Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

October 25, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Don Kelly
Plant Manager
Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006

Re: DRAFT Permit No. 0530010-001-AC (PSD-FL-233)
Kilns and Coolers No. 1 and No. 2

Dear Mr. Kelly:

Enclosed is one copy of the Draft Air Construction Permit for the Southdown cement plants located at US Highway 98, Northwest of Brooksville, Hernando County. The Technical Evaluation and Preliminary Determination along with the Department's Intent to Issue Air Construction Permit and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" are also included.

The "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" must be published within 30 (thirty) days of receipt of this letter. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the alloted time may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above letterhead address. If you have any other questions, please contact Teresa Heron or Mr. Linero at 904/488-1344.

Sincerely,

A A Linero P.E. for

C. H. Fancy, P.E., Chief,
Bureau of Air Regulation

CHF/th/h

Enclosures

In the Matter of an
Application for Permit by:

Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006 /

DRAFT Permit No.:0570008-013-AC
PSD-FL-234
Brooksville Portland Cement Facility
Hernando County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of DRAFT Permit attached) for the proposed project, detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination, for the reasons stated below.

The applicant, Southdown, Inc., applied on February 22, 1996, to the Department for modification of the existing air construction permits for its Brooksville facility located at Highway 98 Northwest of Brooksville, Hernando County. The request is to revise permitted emission limits for two existing kilns and coolers.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a new air construction permit is required to revise the emission limits as proposed.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT". The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 904/488-1344; Fax 904/ 922-6979) within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit pursuant to Rule 62-103.150 (6), F.A.C.

The Department will issue the FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT." Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., or a party requests mediation as an alternative remedy under Section 120.573 F.S. before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9730, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in this notice of intent.

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

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by iling with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S.for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S.remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.

C.H. Fancy, P.E., Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE AIR CONSTRUCTION PERMIT (including the PUBLIC NOTICE, Technical Evaluation and Preliminary Determination, Draft BACT Determination, and the DRAFT permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 10-25-96 to the person(s) listed:

Mr. Don Kelly, Southdown, Inc. *
Brian Beals, EPA
John Bunyak, NPS
John Koogler, P.E.
Amargit Gill, Southdown, Inc.
Bill Thomas, SWD
Tom Ellison, SWD
Lizanne Garcia, HCPD

Clerk Stamp

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

Kuni Jolen (Clerk) 10-25-96 (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit No.: 0530010-001-AC, (PSD-FL-233)
Southdown Brooksville Cement Manufacturing Facility
Hernando County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification to Southdown, Inc., for a revision of the emission limits applicable to its portland cement facility located on Highway 98, Northwest of Brooksville, Hernando County. A Best Available Control Technology (BACT) determination was required for particulate matter (PM/PM_{10}), and carbon monoxide (CO) pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are: Southdown, Inc. Post Office Box 6, Brooksville, Florida 34605-0006.

The new permit will replace four current construction permits for Cement Plants No. 1 and No. 2 which were originally permitted in 1973 and 1980, respectively. Each plant includes a coal/ liquid fuel/ gas-fired, dry process cement kiln with a preheater and clinker cooler. Air pollution control is achieved by fabric filters (baghouses) for PM/PM_{10} from the kilns and coolers; absorption of sulfur compunds and metals into the product; and combustion controls for CO, volatile organic compounds (VOC), and nitrogen oxides (NO_x).

The permit will account for increases in the permitted emissions of PM/PM_{10} from Coolers No. 1 and No. 2 and Kiln No. 2; decrease of permitted emissions of PM/PM_{10} from Kiln No. 1; increases in permitted emissions of CO and VOC from both kilns; and will set a permit limit for NO_x from Kiln No. 1. The final set of limits are among the lowest in Florida or any other state.

Total emissions of pollutants exhibiting PSD-significant increases shall not exceed the following limits:

Pollutant	Maximum Emissions Tons Per Year (TPY)
CO	1,441
PM/PM_{10}	331
VOC	110

An air quality impact analysis was conducted. Emissions from the facility will consume PSD increment but will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. The maximum predicted PSD Class II PM_{10} increments consumed by all sources in the area, including this project, will be as follows:

PSD Class II Increment Consumed ($\mu g/m^3$)		Allowable Increment ($\mu g/m^3$)	Percent Increment Consumed
PM_{10}			
24-hour	24.0	30	80
Annual	13.8	17	81

The project has an insignificant impact on the Chassahowitzka PSD Class I area for the PM_{10} annual averaging time. The maximum predicted PSD Class I PM_{10} increment consumed by the project for the 24 hour averaging time is 1.02 $\mu g/m^3$ or 18% of the available 24 hour increment of 8 $\mu g/m^3$.

The Department will issue the FINAL Permit, in accordance with the conditions of the ~~enclosed~~ DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue FINAL Permit with the ~~attached~~ conditions of the ~~enclosed~~ DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. or a party requests mediation as an alternative remedy under Section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9370, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

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As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 904/488-1344
Fax: 904/922-6979

Department of Environmental Protection
Southwest District Office
Tampa, Florida 33619
Telephone: 813/744-6100
Fax: 813/744-6458

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information.

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

P.E. Certification Statement

Permittee:
Southdown, Inc.,
Portland Cement Manufacturing Facility
Brooksville, Florida

Permit No.: 0530010-001 and PSD-Fl-233
Facility ID No.: 0530010

Project type: Permit Modification
Kilns and Coolers No. 1 and No. 2

I HEREBY CERTIFY that the engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including but not limited to the electrical, mechanical, structural, hydrological, and geological features).

A.A. Linero, P.E. Date
Registration Number: 26032

10/25/96

Department of Environmental Protection
Bureau of Air Regulation
New Source Review Section
111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Phone (04) 488-1344
Fax (904) 922-6979

aaf 10/25

DEPARTMENT OF ENVIRONMENTAL PROTECTION
NEW SOURCE REVIEW SECTION
BUREAU OF AIR REGULATION
Telephone (904) 488-1344
Fax (904) 922-6979
Mail Station # 5505

TECHNICAL EVALUATION

AND

PRELIMINARY DETERMINATION

Southdown, Inc.,
Brooksville, Hernando County, Florida

Air Construction Permit Number 0530010-001-AC (PSD-FL-233)
(Supersedes AC 27-258569, 258570, 258571, and 258572)
Kilns 1 and 2, Coolers 1 and 2

October 25, 1996

1. APPLICATION INFORMATION

1.1 Applicant Name and Address

Southdown, Inc.
U.S. Highway 98
Brooksville, Florida 34605

Authorized Representative:
Mr. Don Kelly, Plant Manager

1.2 Reviewing and Process Schedule

02-22-96: Date of Receipt of Application
03-08-96: Department's Preliminary Incompleteness Letter
03-21-96: Department's Incompleteness Letter
04-01-96: Southdown's Initial Response to Department's letter of March 8, 1996
06-17-96: Southdown's Response to Department's letters of March 8, 1996
06-17-96: Copy of Southdown's Title V Application as partial response to Department's letter of March 21, 1996
07-10-96: Department's Incompleteness Letter
07-24-96: Southdown's letter to EPA
08-23-96: Southdown's response to Department's letter of July 10, 1996
09-23-96: Department's Incompleteness Letter
10-02-96: Meeting with Southdown's representatives (submittal of netting calculations)
10-14-96: Southdown's response to Department's Incompleteness letter of September 23, 1996
10-17-96: Southdown's letter requesting to recant letter of October 14, 1996

2. FACILITY INFORMATION

2.1 Facility Location

Southdown, Inc.
Portland Cement Manufacturing Facility
UTM: Zone 17; 356 and 3169
Directions: Highway 98, Northwest of Brooksville in, Hernando County.

2.2 Standard Industrial Classification Code

Major Group Number	32	*Clay, Glass and Concrete Products*
Group Number	324	*Cement, Hydraulic*
Industry Number	*3241*	*Cement, Hydraulic*

2.3 Facility Category

This facility includes two existing cement plants consisting of two cement kilns and two clinker

coolers along with ancillary equipment. Air pollutant emissions are over 100 tons per year (TPY) of particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC). This is a Major Facility per Rule 62-210.200(171), F.A.C. and a Major (Title V) Source of Air Pollution per Rule 62-210.200(173). This industry is listed in Table 62-212.400-1, F.A.C., Major Facility Categories.

3. PROJECT DESCRIPTION

3.1 This project involves the following emissions units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
001	Unit No. 1 - Kiln No. 1
002	Unit No. 2 - Kiln No. 2
003	Unit No. 3 - Cooler No. 1
004	Unit No. 4 - Cooler No. 2

Southdown requested the following:

1. To change the allowable emission rates for particulate matter (PM/PM_{10}) from Kilns Nos. 1 and 2 and Clinker Coolers Nos. 1 and 2. The permitted PM/PM_{10} limits would be increased for Kiln No. 2 from 13.5 pounds per hour (lb/hr) to 26.0 lb/hr, while PM/PM_{10} emissions for Kiln 1 are proposed to be decreased from 39.0 lb/hr to 26.0 lb/hr. The proposed limit for each cooler is 13.0 lb/hr. For the kilns, these limits are equivalent to 0.2 pounds of particulate matter per ton of feed to the kiln (lb/ton feed). For the coolers they are equivalent to 0.1 lb/ton feed.

2. To increase the existing CO emission limits for Kilns 1 from 57.7 lb/hr (while firing tires) to 169.9 lb/hr (under all conditions) and for Kiln 2 from 64.0 to 170 lb/hr.

3. To increase the existing VOC emission limit from 7.4 lb/hr to 13.0 lb/hr for Kiln 2.

No physical change in, change in the method of operation of, or change in annual operating hours of any of the emissions units is proposed. The proposed permit revisions will, however, result in significant net emission increases for PM/PM_{10} (Kilns 1 and 2 and Coolers 1 and 2) and for CO (Kilns 1 and 2) when comparing past actual with future potential emissions.

Background Information

Kiln and Cooler 1 were originally permitted 1973, while Kiln and Cooler 2 were originally permitted in 1980. Kilns 1 and 2 are currently permitted under permits AC 27-258571 and AC27-258572, respectively. Coolers 1 and 2 are permitted under AC 27-258569 and AC27-258570, respectively.

Both kilns are presently permitted for a maximum 1-hour kiln preheater feed rate of 165 tons per hour (TPH), a corresponding kiln feed rate of 148 TPH, a 30-day average kiln preheater feed rate of 145 TPH and a corresponding kiln feed rate of 130 TPH. The maximum heat input rate to each kiln is 300 MMBtu per hour. Each kiln utilizes a baghouse to control the emissions of particulate matter. There are no add-on controls for any of the other pollutants emitted from the cement kilns. Raw material properties, chemical reactions in the kiln, absorption into the clinker, and combustion controls minimize emissions of NO_x, SO_2, CO, and VOC.

Both coolers are permitted for a maximum 1-hour throughput rate of 90 TPH and, a 30-day average throughput rate of 84 TPH. Each clinker cooler utilizes a baghouse to control the emissions of particulate matter.

The applicant has requested removal of clinker production limits and that emission limits be based on feed to the kiln preheater instead of feed to the kiln.

4. PROCESS DESCRIPTION

4.1 General Information

Portland cement is a fine powder, usually gray in color, that consists of a mixture of dicalcium silicate, tricalcium silicate, tricalcium aluminate, and tricalcium aluminoferrite, and miscellaneous minerals to which one or more forms of calcium sulfate have been added. About 95% of the cement production in the U.S. is portland cement. Masonry cement, also produced at the portland cement plant, represents the balance of the domestic cement production.

There are several variations in cement manufacturing including the wet, dry, dry preheater and dry precalciner processes. The precalciner process also includes a preheater. These processes are essentially identical relative to the manufacture of cement from raw materials. However, the type of process does affect the equipment design, method of operation, and fuel consumption. Because of its lower fuel requirements, most new portland cement plants use the dry precalciner process.

The choice of fuel is based on economics. The most commonly used kiln fuels are coal, natural gas, and oil. Supplementary fuels such as petroleum coke, tires, used oil and various kinds of wastes are burned at many plants. Fuel combustion differs between the wet, dry, dry preheater and dry precalciner processes. In the first three, all fuel combustion typically occurs in the kiln. In the latter, some fuel combustion occurs in a separate calcining vessel located between the preheater and kiln. In

any of the processes, it is possible to introduce additional fuels such as tires directly into the kiln. Southdown uses the dry preheater process, a version of which is depicted in simplified form in figure 1 (from a portland cement association publication).

The production of portland cement is a four-step process: (1) raw materials acquisition and handling (2) kiln feed preparation for pyroprocessing, (3) pyroprocessing, and (4) finished cement grinding. The chemical reactions and physical processes that constitute the transformation are quite complex. The heart of the portland cement manufacturing process is the pyroprocessing system which includes the rotary kiln and suspension preheater/precalciner (when present). Several complex chemical reactions necessary to produce portland cement minerals take place in the pyroprocessing system.

Pyroprocessing (preheater process) may be conveniently divided into five stages, depending on location and temperature of the materials in the system.

1. Uncombined water evaporates from raw materials as material temperature increases to 100°C (212°F) in the upper preheater or raw materials roller mill.

2. As the material temperature increases from 100°C to approximately 430°C (800°F) in the preheater, combined water is liberated from argillaceous compounds.

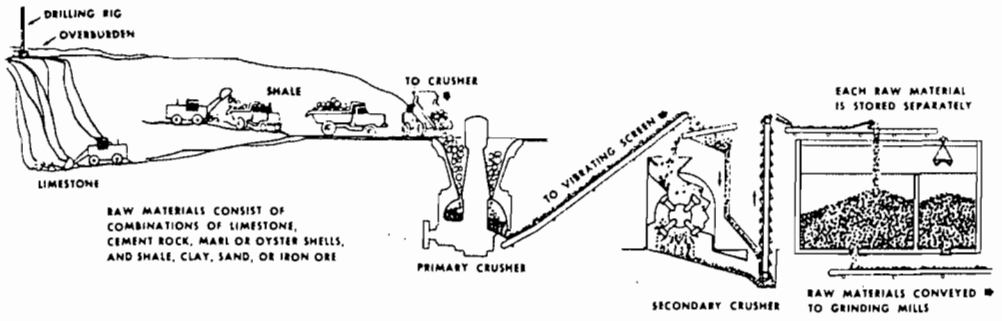
3. Between 430°C and 900°C (1650°F), partial calcination occurs in the lower preheater and is completed within the kiln. Carbon dioxide is liberated from the carbonates and calcium oxide (lime) is formed.

4. Following calcination, sintering of the oxides occurs in the burning zone of the rotary kiln at temperatures up to 1510°C (2750°F). Lime, silica, and iron and aluminum compounds react to form calcium silicates, aluminates, ferrites and aluminoferrites. Alkali sulfates and chlorides evaporate.

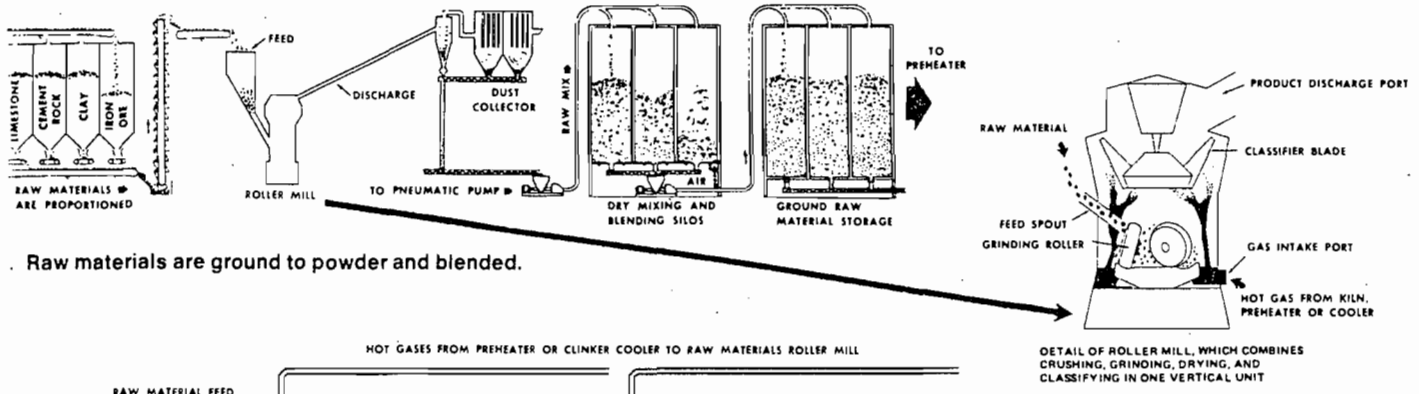
5. Following sintering, clinker nodules are produced as the temperature of the material decreases from 1510°C to 1370°C (2500°F).

The raw materials enter the pyroprocessing system in the uppermost preheater cyclones. They exit the preheater and enter the kiln at the elevated end. The rotation of the kiln causes the solid materials to be slowly transported downward from the front end. Fuel is supplied at the lower or discharge end of the kiln. The hot, gaseous combustion products move countercurrent to the materials flow, thereby transferring heat to solids in the kiln and preheater.

