACTURING PLANT	TX	PSD-TX-145 M1	6/29/2001	FM NO. 1 AIRSLIDES, N-22		BAGHOUSE	0.36 LB/H	1.51 T/YR	
TX-0355	PORTLAND CEMENT MANUFACTURING PLANT	TX	*PSD-TX-145 M1*	*6/29/2001*	FM NO. 2 SEPARATOR, *N-63*		BAGHOUSE	1.26 LB/H	5.29 T/YR	
TX-0355	PORTLAND CEMENT MANUFACTURING PLANT	TX	PSD-TX-145 M1	6/29/2001	FM NO. 2 AIRSLIDES, N-69		*BAGHOUSE*	*0.36 LB/H*	1.51 T/YR	
CO-0047	HOLNAM, FLORENCE	CO	98-FR-0895	7/29/1999	FINISH MILL SYSTEM		BAGHOUSE	70.78 T/YR		
IN-0081	LONE STAR INDUSTRIES, INC.	IN	133-10159	4/16/1999	FINISH MILL, NO. 3	95 T/H	FABRIC FILTER	0.01 GR/DSCT	1.97 LB/H	
IN-0081	LONE STAR INDUSTRIES, INC.	IN	133-10159	4/16/1999	FINISH MILL TRANSFER EQUIPMENT	235 TPH	BAGHOUSE	0.015 gr/dscf	0.01 GR/DSCF	
IN-0081	LONE STAR INDUSTRIES, INC.	IN	133-10159	4/16/1999	FINISH MILL TRANSFER NO. 3		FABRIC FILTER	0.015 GR/DSCF	0.01 GR/DSCF	
TX-0279	NORTH TEXAS CEMENT COMPANY	TX	PSD-TX-893	9/4/1999	FINISH MILL SYSTEM VENT		*BAGHOUSE*	9.83 LB/H	43.1 T/YR	
MO-0048	LAFARGE CORPORATION	MO	0897-019	8/20/1997	FINISH MILL, HOPPER, CEMENT AIR SEPARATION	1401600 TONS	BAGHOUSE	3.46 LB/HR		

Source: *EPA's RACT/BACT/LAER Clearinghouse*, 2005.

BART Selection

Cement Kiln and Clinker Cooler

PM/PM_{10} emissions are to be controlled using a baghouse (fabric filter). This control techniques is the top-ranked techniques based on control efficiency, technical feasibility, and proven technology. The baghouse achieves more than 99-percent control for the Cement Kiln. The existing emission limits of 29.7 lb/hr for PM and PM_{10} for the Cement Kiln and 14.9 lb/hr for PM and PM_{10} for the Clinker Cooler are reasonable based on the most recent BACT determinations listed on the Clearinghouse. The proposed control technology of a baghouse is reasonable based on the control technologies listed on the Clearinghouse for this type of process.

-003 Cement Kiln No. 1 (Baghouse E-55)

The proposed BART is the existing Fuller Draco Custom Baghouse (Baghouse ID E-55, with 20 compartments exhausting to one common stack). A BACT evaluation for PM was conducted in 0530010-003-AC/PSD-FL-233. The BART analysis does not significantly alter the results of that evaluation.

-004 Cement Plant Clinker Cooler No. 1 (Baghouse F-18)

The proposed BART is the existing Western Precipitation Baghouse (Baghouse ID F-18). A BACT evaluation for PM was conducted in 0530010-003-AC/PSD-FL-233. The BART analysis detailed above does not significantly alter the results of that evaluation.

Finish Mills and Material Handling Equipment

The only add-on control technology that is listed on the Clearinghouse for Finish Mills and material handling sources located at cement plants are fabric filters/baghouses. Baghouses can achieve very high control efficiency (greater than 99%). Any additional add-on control techniques would be very costly based on the control that the baghouses alone can achieve. Therefore, since baghouses are the only proven control technology for this type of source and since they can achieve very high control efficiencies, baghouses are justified as BART for the Finish Mills and the Material Handling Equipment.

-002 No. 1 Kiln Feed System

The proposed BART is the existing Western Precipitation Pulse Flow Baghouse.

-005 Finish Mills Nos. 1 & 2 With Two Dust Collectors

The proposed BART is the existing Western Precipitation Pulse Flow PF 6012, E-210 Baghouse.

-006 Clinker Storage Silo Nos. 1 & 2 (Baghouse F-31)

The proposed BART is the existing Western Precipitation Pulse Flow Baghouse

-008 No. 1 Kiln Blending Silos (Baghouses E-36, F-17)

The proposed BART is the existing Western Precipitation Pulse Flow PF 6012, E-210 Baghouse.

-009 Portland Cement Storage Silos Nos. 1-5 (Baghouse H-03)

The proposed BART is the existing Western Precipitation Pulse Flow PF 6012, E-210 Baghouse.

-011 Raw Material Storage Silos & Feed System (Baghouses C-11, C-11A)

The proposed BART is the existing Western Precipitation Pulse Flow PF 6012, E-210 Baghouse.

In support of these proposals, these units comply to MACT under subject to NESHAP subpart LLL.

Evaluate Visibility Impacts and Document the Results

CALPUFF modeling was performed as described in the modeling protocol. Results of the modeling are provided in the appended Modeling Results.

Sulfur Dioxide

SO_2 may be generated from the sulfur compounds in the raw material and the sulfur in the fuel. However, the alkaline nature of the cement provides for direct adsorption of SO_2 into the product. Depending on the process and the source of the sulfur, SO_2 adsorption ranges from about 70 percent to more than 95 percent.

The proposed BART control technique is inherent scrubbing of SO_2 by the limestone in the raw material.

Identify All Available Retrofit Control Technologies

A summary of the available SO_2 control technologies are listed in Table 7, including the respective control efficiencies. These techniques include the following:

- Absorption;
- Adsorption; and
- Low sulfur fuels.

These types of controls are described in detail below.

Table. 7

Table. Summary of Available SO_2 Control Technologies and the Associated Control Efficiency and Technical Feasibility

Control Technology	Control Efficiency (%)	Proven and Technically Feasible? (Y/N)	Ranking Based on Efficiency	Proposed Technology for the Cement Kiln? (Y/N)
Absorption				
Packed Towers	95 - 99	Y	1	N
Plate (or Tray) Scrubbers	80 - 99	Y	3	N
Venturi Scrubbers	70 - 99	Y	4	N
Spray Chambers	80 - 99	Y	3	N
Adsorption				
Dry Scrubbing	> 90	Y	2	Y
Low-Sulfur Fuels	< 90	Y	5	N

Absorption

Absorption is a mass transfer operation in which one or more soluble components of a gas mixture are dissolved in a liquid with a low volatility. The pollutant diffuses out of the gas into the liquid when the liquid has less than the equilibrium concentration of the gaseous component.

The driving force for absorption is this difference between actual and equilibrium concentration. Control devices that use absorption principles include packed towers, plate or tray columns, venturi scrubbers, and spray chambers.

Packed towers are columns that are filled with packing material that provide a large surface area. The large surface area allows for contact between the liquid and the gas. Packed towers can achieve higher removal efficiencies, handle higher liquid rates, and have relatively lower water consumption requirements than other types of gas absorbers. However, packed towers may also have high pressure drops, high instances of clogging and fouling, and high maintenance costs because of the packing material.

Plate, or tray, tower scrubbers are vertical cylinders where the gas and liquid come in contact in steps on trays or plates. The liquid enters at the top of the column and flows across each plate and through a downspout to the plates below. The gas stream flows upward through holes in the plates, bubbles into the liquid, and passes to the plate above. Plate towers are easier to clean and can handle large temperature fluctuations better than packed towers. However, at high gas flow rates, plate towers exhibit larger pressure drops and have higher liquid holdups.