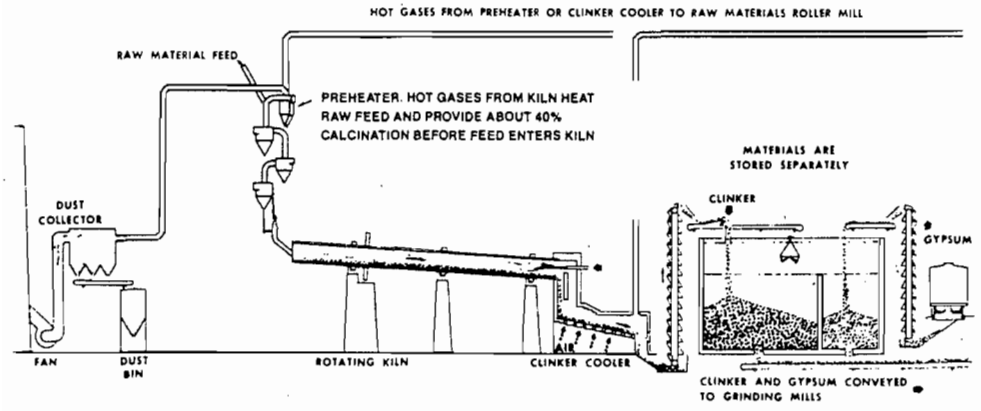
The product of the rotary kiln is known as clinker which enters a vessel where it is cooled by air. Hot air from the clinker cooler is recovered and returned to the pyroprocessing system as combustion air. The cooled clinker is mixed with a form of calcium sulfate, usually gypsum, and ground in ball or tube mills in the finish mill department to produce portland cement.



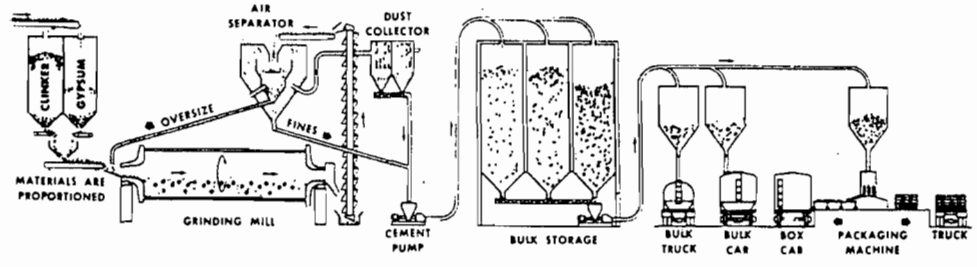
. Stone is first reduced to 125 mm size, then to 20 mm, and stored.



. Raw materials are ground to powder and blended.



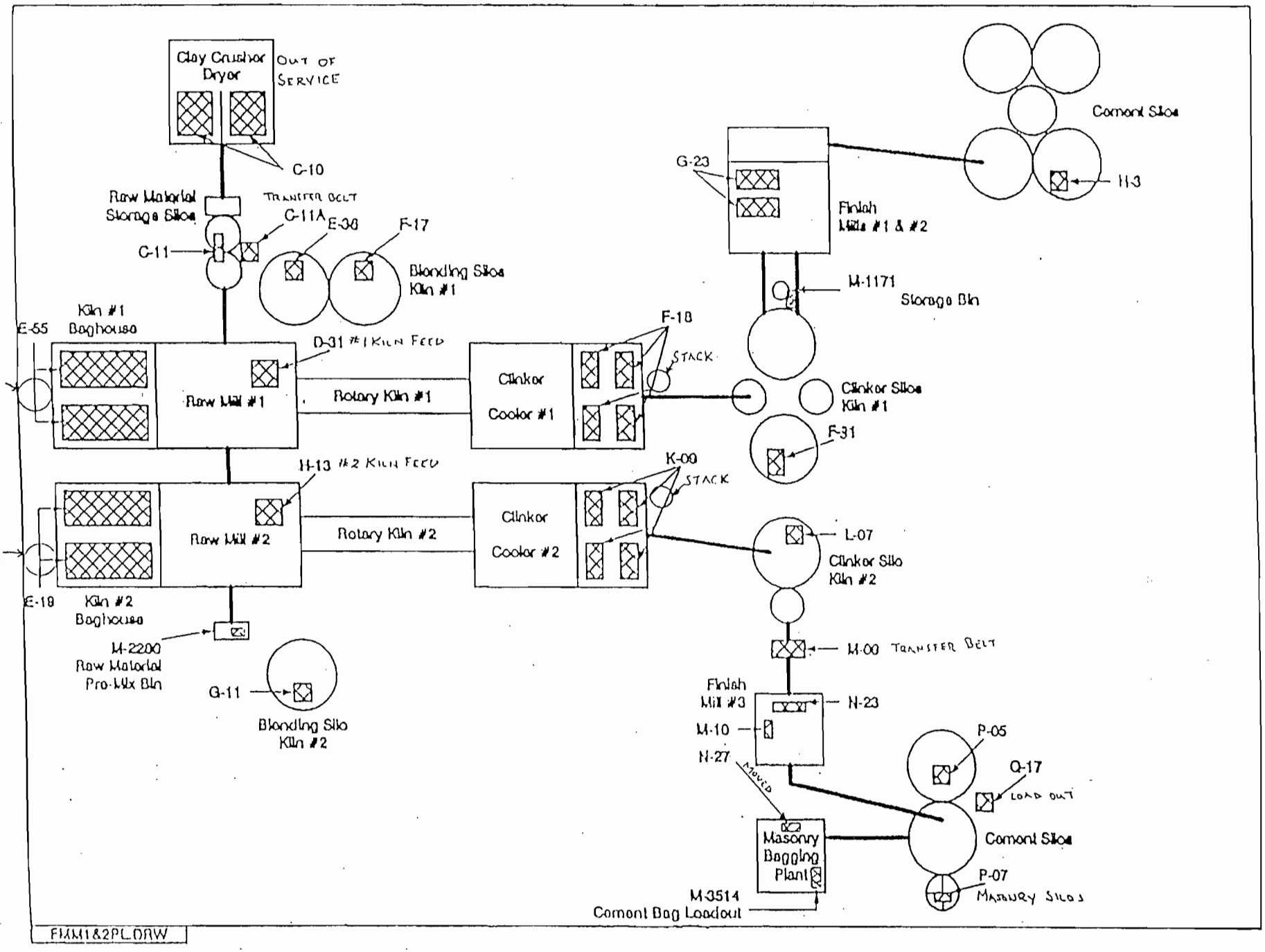
Burning changes raw mix chemically into cement clinker. Note four-stage preheater, flash furnaces, and shorter kiln.



Clinker with gypsum is ground into Portland cement and shipped.

Figure 1 New technology in dry-process cement manufacturing

FIGURE 2. PROCESS FLOW DIAGRAM.



Portland cement is shipped from the packhouse or shipping department in bulk or in paper bags by truck or rail.

A process flow diagram for this facility is presented in Figure 2.

5. RULE APPLICABILITY

The proposed project is subject to preconstruction review under the applicable provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). This facility is located in Hernando County, an area designated as attainment for all criteria pollutants in accordance with Rule 62-204.360, F.A.C.

The proposed project, increasing PM/PM_{10} emissions from Kilns 1 and 2 and Cooler 1 and 2 and CO emissions from Kilns 1 and 2, is subject to review under Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD), because the emission increases for both pollutants exceed the significant emission rates given in Table 62-212.400-2, F.A.C. This review consists of a determination of Best Available Control Technology (BACT) and, unless otherwise exempted, an analysis of the air quality impact of the proposed project's impacts on soils, vegetation and visibility along with air quality impacts resulting from associated commercial, residential and industrial growth.

A review of past permitting actions reveals that there have been production increases approved by the Department in the past for Kiln 1. PSD/BACT review was not conducted while establishing the first set of "federally enforceable" conditions for Kiln 1 in 1991 (from 120 to 130 TPH) or establishing an allowable process rate based on feed to the preheater instead of feed to the kiln (from 130 TPH to 145 TPH). Both of the increases are presumed by the Department to have resulted in actual increases of emissions of pollutants (NO_x and CO) not fully regulated in the present permit. Little reliable data presently exist to prove whether or not actual emission increases occurred. Instead of conducting a protracted review, the Department and Southdown have agreed to set limits for these uncontrolled emissions at levels which insure that present limits are no greater than past actual emissions or which reflect recent BACT determinations at similar facilities. A CO limit set in 1994 applicable only when burning tires will be removed as will the conditions which allow tire burning in Kiln 1.

The emission units affected by this modification shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations) and, specifically, the following chapters and rules:

- Chapter 62-4 Permits
- Rule 62-204.220 Ambient Air Quality Protection
- Rule 62-204.240 Ambient Air Quality Standards
- Rule 62-204.260 Prevention of Significant Deterioration Increments
- Rule 62-204.360 Designation of Prevention of Significant Deterioration Areas
- Rule 62-204.800 Federal Regulations Adopted by Reference

- Rule 62-210.300 Permits Required
- Rule 62-210.350 Public Notice and Comments
- Rule 62-210.370 Reports
- Rule 62-210.550 Stack Height Policy
- Rule 62-210.650 Circumvention
- Rule 62-210.700 Excess Emissions
- Rule 62-210.900 Forms and Instructions
- Rule 62-212.300 General Preconstruction Review Requirements
- Rule 62-212.400 Prevention of Significant Deterioration
- Rule 62-296.320 General Pollutant Emission Limiting Standards
- Rule 62-297.310 General Test Requirements
- Rule 62-297.400 EPA Methods Adopted by Reference
- Rule 62-297.401 EPA Test Procedures
- Rule 62-297.520 EPA Performance Specifications

Cement Plants 1 and 2 are subject to all applicable requirements of 40 CFR 60, NSPS for Portland Cement Plants, Subpart F.

These emission units shall comply with all applicable requirements of 40 CFR 60, General Provisions, Subpart A.

6. SOURCE IMPACT ANALYSIS

6.1 Emission Limitations

This facility emits the following PSD regulated pollutants: particulate matter, sulfur dioxide, nitrogen oxides, volatile organic compounds, carbon monoxide, sulfuric acid mist, fluorides, beryllium, mercury and lead. Cement Plant No. 2 has already gone through various PSD reviews [PSD-FL-063, PSD-FL-124, PSD-FL-124(A) and PSD-FL-188].

The new permit (0530010-001 AC - Section III. B) will address the increases in PM/PM_{10} from both Kiln and Cooler 1, establish a CO limit for Kiln 1 under all operating conditions, and establish for the first time NO_x and VOC emission limitations and include all other applicable conditions for Kiln and Cooler 1 from existing permits. The Department's proposed permitted emission and compliance requirements for Kiln and Cooler No. 1 are summarized in Tables 1-1, Air Pollutant Emission Standards and Terms, and Table 2-1, Compliance Requirements.

Permit 0530010-001 AC, Section III. C, will address the increases of PM/PM_{10}, from Kiln and Cooler 2, the increases in emissions of CO and VOC from Kiln 2, and include all other conditions for Kiln and Cooler 2 from existing permits. The Department's proposed permitted emissions and compliance requirements for Kiln and Cooler 2 are summarized in Tables 1-2, Air Pollutant Emission Standards and Terms, and Table 2-2, Compliance Requirements.

6.2 *Emission Summary*

CEMENT KILN No. 1 and COOLER No. 1 [1]

Pollutants	Current Allowable		Current Actual		New Allowable		Net Increase ton/yr	PSD Significant Level ton/yr
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
(kiln) PM/PM10	39	171	17.8 [4]	70.4 [4]	26	114	43.6	25/15
(cooler) PM/PM10	7.1	28.1	6.17 [4]	24.3 [4]	13	56.9	32.6	25/15
SO2	15	65.7	NA	NA	15	65.7	NA	40
NO_x	NA [6]	NA [6]	NA [6]	NA [6]	275	1205	NA	40
CO	57.7 [3]	234 [3]	31.6 [5]	138 [5]	170	744	606	100
VOC	NA	NA	NA	NA	13	56.9	< 40	40
Opacity (cooler)	10%				10%			
Opacity (kiln)	20%				20%			

CEMENT KILN No. 2 AND COOLER No. 2 [2]

Pollutants	Current Allowable		Current Actual [4]		New Allowable		Net Increase ton/yr	PSD Significant Level ton/yr
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
(kiln) PM/PM10	13.5	55.4	6.77	25.9	26	106.6	80.7	25/15
(cooler) PM/PM10	7.1	20.5	4.44	17.1	13	53.3	36.2	25/15
SO2	15	65.70	NA	NA	15	61.70	NA	40
NO_x	250	1025	NA	NA	250	1025	NA	40
CO	64	262	53	203	170	697	494	100
VOC	7.4	30.3	4.47	17.1	13	53.3	36.2	40
Opacity (cooler)	10%				10%			
Opacity (kiln)	10%				10%			

Footnotes:

[1] These units were originally permitted in 1973. Permit No. AC27- 2251.
[2] These units were originally permitted by EPA in 1980 (PSD-Fl-063).
[3] CO emission limits of 57.7 lbs/hr and 234.4 tons/yr were established while burning tires (WTDF) and coal.
[4] Kiln and Cooler No. 1 operated 8001 hours in 1994 and 7875 hours in 1995.
Kiln and Cooler No. 2 operated 7478 hours in 1994 and 7780 hours in 1995.
[5] Based on actual stack test conducted in 1993 while burning coal only. Continuous operation was assumed (8760 hours per year).
[6] There are no limits for NO_x from this kiln or reliable historical emissions data.

Southdown requested the Department to consider current allowable emissions for the baseline calculations instead of actual emissions because in some cases the actual emissions are greater and cannot be used to perform the calculations. However, the Department used actual emissions from the last two years (1994 and 1995) of operation. Actual emissions are based on the Department's records kept at the Southwest District Office in Tampa.

Enforcement Note: *The District has been negotiating a consent agreement with Southdown as a result of a number of excess opacity and stack test emissions violations.*

6.3 Control Technology Review

The Department and the U.S. EPA have made several previous BACT determinations (1980, 1988, 1993) for this cement manufacturing facility, specifically Cement Plant No. 2. Cement Plant 2 was built in accordance with a PSD/BACT review conducted in 1980. BACT reviews conducted since that time have been related to corrections of very stringent initial limits as well as to allow burning of different fuels. Because of these operational changes, BACT limits were developed and revised for Cement Plant 2. The actual controls have been use of fabric filters (baghouses) for particulate control and process optimization for control of CO, SO_2 NO_x, and VOC.

Southdown has curtailed a number of the operational changes which resulted in the PSD/BACT reviews conducted since the construction of Cement Plant 2. They plan to use the same technology that they always have used, but want to insure that the emissions limits are consistent with that technology and with the requirements of the Major Source (Title V) Program to insure that the facility continuously operate in compliance with applicable conditions.

The current revision for Cement Plant No. 2 (Kiln and Cooler No. 2) will consider a revision of the BACT emission limits for PM/PM_{10} and CO. In addition a new limit will be set for VOC emissions. The rationale for this change is explained in the BACT determination, a copy of which is attached to this document.

Cement Plant No. 1 was built prior to existence of the PSD program. Emission limits for PM/PM_{10}, NO_x, CO and VOC will be developed for Kiln 1 and PM/PM_{10} for Cooler 1. The PM/PM_{10} and CO

emissions limits will be based on PSD/BACT requirements for PM/PM_{10} and CO emissions.

6.3.1 Nitrogen Oxides (NO_x)

Nitrogen oxides will be limited to 275 lb/hr from Kiln 1 and equal to an emission factor of 1.9 pounds of NO_x per ton of feed to the preheater (lb NO_x/ton feed). The limit from Kiln 2 will remain at 250 lb/hr which is equal to a rate of 1.72 lb NO_x/ton feed. These limits will attained through process and combustion control.

6.3.2 Sulfur dioxide (SO_2)

Sulfur dioxide emissions from each kiln will remain limited to 15 lb/hr (0.10 lb SO_2/ton feed). These represent the lowest known rates from any kiln in the country. SO_2 emissions are minimized by maintaining proper ratios of sulfur and alkali in the pyroprocessing environment and intimate contact between raw materials and exhaust gases. Ultimately the sulfur oxides are incorporated into the clinker lattice structure, thus minimizing the amount emitted to the atmosphere. A small measure of SO_2 removal is theoretically possible in the baghouse although insufficient moisture is present to allow this mechanism to be significant.

6.3.3 Particulate Matter (PM/PM_{10})

Particulate emissions will be limited to 26 lb/hr from each kiln and 13 lb/hr from each cooler. These equate to 0.18 lb/ton feed and 0.09 lb/ton feed from the kiln and cooler respectively. These values are among the lowest at any cement plant in the country. The exhaust gases from both kilns and coolers are controlled by fabric filters (baghouses). When properly maintained, baghouses routinely achieve a particulate control efficiency greater than 99.9 percent.

6.3.4 Carbon Monoxide and Volatile Organic Compounds (CO and VOC)

Emissions from each kiln of carbon monoxide and volatile organic compounds will be limited to 170 lb CO/hr and 13 lb VOC/hr. These values correspond to emission factors of 1.17 lb CO/ton feed and 0.09 lb VOC/ton feed. These limits will be accomplished by combustion control.

6.4 Air Quality Analysis

6.4.1 Introduction

The proposed project will increase emissions of two pollutants at levels in excess of PSD significant amounts: PM/PM_{10}, and CO. The air quality impact analyses required by the PSD regulations for these pollutants include:

* An analysis of existing air quality for PM_{10}, and CO;

* A significant impact analysis for PM_{10} and CO;

* A PSD increment analysis for PM_{10} ;

* An Ambient Air Quality Standards (AAQS) analysis for PM_{10} and CO; and

* An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The significant impact, PSD increment, and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the required analyses follows.

6.4.2 Analysis of Existing Air Quality and Determination of Background Concentrations

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. This monitoring requirement may be satisfied by using previously existing representative monitoring data, if available. An exemption to the monitoring requirement may be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. In addition, if an acceptable monitoring method for the specific pollutant has not been established by EPA, monitoring may not be required.

If preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from previously existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling.

The table below shows that PM_{10} impacts from the project are predicted to be greater than the de minimus level; therefore, preconstruction ambient air quality monitoring is required for PM_{10}. Previously existing representative monitoring data from a PM_{10} monitor in the vicinity of the facility were used to fulfill the PM_{10} monitoring requirement and to establish a PM_{10} background concentration for use in the AAQS analysis. Background concentrations established for PM_{10} are 105 and 35 ug/m3 for the 24-hour and annual averaging times, respectively. CO impacts from the project are predicted to be less than the de minimus level; therefore, no preconstruction ambient air quality monitoring is required for CO.

Maximum Project Air Quality Impacts for Comparison to the De Minimus Ambient Levels.

Pollutant	Avg. Time	Max Predicted Impact (ug/m^3)	Impact Greater Than De Minimus?	De Minimus Level(ug/m^3)
PM_{10}	24-hour	11.2	YES	10
CO	8-hour	146	NO	575

6.4.3 Models and Meteorological Data Used in Significant Impact, PSD Increment and AAQS Analyses

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project and other existing major facilities. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options in each modeling scenario. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfy the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) stations at Tampa International Airport, Florida (surface data) and Ruskin, Florida (upper air data). The 5-year period of meteorological data was from 1987 through 1991. These NWS stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

Since five years of data were used in ISCST3, the highest-second-high (HSH) short-term predicted concentrations were compared with the appropriate AAQS or PSD increments. For the annual

averages, the highest predicted yearly average was compared with the standards. For determining the project's significant impact area in the vicinity of the facility and if there are significant impacts from the project on any PSD Class I area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

6.4.4 Significant Impact Analysis

Initially, the applicant conducted modeling using only the proposed project's emissions. Receptors were placed within 20 km of the facility, which is located in a PSD Class II area, and the Chassahowitzka National Wilderness Area (CNWA) which is a PSD Class 1 area located approximately 14 km to the west of the project at its closest point. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compared maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project were predicted in the vicinity of the facility or in the CNWA. The tables below show the results of this modeling. The radius of significant impact, if any, for each pollutant and applicable pollutant averaging time is also shown in the tables below.

Maximum Project Air Quality Impacts for Comparison to the PSD Class II Significant Impact Levels in the Vicinity of the Facility.

Pollutant	Avg. Time	Max Predicted Impact (ug/m^3)	Significant Impact Level (ug/m^3)	Significant Impact?	Radius of Significant Impact (km)
PM_{10}	Annual	1.3	1	YES	2.5
	24-hour	11.2	5	YES	2.5
CO	8-hour	146	500	NO	0.0
	1-hour	411	2000	NO	0.0

Maximum Project Air Quality Impacts for Comparison to the PSD Class I Significant Impact Levels (CNWA)

Pollutant	Averaging Time	Max. Predicted Impact at Class I Area (ug/m^3)	Significant Impact?	National Park Service (NPS) Significant Impact Level (ug/m^3)
PM_{10}	Annual	0.069	NO	0.08
	24-hour	1.02	YES	0.27

As shown in the tables the maximum air quality impacts due to PM_{10} emissions from the proposed project are greater than the significant impact levels in the vicinity of the facility and in the Class I area for the 24-hour averaging time. Therefore, the applicant was required to do further PM_{10}

modeling in the vicinity of the facility, within the applicable significant impact area, to determine the impacts of the project along with all other sources in the vicinity of the facility. The significant impact area is based upon the predicted radius of significant impact. Further modeling for Class I impacts was also required for the PM_{10} 24-hour averaging time. Further modeling for CO impacts was not required because maximum predicted CO impacts were less than the applicable significant impact levesls.

6.4.5 Receptor Networks For PSD Increment And AAQS Analyses

For the AAQS and PSD Class II analyses, receptor grids normally are based on the size of the significant impact area for each pollutant. For predicting maximum PM_{10} concentrations in the vicinity of the facility, a discrete receptor grid comprised of 369 receptors located along the property boundary and a polar receptor grid of 53 receptors located at radial distances of 2.5 and 3.0 km were used in these analyses. For the PSD Class I analysis, a receptor gird consisting of twenty receptors along the boundary of the CNWA was used. The results of these analyses are discussed below.

6.4.6 PSD Increment Analysis

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant. The results of the PSD Class II increment analysis presented in the table below show that the maximum predicted PM_{10} impacts are less than the allowable increments.

PSD Class II Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact (ug/m^3)	Impact Greater Than Allowable Increment?	Allowable Increment (ug/m^3)
PM_{10}	Annual	13.8	NO	17
	24-hour	24.0	NO	30

The results of the PSD Class I increment analysis presented in the table below show that the maxmimum predicted PM_{10} impact for all sources within 120 km of the Class I area is greater than the allowable increment; however the analysis also shows that this project's contribution to any predicted exceedance of the increment is less than the National Park Service significant impact level

PSD Class I Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact[1] (ug/m^3)	Impact Greater Than Allowable Increment?	Allowable Increment (ug/m^3)	Maximum Southdown Contribution To Any Exceedance	National Park Service Significant Impact Level	Southdown Contribution Significant
PM_{10}	24-hour	8.2	YES	8	0.021	0.027	NO

6.4.7 AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modeled. The results of the AAQS analysis are summarized in the table below. As shown in this table, emissions from the proposed facility are not expected to cause or significantly contribute to a violation of an AAQS.

Ambient Air Quality Impacts

Pollutant	Averaging Time	Major Sources Impact (ug/m^3)	Background Conc. (ug/m^3)	Total Impact (ug/m^3)	Total Impact Greater Than AAQS	Florida AAQS (ug/m^3)
PM_{10}	Annual	6.4	35	41	NO	50
	24-hour	40.6	105	146	NO	150

6.5 Additional Impacts Analysis

6.5.1 Impacts On Soils, Vegetation, And Wildlife

The maximum ground-level concentrations predicted to occur for PM_{10} and CO as a result of the proposed project, including background concentrations and all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area. An air quality related values (AQRV) analysis was done by the applicant for the Class I area. No significant impacts on this area are expected.

6.5.2 Impact On Visibility

Visual Impact Screening and Analysis (VISCREEN), the EPA-approved Level I visibility computer model, was used to estimate the impact of the proposed project's stack emissions on visibility in the CNWA. The results indicate that the maximum visibility impacts do not exceed the screening criteria inside or outside this area. As a result, there is no significant impact on visibility predicted for this Class I area. In addition a regional haze analysis was done. This analysis predicted no adverse impacts upon regional haze.

6.5.3 Growth-Related Air Quality Impacts

There will be no growth-related impacts because no physical or operational modifications will occur and production will not change as a result of this permit action.

7. CONCLUSION

Based on the foregoing technical evaluation of the application and additional information submitted by Southdown, Inc., the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations provided the Department's Best Available Control Technology Determination is implemented and certain conditions are met. The General and Specific Conditions are listed in the attached draft conditions of approval.

Permit Engineer: T. Heron
Reviewed and approved by A. A. Linero, P.E.

Department of Environmental Protection

DRAFT

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

PERMITTEE:

Southdown, Inc.,
Brooksville Plant
Post Office Box 6
Brooksville, Florida 34605-0006

FID No.:	0530010
PSD No.:	PSD-FL-233
Permit No.:	0530010-001-AC
SIC No.:	3241
Expires:	October 31, 1997

Authorized Representative:
Don Kelly, Plant Manager

LOCATED AT:

Southdown, Inc., Brooksville Plant, Hernando County
Project: Portland Cement Manufacturing
Kilns Nos. 1 & 2 and Clinker Coolers 1 & 2

UTM: Zone 17 ; 356.0 km E ; 3169.9 km N
Directions: *Located on Highway 98, NW of Brooksville, Hernando County*

STATEMENT OF BASIS:

This draft construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, 62-297. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached appendices made a part of this permit:

Table 1-1 and 1-2	Air Pollutants Standards and Terms
Table 2-1 and 2-2	Compliance Requirements
Appendix BD-1	BACT Determination
Appendix GC-1	Construction Permit General Conditions

EFFECTIVE DATE:

Howard L. Rhodes, Director
Division of Air Resources Management

SECTION I. FACILITY INFORMATION

FACILITY DESCRIPTION:

This facility consists of two identical portland cement manufacturing plants and associated equipment. These plants are identified as Cement Plant No. 1 and Cement Plant No. 2.

EMISSION UNITS

These permits address the following emission units:

EMISSIONS UNIT NO.	EMISSIONS UNIT DESCRIPTION
001	Unit No. 1 - Kiln No. 1
002	Unit No. 2 - Kiln No. 2
003	Unit No. 3 - Cooler No. 1
004	Unit No. 4 - Cooler No. 2

REGULATORY CLASSIFICATION

This industry is listed in Table 62-212.400-1 of Chapter 62-212, F.A.C., "Major Facility Categories." Therefore, stack and fugitive emissions of over 100 tons per year of carbon monoxide, volatile organic compounds, sulfur dioxide, nitrogen oxides, or particulate matter characterize the installation as a major facility subject to the requirements of Rule 62-204.800, F.A.C., which incorporates 40 CFR Subpart F, the New Source Performance Standards (NSPS) for Portland Cement Plants. This facility is a Title V source.

PERMIT SCHEDULE:

- (DATE) Petition for an administrative hearing
- (DATE) Received proof of publication in **(DATE)** issue of Newspaper
- (DATE) Issued Notice of Intent to issue Permit
- 10/02/96 Application deemed complete

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

1.0 ADMINISTRATIVE

1.1 Regulating Agencies: All documents related to applications for permits to operate, reports, tests, minor modifications and notifications shall be submitted to the Department of Environmental Protection (DEP) Air Pollution Control Section of Hillsborough County located at 3804 Coconut Drive, Tampa, Florida 33619-8218, and phone number (813)744-6100. All applications for permits to construct or modify an emission unit(s) subject to the Prevention of Significant Deterioration requirements should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP) located at 2600 Blairstone Road, Tallahassee, Florida 32399-2400 and phone number (904)488-1344.

1.2 General Conditions: The owner and operator is subject to and shall be aware of and operate under the attached General Permit Conditions G.1 through G.15 listed in *Appendix GC* of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. **[Rule 62-4.160, F.A.C.]**

1.3 Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapter of the Florida Administrative Code.

1.4 Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C., when appropriate and follow the application procedures in Chapter 62-4, F.A.C. **[Rule 62-210.900, F.A.C.]**

1.5 Expiration: This air construction permit shall expire on October 31, 1997. **[Rule 62-210.300(1), F.A.C.]** The permittee may, for good cause, request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit. However, the permittee shall promptly notify the Southwest District office of any delays in completion of the project which would affect the startup day by more than 90 days. **[Rule 62-4.090, F.A.C].**

1.6 Application for Title V Permit: This air construction permit revise specific permit conditions to reflect the current applicable requirements, BACT and new permit emission limits. Stack testing of emissions that are required by this permit shall be performed to determine compliance with all new applicable permitted limits. A revision of the Title V operating permit application pursuant to Chapter 62-213, F.A.C., shall be submitted to the DEP District office in Tampa. **[Chapter 62-213]**

1.7 Applicable Regulations: Unless otherwise indicated, the construction and operation of these emission units shall be in accordance with the capacities and specifications stated in the application. Southdown, Inc., is subject to all applicable provisions of Chapter 403, F.S and Florida Administrative Code Chapters 62-4; 62-103; 62-204, 62-210, 62-212, 62-213, 62-296, 62-297; and the Code of Federal Regulations Section 40, Part 60. Specifically, this facility is subject to the New Source Performance Standards (NSPS) for Portland Cement Plants identified by the Code of Federal Regulations Section 40, Part 60, Subpart F, and incorporated by reference in the Florida Administrative Code regulation 62-204.800. Issuance of this

permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. **[Rule 62-210.300, F.A.C.]**

2.0 EMISSION LIMITING STANDARDS

2.1 General Visible Emissions Standard: **[Rule 62-296-320 (4)(b). F.A.C.]** Unless otherwise specified by rule or permit, no person shall cause, let, permit, suffer or allow to be discharged into the atmosphere any air pollutants from new or existing emissions units, the opacity of which is equal to:

- Visible emissions of all minor sources controlled by baghouses shall not exceed 5% opacity (BACT determination).
- Visible emissions from PM fugitive sources shall not exceed 10% opacity.

2.2 Unconfined Emissions of Particulate Matter **[Rule 62-296.320(4)(c), F.A.C.]**

(a) The owner or operators shall not cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any source whatsoever, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrially related activities such as loading, unloading, storing or handling, without taking reasonable precautions to prevent such emission.

(b) Reasonable precautions shall include the following:

- All permanent haul roads shall be paved.
- Temporary haul road shall be watered or treated with chemical dust suppressants at regular intervals.
- Dry materials (moisture content < 14%) shall be stored below grade, in silos, or in enclosed structures.
- Coal stored at or above natural grade shall be compacted, turned and /or watered as necessary to maintain a minimum 8% moisture content in the surface layer, and shall be aligned with the predominant wind direction to minimize wind erosion.
- Abandoned haul road and other disturbed areas shall be revegetated within 60 days of the date that active service of the roads ends.
- All cement products shall be transferred to transport trucks with a sealed pneumatic conveying system which is either a closed system or exhausted through a bag filter.

NOTE: Facilities that cause frequent, valid complaints may be required by the Southwest District office in Tampa to take these or other reasonable precautions. In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or

practice, and the degree of reduction of emissions expected from a particular technique or practice.

2.3 General Pollutant Emission Limiting Standards: **[Rule 62-296.320 (1), F.A.C.]**

(a) The owner or operator shall not store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems.

(b) No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

NOTE: An objectionable odor is defined as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [F.A.C. 62-210.200(198)]

3.0 OPERATION AND MAINTENANCE

3.1 Changes/Modifications: The owner or operator shall submit to the Department of Environmental Protection, Bureau of Air Regulation and /or the Southwest District office in Tampa, for review and obtain approval for any changes in, or modifications to: the method of operation; process or pollution control equipment; increase in hours of operation; equipment capacities; or any change which would result in an increase in potential/actual emissions. Depending on the size and scope of the modification, it may be necessary to submit an application for, and obtain an air construction permit prior to making the desired change. FDEP will provide a clear point of entry for Hernando County and any other substantially affected parties to challenge any of FDEP's proposed determinations in this regard. *Routine maintenance of equipment would not constitute a modification of this permit.* **[Rule 62-4.030, 62-210.300 and 62-4.070(3), F.A.C.]**

3.2 Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by hazard of fire, wind or by other cause, the owner or operator shall notify the Southwest District office in Tampa as soon as possible, but at least within (1) working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; the steps being taken to correct the problem and prevent future recurrence; and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit and the regulations. **[Rule 62-4.130, F.A.C.]**

3.3 Circumvention: The owner or operator shall not circumvent any air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. **[Rules 62-210.650, F.A.C.]**

3.4 Excess Emissions Requirements **[Rule 62-210.700, F.A.C.]**

(a) Excess emissions resulting from start-up, shutdown or malfunction of these emissions units shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24 hour period unless specifically authorized by the Southwest District office for longer duration. **[Rule 62-210.700(1), F.A.C.]**

(b) Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during start-up, shutdown, or malfunction shall be prohibited. **[Rule 62-210.700(4), F.A.C.]**

(c) In case of excess emissions resulting from malfunctions, the owner or operator shall notify the Air Pollution Control Section of the Southwest District office within one (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the problem; and the corrective actions being taken to prevent recurrence. **[Rule 62-210.700(6), F.A.C.]**

4.0 Monitoring of Operations

4.1 Determination of Process Variables:

(a) The permittee shall install, operate, and maintain equipment and /or instruments necessary to determine process variables, such as process weight input or heat input, when such data is needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards. **[Rule 62-297.310 (5), F.A.C.].**

(b) Equipment and /or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. **[Rule 62-297.310(5), F.A.C]**

5.0 TEST REQUIREMENTS

5.1 Test Performance: Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after initial startup up and annually thereafter (except for VOC), the owner or operator shall conduct performance test(s) for PM/PM_{10}, NOx, SO_2 , CO, VE and VOC (initial) pursuant to 40 CFR 60.8, Performance Tests, Rule 62-296.310 F.A.C., and 40 CFR 60, Appendix A. **[Rule 62-204.800, F.A.C and Rule 62-297.310, F.A.C.]**

5.2 Test Procedures and Test Reports shall meet all applicable requirements of the Florida Administrative Code Chapter 62-297. **[Rule 62-297.310, F.A.C.]**

5.3 Test Notification: The owner or operator shall notify the Southwest District office in Tampa in writing at least (30) days prior to each scheduled compliance test of the test date, the expected test time, the facility contact person for the test, and the person or company conducting test. The (30) day notification requirement may be waived at the discretion of the Department. Likewise, if circumstances prevent testing during the test window specified for the emission unit, the owner or operator may request an alternate test date before the expiration of this window. **[Rule 62-297.310 and 40 CFR 60.8, F.A.C.]**

5.4 Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in Rule 62-204, 62-210, 62 -212, 62-296 and 62-297, F.A.C. or in a permit issued pursuant to those rules is being violated, it may require the owner or operator of the facility to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions units and to provide a report on the results of said tests to the Southwest District office in Tampa. **[Rule 62-297.310, F.A.C.]**

5.5 Stack Testing Facilities: The owner or operator shall install stack testing facilities in accordance with **Rule 62-297.310, F.A.C.**

5.6 Exceptions and Approval of Alternate Procedures and Requirements: An Alternate Sampling Procedure (ASP) may be requested from the Bureau of Air Regulation of the Florida Department of Environmental Protection in accordance with the procedures specified in **Rule 62-297.620, F.A.C.**

6.0 REPORTS AND RECORDS

6.1 Duration: All reports and records required by this permit shall be kept for at least (5) years from the date the information was recorded. **[62-4.160(14)(b), F.A.C.]**

6.2 Emission Compliance Stack Test Reports:

(a) A test report indicating the results of the required compliance tests shall be filed with the Southwest District office in Tampa as soon as practical, but no later than 45 days after the last sampling run is completed. **[Rule 62-297.310, F.A.C.]**

(b) The report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in **Rule 62-297.310 (8), F.A.C.**

6.3 Excess Emissions Report: If excess emissions occur, the owner or operator shall notify the Air Compliance Section of the Southwest District office within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Pursuant to the New Source Performance Standards, excess emissions shall also be reported in accordance with 40 CFR 60.7. **[Rules 62-4.130 and 62-210.700(6), F.A.C.]**

6.4 Annual Operating Report for Air Pollutant Emitting Facility: Before March 1st of each year, the owner or operator shall submit to the Department this required report [DEP Form No. 62-210.900(5)], which summarizes operations for the previous calendar year. **[Rule 62-210.370(3), F.A.C.]**

7.0 OTHER REQUIREMENTS

7.1 Waste Disposal: The owner or operator shall treat, store, and dispose of all liquid, solid, and hazardous wastes in accordance with all applicable Federal, State, and Local regulations. This air pollution permit does not preclude the permittee from securing any other types of required permits, licenses, or certifications.