Venturi scrubbers have a "converging-diverging" flow channel. The cross-sectional area of the channel decreases then increases along the length of channel, which increases the waste stream velocity and turbulence which improves the gas-liquid contact. The liquid droplets are then separated from the gas stream in an entrainment section. A venturi scrubber's control efficiency is increased by increasing the pressure drop, which leads to higher operating costs.

Spray towers use a spray distribution system to deliver liquid droplets through a countercurrent gas stream under the influence of gravity. The droplets contact the pollutants in the gas stream. The required contacting power is derived from an appropriate combination of liquid pressure and flow rate. Spray towers are easy to operate and maintain and have low energy requirements. However, they have the least effective mass transfer capability of the absorbers and have high water recirculation rate requirements.

Adsorption

In an adsorption control system, a dry alkaline powder is injected into the gas stream. SO_2 is adsorbed to the surface of the alkaline particles. A reaction occurs that forms compounds that cannot be reentrained into the gas stream. Hydrated lime (calcium hydroxide) is the most common type of alkali. A spray dry scrubber is a control technology that uses adsorption.

Low Sulfur Fuels

Another technique for lowering SO_2 emissions is to switch to a low-sulfur content fuel. The SO_2 emissions are a direct relation to the amount of sulfur levels in the fuel or feed. In the case of a cement kiln, the use of raw materials (feed) with low sulfides (pyrites) content can result in lower SO_2 emissions by preventing the formation of SO_2 emissions by pyrite roasting in the upper stages of the preheater.

Eliminate Technically Infeasible Options

All of the control techniques included in Table 8 are considered technically feasible for SO_2 control from the kiln.

Table. 8

Table. Ranking of Available SO_2 Control Technologies by Control Efficiency

Control Technology	Control Efficiency (%)	Ranking Based on Efficiency	Proposed Technology for the Cement Kiln? (Y/N)
Packed Towers	95 - 99	1	N
Dry Scrubbing	> 90	2	Y
Plate (or Tray) Scrubbers	80 - 99	3	N
Spray Chambers	80 - 99	3	N
Venturi Scrubbers	70 - 99	4	N
Low-Sulfur Fuels	< 90	5	N

Evaluate Control Effectiveness of Remaining Control Technologies

A summary of the control techniques ranked by the order of control efficiency is listed in Table 8. The top two control techniques, based on control efficiency, are packed tower scrubbers and dry scrubbing.

Previous BACT Determinations

A review of previous BACT determinations from the last ten years was performed for SO_2 emissions from Preheaters, Calciners, and Cement Kilns at Portland Cement Plants and is presented in Table 9. From this review, it is evident that the control techniques for SO_2 have typically been wet scrubbers (only 4 facilities), dry scrubbing equivalent (inherent scrubbing of SO_2 from limestone in raw material), low sulfur fuels, and process changes or controls. The SO_2 emission limits have ranged from 0.16 lb/ton to 28.8 lb/ton (hourly and annual averages) and 0.143 lb/ton to 10 lb/ton on a daily-average basis for coal-fired kilns.

The current limit of 15.0 lb/hr (@150 ton of clinker /hr) or 0.10 lb/ton of preheater feed (about 0.17 lb/ton of clinker)is at the low end of the range of BACT determinations and should therefore satisfy for BART.

Table. 9

Table: Summary of Previous NO$_x$ BACT Determinations from Cement Kilns, Preheaters, and Calciners at Portland Cement Plants