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION A. COMMON CONDITIONS: 40 CFR 60 SUBPART A, GENERAL PROVISIONS

EMISSION UNITS

This permit addresses the following emission units.

EMISSIONS UNIT NO.	EMISSIONS UNIT DESCRIPTION
001	Unit No. 1 - Kiln No. 1
002	Unit No. 2 - Kiln No. 2
003	Unit No. 3 - Cooler No. 1
004	Unit No. 4 - Cooler No. 2

These emission units shall comply with all applicable requirements of 40 CFR 60, General Provisions, Subpart A.

A1. [49 CFR 60.7, Notification and record keeping]
A2. [40 CFR 60.8, Performance tests]
A3. [40 CFR 60.11, Compliance with standards and maintenance requirements]
A4. [40 CFR 60.12, Circumvention]
A5. [40CFR 60.13, Monitoring requirements]
A6. [40 CFR 60.19, General notification and reporting requirements]

These emission units shall comply with all applicable provisions of the 40 CFR 60 New Source Performance Standards for Portland Cement Plants, Subpart F. **[Rule 62-204.800, F.A.C]**

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION B. SPECIFIC CONDITIONS:

The following Specific Conditions apply to the following emission units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
001	Unit No. 1 - Kiln 1
003	Unit No. 3 - Cooler 1

EMISSION LIMITATIONS

B1. The emissions from these emission units shall not exceed the allowable emission rates listed in Table 1-1 Air Pollutant Standards and Terms (attached). **[Rule 62-210.200(198) and 62-212.400, F.A.C.]**

B2. In order to minimize excess emissions during startup/shutdown/malfunction this emission units shall adhere to best operational practices. **[Rule 62-210.700, F.A.C. and 40 CFR 60.7]**

OPERATIONAL LIMITATIONS

B3. These emission units are allowed to operate continuously (8760 hours/year). **[Rule 62-210.200, F.A.C. Definitions-Potential to emit (PTE)]**

B4. OPERATING RATES:

- Kiln preheater feed rate-- 165 tons/hour (one-hour maximum)
- Kiln preheater feed rate -- 145 tons/hour (30-day average)

[AC 27-186923, AC 27-258571 and Dr. John Koogler's letter of November 22, 1994]
[Rule 62-210.200 F.A.C., (PTE)]

B5. The No. 1 cement kiln fuel heat input rate shall not exceed 300 MMBtu/hr, or specifically:

(a). 24,000 pounds per hour of coal with a heating value of 12,500 Btu/hr

(b). 2,116 gallons/hour of No. 2 fuel oil with a heating value of 141, 300 Btu/gal

(c). 2,060 gallons/hour of No. 4 fuel oil with a heating value of 145,600 Btu/gal

(d). 2,016 gallons/hour of No. 5 fuel oil with a heating value of 148,800 Btu/gal

(e). 1,982 gallons/hour of No. 6 fuel oil with a heating value of 151,300 Btu/gal

(f). 92,683 cubic feet/hour of natural gas with a heating value of 1,025 Btu per cubic foot

Use of fuels other than those listed above is prohibited [Construction Permit No. AC27-186923 and AC27-212252 and Supplemental information received by DEP March 31, 1995]

B6. Any other operating parameters (including control equipment operating parameters) established during compliance testing and /or inspection that will confirm the proper operation of each emission unit shall be included in the operating permit. **[Rule 62-297.310, F.A.C. and 62-4.070, F.A.C.]**

MONITORING OF OPERATIONS

B7. The owner or operator shall record the daily production and preheater-kiln system feed rate. (Emission unit 001). **[Rule 62-204.800, F.A.C., 40 CFR 60.63(a)]**

B8. The owner or operator shall install, calibrate, maintain, and operate in accordance with 40 CFR 60.13 a *continuous opacity monitoring system* to measure the opacity of emissions from the cement kiln and clinker cooler control device stacks. **[Rule 62-204.800, F.A.C., 40 CFR 60.63(b)]**

B9. Continuos monitors with recorders shall also be installed, calibrated, maintained and operated for this kiln subject to approval by the Department for:

Nitrogen Oxides: During the annual test (30 days compliance performance period) to demonstrate compliance with the permit emission limit of 275 lbs/hour.

Carbon Monoxide: During the initial test [one(1) weeks period] to demonstrate compliance with the permit emission limit. Thereafter, continuous process monitors for CO and O_2 to optimize combustion conditions for pollution control shall be part of the process.
[Rules 62-212.400(1)(c), 62-212.400(6) and 62-4.070, F.A.C.]

B10. The monitoring devices shall meet the applicable requirements of **Chapter 62-204, F.A.C., 40 CFR 60, Appendix F**, and **40 CFR 60.13,** including certification of each device in accordance with **40 CFR 60, Appendix B**, Performance Specifications and **40 CFR 60.7(a)(5)** Notification Requirements. Data on monitoring equipment specifications, manufacturer, type calibration and maintenance requirements, and the proposed location of each monitor shall be provided to the Department's Southwest District office for review at least 90 days prior to installation of a new CEMS.

TEST METHODS AND PROCEDURES

B11. Emission Units 001 and 003 shall be tested in accordance with the EPA/reference method, testing time frequency, and minimum compliance test duration. Table 2-1. Compliance Requirements (attached) lists the EPA Methods.
No other test method shall be used unless approval from the Department has been received in writing. These emission units shall comply with applicable requirements of Rule 62-297.310, F.A.C., General Test Requirements and 40 CFR 60.8 Performance Tests.
[Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, 62-297.620 F.A.C, and 40 CFR 60 Appendix A, and 40 CFR 60.8, Subpart A]

B12. Compliance with the particulate matter standard contained in Table 1-1 Air Pollutant Standards and Terms (attached) shall be determined using EPA Method 5. The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E = (c_s \times Q_{sd})/(P \times K)$

where:

E	=	emission rate of particulate matter, kg/metric ton (lb/ton) of kiln feed
c_s	=	concentration of particulate matter, g/dscm (g/dscf),
Q_{sd}	=	volumetric flow rate of effluent gas, dscm/hr (dscf/hr)
P	=	total kiln feed (dry basis) rate, metric ton/hr (ton/hr)
K	=	conversion factor, 1000 g/kg (453.6 g/lb)

The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30.0 dscf) for the kiln and at least 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler.
[Rules 62-204.800 and 62-297.401, F.A.C. 40 CFR 60.64(b)(1) - (3)]

B13. Suitable methods shall be used to determine the kiln feed rate (P), except fuels, for each run. Material balance over the production system shall be used to confirm the feed rate. **[40 CFR 60.64(3)]**

B14. The visible emissions test shall be conducted by a certified observer and be a minimum of 180 in duration. The test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. **[40 CFR 60.11 and Rule 62-297.310 (7), F.A.C.]**

B15. Testing of emissions shall be conducted with the source operating at permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, each emission unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at

the permitted capacity. The initial compliance test results shall be submitted to the DEP Southwest District office with the application for an operating permit. **[Rule 62-4.070 (3), 62-297.310, 62-213, 62-4.055, 62-4.22, F.A.C.]**

B16. Operating procedures shall include good combustion practices and proper training of all operators and supervisors. The good combustion practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. **[Rule 62-4.070(3), F.A.C.]**

RECORDKEEPING AND REPORTING REQUIREMENTS

B17. The owner or operator shall submit reports of excess emissions based upon data from the continuous opacity monitoring system. Periods of excess emissions that shall be reported are defined as all 6 minute periods during which the average opacity exceeds that allowed in **40 CFR 60.62(a)(2)**. The content of these reports must comply with the requirements in **40 CFR 60.7(d)**. Such reports shall be submitted quarterly pursuant to **40 CFR 60.7 (c)**.
[Rule 62-204.800, F.A.C.; 40 CFR 60.63(d), 60.65(a) and 40 CFR 60.7]

B18. Daily sampling and recording of the baghouse dust for the No. 1 kiln is required. The concentration of thallium in the baghouse dust shall not exceed 1.5%. Compliance shall be demonstrated using the "Thallium Concentration Monitoring and Analysis Procedure" as described in Mr. Bob Roger's letter to Dr. John Koogler, dated January 12, 1994 (attachment #9 of Construction Permit No. AC27-240349].

B19. The following fuel records shall be maintained for a minimum of five (5) years and made available upon request:

1. Coal

   (a) the coal usage rate in tons/day
   (b) the average sulfur content and heating value (Btu/lb) of each coal shipment based upon analysis of a sample representative of the shipment (trainload);

2. Liquid Fuels

   (a) The fuel type (number) and usage rate in gal/day;
   (b) Records of the sulfur content and heating value (Btu/gal) of each oil shipment based upon analysis of a sample representative of the shipment

3. Natural Gas

   (a) The fuel usage rate in cubic feet per day.
   (b) The average heating value (Btu/Ft^3) provided by the gas supplier.

[Rule 62-4.070(3), F.A.C.]

B20. Two copies of the results of the emission tests for the pollutants listed in Condition 1 for these emission units shall be submitted within forty-five days of the last sampling run to the Department's Southwest District office. Reports shall be in a format consistent with and shall include the information in accordance with **Rule 62-297.310 (8), F.A.C. [Rule 62-210.370(3) and Rule 62-.297.310(8), F.A.C.]**

Daily Operation and Maintenance (O&M) Log:

B21. This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to the various specific conditions of this permit. Operators shall keep a daily O&M log to include, at a minimum, the following information.

(a) The data collected from in-stack monitoring instruments

(b) The records on daily feed rates and clinker production rate

(c) The amount and type of fuel burned per affected unit

(d) The results of all source tests

(e) Calibration logs for all instruments

(f) Maintenance/repair logs for any work performed on equipment or instrument which is subject to this permit; and,

(g) Analysis data.

All measurements, records, and other data required to be maintained by Southdown, shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. This data shall be made available to the Department upon request. The Department's Southwest District office shall be notified in writing at least 15 days prior to the testing (auditing) of any instrument required to be operated by these specific conditions of certification in order to allow witnessing by authorized personnel. **[Rule 62-4.070(3), F.A.C.]**

Table 1-1. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0530010

Permittee:

Southdown, Inc.

Portland Cement Plant

DRAFT Permit No.: 0530010-001-AC

Kiln No.1 & Cooler No.1 PSD-FL-233

Emission Unit 001 - Kiln No. 1

Emission Unit 003 - Cooler No. 1

				Allowable Emissions			
E.U. ID#	Description	Pollutant ID	Fuel(s)	lb/ton $kiln_{ph}$ feed *	lb/hr	TPY	Regulation(s)
001	Kiln No. 1	PM/PM_{10}	Coal / Gas	0.18	26.0	113.88	Rule 62-212.400(6), F.A.C.
001	Kiln No. 1	SO_2 (1)	Coal / Gas	0.10	15.0	65.70	Rule 62-4.070(3), F.A.C.
001	Kiln No. 1	NO_x	Coal / Gas	1.90	275.0	1205.00	Rule 62-4.070(3), F.A.C.
001	Kiln No. 1	CO	Coal / Gas	1.17	170.0	744.60	Rule 62-212.400(6), F.A.C.
001	Kiln No. 1	VOC	Coal / Gas	0.09	13.0	56.94	Rule 62-4.070(3), F.A.C.
001	Kiln No. 1	20% VE	Coal / Gas				Rule 62-204.800, F.A.C.
003	Cooler No. 1	10% VE	Coal / Gas				Rule 62-204.800, F.A.C.
003	Cooler No. 1	PM/PM_{10}	Coal / Gas	0.09	13.0	56.94	Rule 62-204.800, F.A.C.

ALLOWABLE OPERATING RATES

		KILN No.1	Cooler No.1	
Hours of operation		8760	8760	
Kiln preheater feed rate	TPH	165		One-hour maximum
Kiln preheater feed rate *	TPH	145		(30 - day average)
Kiln Heat Input	MMBtu/hr	300		

NOTES

(1) Emissions of SO_2 will not exceed 15 lbs/hr. Annual testing is required in lieu of fuel sulfur restrictions. [AC27-258571]

Table 2-1. Compliance Requirements.

FACILITY ID NUMBER: 0530010

Permittee:
Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-001-AC
PSD-FL-233 Kiln No. 1 & Cooler No. 1

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA/Reference Method *	Testing Time Frequency	Min. Compliance Test Duration	CMS*
001	Kiln No.1	PM/PM_{10}	Coal / Gas	5	initial/annual	3 hr	
001	Kiln No.1	VE	Coal / Gas		continuous [4]		Yes
001	Kiln No.1	SO_2 [7]	Coal / Gas	6C	annual	3hr	
001	Kiln No.1	NOx [3]	Coal / Gas	7E	initial/annual [3]	3hr	30-days [3]
001	Kiln No.1	CO [5]	Coal / Gas	10	initial/annual	3hr	1 Week [5]
001	Kiln No.1	VOC [2]	Coal / Gas	25 or 25A	initial [5]	3hr	
003	Cooler No.3	PM/PM_{10}	Coal / Gas	5	initial/annual	3 hr	
003	Cooler No.3	VE	Coal / Gas		continuous [4]		Yes

Notes:

[1] Testing of emissions shall be conducted while burning coal or natural gas.

[2] VOC emission shall be tested initially to comply with the condition of this permit. Thereafter, compliance will be assumed provided the CO allowable emission rate is not exceeded.

[3] NO_x - CEMS data shall be used for the Kiln No.1 annual compliance test provided that the CEM calibration and maintenance during the 30-day period meet the applicable requirements of 40 CFR 60, Appendix B and Appendix F.

[4] Pursuant to Rule 62-4.070(3), 62-212.400(6) and 62-296.500 F.A.C., the kiln/cooler exhaust system shall be equipped with continuous monitors to record the opacity at the stack to indicate proper maintenance and operation. Compliance with the opacity standard shall be demonstrated by CEMs pursuant to 40 CFR 60.7(c) and 40 CFR 60.63.

[5] Continuous emissions monitors shall be installed for a period of one week to show compliance with the CO limits. CEMS shall meet the applicable requirements of 40 CFR 60 Appendix B and Appendix F. Thereafter, continuous process monitors for CO and O_2 to optimize combustion conditions for pollution control shall be part of the process.

[6] Both kilns are allowed to burn fuel oils (No.2,4,5, and 6) as auxiliary fuels. See specific conditions No. 5.

[7] Emissions of SO_2 will not exceed 15 lbs/hour. Annual testing is required in lieu of fuel sulfur restrictions. (Supplemental information received by DEP March 31, 1995).

* CMS [=] compliance demonstrated by CEMS.

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION C SPECIFIC CONDITIONS

The following Specific Conditions apply to the following emission units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
002	Unit No. 2 Kiln No. 2
004	Unit No. 4 - Cooler No. 2

EMISSION LIMITATIONS

C1. The emissions from these emission units shall not exceed the allowable emission rates listed in Table 1-2 Air Pollutant Standards and Terms (attached). **[Rule 62-210.200(198) and 62-212.400, F.A.C.]**

C2. In order to minimize excess emissions during startup/shutdown/malfunction this emission units shall adhere to best operational practices. **[Rule 62-210.700, F.A.C. and 40 CFR 60.7]**

OPERATIONAL LIMITATIONS

C3. Cement Kiln No. 2 is allowed to operate 8200 hours/year [AC27-221252].

C4. *Process operating rates*:

- Kiln preheater feed rate -- 165 tons/hour (one hour maximum)
- Kiln preheater feed rate -- 145 tons/hour (30 production -day average)

[AC 27-186923, AC 27-258572 and Dr. John Koogler's letter of November 22, 1994]. **[Rule 62-210.233, F.A.C., (PTE)]**

C5. The cement kiln fuel heat input rate shall not exceed 300 MMBtu/hr, or specifically:

(a). 24,000 pounds per hour of coal with a heating value of 12,500 Btu/hr

(b). 2,116 gallons/hour of No. 2 fuel oil with a heating value of 141, 300 Btu/gal

(c). 2,060 gallons/hour of No. 4 fuel oil with a heating value of 145,600 Btu/gal

(d). 2,016 gallons/hour of No. 5 fuel oil with a heating value of 148,800 Btu/gal

(e). 1,982 gallons/hour of No. 6 fuel oil with a heating value of 151,300 Btu/gal

(f). 292,683 cubic feet/hour of natural gas with a heating value of 1,025 Btu per cubic foot

Use of fuels other than those listed above is prohibited [Construction Permit No. AC27-186923 and AC27-212252 and Supplemental information received by DEP March 31, 1995]

C6. Any other operating parameters (including control equipment operating parameters) established during compliance testing and /or inspection that will confirm the proper operation of each emission unit shall be included in the operating permit **[Rule 62-297.310, F.A.C. and 62-4.070, F.A.C.]**

MONITORING OF OPERATIONS

C7. The owner or operator shall record the daily production and preheater-kiln system feed rate. **[Rule 62-204.800, F.A.C., 40 CFR 60.63(a)]**

C8. The owner or operator shall install, calibrate, maintain, and operate in accordance with **40 CFR 60.13** a *continuous opacity monitoring system* to measure the opacity of emissions from the cement kiln and clinker cooler control device stack. **[Rule 62-204.800, F.A.C., 40 CFR 60.63(b)]**

C9. Continuos monitors with recorders shall also be installed, calibrated, maintained and operated for each kiln subject to approval by the Department for:

Nitrogen Oxides: During the annual test (30 days compliance performance period).

Carbon Monoxide: During the initial test [one(1) weeks period] to demonstrate compliance with the permit emission limit. Thereafter, continuous process monitors for CO and O_2 to optimize combustion conditions for pollution control shall be part of the process.
[Rules 62-212.400(1)(c), 62-212.400(5) and 62-4.070, F.A.C.]

C10. The monitoring devices shall meet the applicable requirements of **Chapter 62-204, F.A.C., 40 CFR 60, Appendix F, and 40 CFR 60.13**, including certification of each device in accordance with **40 CFR 60, Appendix B,** Performance Specifications and **40 CFR 60.7(a)(5)** Notification Requirements. Data on monitoring equipment specifications, manufacturer, type calibration and maintenance requirements, and the proposed location of each monitor shall be provided to the Department's Southwest District office for review at least 90 days prior to installation of a new CEMS.

TEST METHODS AND PROCEDURES

C11. Emission Units 001 and 002 shall be tested in accordance with the EPA/reference method, testing time frequency, and minimum compliance test duration. Table 2-2. Compliance Requirements (attached) list the EPA Methods.
No other test method shall be used unless approval from the Department has been received in writing.

These emission units shall comply with all applicable requirements of Rule 62-297.310, F.A.C., General Test Requirements.
[Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, F.A.C, and 40 CFR 60, Appendix A and 40 CFR 60.8, Subpart A]

C12. Compliance with the particulate matter standard contained in Table 1-2 Air Pollutant Standards and Terms (attached) shall be determined using EPA Method 5. The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E = (c_s \times Q_{sd})/(P \times K)$

where:

E	=	emission rate of particulate matter, kg/metric ton (lb/ton) of kiln feed
c_s	=	concentration of particulate matter, g/dscm (g/dscf)
Q_{sd}	=	volumetric flow rate of effluent gas, dscm/hr (dscf/hr)
P	=	total kiln feed (dry basis) rate, metric ton/hr (ton/hr)
K	=	conversion factor, 1000 g/kg (453.6 g/lb)

The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30.0 dscf) for the kiln and at least 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler. **[Rules 62-204.800 and 62-297.401, F.A.C. 40 CFR 60.64(b)(1) - (3)]**

C13. Suitable methods shall be used to determine the kiln feed rate (P), except fuels, for each run. Material balance over the production system shall be used to confirm the feed rate. **[40 CFR 60.64(3)]**

C14. The visible emissions test shall be conducted by a certified observer and be a minimum of 180 in duration. The test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. **[40 CFR 60.11. and Rule 62-297.310 (7), F.A.C.]**

C15. Testing of emissions shall be conducted with the source operating at permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, each emission unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. The initial compliance test results shall be submitted to the DEP Southwest District office with the application for an operating permit. **[Rule 62-4.070 (3), 62-297.310, 62-213, 62-4.055, 62-4.22, F.A.C.]**

C16. Operating procedures shall include good combustion practices and proper training of all operators and supervisors. The good combustion practices shall meet the guidelines and procedures as established by the

equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. **[Rule 62-4.070(3), F.A.C.]**

RECORDKEEPING AND REPORTING REQUIREMENTS

C17. The owner or operator shall submit reports of excess emissions based upon data from the continuous opacity monitoring system. Periods of excess emissions that shall be reported are defined as all 6 minute periods during which the average opacity exceeds that allowed in **40 CFR 60.62(a)(2)**. The content of these reports must comply with the requirements in **40 CFR 60.7(d)**. Such reports shall be submitted quarterly pursuant to **40 CFR 60.7 (c). [Rule 62-204.800, F.A.C.; 40 CFR 60.63(d), 60.65(a) and 40 CFR 60.7]**

C18. The following Kiln No. 2 fuel records shall be maintained and made available upon request:

1. Coal

   (a) the coal usage rate in tons/day
   (b) the average sulfur content and heating value (Btu/lb) of each coal shipment based upon analysis of a sample representative of the shipment (trainload);

2. Liquid Fuels

   (a) The fuel type (number) and usage rate in gal/day;
   (b) Records of the sulfur content and heating value (Btu/gal) of each oil shipment based upon analysis of a sample representative of the shipment

3. Natural Gas

   (a) The fuel usage rate in cubic feet per day.
   (b) The average heating value (Btu/Ft^3) provided by the gas supplier
   [Rule 62-4.070(3), F.A.C.].

C19. Two copies of the results of the emission tests for the pollutants listed in Condition 1 for these emission units shall be submitted within forty-five days of the last sampling run to the Department's Southwest District office. Reports shall be in a format consistent with and shall include the information in accordance with **Rule 62-297.310 (8), F.A.C**. **[Rule 62-210.370 (3) and Rule 62-.297.310(8), F.A.C.]**

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

Daily Operation and Maintenance (O&M) Log:

C20 This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to the various specific conditions of this permit. Operators shall keep a daily O&M log to include, at a minimum, the following information:

(a) The data collected from in-stack monitoring instruments

(b) The records on daily feed rates and clinker production rate

(c) The amount and type of fuel burned per affected unit

(d) The results of all source tests

(e) Calibration logs for all instruments

(f) Maintenance/repair logs for any work performed on equipment or instrument which is subject to this permit

(g) Fuel analysis data.

All measurements, records, and other data required to be maintained by Southdown, shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. This data shall be made available to the Department upon request. The Department's Southwest District office shall be notified in writing at least 15 days prior to the testing (auditing) of any instrument required to be operated by these specific conditions of certification in order to allow witnessing by authorized personnel. **[Rule 62-4.070(3), F.A.C.]**

Table 2-2. Compliance Requirements.

FACILITY ID NUMBER: 0530010

Permittee:
Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-001-AC
PSD-FL-233 Kiln No. 2 & Cooler No.2

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA/Reference Method *	Testing Time Frequency	Min. Compliance Test Duration	CMS*
002	Kiln No.2	PM/PM_{10}	Coal / Gas	5	initial/annual	3 hr	
002	Kiln No.2	VE	Coal / Gas		continuous [4]		Yes
002	Kiln No.2	SO_2 [7]	Coal / Gas	6C	annual	3hr	
002	Kiln No.2	NOx [3]	Coal / Gas	7E	annual [3]	3hr	30-days [3]
002	Kiln No.2	CO [5]	Coal / Gas	10	initial/annual [5]	3hr	1 Week [5]
002	Kiln No.2	VOC [2]	Coal / Gas	25 or 25A	initial	3hr	
004	Cooler No.4	PM/PM_{10}	Coal / Gas	5	initial/annual	3 hr	
004	Cooler No.4	VE	Coal / Gas		continuous [4]		Yes

Notes:

[1] Testing of emissions shall be conducted while burning coal or natural gas.

[2] VOC emission shall be tested initially to comply with the condition of this permit. Thereafter, compliance will be assumed provided the CO allowable emission rate is not exceeded.

[3] NO_x - CEMS data shall be used for the Kiln No.2 annual compliance test provided that the CEM calibration and maintenance during the 30-day period meet the applicable requirements of 40 CFR 60, Appendix B and Appendix F.

[4] Pursuant to Rule 62-4.070(3), 62-212.400(6) and 62-296. 500 F.A.C., the kiln/cooler exhaust system shall be equipped with continuous monitors to record the opacity at the stack to indicate proper maintenance and operation. Compliance with the opacity standard shall be demonstrated by CEMs pursuant to 40 CFR 60.7(c) and 40 CFR 60.63.

[5] Continuous emissions monitors shall be installed for a period of one week to show compliance with the CO limits. CEMS shall meet the applicable requirements of 40 CFR 60, Appendix B and Appendix F. Thereafter, continuous process monitors for CO and O2 to optimize combustion conditions for pollution control shall be part of the process.

[6] Both kilns are allowed to burn fuel oils (No.2,4,5, and 6) as auxiliary fuels. See specific conditions No. 5.

[7] Emissions of SO_2 will not exceed 15 lbs/hour. Annual testing is required in lieu of fuel sulfur restrictions. (Supplemental information received by DEP March 31, 1995).

* CMS [=] compliance demonstrated by CEMS.

Table 1-2. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0530010

Permittee:

Southdown, Inc.

Portland Cement Plant

DRAFT Permit No.: 0530010-001-AC

Kiln No. 2 & Cooler No. 2 PSD-FL-233

Emission Unit 002 - Kiln No. 2
Emission Unit 004 - Cooler No. 2

				Allowable Emissions			
E.U. ID#	Description	Pollutant ID	Fuel(s)	lb/ton dry $kiln_{ph}$ feed *	lb/hr	TPY	Regulation(s)
002	Kiln No. 2	PM/PM_{10}	Coal / Gas	0.18	26.0	107	Rule 62-212.400(6), F.A.C.
002	Kiln No. 2	SO_2 (1)	Coal / Gas	0.10	15.0	61.5	Rule 62-212.400(6), F.A.C.
002	Kiln No. 2	NO_x	Coal / Gas	1.72	250.0	1025	Rule 62-212.400(6), F.A.C.
002	Kiln No. 2	CO	Coal / Gas	1.17	170.0	697	Rule 62-212.400(6), F.A.C.
002	Kiln No. 2	VOC	Coal / Gas	0.09	13.0	53.3	Rule 62-4-070(3), F.A.C.
002	Kiln No. 2	10% VE	Coal / Gas				Rule 62-212.400(6), F.A.C.
004	Cooler No.2	10% VE	Coal / Gas				Rule 62-212.400(6), F.A.C.
004	Cooler No.2	PM/PM_{10}	Coal / Gas	0.09	13.0	53.3	Rule 62-212.400(6), F.A.C.

ALLOWABLE OPERATING RATES

		KILN No. 2	Cooler No. 2	
Hours of operation		8200	8200	
Kiln preheater feed rate	TPH	165		One-hour maximum
Kiln preheater feed rate *	TPH	145		(30 - day average)
Kiln Heat Input	MMBtu/hr	300		

NOTES

(1) Emissions of SO_2 will not exceed 15 lbs/hr. Annual testing is required in lieu of fuel sulfur restrictions. [AC27-258572]

EXHIBIT 1

SECTION IV. PERMITTING HISTORY AND RELEVANT DOCUMENTS

Permitting History

A detailed Permitting History of the emission units modified in this permit are found in Appendix PH.

December 18, 1973	Permit AC 27-2251 to construct Kiln No. 1 and Associated Equipment.
July 25, 1980	Permits AC 27-30444, 30446, 30447, 30449, 30450, 30451, 30453, 30454 and 30455 to construct Kiln No. 2 and Associated Equipment.
March 1981	PSD-FL-063 issued by EPA - Permit to Construct Kiln No. 2 and Associated Equipment.
November 3, 1987	Modification of Kiln No. 2: Increase NOx limits from 195.3 lbs/hr to 250 lbs/hr and SO_2 limits from 3 lbs/hr to 12 lbs/hr. Permit No. AC 27-138850 and PSD-FL-124.
July 20, 1990	Modifications of Kiln No. 2 to burn Flolite oil, increase operating rates and operate kiln without operating the raw mill, PSD-FL-124A
	Modification to burn tires in Kiln No. 1. This request was granted. Currently (1996) this facility is not burning tires.
July 25, 1990	AC 27-173474, NO_x emissions were reduced from 250 lbs/hr to 162.3 lbs/hr.
January 25, 1991	Modification of Kiln No. 2 Auxiliary Sources to coincide with recent changes in operation of No. 2 Kiln, AC 27-185898, 27-185900 through -185907.
March 8, 1991	Permit Issued to burn Flolite at Kiln No. 1 AC 27-186923. Allow testing while burning TDF. Conditions of permit remain unchanged.
February 24, 1992	Request to burn waste classified as hazardous waste was withdrawn. This request was filed with the U.S. EPA, Region IV.
January 26, 1993	Modification to allow an increase in cement Kiln No. 2. NO_x emissions from 162.3 lbs/hr to 250 lbs/hr, 30 days rolling average. This increase was to reflect previous BACT limit (PSD-FL-124). Permit allows use of Flolite.
	New permits, PSD-FL-188 and AC 27-212252, were issued.
April 15, 1994	Permit issued to allow the use of TDF to provide 20% of heat input. AC27-240349, Kiln No. 1.

SECTION IV. PERMITTING HISTORY AND RELEVANT DOCUMENTS

August 13, 1995	Permits issued at the Southwest District office (AC-27-258569, AC27-258570, AC258571, AC27-258572) to allow the burning of natural gas, fuel oils Nos. 2 , 4, 5 and 6. Deletes use of flolite in Kilns No. 1 and No. 2.
February 22, 1996	Request to modify cement Kiln No. 1 and No. 2. The request is to increase emissions of CO, VOC and to increase/decrease TSP. A detailed project description is listed in the Technical Evaluation and Preliminary Determination. Permit Nos. PSD-FL-233 and 0530010-001-AC.

NOTE: This permit revises and supersedes air construction permits numbers AC27- 258589, 258570, 258571, and 258572.

Relevant Documents:

1. Application received February 22, 1996.
2. Department's letters dated March 8, March 21, July 10, July 25, September, 1996.
3. Southdown Inc. letters dated April 1, June 17, July 22, August 26, October 2, (netting calculations) October 14, 1996.
4. National Park Service's letter dated April 11, 1996
5. EPA's letter dated
6. Hernando County Planning Department's letter dated March 8, 1996
7. Appendix PH. Southdown permitting history.

SOUTHDOWN, INC.
PORTLAND CEMENT FACILITY
PERMIT 0530010-001 AC (PSD-FL-233)
Hernando County

The applicant, Southdown Inc. (SI), owns a portland cement manufacturing facility in Brooksville. It consists of two kilns with a preheater design and two clinker coolers along with raw mill, finish mill, cement and clinker handling equipment, coal handling equipment, silos, and air pollution control equipment. A process description is included in the Technical Evaluation and Preliminary Determination.

Each kiln/cooler is permitted to process 165 tons per hour (TPH) of raw material fed to the preheater, 148 TPH to the kiln, and 90 TPH from the cooler on a 1-hr basis. Each is also permitted to process 145 TPH to the preheater, 130 TPH to the kiln, and 84 TPH from the cooler on a 30-day basis.

A single, large, fabric filter system (baghouse) is already in use to capture particulate matter from each kiln and cooler. Baghouses are also used to limit particulate emissions from other process emission points. All the emission units controlled by baghouses are listed in a Best Available Control Technology (BACT) determination performed for Cement Plant 2 in 1980. Kiln 2 has three (3) additional BACT determinations on file with the Department (1980, 1988 and 1993). No previous BACT determinations have been performed on Kiln 1.

Southdown requested to revise the allowable emissions limits for their kilns and coolers. Specifically, it was requested to increase emissions limits for particulate matter (PM/PM_{10}), carbon monoxide (CO), visible emissions (VE) and volatile organic compounds (VOC) from Kiln 2; decrease PM/PM_{10} (allowable emissions) and increase CO emission limits for Kiln 1; and increase the PM/PM_{10} limits for Coolers 1 and 2. The stated reason is to allow for fluctuations in emission rates during the normal operation.

The project and rule applicability are described in the separate Technical Evaluation and Preliminary Determination. A Best Available Control Technology (BACT) determination pursuant to Prevention of Significant Deterioration (PSD) is required for each pollutant exceeding the significant emission rates in Table 62-212.400-2, F.A.C., "Regulated Air Pollutants Significant Emissions Rates." The increase in emissions will subject Kilns 1 and 2 to PSD review for particulate matter and carbon monoxide and Coolers 1 and 2 to PSD review for particulate matter. The increase in the VOC emission limit for Kiln 2 will not trigger PSD. In this case, the determinations will be for particulate matter (PM/PM_{10}), and carbon monoxide (CO).

Following is the BACT determination proposed by the applicant. These are on the basis of feed to the kiln.

BACT DETERMINATION REQUESTED BY THE APPLICANT - KILN FEED BASIS:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM_{10}) (kilns)	0.2 lb./ton of dry kiln feed
Particulate Matter (PM/PM_{10})(coolers)	0.1 lb/ton of dry kiln feed
Carbon Monoxide (kilns)	1.30 lb/ton dry kiln feed
Volatile Organic Compounds (Kiln 2)	0.1 lb/ton dry kiln feed
Visible Emissions (Kiln 2)	20 percent

The above limits are expressed in terms of pollutant emitted per ton of material reaching the kiln. Following a review of past permits, the exact process, requirements of the applicable NSPS for cement plants, and discussions with Southdown, the Department will limit only raw material fed to the kiln preheater. This is the most accurate and reliable measure of kiln operating rate in a preheater or precalciner kiln, particularly when there are no bypass streams and when little or no cement kiln dust is wasted. All limits will be expressed in terms of pounds of pollutant per ton of material fed to the kiln preheater ($kiln_{ph}$). Where appropriate, equivalent factors in terms of pounds of pollutant per ton of clinker produced will also be given for reference and comparison with industry or EPA reporting conventions. The above table is therefore adjusted as follows:

BACT DETERMINATION REQUESTED BY THE APPLICANT - PREHEATER BASIS:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM_{10}) (kilns)	0.18 lb./ton of dry $kiln_{ph}$ feed
Particulate Matter (PM/PM_{10})(coolers)	0.09 lb/ton of dry $kiln_{ph}$ feed
Carbon Monoxide (kilns)	1.17 lb/ton dry $kiln_{ph}$ feed
Volatile Organic Compounds (Kiln 2)	0.09 lb/ton dry $kiln_{ph}$ feed
Visible Emissions (Kiln 2)	20 percent

DATE OF RECEIPT OF A BACT APPLICATION:

February 22, 1996

REVIEW GROUP MEMBERS:

Teresa Heron, and A. A. Linero of the New Source Review Section.