RBLCID	Facility Name	State	Permit No.	Date Issued	Process Type	Fuel/Fuel	Throughput	Emission Limit (ppm corrected to Clearinghouse)	Emission Limit (converted*)	Control Equipment Description	% Effic.
IA-0070	LEHIGH CEMENT COMPANY - MASON CITY PLANT	IA	17-01-015	12/11/2001	KILN/CALCINER/PREHEATER	COAL	150 TPH Clinker	550.3 T/YR	5 DLB/T	WET SCRUBBER	
VA-0272	ROANOKE CEMENT	VA	30232	6/13/2003	LIME KILN	COAL	1,300,000 T/YR	950 LB/H; 3,104.4 TPY	6.40 lb/ton (hourly), 4.78 lb/ton (annual)	LOW SULFUR COAL, GCP AND CEMS	
SD-0003	GCC DACOTAH - DACOTAH QUARRY/LIMESTONE	ND	28.1101-[ND]	4/10/2003	ROTARY KILN #6	COAL	2,250 T/H	632 LB/H	6.74 lb/ton	Inherent scrubbing effect of processing limestone	
AL-0309	LAFARGE, INC	AL	105-0002-X004	9/13/2002	CEMENT KILN	COAL	230 T/H	166 LB/H	0.821 LB/T	*	90
IA-0052	LAFARGE CORPORATION	IA	PSD-01-057	7/1/2002	PREHEATER/PRECALCINER KILN	COAL	3,008 T/D	560 LB/D, 4,850 TPY	0.143 lb/ton (daily)	Dry Scrubber Equivalent. Lime is generated from limestone in feed and comes into contact with SO2 and some SO2 captured in waste kiln dust	75
WA-0307	PORTLAND CEMENT CLINKER RING PLANT	WA	PSD-90-03	10/5/2001	KILN EXHAUST STACK			100 ppm @ 10% O2, 1-hr		During kiln preheating period, shutdown and during maintenance of baghouse, only nat. gas will be burned and sulfur runs shall be removed if the ring was the cause of the shutdown	
TX-0355	PORTLAND CEMENT MANUFACTURING PLANT	TX	PSD-TX-143 M2	6/29/2001	GRINDING, PROBLATING, KILN, K-19			20 LB/H, 84 TPY		NONE INDICATED	
CO-0043	RIO GRANDE PORTLAND CEMENT CORP.	CO	98PB0093	9/25/2001	PREHEATER/PRECALCINER, KILN		950,000 T/YR Clinker	1.99 LB/T, 12-month rolling	1.99 LB/T	Raw materials quarry will be managed for optimum sulfur content. SO2 will be absorbed in a 5-stage preheater/precalciner Kiln	85
MD-0027	LEHIGH PORTLAND CEMENT COMPANY	MD	06-6-0356R	6/8/2001	PREHEATER/PRECALCINER	COAL	2,213,000 T/YR	1041 T/YR	0.94 lb/ton	Options include the installation of a 5-stage preheater precalciner pyroprocessing plant and use of raw material with sulfur < 0.03%.	95
IL-0109	*SOUTHEASTERN AMERICAN CEMENT COMPANY, INC.*	IL	1210465-001-AC	6/13/2001	IN-LINE KILN & RAW MILL	Nat. Gas	178 T/H	0.27 LB/T CLINKER	0.27 LB/T CLINKER	Low sulfur materials and process control	
MI-0287	HOLNAM, INC	MI	60-701	3/20/2001	CEMENT KILNS, WET PROCESS (2)	COAL	190 T/H (Each)	*21.7 LB/T*	*21.7 LB/T*	SO2 FOR IN-PLANT LIMESTONE HAS OFTEN DROPPED IN SCRUBBER	85
KS-0022	MONARCH CEMENT COMPANY	KS	10069	1/22/2001	2 PH/2 CALCINERS (EACH)	Nat. Gas	102.6 TPH	421 LB/H; 622.3 TPY	3.81 lb/ton (hourly); 1.32 lb/ton (annual)	BAGHOUSE	99
CO-0047	HOLNAM, STORNO	CO	98-ER-0095	7/29/1999	KILN/PREHEATER/BYPASS & CLINKER COOLER			625.23 T/YR		WET LIME SCRUBBER	
IN-0081	LONE STAR INDUSTRIES, INC	IN	133-10159	4/16/1999	KILN OPERATION	COAL	360 T/H	3317 T/YR	2.10 lb/ton		
TX-0279	NORTH TEXAS CEMENT COMPANY	TX	PSD-TX-893	3/4/1999	MAIN KILN SCRUBBER STACK	COAL	3,100 T/D	2640 LB/H; 1,577 TPY	21.99 lb/ton (hourly), 2.79 lb/ton (annual)	SCRUBBER AND BAGHOUSE	
NSH12	LONE STAR INDUSTRIES, INC	IN	133-5806-00012-3241	9/10/1998	CEMENT KILN, WET PROCESS,	COAL	75 T/H	543 LB/H	4.03 LB/T fired	SULFUR CONTENT OF COAL SHALL NOT EXCEED 3 PERCENT	
TX-0282	CAPITOL CEMENT/DIVISION	TX	PSD-TX-120M3	9/16/1998	DRY WET KILN & ALKALI BYPASS		328,650 TPY Dry Rate 750/hr 3 tpy	2.90 LB/T, 50.512 tpy	55.52 lb/ton (dry), 24.8 lb/ton	DRY SCRUBBER	
TX-0282	CAPITOL CEMENT/DIVISION	TX	PSD-TX-120M3	9/16/1998	DRY KILN EXHAUST/BAGHOUSE (KS-1a)		330,000 T/YR Clinker	840 LB/H; 3,679.2 TPY	10.08 lb/ton	DRY SCRUBBER ACHIEVING AT LEAST 90% REDUCTION.	
TX-0282	*CAPITOL CEMENT/DIVISION*	TX	PSD-TX-120M3	9/16/1998	ALKALI BYPASS/BAGHOUSE STACK (9A)			*360 LB/H; 1,576.8 TPY*		NONE	
TX-0282	CAPITOL CEMENT/DIVISION	TX	PSD-TX-120M3	9/16/1998	WET KILN EXHAUST/BAGHOUSE (KS-1B)		178,650 T/YR Clinker	*1,260 LB/H, 5,296 TPY*	*27.76 lb/ton*	NONE	
MI-0354	HOLNAM, INC	MI	*60-78K*	6/23/1998	CEMENT KILNS, WET PROCESS, (2)	COAL	190 T/H	11.980 T/D	21.7 LB/T Clinker	SO2 FOR IN-PLANT LIMITED TO 2.5% MAX. 2.17%	continued
IL-0057	*RIVERSIDE SOUTH COMPANY*	IL	*97030016*	6/12/1998	KILN, CEMENT, PREHEATER/PRECALCINER		3,000 TPD Cement	0.8 LB/T	0.8 LB/T	INHERENT ABSORPTION OF SO2 IN PRODUCT	
OR-0036	DURKEE FACILITY	OR	01-0029	2/26/1998	KILN		*30.19 PPHV, 150 lb/day*	LOW SULFUR COAL			NEGLIGIBLE
FL-0224	FLORIDA ROCK INDUSTRIES, INC	FL	PSD-FL-228	12/23/1996	KILN/PORTLAND	COAL	14 T/H	0.36 LB/T	0.36 LB/T	FUEL SUMITS AND PROCESS DESIGN	CLINKER
UT-0039	ASHGROVE CEMENT COMPANY	UT	DAQE-958-96	10/24/1996	KILN	COAL	170 T/H	1.1 LB/KMBTU		LOW SULFUR FUEL	
UT-0062	HOLNAM, DIVISION SLIDE PLANT	UT	DAQE-522-96	5/13/1996	KILN	COAL		110 LB/H		LOW SULFUR	
FL-0110	FLORIDIAN/ITOM	FL	*PSD-FL-222*	*11/17/1995*	KILN	COAL	83 T/H	0.27 LB/T	0.27 LB/T	PROCESS REMOVES ACID	CLINKER
NV-0032	GREAT STAR CEMENT CORP./UNITED ROCK PRODUCTS CORP.	NV	AT39	10/23/1995	CEMENT KILN/CLINKER COOLER			208 TPY	0.416 LB/TON CLINKER	TYPE SPEC. LIMIT FUEL TO COAL WITH 1% SULFUR (COAL SULFUR ANALYSIS)	90
WY-0041	MOUNTAIN CEMENT COMPANY/LARAMIE FACILITY	WY	CT-1337	3/6/1995	KILN, COAL	COAL	45.3 T/H COAL	496 LB/H (Dry)		LOW SULFUR COAL AND ABSORPTION OF SO2 BY THE	
MO-0039	CONTINENTAL CEMENT COMPANY, LLC	MO	2002-02-038	9/24/2002	ROTARY KILN	COAL	183 T/H	12 LB/T Clinker, 3 hr rolling, 10 lb/ton 24 hr	12 LB/T Clinker, 3 hr rolling, 10 lb/ton 24 hr	*WET SCRUBBER*	
IN-0086	*SIGNAL MOUNTAIN CEMENT COMPANY,*	IN	47-06-3070	3/29/1998	DRY LT/LT KILN	Pet. Coke	160 T/H	800 PPM, BY 3 hr		GOOD COMBUSTION	
MO-0048	LAFARGE CORPORATION	MO	0897-019	8/20/1997	RAW MILL, PREHEATER/PRECALCINER KILN		1,584,000 T/YR	*477 LB/HR, 3 HR AVG*	*2.63 lb/ton (3-hr)*	INHERENT DRY SCRUBBING	

* Based on 8,760 hours per year

Source: EPA's RACT/BACT/LAER Clearinghouse, 2005

Energy Impacts

Wet scrubbers have high energy requirements because of the cost of operating the fan and pump. The fan must use energy to overcome the pressure drop in the column, ductwork, and other parts of the control system, and the pump must use energy to recirculate the solvent. Dry scrubbing uses less energy because it is a simpler process and has a low pressure drop. There is also lower water consumption when using a dry scrubber.

Environmental Impacts

In a packed-tower scrubber, the water or other scrubbing solution must be treated to remove the SO_2 or be disposed of. Therefore, a packed-tower scrubber creates a separate waste stream. Dry scrubbing does not generate a wet waste product and the dry waste stream that is generated is much easier to remove.

Economic Analysis

The capital cost, operation and maintenance (O&M) cost, and annualized cost of installing a packed-tower scrubber for SO_2 control from the Cement Kiln was estimated based on the EPA's Air Pollution Control Technology Fact Sheet which was developed using EPA's cost estimating spreadsheets. The volumetric flow rate of the gas stream (190,000dscfm or 270,000 acfm) was used in this estimate. The cost effectiveness was also estimated based on a conservative control efficiency of 99-percent (the control efficiency for this type of scrubber for SO_2 control ranges from 95 to 99-percent) for the packed-tower scrubber and baseline SO_2 emissions of 166 TPY (based on 0.17 lb SO_2/ton clinker and 90 TPH clinker). A summary of the costs are described below.

	Cost Factor/Equation	**Cost Range**
Capital Cost	$11 - $55/scfm	$2,100,000 - $10,500,000
O&M Cost	$15 - $49/scfm	$2,800,000 - $9,300,000
Annualized Cost	$17 - $78/scfm	$3,200,000/yr - $14,800,000/yr
Cost Effectiveness	Annualized Cost / (Baseline Emissions – Controlled Emission Rate)	$48,500/ton - $225,000/ton

BART Selection

Based on the ranking of available control techniques for SO_2 control from the Cement Kiln the packed-tower scrubber is the top choice. However, a packed-tower scrubber can be rejected on a cost effectiveness basis. Furthermore, a packed-tower scrubber has a high energy demand and will create a wet-waste product which requires separate treatment and disposal. The next highest control technique, based on control efficiency, is dry scrubbing.