BACT DETERMINATION PROCEDURE:

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

(a) Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determination of any other state.

(d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from this facility can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as follows:

- Particulate matter from kilns and coolers (PM/PM_{10}, and VE). Controlled generally by add-on particulate collection equipment such as baghouses or electrostatic precipitators.

- Products of combustion and incomplete combustion (e.g., SO_2, NO_x, CO, VOC). Control is largely achieved by good combustion practices and reactions with clinker and raw materials.

- Emissions from materials handling, conveyance, and storage (primarily PM). Controlled generally by fabric filters and reasonable precautions.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM, SO_2, H_2SO_4, fluorides, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

BACT ANALYSIS

PARTICULATE MATTER (PM/PM_{10})

Particulate Matter is generated by the various physical and chemical processes at a cement manufacturing plant. Sources of particulate matter at cement plants include (1) quarrying and crushing, (2) raw material storage, (3) grinding and blending, 4) clinker production, 5) finish grinding, and 6) packaging and loading. Additional sources of PM are raw material storage piles, conveyers, storage silos, and unloading facilities.

The largest emission source of PM within cement plants is the pyroprocessing system that includes the kiln and clinker cooler exhaust stacks (in this case, common kiln/cooler stack). Emissions from kilns are affected by several factors, including differences in convective patterns, material movement patterns, burner locations and insertion lengths, heat transfer mechanisms, and the type of clinker cooler that supplies secondary air to the kiln for combustion. Typically, dust from the pollution control equipment servicing the kiln and cooler is collected and recycled into the kiln and thus incorporated into the clinker. Southdown has stated that the great majority of the cement kiln dust (CKD) captured in the baghouse is returned to the pyroprocessing system as raw material.

Common control devices for stack gases include settling chambers, inertial separators, impingement separators, wet scrubbers, fabric filters, and electrostatic precipitators. Fabric filters (baghouses) and electrostatic precipitator (ESPs) are generally considered equivalent for particulate control. Both types of devices can achieve removal efficiencies of over 99 percent. ESPs and baghouses are used extensively as control devices at cement plants. ESPs are generally specified for kiln and clinker cooler exhaust gases because of their ability to operate effectively at varying temperatures. Baghouses are also used at various facilities for particulate control from kilns and coolers. Both types of control equipment provide for the recovery/recycling of collected dust back into the process stream. Baghouses are also used to control particulate emissions from most other material processing operations at cement plants.

Common controls to limit particulate emissions from fugitive sources (such as roadways, stockpiles, and material processing and conveying equipment) include wet suppression, sweeping, application of

surfactants, paving of roads and covering of stockpiles to reduce wind erosion. Wet suppression of fugitive particulate emissions is considered as BACT for most material handling operations and unpaved roads. Dust from stockpiles can be minimized by relatively high material moisture content with additional water spraying as necessary.
A review of the BACT Clearinghouse shows that baghouses and ESPs are widely used to control particulate matter from process emission units at cement plants. They are commonly accepted as BACT. This facility, particulate matter sources are controlled by baghouses.

Southdown has proposed to change the allowable emission rates for particulate matter (PM/PM_{10}) from Kilns 1 and 2 and Clinker Coolers 1 and 2 to allow for the fluctuations in emission rates during normal operating conditions. The permitted PM/PM_{10} limits would be increased for Kiln 2 from 13.5 pounds per hour (lb/hr) to 26.0 lb/hr, while PM/PM_{10} emissions for Kiln 1 are proposed to be decreased from 39.0 lb/hr (allowable emissions) to 26.0 lb/hr. The proposed limit for the two clinker coolers would be increased from 7.13 lb/hr (kiln 1) and 5.0 lb/hr (kiln 2) to 13.0 lb/hr. The proposed kiln particulate emission limits are equivalent to 0.18 pounds per ton of dry feed to each kiln preheater (lb/ton $feed_{ph}$). This is a standard lower than the New Source Performance Standard NSPS limit of 0.3 pounds per ton of dry feed (kiln). For the coolers the proposed limits are equivalent to 0.09 lb/ton $feed_{ph}$ which is less than the applicable NSPS limit.

Southdown also requested to increase VE (which is largely linked to particulate emissions) from 10 percent for Kiln 2 to 20 percent.

PRODUCTS OF COMBUSTION AND INCOMPLETE COMBUSTION

Carbon Monoxide and Nitrogen Oxides

Carbon monoxide (CO) is a pollutant formed by the incomplete combustion (oxidation) of carbon containing compounds in the cement kiln fuel and during the transformation of cement raw materials to cement clinker. When insufficient oxygen is provided, more CO and less CO_2 are formed than under excess air conditions. Substantial quantities of CO and CO_2 are also generated through calcining of limestone and other calcareous material. This calcining process thermally decomposes $CaCO_3$ to CaO and CO_2. The calcining of limestone in the cement manufacturing process liberates large amounts of CO_2, which is available for dissociation into CO.

Flyash, a constituent of the raw feed mix, contains unburnt carbon which can vary in concentration depending on the source of the flyash. As the raw feeds travels down the preheater tower, most of the carbon present in the flyash is burned off. However, some of it is emitted as carbon monoxide. This contributes to fluctuations in carbon monoxide emissions.

Although this specific application does not necessitate a PSD review and BACT determination for nitrogen oxides (NO_x), past changes in production rates in Kiln 1 presumably caused concurrent increases in this pollutant. Unless specific measures were taken at the time to insure NO_x emissions increases were kept at less than significant levels, such a review and determination would have been required. The Department is using the opportunity to resolve this outstanding issue by setting a non-BACT emission limit which can be reasonably assumed to be lower than emissions prior to the changes which were not subjected to appropriate review. Southdown has agreed that this limit should be no greater than 275 lb/hr (1.9 lb NO_x/ton $feed_{ph}$).

Southdown is not proposing any changes for Kiln 2 NO_x emissions. Currently, the emission level of 250 lb NO_x/hr is being met (equivalent to 1.72 lb NO_x/ton $feed_{ph}$)

The generation of CO and NO_x is inversely related to that of NO_x and is linked to the oxygen level that is present in the kiln system. As the oxygen level increases, the formation of NO_x increases and the formation of CO decreases. Conversely, when the oxygen level decreases, the formation of NO_x decreases and the formation of CO increases. Southdown will meet CO and NO_x emission levels by controlling excess oxygen in the kiln to a level between one and one-half to three percent excess oxygen. A continuous CO process monitor will assist in the control of the CO content in the kiln.

Emissions of CO can potentially be reduced at portland cement plants through utilization of proper combustion practices to maximize the oxidation of CO to CO_2 and reducing the quantity of CO in the flue gas stream (flue gas control). The high temperatures and control of excess air and fuel, typically results in simultaneous optimization for CO and NO_x. The applicant proposes proper combustion practices as BACT to control emissions of CO from this plant. A review of the BACT Clearinghouse reveals that for cement plants, BACT for CO is proper combustion practices.

The applicant proposes a CO limit of 1.17 lb/ton of $feed_{ph}$ and good combustion practice as BACT for CO for each Kiln. This represents an emission increases for Kiln 1 from 57.7 lb/hr to 169.9 lb/hr and for Kiln 2 from 64.0 to 169.9 lb/hr respectively. This increase is proposed in order to allow for more representative on a year-round basis compared with what is achievable during an annual test. It also accounts for fluctuations due to normal process oscillations and varying characteristics of raw materials and fuels.

Volatile Organic Compounds

VOC is also a pollutant formed due to incomplete combustion of fuel and organic material in the feed material to the kiln system. Limestone contains very low levels of VOCs. An additional source of VOC is oil from mill scale which is sometimes used as a raw material for its iron.

Southdown will reduce the VOC emissions by controlling the temperatures in the kiln system. In the kiln, the feed material will reach about 2700 degrees Fahrenheit. The temperature of the gases in the kiln will reach between 3700 to 3800 degrees Fahrenheit. At these high temperatures, virtually all VOCs will be

consumed or destroyed regardless of their source (limestone, mill scale, coal, fuel oil, etc.). Clinker production requires certain temperatures, residence time, and turbulence within the kiln. These factors are sufficient to ensure the destruction of almost all VOCs at cement plants.

Emissions of VOC can also be controlled by add-on control devices, by the mechanisms of adsorption, absorption, or incineration (afterburning). Incineration processes include flame incineration, thermal incineration, and catalytic incineration. No add-on controls for VOC have been demonstrated for cement plants.

A review of the BACT Clearinghouse reveals that for cement plants, BACT for VOCs is proper combustion practices. The applicant estimates low emissions of VOC such that the kilns will not be subject to BACT for this pollutant.

For VOC, the applicant has estimated 13.0 lb/hr (an increase of 8.0 lb/hr) for Kiln 2. The applicant is utilizing good combustion practices for both kilns to reduce VOCs emissions.

BACT DETERMINATION RATIONALE:

The existing BACT VE limit of 10 percent for Kiln 2 is more stringent than the NSPS for Portland Cement Plant, 40 CFR 60, Subpart F for Kiln 2. It is also consistent with various recent BACT determinations made throughout Florida. There is no good basis for considering the higher VE limit proposed by Southdown than the one already established. Although Kiln 1 has a VE limit of 20 percent, the kilns are operated similarly and will have identical PM limits. The efforts to maintain the lower Opacity limit at Kiln 2 will probably result in fairly low opacity from Kiln 1.

BACT for PM (0.2 lb/ton kiln feed) from Kilns 1 and 2 proposed by Southdown is more stringent than the NSPS for Portland Cement Plants, 40 CFR 60, Subpart F. The basis is the BACT determinations made by the Department for Florida Rock Industries and Florida Crushed Stone and the original BACT determination for Southdown (then FM&M). The Department accepts the applicant's proposed limit (as corrected to 0.18 lb/ton $kiln_{ph}$ feed) for both Kiln 1 and 2.

BACT for PM (0.1 lb/ton $kiln_{ph}$) feed from Coolers 1 and 2 proposed by Southdown is equal to that given in the NSPS for Portland Cement Plants. Southdown was unable to achieve lower limits set in the past as a result of permit conditions they agreed to comply with in order to avoid PSD/BACT. The basis is also the BACT determinations made by the Department for Florida Rock Industries and Florida Crushed Stone. The Department accepts the applicant's proposed limit (corrected to 0.09 lb/ton $kiln_{ph}$ feed) for both Cooler 1 and 2 with the understanding that it is being met at all times rather than just during annual emission tests.

During this review, the Department discovered that, miscellaneous PM sources (other than the kilns and coolers) controlled by baghouses were limited in the original permit (July 1, 1980) for Cement Plant 2 to "0" percent Opacity. These values have been changed in subsequent operating permit reviews, but the original enforceable permit was not changed. Since a 0 percent Opacity limitation is not generally feasible to achieve or demonstrate, the Department is rectifying the value in this construction permit. For each small baghouse associated with Cement Plant 2, the exhaust gases must not exhibit greater than 5 percent opacity. The Department has determined that 5 percent opacity is BACT and is attainable with a baghouse. This is consistent with recent BACT determinations.

BACT for CO was proposed by Southdown to be 1.17 lb/ton $kiln_{ph}$ feed (2.0 lb/ton clinker at a clinker production rate of 84 TPH) for both Kilns. This value will provide sufficient flexibility to minimize NO_x and SO_2 emissions. The value is with the Department's recent BACT determination to Florida Crushed Stone (FCS) with a CO limit of 2.0 lb/ton clinker. However the Department encourages Southdown to continue to be judicious in selecting sources of coal ash. Some of the local power companies are trying to recover the unburned carbon in the coal ash by reburning it, taking advantage of the heat content, and producing a more salable coal ash for customers such as the cement industry. If Southdown revises its specifications and accepts poor quality flyash, it can be counter-productive for this pollution prevention effort affecting both industries.

No BACT determination was required for VOC for either Kiln. The Department accepts the limit requested by Southdown which will result in annual emissions less than the PSD threshold. It will allow Southdown sufficient flexibility in control for all combustion products.

No BACT determination was requested or required for metals such as mercury, beryllium, lead arsenic, fluorides and sulfuric acid mist (PSD pollutants). Original emission estimates submitted for previous applications provided assurance that emissions of these pollutants are less than the PSD significant threshold values.

No new BACT determinations were requested for NO_x and SO_2. The actual BACT emission levels of 250 lb NO_x/hr and 15 lb SO_2/hr for Kiln 2 are being met. These are equal to 1.72 lb NO_x/ton $kiln_{ph}$ feed and 0.10 lb SO_2/ton $kiln_{ph}$ feed. For comparison with industry conventions, these values are equal to 2.98 lb NO_x/ton clinker and 0.18 lb SO_2/ton clinker at a production rate of 84 TPH. A new non-BACT emission limit of 275 lb NO_x/hr (equal to 1.9 lb/ton $kiln_{ph}$ feed or 3.27 lb/ton of clinker at a production rate of 84 TPH) is being set for Kiln 2. Kiln 1 also meets the same SO_2 limit as Kiln 2.

BACT DETERMINATION BY DEP:

Based on the information provided by the applicant and the information searches conducted by the Department, the BACT emission levels are established as follows:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM_{10}) (kilns)	0.18 lb./ton $kiln_{ph}$ feed
Particulate Matter (PM/PM_{10})(coolers)	0.09 lb/ton $kiln_{ph}$ feed
Carbon Monoxide (kilns)	1.17 lb/ton $kiln_{ph}$ feed
Nitrogen Oxides (Kiln 1)	1.9 lb/ton $kiln_{ph}$ feed (30 day, non-BACT)
Volatile Organic Compounds (kilns)	0.09 lb/ton $kiln_{ph}$ feed (non-BACT)
Visible Emissions (Kiln 2)	10 percent (no change)
Minor points sources with baghouses	5 percent

COMPLIANCE

Compliance with the particulate emission limitations shall be in accordance with the EPA Reference Method 5 as contained in Appendix A, 40 CFR 60, and set forth in Subsection 60.64 of the NSPS for Portland Cement Plants, 40 CFR 60.

Compliance with opacity standards (minor sources controlled by baghouses) shall be determined by conducting observations in accordance with 40 CFR 60, Appendix A, Method 9.

Continuous opacity monitors (kilns and coolers) shall meet the requirements of the 40 CFR 60, NSPS Subpart F for Portland Cement Plants. Compliance with the opacity standard for the Kilns and Clinker Coolers No. 1 and No. 2 shall be demonstrated by CEMs.

Compliance with the CO limitations shall be demonstrated by 3 one-hour tests using EPA Method 10.

Pursuant to Rules 62-4.070(3), 62-212.400(6), and 62-297.520, F.A.C., the kiln/cooler exhaust stack system shall also be equipped with continuous monitors process monitors to record CO and/or O_2 to indicate proper maintenance, operation, and to optimize combustion for pollution control.

Compliance with the new Kiln 1 NO_x limitation shall be demonstrated annually by a 30 day test using a CEM which meets the requirements of 40 CFR 60, Appendix B and Appendix F.

Compliance with the VOC limitations shall be demonstrated (on a one time basis) by three one hour stack tests using Method 25 or 25A to confirm emission rate is less than the PSD significant emission rate.

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Teresa Heron, Review Engineer,
A. A. Linero, Administrator, New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:	Approved By:
C. H. Fancy, P.E., Chief Bureau of Air Regulation	Howard L. Rhodes, Director Division of Air Resources Management
Date:	Date:

Southdown
Brooksville Cement Plant

May 21, 1997

Certified Mail - Return Receipt Requested

Ms. Teresa Heron
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT
Draft Permit No.: 0530010-001-AC (PSD-FL-233)

Dear Ms. Heron:

The Florida Department of Environmental Protection's (FDEP) notice of its intent to issue an air construction permit modifications to Southdown, Inc., for a revision of the emission limits applicable to its portland cement facility has been published in the Hernando, Pasco, and Citrus County sections of The Tampa Tribune. The notice of intent was published on May 15, 1997. This fulfills the FDEP's requirement to publish the "Notice of Intent to Issue" within the thirty day time period.

A copy of this Notice and affidavit are attached.

If further action is required in regards to issuance of this permit, please do not hesitate to contact me at (352) 796-7241.

Sincerely,

Don B. Kelly

Don B. Kelly
Plant Manager

Attachments

DBK\dab

16301 Ponce De Leon Boulevard • Brooksville, Florida 34614
(800) 727-6261 • (352) 796-7241 • Fax: (352) 754-9836

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

February 5, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Don Kelly, Plant Manager
Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006

Dear Mr. Kelly:

Re: Southdown Request for Further Modification of Draft Permit
Permit No. 001-0530010 AC, (PSD-FL-233)

The Department has reviewed Southdown's request to change the hours of operation and to increase the process feed rate for both kilns from 145 TPH to 150 TPH.

Per our conversations with representatives of Southdown and Koogler and Associates, we will defer action on the pending permit request and will await submittal of a formal application to increase production from both Kilns. It should include a BACT proposal, including compliance methods as well as an air quality analysis which will be considered by the Department in its own determination. We will incorporate our new determination into the pending action and provide a revised Intent and Public Notice.

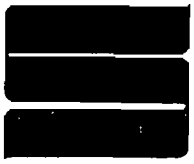
If you have any questions on this matter please call Teresa Heron (Review Engineer) or Cleve Holladay (meteorologist) at (904) 448-1344.