The proposed BACT for the Cement Kiln is inherent limestone scrubbing (equivalent to dry scrubbing) at a limit of 16.5 lb/hr. The current SO_2 emission limit is very low compared to the BACT emission limits listed on the Clearinghouse for similar processes. For these reasons, the proposed BART is justified.

Evaluate Visibility Impacts and Document the Results

CALPUFF modeling was performed as described in the modeling protocol. Results of the modeling are provided in the appended Modeling Results.

Nitrogen Oxides

NO_x is generated during fuel combustion by oxidation of chemically-bound nitrogen in the fuel and by thermal fixation of nitrogen in the combustion air. NO_x emissions increase as the nitrogen content of the fuel increases. In cement manufacturing, NO_x emissions are generated in the burning zone of the kiln and of the precalcining vessel.

Proposed BART

The proposed BART for NO_x from the Cement Kiln is the existing selective non-catalytic reduction (SNCR) system and the Low-NOx burners permitted to limit to avoid PSD review in permit 0530010-026-AC. The permitted emission limit from this system of 1.21 lb/ton of preheater feed (or about 2.02 lb/ton of clinker) is state of the art and low compared to other recent BACT determinations. A quick review of the BART analysis information is provided below for information only.

Identify All Available Retrofit Control Technologies

A summary of available NOx control technologies and their associated control efficiencies is listed in Table. Control technologies for NO_x can be divided into two categories: pre-combustion or process changes, and post-combustion or add-on controls. The available types of NO_x controls are:

Pre-combustion controls:

- Plant design;
- Fuel switching;
- Overfire air (OFA);
- Flue gas recirculation (FGR);
- Low-NO_x burners (LNB); and
- Reburn.

Post-combustion/add-on controls:

- Selective non-catalytic reduction (SNCR); and
- Selective catalytic reduction (SCR).

These controls are described in detail below.

Table. Summary of Available NO_x Control Technologies and the Associated Control Efficiency and Technical Feasibility

Control Technique	Control Efficiency (%)	Proven and Technically Feasible? (Y/N)	Ranking Based on Efficiency	Proposed Technology for the Cement Kiln? (Y/N)
Pre-Combustion				
Plant Design	< 50	Y	7	N
Fuel Switching	Minimal	Y	9	N
Overfire Air (OFA)	20 - 30	Y	8	N
Flue Gas Recirculation (FGR)	50 - 80	N	3	N
Low NO_x Burners (LNB)/Staged Combustion	35 - 55	Y	5	Y
Reburn	50 - 60	N	4	N
Post-Combustion				
Selective Non-Catalytic Reduction (SNCR)	30 - 50	Y	6	Y
SCR	70 - 90	Y	2	N
LNB with SCR	50 - 80	Y	3	N
LNB with OFA and SCR	85 - 95	Y	1	N

Fuel Switching

One option for reducing NO_x emissions is to switch to a low-nitrogen content fuel. In the cement kiln, natural gas combustion with a high flame temperature and low fuel nitrogen generates a larger quantity of NO_x than does oil or coal. Oil and coal have higher fuel nitrogen contents but burn with lower flame temperatures. Since the availability of fuels is driven by economics and availability, fuel switching is considered impractical.

Overfire Air

Overfire air (OFA) combustion is when burners are fired more fuel rich that normal while the remaining combustion air is admitted through overfire air ports or an idle top row of burners. OFA is usually used on large units since larger proportional increases in furnace size and cost may be required to assure complete fuel combustion.

Flue Gas Recirculation

Flue gas recirculation (FGR) is a process where a portion of the flue gas is recycled back to the primary combustion zone. NO_x formation is reduced by two mechanisms. The first is heating in the primary combustion zone lowers the peak flame temperature, which reduces thermal NO_x formation. The second is reducing thermal NO_x formation by lowering the oxygen content in the primary flame zone. This type of control technique is typically applied to boilers, and is not a proven control technique for a cement kiln operation. Therefore, this control technique is not considered further.

Low-NO_x Burners

Certain designs of burners have been found to generate lower NO_x emissions. The most common type of low-NO_x burner (LNB) methodology is staged air burners (staged combustion). Staged air burners are two-stage combustion burners which are fired fuel-rich in the first stage. They are specifically designed to lower flame turbulence, delay fuel/air mixing, and establish the fuel-rich zones for initial combustion. Since there is less available oxygen in the primary combustion zone, fuel NO_x formation is inhibited. Staged air burners can be used for any fuel type.

Reburn

Reburn technology involves passing the burner zone products through a secondary flame or fuel-rich combustion zone. A portion of the fuel is diverted to create a secondary flame downstream of the primary combustion zone. Reburn has only been tested on a cement kiln by a pilot project performed by Acurex Environmental Corporation. Therefore, since it has not been used on any practical applications of a cement kiln of this design, this is not considered to be a proven control technology for this type of cement kiln.

SNCR

Selective non-catalytic reduction (SNCR) is based on the chemical reduction of the NO_x molecule into molecular nitrogen (N_2) and water vapor (H_2O). A nitrogen-based reagent, such as ammonia or urea, is injected into the post-combustion flue gas. It is considered to be a selective process because the reaction of the reduction of NO_x is favored over other chemical reactions during this process for a specific range of temperatures and in the presence of oxygen.

The ammonia reaction is as follows:

$$2NO + 2NH_3 + \frac{1}{2} O_2 \rightarrow 2N_2 + 3 H_2O$$

The urea reaction is as follows:

$$2NO + CO(NH_2)_2 + \frac{1}{2} O_2 \rightarrow 2N_2 + CO_2 + 2H_2O$$

There are advantages to urea-based systems over ammonia. Urea is non-toxic and is less volatile so it can be more easily stored and handled. Urea droplets can penetrate farther into the flue gas which enhances the mixing of the flue gas. However, urea is more expensive than ammonia.

The optimum operating temperature for SNCR is 800°C to 1,090°C (1,472°F to 1,994°F). The SNCR process must take place under an oxidizing environment.

SCR

Selective catalytic reduction (SCR) chemically reduces the NO_x molecule into N_2 and H_2O vapor. A nitrogen-based reagent such as ammonia or urea is injected into the ductwork downstream of the combustion unit. The waste gas mixes with the nitrogen-based reagent and then enters a reactor that contains the catalyst. The hot gas stream and reagent diffuse through the catalyst. The reagent reacts selectively with the NO_x molecules within a specific temperature range and in the presence of the catalyst and oxygen.

Catalyst deactivation can occur due to poisoning by flue gas constituents. As the catalyst activity decreases, NO_x removal decreases and ammonia slip increases. Catalyst poisoning can occur from high levels of PM in the gas stream. In the case of cement manufacturing, the gas stream has a high PM content. For the SCR system to operate properly, the flue gas must be between approximately 575°F to 925°F (300°C to 500°C). The gas stream from a cement kiln is at this temperature upstream of the PM control device (baghouse). Therefore, to install an SCR system to control NO_x emissions from a cement plant of this design, the SCR would have to be installed prior to the baghouse or after the baghouse with a reheat system. Installing the SCR prior to the baghouse would cause catalyst poisoning due to high PM levels and installing the SCR after the

baghouse would increase the capital and operating costs of the SCR system considerably due to the need to reheat the gas stream.

Eliminate Technically Infeasible Options

As the current system was recently reviewed through a BACT determination, installation of additional control is not proposed. Per the BACT determination, no other control options at this time, are practical to further reduce NOx emissions.

Evaluate Control Effectiveness of Remaining Control Technologies

The existing control system controls of SNCR and LNB control NOx emissions to a limit of 1.21 lb/ton of preheater feed (about 2.02 lb/ ton of clinker). Because of the recent BACT determination (December 2006) of these NOx controls, no further analysis is provided.

Evaluate Visibility Impacts and Document the Results

CALPUFF modeling was performed as described in the modeling protocol. Results of the modeling are provided in the appended Modeling Results.

3. Modeling

This CALPUFF modeling is provided to Florida Dept. of Environmental Protection. (FDEP) applicable emission units at the CEMEX Inc., Brooksville Cement plant to the Regional Haze Rule (40 CFR 51.300). This modeling is consistent with App. W and Y of 40 CFR 51. These procedures follow the VISTAS common protocol. The visibility impact of the CEMEX units on Class I areas is modeled to assist in determining applicable Best Achievable Retrofit Technology (BART).

Location of Source vs. Relevant Class I Areas

Table 1 provides the locations of CEMEX, Inc., Brooksville cement plant subject emission unit locations. Figure 1 shows the location of the plant and surrounding Class I areas within 350 km.

Table 10. CEMEX emission units subject to Regional Haze Rule

Stack ID #	CEMEX-Brooksville Cement Plant	Location UTM				Location LCC (converted from UTM based on proj. 40N,97W,33Lat1,45Lat2)		
		UTM East	UTM North	UTM Zone	Datum	LLC east	LCC north	Datum
		km	km			km	km	
002	NO. 1 KILN FEED SYSTEM (BAGHOUSE D-31)	356.240	3168.440	17	NAD27	1426.589	-1148.554	NWS-84
003	CEMENT KILN NO. 1 BAGHOUSE(E-55).REVISED OIL CONCENTRATIONS	356.250	3168.370	17	NAD27	1426.611	-1148.623	NWS-84
004	CEMENT PLANT CLINKER COOLER NO. 1 (BAGHOUSE F-18)	356.250	3168.560	17	NAD27	1426.578	-1148.433	NWS-84
005	FINISH MILLS #1 & #2 WITH TWO DUST COLLECTORS	356.200	3168.600	17	NAD27	1426.522	-1148.402	NWS-84
006	CLINKER STORAGE SILO NOS. 1&2 (BAGHOUSE F-31)	356.260	3168.600	17	NAD27	1426.581	-1148.391	NWS-84
008	NO. 1 KILN BLENDING SILOS (BAGHOUSE NOS. E-36,F-17)	356.230	3168.469	17	NAD27	1426.574	-1148.527	NWS-84
009	CEMENT PLT STG SILOS DUST UNIT H-3	356.190	3168.700	17	NAD27	1426.494	-1148.303	NWS-84
011	RAW MAT'L STORAGE SILOS & FEED SYST. W/BAGHOUSES (C-11,C-11A	356.310	3168.450	17	NAD27	1426.657	-1148.532	NWS-84
024	RAW MATERIAL PRE-MIX BIN W/BAGHOUSE (M-2280	356.310	3168.450	17	NAD27	1426.657	-1148.532	NWS-84
025	ADDITIVE MATERIAL STORAGE BIN W/BAGHOUSE M-1171	356.240	3168.600	17	NAD27	1426.562	-1148.395	NWS-84

Figure 1. Regional map of Cemex , Brooksville cement plant

The Class I areas within a 350 km area of the cement plant are as follows:

1) Chasskowitzka- Distance to site: 10 kilometers
2) Okefenokee : 245 kilometers
3) St. Marks: 230 kilometers

Air Quality Modeling Methodology

Overview of Steps

(1) Obtain CALMET data from FDEP.
(2) Run CALPUFF to model the sample point source impact.
(3) Run POSTUTIL to get the new components Elemental Carbon (EC), Soil, Organic Carbon (SOA) and PMC from the six PM categories. NOTE: as the emissions from EC, SOIL/PMF, SOA/OC and PMC were each from a separate size range, POSTUTIL was not required to resort the CALPUFF concentration output. Thus, CALPUFF PM10 emissions were modeled directly as EC, SOIL, OC, and PMC.
(4) Run CALPOST for each Class I area using visibility Method 6. Make a table and analyze the results.

Modeling Products

- CALMET - Version 5.724
- CALPUFF - Version 5.756
- CALPOST, Version 5.6393

Modeling Domain Configuration

The modeling domain is in LCC units. The ranges of Domain 2 (see Figure 2) are as follows:

```
Projection:
PMAP = LCC
FEAST  = 0.000
FNORTH = 0.000
RLAT0 =  40N
RLON0 =  97W
XLAT1 =  33N
XLAT2 =  45N
DATUM = NWS-84
```

Domain LCC Range ---

X(km) Easting : 700.000000 1800.00000

Y(km) Northing: -1600.00000 -750.000000

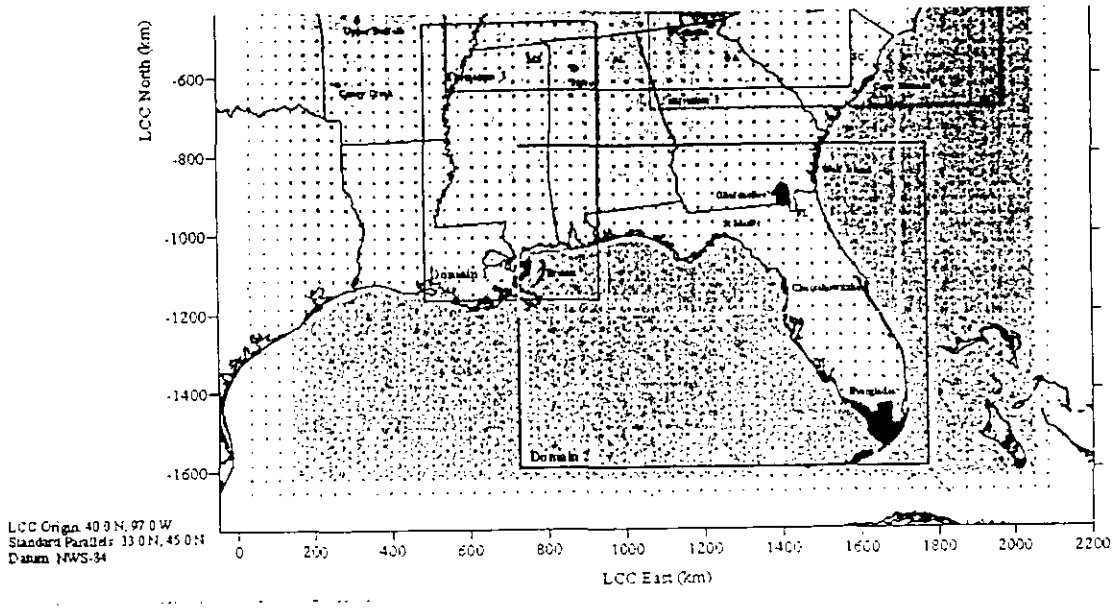


Figure 2. Domain 2 for 4-km CALMET modeling.

CALMET Meteorological Modeling

FDEP provided 4-km grid "CALPUFF-ready" Calmet data for the period of 2001-2003. The data were copied to an external hard drive by FDEP and provided to KA.