Sincerely,

A. A. Linero, P.E.
Administrator
New Source Review Section

AAL/th/t

cc: B. Beals, EPA
J. Bunyak, NPS
B. Thomas, SWD
L. Garcia, HCEPD
A. Gill, Southdown
J. Koogler, P.E.



January 30, 1997

Mr. A. A. Linero, P.E., Administrator
New Source Review Section
Bureau Of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Permit No. 0530010-001-AC (PSD-FL-233)
Kilns and Coolers No. 1 and No. 2

Dear Mr. Linero

Southdown continuously evaluates its production needs at its plants based on market demands and forecasts. Based on these studies, we need to maintain a feed rate to both kilns that would average out at 150 tons/hour over a 30-day average instead of the present 145 tons/hour. The following changes will insure that this feed can be maintained on a 30-day rolling average.:

1) Modify preheater exit gas cyclones to increase cyclone efficiency above the present 89%, which will reduce heat loss and lower the pressure drop.

2) Replace Kiln ID fan with a high efficiency design, so that higher air flows can be achieved without increasing the drive motor horsepower.

3) Add two additional modules to the Kiln #1 baghouse. This will allow us to maintain a low air-to-cloth ratio when a module has been isolated for maintenance.

4) Improve the clinker cooler efficiency by upgrading the clinker cooler fans and adding static grates.

5) Increase kiln feed system capability to insure the 150-ton per hour feed rate on a continuous basis. Even though our actual feed rate will average 150 tons/hour, the system has to be designed for 160 tons/hour.

Southdown, Inc. ▬ 1200 SMITH STREET ▬ SUITE 2400 ▬ HOUSTON, TEXAS 77002 ▬ (713) 650-6200

6) Add drying drum to the #1 raw mill and increase the mill fan capacity to recuperate the waste heat from the preheater gas.

These changes are designed to increase the overall thermal efficiency, and the maximum heat input to the kiln will not exceed the existing limit of 300 MMBtu/Hr. The above referenced permits are based on a feed rate of 145 tons/hr, 30-day rolling average. Kiln #1 is allowed to operate 8760 hours per year and Kiln #2 is allowed to operate 8200 hours per year. To accomodate the increased feed rate, and to minimize the net annual emissions increase, we are requesting that the operating hours be changed for both kilns to 8350 hours per year. The attached spreadsheet summarizes the emissions from each kiln based on the allowable limits in the pending permits. An alternate scenario, based on 150 tons/hour, annual average, and 8350 hours/year operation for each kiln is also included to show the increases in emissions.

Sincerely,

Amarjit Singh Gill

Amarjit Singh Gill, PE
Director, Air Permitting

c: Don Kelly
John Koogler
Dave Repasz
Dan Heintz

Pollutants	New Allowable Lb/Ton Feed	Allowable @ 145 TPH Lb/Hr	Allowable @ 150 TPH Lb/Hr	Allowable @ 145 TPH & 8760 TPY	Allowable @ 150 TPH & 8350 TPY	Present Permits Kilns 1 & 2 TPY	Proposed Kilns 1 & 2 TPY
PM/PM10, Kiln	0.18	26.1	27.0	114.3	112.7	221.3	225.5
PM/PM10, Cooler	0.09	13.1	13.5	57.2	56.4	110.7	112.7
SO2	0.10	14.5	15.0	63.5	62.6	123.0	125.3
NOx	1.90	275.5	285.0	1206.7	1189.9	2229.2	2267.0
CO	1.17	169.9	175.8	744.3	734.0	1441.1	1467.9
VOC	0.09	13.1	13.5	57.2	56.4	110.7	112.7
Opacity, Cooler %	10	10					
Opacity, Kiln %	20	20					

Cement Kiln No. 1 And Cooler No. 1

Pollutants	New Allowable Lb/Ton Feed*	Allowable @ 145 TPH Lb/Hr	Allowable @ 150 TPH Lb/Hr	Allowable @ 145 TPH & 8200 TPY	Allowable @ 150 TPH & 8350 TPY	Ref Method	Duration/ Frequency
PM/PM10, Kiln	0.18	26.1	27.0	107.0	112.7	5	3 1-Hr Runs
PM/PM10, Cooler	0.09	13.1	13.5	53.5	56.4	5	3 1-Hr Runs
SO2	0.10	14.5	15.0	59.5	62.6	6C	3 1-Hr Runs
NOx	1.72	249.4	258.0	1022.5	1077.2	7E	3 1-Hr Runs
CO	1.172	169.9	175.8	696.8	734.0	10	3 1-Hr Runs
VOC	0.09	13.1	13.5	53.5	56.4	25 or 25A	3 1-Hr Runs
Opacity, Cooler %	10	10				9	180 Min
Opacity, Kiln %	10	10				9	180 Min

Cement Kiln No. 2 And Cooler No. 2

COMPARISON OF 145 TPH VS 150 TPH FEED

Pollutants	New Allowable Lb/Ton Feed	Allowable @ 145 TPH Lb/Hr	Allowable @ 150 TPH Lb/Hr	Allowable @ 145 TPH & 8760 TPY	Allowable @ 150 TPH & 8350 TPY	Present Permits Kilns 1 & 2 TPY	Proposed Kilns 1 & 2 TPY
PM/PM10, Kiln	0.18	26.1	27.0	114.3	112.7	221.3	225.5
PM/PM10, Cooler	0.09	13.1	13.5	57.2	56.4	110.7	112.7
SO2	0.10	14.5	15.0	63.5	62.6	123.0	125.3
NOx	1.90	275.5	285.0	1206.7	1189.9	2229.2	2267.0
CO	1.17	169.9	175.8	744.3	734.0	1441.1	1467.9
VOC	0.09	13.1	13.5	57.2	56.4	110.7	112.7
Opacity, Cooler %	10	10					
Opacity, Kiln %	20	20					

Cement Kiln No. 1 And Cooler No. 1

Pollutants	New Allowable Lb/Ton Feed*	Allowable @ 145 TPH Lb/Hr	Allowable @ 150 TPH Lb/Hr	Allowable @ 145 TPH & 8200 TPY	Allowable @ 150 TPH & 8350 TPY	Ref Method	Duration/ Frequency
PM/PM10, Kiln	0.18	26.1	27.0	107.0	112.7	5	3 1-Hr Runs
PM/PM10, Cooler	0.09	13.1	13.5	53.5	56.4	5	3 1-Hr Runs
SO2	0.10	14.5	15.0	59.5	62.6	6C	3 1-Hr Runs
NOx	1.72	249.4	258.0	1022.5	1077.2	7E	3 1-Hr Runs
CO	1.172	169.9	175.8	696.8	734.0	10	3 1-Hr Runs
VOC	0.09	13.1	13.5	53.5	56.4	25 or 25A	3 1-Hr Runs
Opacity, Cooler %	10	10				9	180 Min
Opacity, Kiln %	10	10				9	180 Min

Cement Kiln No. 2 And Cooler No. 2

COMPARISON OF 145 TPH VS 150 TPH FEED

January 31, 1997

Mr. A. A. Linero, P.E., Administrator
New Source Review Section
Bureau Of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Permit No. 0530010-001-AC (PSD-FL-233)
Kilns and Coolers No. 1 and No. 2

Dear Mr. Linero

As a follow up to our meeting of January 30, 1997, the following justification is provided to amend the above referenced pending permit, which has gone through the public notification process and is about to be issued by the Florida Department of Environmental Protection (FDEP):

1) The increase in production will be realized through thermal efficiency improvements with no increase in heat input above the present 300 MMBtu/hr for each kiln.

1) The peak feed rate limit of 165 tons/hour to the preheater will not exceed that allowed under the pending permit.

2) The pending permit allows Kiln #1 to operate 8760 hours/year and Kiln #2 to operate 8200 hours/year. By adjusting the operating hours for each kiln to 8350/year, the combined net increase in emissions for each criteria pollutant from both kilns collectively, above that allowed in the pending permit, is below significant level. These increases are summarized in the attached spreadsheet.

   The use of allowable emissions in netting calculations is permitted in 40 CFR 52.24.13(iii), which states: "The Administrator may presume that source-specific allowable emissions are equivalent to the actual emissions of the unit." This is particularly true where actual emissions, under the pending permit, have not been established or verified as yet.

Since this change is not subject to the PSD review, the 30 day public commenting period is not required. If, however, FDEP determines that a public notification for a shorter duration is necessary, Southdown will publish the notice as directed.

During the meeting yesterday, we informed you that Southdown plans to implement the following

changes to insure that a feed rate of 150 tons/hour can be maintained on a 30-day rolling average:

1) Modify preheater exit gas cyclones to increase cyclone efficiency above the present 89%, which will reduce heat loss and lower the pressure drop.

2) Replace Kiln ID fan with a high efficiency design, so that higher air flows can be achieved without increasing the drive motor horsepower.

3) Add two additional modules to the Kiln #1 baghouse. This will allow us to maintain a low air-to-cloth ratio when a module has been isolated for maintenance.

4) Improve the clinker cooler efficiency by upgrading the clinker cooler fans and adding static grates.

5) Improve the kiln feed system capability to insure the 150-ton per hour feed rate on a continuous basis.

6) Add a drying drum to the #1 raw mill and increase the mill fan capacity to recuperate the waste heat from the preheater gas.

Cement kilns generally burn their on-site generated, non-hazardous wastes, such as used oil, lubrication oil, grease and rags in the kilns. This has been a practice at our Brooksville Plant for a number of years and was authorized in the early eighties by a letter from the FDEP. Unfortunately, we cannot locate a copy of this letter at this time.

Therefore, we request that a provision be included in our permit (in Sections B5 & C5) to burn such non-hazardous wastes. We use approximately 25,000 gallons of lubricants annually at this plant. A good portion of the spent lubricants is burned in the kiln and the remainder is used for other lubricating purposes.

Southdown will submit any additional fees deemed necessary by the FDEP for this permit change. If you have any questions or need additional information, please call me at (713) 653-8098.

Sincerely,

Amarjit Singh Gill

Amarjit Singh Gill, PE
Director, Air Permitting

c: Don Kelly
John Koogler
Dave Repasz
Dan Heintz

PENALTY COMPUTATION WORKSHEET

Violator's Name: Southdown, Inc., dba Florida Mining and Materials

Violator's Facility: Portland Cement Plant, U. S. 98, Northwest of Brooksville

Department Staff Responsible for Penalty Computation: Tom Ellison

Date: 6/5/96

Part I - Class B (no penalty) Determination

Rationale: N/A

Part II - Class A Penalty Determination

	Violation Type	Potential for Harm	Extent of Deviation	Matrix Amount	Multiday Amount	Adj.	Total
1.	Kiln #1 - excess emissions	Major	Major	$10,000	$65,538	0	$75,538
2.	Kiln #1 - failure to maintain pollution control device	Major	Moderate	7,000	0	0	7,000
3.	Clinker Cooler #1 - excess emissions	Moderate	Major	4,250	27,472	0	31,712
4.	Clinker Cooler #1 - failure to maintain pollution control device	Moderate	Moderate	2,600	0	0	2,600
5.	Clinker Cooler #1 - stack test failure	Moderate	Major	3,900	10,725	0	14,625
6.	Kiln #2 - excess emissions	Moderate	Major	4,250	29,150	0	33,400
7.	Kiln #2 - failure to maintain pollution control device	Moderate	Moderate	2,600	0	0	2,600
8.	Kiln #2 - stack test failure	Moderate	Moderate	2,600	2,600	0	5,200
9.	Clinker Cooler #2 - excess emissions	Moderate	Major	3,900	9,325	0	13,225
10.	Clinker Cooler #2 - failure to maintain pollution control device	Moderate	Moderate	2,600	0	0	2,600
11.	Finish Mill #1 - failure to conduct VE test in 1995	Moderate	Major	3,900	0	0	3,900
12.	Finish Mill #2 - failure to conduct VE test in 1995	Moderate	Major	3,900	0	0	3,900

Total Penalties for all Violations: $196,300

Part III - Multiday Penalties and Adjustments

Adjustments	Dollar Amount
Good faith/Lack of good faith prior to discovery:	
Justification:	
Good faith/Lack of good faith after discovery:	
Justification:	
History of Non-compliance:	
Justification:	
Economic Benefit of Non-Compliance	
Justification:	
Ability to Pay:	
Justification:	
Total Adjustments	

Multiday Penalties	Dollar Amount
Number of days adjustment factor(s) to be applied	
Justification:	
Number of days matrix amount is to be multiplied:	See below

Justification: V1, V3, V6 and V9: For multiday calculations on the excess emissions violations, see attachments 2-5.

V5. IAW penalty guidance, Clinker Cooler #1 assumed to be operating out of compliance from date of original test to date final test demonstrated compliance: 11 additional days x 25 % of matrix amount x $2,600 = $10,725.

V8. IAW penalty guidance, Kiln #2 assumed to be operating out of compliance from date of original test to date final test demonstrated compliance: 4 additional days x 25 % of matrix amount x $2,600 = $2,600.

ATTACHMENT 1
EXPANDED PENALTY MATRIX CELLS

MAJOR POTENTIAL FOR HARM

	Major Extent of Deviation		
percent opacity 84 - 100	$10,000	$9,500	$9,000
67 - 83	$9,500	$9,000	$8,500
50 - 66	$9,000	$8,500	$8,000
duration	≥ 361 min.	241 - 360 min.	121 - 240 min.

	Moderate Extent of Deviation		
percent opacity 45 - 49	$8,000	$7,500	$7,000
40 - 44	$7,500	$7,000	$6,500
35 - 39	$7,000	$6,500	$6,000
duration	≥ 361 min.	241 - 360 min.	121 - 240 min.

	Minor Extent of Deviation		
percent opacity 30 - 34	$6,000	$5,650	$5,300
25 - 29	$5,650	$5,300	$4,950
21 - 24	$5,300	$4,950	$4,600
duration	≥ 361 min.	241 - 360 min.	121 - 240 min.

MODERATE POTENTIAL FOR HARM

	Major Extent of Deviation		
percent opacity 80 -100	$4,600	$4,250	$3,900
60 - 79	$4,250	$3,900	$3,550
40 - 59	$3,900	$3,550	$3,200
duration	≥ 361 min.	241 - 360 min.	121 - 240 min.

	Moderate Extent of Deviation		
percent opacity 35-39	$3,200	$2,900	$2,600
30 -34	$2,900	$2,600	$2,300
25 - 29	$2,600	$2,300	$2,000
duration	≥ 361 min.	241 - 360 min.	121 - 240 min.

	Minor Extent of Deviation		
percent opacity 20 - 24	$2,000	$1,800	$1,600
15 - 19	$1,800	$1,600	$1,400
10 - 14	$1,600	$1,400	$1,200
duration	≥ 361 min.	241 - 360 min.	121 - 240 min.

Attachment 2
Cement Kiln #1 Excess Emissions
April 1, 1995 through January 29, 1996

Start Date	Start Time	End Date	End Time	Maximum Opacity, %	Extent of Deviation	Excess Emissions, Minutes	Penalty Matrix Amount
4/1/95	1918	4/2/95	1918	48	Moderate	636	$8,000
4/5/95	1642	4/6/95	0954	56	Major	188	$8,000
4/7/95	2349	4/8/95	1436	28	Minor	294	$5,300
4/9/95	2331	4/10/95	2331	48	Moderate	402	$8,000
4/10/95	2331	4/11/95	1131	29	Minor	168	$4,950
4/12/95	1449	4/13/95	0413	38	Moderate	144	$6,000
4/14/95	1449	4/15/95	0849	38	Moderate	690	$8,000
4/19/95	1838	4/19/95	2144	34	Minor	156	$5,300
4/20/95	2338	4/21/95	2338	71	Major	1350	$9,500
4/21/95	2338	4/22/95	1638	85	Major	726	$10,000
4/24/95	0356	4/24/95	1556	31	Minor	408	$6,000
7/5/95	0803	7/6/95	0533	25	Minor	138	$4,950
7/11/95	0943	7/11/95	1513	31	Minor	264	$5,650
7/16/95	0836	7/16/95	1625	40	Moderate	378	$7,500
7/28/95	1931	7/29/95	1101	33	Minor	828	$6,000
7/30/95	0455	7/30/95	0901	25	Minor	150	$4,950
7/31/95	0819	8/1/95	0819	25	Minor	132	$4,950
8/1/95	0819	8/1/95	2125	26	Minor	148	$4,950
9/5/95	1507	9/5/95	2143	24	Minor	306	$5,300
9/24/95	0730	9/24/95	0730	59	Major	290	$8,500
9/28/95	0728	9/29/95	0534	28	Minor	342	$5,300
9/29/95	0746	9/30/95	1728	36	Moderate	156	$6,000
9/30/95	1604	10/1/95	0646	32	Minor	336	$5,650
10/1/95	0904	10/2/95	0922	27	Minor	384	$5,650
10/3/95	0904	10/3/95	1752	26	Minor	240	$4,950
10/12/95	0658	10/12/95	1040	26	Minor	126	$4,950
10/29/95	1429	10/30/95	1326	30	Minor	324	$5,650
10/30/95	1450	10/31/95	0256	33	Minor	432	$6,000
11/7/95	1344	11/7/95	2220	28	Minor	300	$5,300
11/9/95	1302	11/10/95	0632	27	Minor	420	$5,650
11/19/95	0621	11/20/95	0621	25	Minor	444	$5,650
11/20/95	0621	11/20/95	1315	26	Minor	312	$5,300
12/12/95	0445	12/12/95	1645	36	Moderate	198	$6,000
12/29/95	0109	12/29/95	0545	28	Minor	210	$4,950
12/30/95	1603	12/31/95	1109	30	Minor	276	$5,650
1/2/96	1000	1/3/96	0001	26	Minor	228	$4,950
1/5/96	0452	1/6/96	0452	40	Moderate	1,044	$7,500
1/6/96	0452	1/6/96	0852	32	Minor	210	$5,300
1/9/96	2052	1/10/96	2052	36	Moderate	498	$7,000
1/15/96	1110	1/16/96	1110	57	Major	318	$8,500

1/16/96	1110	1/17/96	0328	46	Moderate	306	$7,500
1/25/96	1440	1/26/96	1304	45	Moderate	156	$5,300
1/27/96	1810	1/28/96	1810	36	Moderate	228	$6,000
1/28/96	1810	1/29/96	0834	33	Minor	270	$5,650

Penalties (excluding Maximum One-Day Penalty)	$262,150
Multiday Penalties (25 % of above total)	$65,538
Maximum One-Day Penalty	$10,000
Total Penalty (Sum of Multiday Penalties plus Maximum One-Day Penalty)	$75,538

The above table excludes periods when the opacity monitor may have been out of alignment due to high stack temperatures resulting from raw mill shutdown or ground out. The table also excludes any periods when opacity readings fell between 20-22 percent during the period from April 1, 1995 to July 13, 1995 when Southdown adjusted the COM zero drift. Maximum opacity readings have also been decremented by 2 percent for this period. The highlighted entry is the violation selected for the maximum one-day penalty.