CALMET Meteorological Modeling

FDEP provided 4-km grid "CALPUFF-ready" Calmet data for the period of 2001-2003. The data were copied to an external hard drive by FDEP and provided to KA.

CALPUFF Modeling Configuration

The VISTAS common protocol, version 3.2, is the source of the modeling configuration. In accordance with the protocol, default IWAQM values were used except for noted differences below.

Ozone Concentrations

Ozone concentrations were provided in file format for this project by Timothy Plander, FDEP, via email on 7/6/2006.

Ammonia Concentrations

Ammonia concentrations will be set at 0.5 ppb for all CALPUFF modeling. In POSTUTIL CMAQ ambient NH3 data can be used for each Class I area to repartition HNO3 and NO3.

Major Relevant Features of Calpuff

The VISTAS common protocol, version 3.2, is the source of the modeling configuration. The default IWAQM values (EPA-454/R-98-019, App. B) are provided below. IWAQM input default values were used unless noted in the following section.

The CALPUFF configuration follows the IWAQM guidance (EPA, 1998; pg B-1 through B-8) provided above, except as noted below.

-Domain includes source and Class I area within 350 km (Class I areas are noted above).

-Chemical mechanism: MESOPUFF II module, using integrated puff sampling methodology.

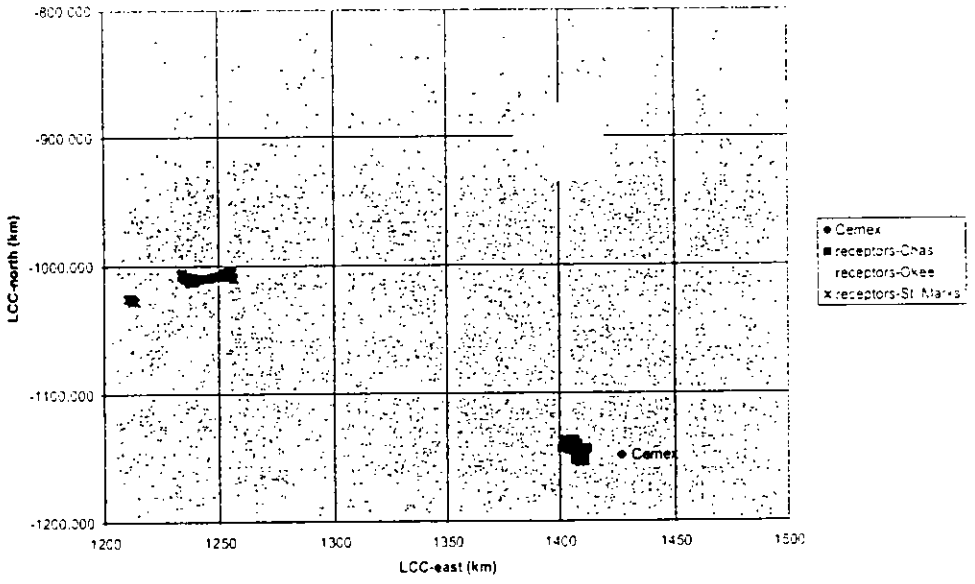
- The IWAQM/FLAG procedures can be used for the Ammonia Limiting Method.

-Use turbulence-based dispersion coefficients and P-G dispersion.

-Class I receptors locations were obtained from NPS http://www2.nature.nps.gov/air/Maps/Receptors/index.cfm. The range of subdomains to use for CALPUFF were assessed from a plot of the source and the receptors. The maximum and minimum locations of the Class I areas were determined and plotted. Based on these location, the subdomain grid extended at least 50 km. An example table and charts are provided below as quality assurance to review grid ranges and source/receptor locations.

		X	Y		X	Y		X	Y	
LCC coordinates	Max	1411.712	-1136.356		1422.463	-877.2871		1256.438	-1004.308	
Class I Areas		156	96		144	96		94	96	
	Min	1400.731	-1154.049		1379.768	-932.1086		1210.455	-1028.3	
		190	127		207	190		190	173	
		Chas			Okee			Sima		
CEMEX	LCC=>	1408.318	-1154.049	0	1418.322	-931.1034	36	1212.44	-1028.3	1
1426.589 | -1148.554	X=40	1409.13	-1153.92	1	1419.904	-930.8431	36	1214.04	-1028.078	1
	Y=97	1409.941	-1153.791	1	1400.612	-932.1086	27	1212.312	-1027.376	1
	lat1=33	1410.753	-1153.661	3	1402.194	-931.8516	27	1213.112	-1027.265	1
	lat2=45	1407.359	-1153.254	0	1403.777	-931.5943	30	1212.183	-1026.452	1
		1408.171	-1153.124	0	1405.36	-931.3367	36	1212.983	-1026.341	1
		1408.983	-1152.995	1	1406.942	-931.0788	36	1210.455	-1025.751	1
		1409.794	-1152.866	1	1408.525	-930.8206	36	1211.255	-1025.64	1
		1410.606	-1152.737	2	1410.108	-930.5622	37	1212.055	-1025.529	1
		1406.401	-1152.458	0	1411.69	-930.3034	36	1212.855	-1025.417	1
		1407.212	-1152.329	0	1413.272	-930.0444	36	1211.127	-1024.716	1
		1408.024	-1152.2	0	1414.855	-929.785	36	1237.268	-1013.511	1

BART-CALPUFF modeling



Unit-Specific Source Data

CALPUFF species modeled: SO2, SO4, NOx, HNO3, NO3 and PM species. Particulate matter is speciated and size fractionated for several species (filterable coarse (PMC) (2.5-10 um), elemental carbon (EC), filterable fine (<2.5 um) inorganic (SOIL) filterable fine organic (elemental carbon (EC)), condensable organics (i.e., secondary organic aerosols (SOA), and

condensable inorganics (SO4)) as shown in Table 4. Please note that neither VOC nor ammonia emissions are required to be modeled as both pollutants were determined by VISTAs to be insignificant haze contributors in the VISTAs region.

The following table provides the emission unit locations. These data are inputs to CALPUFF.

	CEMEX-Brooksville Cement Plant	Location UTM				Location LCC (converted from UTM based on proj. 40N,97W,33Lat1,45Lat2)			Stack Height	Base Elev.	Diam.	Gas Exit Veloc.	Stack Gas Exit Temp.
		UTM East	UTM North	UTM Zone	Datum	LCC east	LCC north	Datum					
		km	km			km	km		m	m	m	m/s	K
002	NO. 1 KILN FEED SYSTEM-BAGHOUSE D-31)	356.240	3168.443	17	NAD27	1426.593	-1148.554	NWS-84	22.87	45.73	0.91	7.19	322.44
003	CEMENT KILN NO. 1 BAGHOUSE(E-55) REVISED OIL CONCENTRATIONS	356.250	3168.370	17	NAD27	1426.611	-1148.623	NWS-84	45.73	45.73	3.96	10.53	333.67
004	CEMENT PLANT CLINKER COOLER NO. 1 (BAGHOUSE F-18)	356.250	3168.560	17	NAD27	1426.578	-1148.433	NWS-84	15.24	45.73	3.05	9.26	444.11
005	FINISH MILLS #1 & #2 WITH TWO DUST COLLECTORS	356.200	3168.600	17	NAD27	1426.522	-1148.402	NWS-84	21.34	45.73	0.79	14.26	366.33
006	CLINKER STORAGE SILO NOS. 1&2 (BAGHOUSE F-31)	356.260	3168.600	17	NAD27	1426.531	-1148.391	NWS-84	45.73	45.73	0.81	24.26	322.44
008	NO. 1 KILN BLENDING SILOS (BAGHOUSE NO.3 E-36 F-17)	356.230	3168.463	17	NAD27	1426.574	-1148.527	NWS-84	66.85	45.73	0.61	24.26	322.44
009	CEMENT PLT STG SILOS DUST UNIT H-3	356.190	3168.720	17	NAD27	1426.494	-1148.303	NWS-84	42.68	45.73	0.67	26.70	338.56
011	RAW MATL STORAGE SILOS & FEED SYST. W BAGHOUSES (C-11 C-11A	356.313	3168.450	17	NAD27	1426.457	-1148.532	NWS-84	24.39	45.73	0.76	15.93	299.00
024	RAW MATERIAL PRE-MIX BIN W BAGHOUSE (M-229)	356.313	3168.450	17	NAD27	1426.557	-1148.532	NWS-84	24.70	45.73	0.52	12.04	314.67
025	ADDITIVE MATERIAL STORAGE BIN W BAGHOUSE (M-137)	356.240	3168.600	17	NAD27	1426.562	-1148.395	NWS-84	9.76	45.73	0.61	24.26	294.11

Emission rates were determined from either stack test data for from permit limits as shown below. Stack test results of PM were assumed equal to PM10 as a conservative measure. In addition, because stack test data of PM by Method 5 do not include condensable fraction, the measured value was increased by a referenced fraction from AP-42.11.6-5 (0.033/0.25-preheater/kiln, 0.017/0.33 for cooler and EUs 4, 6, and 9)

	SO_2	SO_2	NO_x	NO_x	PM_{10}	PM_{10}		STACK TEST DATA											
								2001-2003 avg			2001	2002			2003				
	lbs/hr	g/s	lbs/hr	g/s	lbs/hr	g/s		SO2	NOX	PM	PM	SO2	NOX	PM	SO2	NOX	PM	SO2	NOX
							Reference/Notes on PM10	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
002					0.457	0.1075	use permit value of 1.02 lb/hr x 3.84 (AP42 11.6-5) factor of PM10/PM												
003	3.470	0.439	144.9	23.153	10.197	1.3451	Maximum Method 5 test results from 2001-2003 increased by 0.033/0.25 to account for condensables fraction not accounted for by Method 5. The ratio is from AP42 11.6-5 preheater kiln	3.49	144.00	9.58	9.58	1.29	184	5.9	1.42	173.4	7.02	3.49	171.5
004					9.02	1.1352	Maximum Method 5 test results from 2001-2003 increased by 0.017/0.33 to account for condensables fraction not accounted for by Method 5. The ratio is from AP42 11.6-5 clinker cooler			5.90	8.5			4.62			7.75		
005					30.7	3.8547	use permit value of 36.5 lb/hr x 0.84 (AP42 11.6-5) factor of PM10/PM												
006					0.39	0.0448	Maximum Method 5 test results from 2001-2003 increased by 0.017/0.33 to account for condensables fraction not accounted for by Method 5. The ratio is from AP42 11.6-5 assume similar ratio to that of clinker cooler			0.37	0.37								
008					2.375	0.2411	use permit value of 2.47 lb/hr x 0.84 (AP42 11.6-5) factor of PM10/PM												
009					0.07	0.0092	Maximum Method 5 test results from 2001-2003 increased by 0.017/0.33 to account for condensables fraction not accounted for by Method 5. The ratio is from AP42 11.6-5 assume similar ratio to that of clinker cooler			0.37							0.37		
011					1.904	0.2273	use permit value of 2.15 lb/hr x 0.84 (AP42 11.6-5) factor of PM10/PM												
024					0.501	0.0434	use permit value of 0.6 lb/hr x 0.84 (AP42 11.6-5) factor of PM10/PM												
025					2.153	0.2716	use permit value of 2.57 lb/hr x 0.84 (AP42 11.6-5) factor of PM10/PM												

For example, PM measured by EPA Method 5 on the preheater/kiln is 9.58 lb/hr. The value is increased based on the ratio on condensable/filterable PM provided in AP42 11.6-5 (0.033/0.25). The resulting emission of PM10 is stated as 10.7 lb/hr.

Speciation of PM10 was determined as noted in the following table/notes.

	particle speciation				COARSE		SOIL				Elemental Carbon (EC)	organic condensable		inorganic condensable				
	filterable PM$_{10}$	condensable PM$_{10}$	PM10 emission factor	ref. notes	6-10 µm	2.5-6 µm	1.25-2.5 µm	1.0-1.25 µm	0.625-1.0 µm	0.5-0.625 µm	0.5-0.625 µm	0.625-1.3 µm	0.5-0.625 µm	0.625-1.3 µm	0.5-0.625 µm	1.0-1.25 µm	1.25-1.6 µm	1.6-2.5 µm
	%	%	lb/ton		lb/ton	lb/ton	lb/ton	quartz	quartz	quartz	lb/ton	lb/ton	lb/ton	lb/ton	lb/ton	quartz	quartz	quartz
002	83.7	16.3	0.1579	Clinker Cooler speciation from http://www2.nature.nps.gov/air/permits/flag/flagDoc/app2b.cfm Under cfm	0.0427		0.0447				0.0019	0.0021		0.0155				
003	88.3	11.7	1.3441	Preheater Kiln AP42 11.6-2 (SCC-30500602) filterable/condensable assume id PM=PM10			1.1831					0.1610						
004	83.7	16.3	1.1352	Clinker Cooler speciation from http://www2.nature.nps.gov/air/permits/flag/flagDoc/app2b.cfm Under cfm	0.3430		0.3435				0.0165	0.0241		0.0444				
005	83.7	16.3	3.4561	Clinker Cooler speciation from http://www2.nature.nps.gov/air/permits/flag/flagDoc/app2b.cfm Under cfm	1.4202		1.4273				0.0420	0.0574		0.1441				
006	83.7	16.3	0.7468	Clinker Cooler speciation from http://www2.nature.nps.gov/air/permits/flag/flagDoc/app2b.cfm Under cfm	0.3174		0.3201				0.0078	0.0128		0.0322				
008	83.7	16.3	0.2431	Clinker Cooler speciation from http://www2.nature.nps.gov/air/permits/flag/flagDoc/app2b.cfm Under cfm	0.1035		0.1107				0.0043	0.0041		0.0115				
009	83.7	16.3	0.0002	Clinker Cooler speciation from http://www2.nature.nps.gov/air/permits/flag/flagDoc/app2b.cfm Under cfm	0.0037		0.0033				0.0002	0.0002		0.0013				
011	83.7	16.3	0.2273	Clinker Cooler speciation from http://www2.nature.nps.gov/air/permits/flag/flagDoc/app2b.cfm Under cfm	0.0907		0.0964				0.0037	0.0045		0.0329				
023	83.7	16.3	0.2434	Clinker Cooler speciation from http://www2.nature.nps.gov/air/permits/flag/flagDoc/app2b.cfm Under cfm	0.0251		0.0243				0.0010	0.0012		0.0031				
025	83.7	16.3	0.2714	Clinker Cooler speciation from http://www2.nature.nps.gov/air/permits/flag/flagDoc/app2b.cfm Under cfm	0.1077		0.1152				0.0044	0.0053		0.0230				
					summation for total coarse / fine per. inorganic		summation for inorganic fine / fine per.				summation for elemental carbon / organic fine / fine per.	condensable organic fine/pm10		condensable inorganic fine/pm10				
					2.371	0.000	3.756				0.0375	0.077		0.441				
					2.371													
	CALPUFF CODE NAME				PMC		SOIL				EC	SOA		SOA				
	FRACTION EFFICIENT				0.1		1				10	4		3.75				

§ Rm determined by NPS for each Class I area

As noted above, speciation of all emission units except the EU003-the preheater/kiln were assumed similar in composition to that of the clinker cooler. The Clinker cooler PM10 emission speciation was determined by the National Park Service (http://www2.nature.nps.gov/air/Permits/flag/flagDoc/app2b.cfm) data as shown below. Note that the speciation provided for a kiln from NPS was not appropriate for a preheater/kiln like the kiln at Cemex. It is apparent that the NPS kiln data, derived from AP42 11.6-5, is only applicable to a dry process kiln, and not that of a preheater/kiln.

	Controlled PM10 Emissions																
Clinker	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.	Condensible	OPM/OR	Particle		OPM/OR	Particle		
Cooler	(% of Total)	(% of Total)	(% of Total)	Coef.	(% of Total)	(% of Total)	Coef.	(% of Total)	Coef.	(% of Total)	(% of Total)	Type	Ext. Coef.	(% of Total)	Type	Ext. Coef.	
	100%	83.7%	39.6%	0.6	44.2%	42.8%	1	2%	10	16.3%	14.3%	SO4	3	2.0%	SOA	4	

The calculation of SO4 emissions from all the units, except the preheater/kiln, were determined from the NPS speciation of a clinker cooler shown above. The H2SO4 emissions from the preheater/kiln were determined from AP-4211.6-9 for emissions of SO4 of 0.0072lb/ton of clinker. At the maximum hourly production of 165 tn/hr SO4 emission is 0.149 gram/second. The resulting SO4 emissions are as follows.

	H_2SO_4	Inorganic condensable				
	g/s	g/s				
002	0.015	0.2155				
003	0.149					
004	0.184	0.1944				
005	0.554	0.5541				
006	0.007	0.0079				
008	0.037	0.0375				
009	0.001	0.0013				
011	0.033	0.0329				
024	0.009	0.0091				
025	0.039	0.0390				

In summary, the CALPUFF modeled emission rates are as follows.

	Emission Unit PM size Emissions-CALPUFF Data								
	SO2	SO4	NOx	NO3	HNO3	6-10 µm PMC	1.25-2.5 µm SOIL/PMF	1.25-2.5 µm EC	.625-1.0 µm SOA/OC
	g/s	g/s	g/s	g/s	g/s	g/s	g/s	g/s	g/s
002		0.015				0.043	0.046	0.002	0.002
003	0.439	0.149	23.153			0.000	1.189	0.000	0.157
004		0.184				0.450	0.481	0.013	0.025
005		0.554				1.529	1.636	0.063	0.076
006		0.007				0.019	0.021	0.001	0.001
008		0.037				0.103	0.111	0.004	0.005
009		0.001				0.004	0.004	0.000	0.000
011		0.033				0.090	0.096	0.004	0.004
024		0.009				0.025	0.027	0.001	0.001
025		0.039				0.108	0.115	0.004	0.005

Major Relevant Features of CALPOST

CALPUFF results that are provided in .CON (concentration files) were input to CALPOST modeling. The inputs to CALPOST were determined from various sources.

Background concentrations were determined as follows.

BKSO4 (background SO4 conc. ug/m3)

Site	Period average	Hygro Mm-1	SO4 ext. eff. ug/m3//Mm-1	BKSO4 ug/m3
Chassahowitzka W	Annual	0.9	3	0.3
Okefenokee W	Annual	0.9	3	0.3
St. Marks W	Annual	0.9	3	0.3
Wolf Island W	Annual	0.9	3	0.3

source: http://www2.nature.nps.gov/air/Permits/flag/flagDoc/app2b.cfm

BKSOIL	best 10% days dv	BkSoil ug/m3
Chassahowitzka W	3.79	14.61
Okefenokee W	3.77	14.58
St. Marks W	3.83	14.67
Wolf Island W	3.74	14.54

http://www.epa.gov/ttn/oarpg/t1/memoranda/rh_envcurhr_gd.pdf

all other BK = 0

Relative humidity factors (RHFAC) used for NO3/SO4 calculations were provided by FDEP as shown below.

- CLASSI J F M A M J J A S O N D
- Chass: 3.82, 3.47, 3.39, 3.22, 3.29, 3.87, 3.89, 4.18, 4.12, 3.88, 3.68, 3.88
- Ever: 2.74, 2.57, 2.55, 2.40, 2.36, 2.74, 2.61, 2.89, 2.93, 2.78, 2.60, 2.68
- Stmar: 3.73, 3.42, 3.42, 3.37, 3.51, 4.00, 4.13, 4.38, 4.17, 3.81, 3.71, 3.80
- Okefe: 3.48, 3.19, 3.11, 3.03, 3.55, 3.73, 3.73, 4.05, 4.01, 3.75, 3.52, 3.58
- Breto: 3.74, 3.54, 3.65, 3.62, 3.83, 4.03, 4.30, 4.33, 4.15, 3.71, 3.67, 3.71
- Wolf: 3.40, 3.13, 3.05, 2.99, 3.25, 3.69, 3.71, 4.09, 4.04, 3.74, 3.51, 3.48

4. Modeling Results

Initial results of the visibility modeling are provided below. In addition, electronic copies of all initial modeling files are enclosed on CD. These modeling activities will continue to be refined. Results of the refined modeling will be provided.

Based on the initial modeling, the visibility impacts exceed 0.5 deciview. As such, the modeling will be refined to include the impact of the IMPROVE speciation to address atmospheric salts given the location of the Chassowitzka Class I area to the ocean.

Table. Visiblity Impact Rankings at Class I Areas.

Class I Area	2001 Delta-deciview Ranks 1-8	2002 Delta-deciview Ranks 1-8	2003 Delta-deciview Ranks 1-8
	2.005	1.311	2.001
	1.424	1.276	1.946
	1.274	1.26	1.481
Chassowitzka	1.26	1.242	1.322
	1.159	1.21	1.225
	1.145	1.092	1.178
	1.134	1.079	1.144
Is 98th % ranking >= 0.5? YES	1.12	1.059	**1.126**

Table Details of Visiblity Impact Rankings at Class I Areas

Class I Area		2001		2002		2003		2001-2003	2001	2002	2003	
	Distance source to Class I area boundary	# of days with impact > 0.5 dv in Class I area	# of receptors with impact > 0.5 dv in Class I area	# of days with impact > 0.5 dv in Class I area	# of receptors with impact > 0.5 dv in Class I area	# of days with impact > 0.5 dv in Class I area	# of receptors with impact > 0.5 dv in Class I area	# of days with impact => 1.0 dv	# of receptors with impact => 1.0 dv	# of receptors with impact => 1.0 dv	# of receptors with impact => 1.0 dv	Max 24-hr impact over 3-year period
		# of days	# of receptors	# of days	# of receptors	# of days	# of receptors	# of days			# of receptors	dv
Chassowitzka	10	65	25	85	28	77	14	42	9	10	14	2.005

4. Conclusions

The current allowable controls for the subject emission units of particulate matter (PM), particulate matter (PM_{10}), sulfur dioxide (SO_2), and nitrogen oxides (NOx) and proposed to satisfy BART based on the information provided in this determination. The current controls of the BART-subject units meet or exceed currently acceptable BACT control levels. As such, while CALPUFF modeling results indicate visibility impacts greater than 0.5 deciview, modeling does not account for ALM options or seal salt via the IMPROVE speciation to more accurately describe the impact. As such, additional modeling will be submitted that re-evaluate these modeling modifications.

ATTACHMENT 1

ELECTRONIC COPIES OF CALPUFF/CALPOST FILES