Attachment 3
Clinker Cooler #1 Excess Emissions
April 1, 1995 through January 18, 1996

Start Date	Start Time	End Date	End Time	Maximum Opacity, %	Extent of Deviation	Excess Emissions, Minutes	Penalty Matrix Amount
4/1/95	0000	4/1/95	2400	20	Minor	204	$1,600
4/2/95	1323	4/3/95	1159	16	Minor	210	$1,400
4/3/95	1405	4/4/95	0547	16	Minor	300	$1,600
4/10/95	0823	4/11/95	0817	17	Minor	210	$1,400
4/11/95	1217	4/12/95	1141	16	Minor	288	$1,600
4/12/95	1541	4/13/95	0617	14	Minor	132	$1,200
4/16/95	1023	4/16/95	1805	14	Minor	168	$1,200
4/17/95	1259	4/18/95	1129	12	Minor	174	$1,200
4/21/95	0741	4/22/95	0647	18	Minor	378	$1,800
4/22/95	1017	4/23/95	0941	16	Minor	204	$1,400
4/27/95	0547	4/28/95	0347	16	Minor	126	$1,400
4/28/95	1752	4/29/95	1505	14	Minor	156	$1,200
4/29/95	1923	4/30/95	1815	26	Moderate	438	$2,600
5/1/95	0304	5/2/95	0146	17	Minor	162	$1,400
5/2/95	0840	5/2/95	1422	15	Minor	192	$1,400
5/9/95	1228	5/10/95	0828	18	Minor	150	$1,400
5/10/95	1604	5/11/95	1510	16	Minor	246	$1,600
5/13/95	2234	5/14/95	1458	16	Minor	174	$1,400
5/14/95	2310	5/15/95	1134	24	Minor	156	$1,600
5/16/95	1410	5/17/95	1410	25	Moderate	450	$2,600
5/17/95	1410	5/18/95	1410	56	Major	930	$3,900
5/18/95	1410	5/19/95	1410	66	Major	1158	$4,250
5/19/95	1410	5/20/95	0316	25	Moderate	150	$2,000
5/21/95	1458	5/22/95	1428	17	Minor	186	$1,200
5/22/95	1658	5/23/95	1658	20	Minor	570	$2,000
5/24/95	0404	5/25/92	0304	46	Major	258	$3,550
5/25/95	0428	5/26/95	0358	18	Minor	360	$1,800
5/26/95	0528	5/27/95	0122	16	Minor	336	$1,600
5/27/95	1116	5/28/95	0222	28	Moderate	676	$2,600
5/28/95	1352	5/29/95	1046	34	Moderate	324	$2,600
5/29/95	1922	5/30/95	1246	25	Moderate	240	$2,000
5/30/95	2139	5/31/95	2045	22	Minor	252	$1,800
5/31/95	2145	6/1/95	2139	25	Moderate	930	$2,600
6/1/95	2209	6/2/95	0727	22	Minor	240	$1,600
6/3/95	0509	6/3/95	2357	24	Minor	546	$2,000
6/5/95	0751	6/6/95	0751	16	Minor	384	$1,800
6/6/95	0845	6/7/95	0845	15	Minor	468	$1,800

Southdown, Inc.
Clinker Cooler #1 Excess Emissions
Page 2

Start Date	Start Time	End Date	End Time	Maximum Opacity, %	Extent of Deviation	Excess Emissions, Minutes	Penalty Matrix Amount
6/7/95	1215	6/8/95	0851	17	Minor	426	$1,800
6/8/95	1627	6/9/95	1503	15	Minor	480	$1,800
6/9/95	1651	6/10/95	1627	15	Minor	744	$1,800
6/10/95	1627	6/11/95	1627	24	Minor	708	$2,000
6/11/95	1827	6/12/95	1827	20	Minor	834	$2,000
6/13/95	1045	6/14/95	1045	15	Minor	384	$2,000
6/14/95	1045	6/14/95	2033	23	Minor	528	$2,000
6/25/95	1121	6/25/95	1357	23	Minor	150	$1,600
7/4/95	1909	7/5/95	1527	15	Minor	468	$1,800
7/6/95	1051	7/7/95	1027	15	Minor	366	$1,800
7/7/95	1103	7/8/95	0527	27	Moderate	186	$2,000
7/8/95	1257	7/9/95	1232	13	Minor	306	$1,400
7/10/95	0524	7/11/95	0518	15	Minor	198	$1,400
7/11/95	0930	7/12/95	0036	18	Minor	150	$1,200
7/19/95	0906	7/20/95	0724	13	Minor	156	$1,200
7/20/95	0924	7/20/95	1718	12	Minor	150	$1,200
7/23/95	0754	7/23/95	1948	15	Minor	192	$1,400
7/25/95	1854	7/26/95	1624	15	Minor	468	$1,800
7/27/95	0018	7/27/95	1548	15	Minor	312	$1,600
7/28/95	0024	7/29/95	0024	18	Minor	216	$1,200
7/29/95	0024	7/29/95	1548	12	Minor	216	$1,200
7/31/95	0330	8/1/95	0330	14	Minor	132	$1,200
8/3/95	1230	8/4/95	0254	14	Minor	252	$1,400
8/5/95	1700	8/6/95	1700	14	Minor	252	$1,400
1/5/96	1041	1/6/96	0934	14	Minor	486	$1,600
1/7/96	2358	1/8/96	2158	17	Minor	180	$1,400
1/8/96	2358	1/9/96	2252	13	Minor	192	$1,200
1/17/96	1010	1/18/96	2252	14	Minor	132	$1,200

Penalties (excluding Maximum One-Day Penalty)	$109,850
Multiday Penalties (25 % of above total)	$27,462
Maximum One-Day Penalty	$4,250
Total Penalty (Sum of Multiday Penalties plus Maximum One-Day Penalty)	$31,712

The highlighted entry is the violation selected for the maximum one-day penalty.

Attachment 4
Cement Kiln # 2 Excess Emissions
April 3, 1995 through January 24, 1996

Start Date	Start Time	End Date	End Time	Maximum Opacity, %	Extent of Deviation	Excess Emissions, Minutes	Penalty Matrix Amount
4/3/95	1135	4/4/95	0904	12	Minor	150	$1,200
4/6/95	0115	4/7/95	2338	15	Minor	456	$1,800
4/19/95	1718	4/20/95	1718	33	Moderate	505	$2,900
4/21/95	1718	4/21/95	2117	18	Minor	239	$1,400
4/24/95	1315	4/22/95	1315	18	Minor	413	$1,800
4/25/95	1315	4/25/95	1550	16	Minor	137	$1,400
4/29/95	0935	4/30/95	0029	16	Minor	684	$1,800
5/3/95	1815	5/4/95	1725	19	Minor	174	$1,400
5/8/95	0812	5/8/95	2159	67	Major	204	$3,550
5/9/95	1805	5/10/95	1805	24	Minor	1069	$2,000
5/10/95	1805	5/11/95	1805	30	Moderate	1249	$2,900
5/11/95	1805	5/12/95	1805	32	Moderate	1140	$2,900
5/12/95	1805	5/12/95	2220	16	Minor	238	$1,400
5/15/95	1055	5/16/95	1036	18	Minor	144	$1,400
5/16/95	1106	5/17/95	0606	13	Minor	294	$1,400
5/17/95	1147	5/18/95	1147	18	Minor	630	$1,800
5/18/95	1147	5/19/95	1147	34	Moderate	559	$2,900
5/19/95	1147	5/20/95	1147	17	Minor	575	$1,800
5/20/95	1147	5/21/95	1147	20	Minor	852	$2,000
5/21/95	1147	5/22/95	1147	18	Minor	913	$1,800
5/22/95	1147	5/23/95	0749	13	Minor	159	$1,200
5/29/95	1509	5/30/95	1239	15	Minor	714	$1,800
5/30/95	0032	5/31/95	1032	12	Minor	174	$1,200
6/1/95	0056	6/1/95	2249	14	Minor	342	$1,400
6/6/95	0940	6/7/95	0909	53	Major	834	$3,900
6/7/95	1045	6/8/95	0827	13	Minor	390	$1,600
6/9/95	1144	6/9/95	1137	12	Minor	150	$1,200
6/10/95	1649	6/11/95	1400	12	Minor	132	$1,200
6/12/95	0312	6/13/95	2118	22	Minor	528	$2,000
6/15/95	1234	6/16/95	1103	14	Minor	448	$1,600
6/18/95	1042	6/19/95	0945	17	Minor	474	$1,800
6/19/95	1424	6/20/95	1424	15	Minor	1274	$1,800
6/20/95	1424	6/21/95	1041	16	Minor	1211	$1,800
6/27/95	1206	6/28/95	0954	12	Minor	150	$1,200
6/28/95	1441	6/29/95	1441	19	Minor	318	$1,600
6/29/95	1441	6/30/95	1040	15	Minor	306	$1,600
7/9/95	1528	7/10/95	1528	15	Minor	141	$1,400

Start Date	Start Time	End Date	End Time	Maximum Opacity, %	Extent of Deviation	Excess Emissions, Minutes	Penalty Matrix Amount
7/10/95	1528	7/11/95	1528	20	Minor	263	$1,800
7/11/95	1528	7/12/95	1037	16	Minor	376	$1,800
7/28/95	1948	7/29/95	1535	68	Major	576	$4,250
8/9/95	1846	8/9/95	2104	14	Minor	138	$1,200
8/14/95	1300	8/15/95	0754	21	Minor	258	$1,800
8/26/95	2028	8/27/95	1845	41	Major	1272	$3,900
8/28/95	0314	8/29/95	0300	70	Major	690	$4,250
8/29/95	0318	8/29/95	1354	14	Minor	408	$1,600
9/18/95	1912	9/18/95	2130	26	Moderate	138	$2,000
10/15/95	1419	10/16/95	0654	12	Minor	228	$1,400
11/6/95	0542	11/6/95	0742	12	Minor	138	$1,200
11/8/95	2147	11/9/95	0047	26	Moderate	180	$2,000
11/27/95	0818	11/28/95	0629	13	Minor	306	$1,400
12/29/95	2357	12/30/95	1509	15	Minor	336	$1,600
12/31/95	1015	1/1/96	0356	13	Minor	132	$1,200
1/1/96	1126	1/2/96	0837	14	Minor	318	$1,400
1/6/96	1105	1/7/96	0234	13	Minor	330	$1,400
1/7/96	2322	1/8/96	1457	18	Minor	732	$1,800
1/9/96	0121	1/9/96	1345	13	Minor	456	$1,600
1/10/96	2144	1/11/96	0932	62	Major	522	$4,250
1/12/96	0813	1/13/96	0012	56	Major	366	$3,900
1/14/96	0511	1/14/96	0735	89	Major	144	$3,900
1/15/96	0747	1/15/96	2011	13	Minor	180	$1,200
1/17/96	1657	1/18/96	1521	20	Minor	138	$1,600
1/23/96	1748	1/24/96	0105	79	Major	360	$3,550

Penalties (excluding Maximum One-Day Penalty)	$116,600
Multiday Penalties (25 % of above total)	$29,150
Maximum One-Day Penalty	$4,250
Total Penalty (Sum of Multiday Penalties plus Maximum One-Day Penalty)	$33,400

The above table excludes periods when the opacity monitor may have been out of alignment due to high stack temperatures resulting from raw mill shutdown or ground out. The highlighted entry is the violation selected for the maximum one-day penalty.

Attachment 5
Clinker Cooler #2 Excess Emissions
May 20, 1995 through September 27, 1995

Start Date	Start Time	End Date	End Time	Maximum Opacity, %	Extent of Deviation	Excess Emissions, Minutes	Penalty Matrix Amount
5/20/95	0902	5/20/95	1320	12	Minor	204	$1,200
5/22/95	1554	5/23/95	1535	15	Minor	168	$1,200
5/23/95	1617	5/24/95	1611	15	Minor	288	$1,400
5/24/95	1629	5/25/95	1622	14	Minor	408	$1,600
5/25/95	1758	5/26/95	1758	20	Minor	451	$2,000
5/26/95	1758	5/27/95	1758	41	Major	145	$3,200
5/29/95	1255	5/30/95	1043	15	Minor	204	$1,400
5/30/95	1313	5/31/95	1313	16	Minor	181	$1,400
5/31/95	1313	6/1/95	1313	15	Minor	259	$1,600
6/1/95	1313	6/2/95	1313	14	Minor	390	$1,600
6/2/95	1313	6/3/95	1110	22	Minor	496	$2,000
6/8/95	1442	6/9/95	1336	15	Minor	168	$1,400
6/25/95	2219	6/26/95	2054	12	Minor	222	$1,200
6/29/95	1016	6/30/95	0803	18	Minor	168	$1,400
7/3/95	1437	7/4/95	1425	24	Minor	228	$1,600
7/4/95	1431	7/5/95	1431	12	Minor	217	$1,200
7/5/95	1431	7/5/95	1912	13	Minor	251	$1,400
8/13/95	1731	8/14/95	1725	12	Minor	150	$1,200
8/16/95	1841	8/17/95	1711	18	Minor	138	$1,400
8/18/95	0858	8/18/95	0258	35	Moderate	306	$2,900
9/23/95	0606	9/24/95	0136	52	Major	210	$3,200
9/25/95	1512	9/26/95	0541	84	Major	234	$3,900
9/26/95	1529	9/27/95	1435	24	Minor	258	$1,800

Penalties (excluding Maximum One-Day Penalty)	$37,300
Multiday Penalties (25 % of above total)	$9,325
Maximum One-Day Penalty	$3,900
Total Penalty (Sum of Multiday Penalties plus Maximum One-Day Penalty)	$13,225

The highlighted entry is the violation selected for the maximum one-day penalty.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR RESOURCES MANAGEMENT SYSTEM
16-JUL-96 FACILITY EMISSION REPORT

AIRS ID: 0530010 # of Emissions Unit: 26
Owner: FLORIDA MINING &
Name: FLORIDA MINING & MATERIALS
City: BROOKSVILLE Office: SWD County: HERNANDO
Status: A Compliance Tracking Code: A DFC: 04-OCT-95
SIC: 3241 PSD: Y PPS: N NSPS: Y NESHAP:
Title V Source: Y Syn Non-Title V Source: Small Business Stationary:
Major of HAPS: Y Major of Non-HAP Pollutants:
Syn Minor of HAPS: Syn Minor of Non-HAP Pollutants:

E.U. 1 Desc: CEMENT PLANT RAW MATL STG & HANDLING C-11, C-11A

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	8.6000	8.6000	7.0800	0.2300
PM10				

E.U. 2 Desc: NO. 1 KILN FEED SYSTEM (BAGHOUSE D-31)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	163.0000	4.1800	3.5400	2.2500
PM10				
PB				

E.U. 3 Desc: CEMENT KILN NO. 1 BAGHOUSE(E-55);REVISED OIL CONCE

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
CO		236 T.		159.4000
SO2	2181.2400	65.7	0.1000	2032.3700
PM	169.8000	169.8000	21.6100	14.8300
NOX			0.0001	527.7700
VOC				3.9851
PM10				
PB				

E.U. 4 Desc: CEMENT PLANT CLINKER COOLER NO. 1 (BAGHOUSE F-18)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	44.0000	28.1400	17.5800	5.4600
PM10				

E.U. 5 Desc: FINISH MILLS #1 & #2 WITH TWO DUST COLLECTORS

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	158.0000	158.0000	91.4700	166.3900
PM10				
PB				

$\frac{39\text{ lb}}{\text{hr}} \times \frac{1\text{ ton}}{2000\text{ lb}} \times \frac{8760\text{ hr}}{\text{yr}} = 170.8\text{ TPY}$

7.1

$= 31.091\text{ TPY}$

E.U. 6 Desc: CLINKER STORAGE SILO NOS. 1&2 (BAGHOUSE F-31)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	149.0000	5.7200	4.8300	3.4400

E.U. 7 Desc: CLAY CRUSHER DRYER WITH BAGHOUSE UNIT C-10

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM		18.5000		
SO2				
NOX				
PM10				

E.U. 8 Desc: NO. 1 KILN BLENDING SILOS (BAGHOUSE NOS. E-36,F-17

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	163.0000	9.7200	8.1700	3.4300
PM10				

E.U. 9 Desc: CEMENT PLT STG SILOS DUST UNIT F-3

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	150.0000	155.5000	134.9700	91.1200

E.U. 11 Desc: RAW MAT'L STORAGE SILOS & FEED SYST. W/BAGHOUSES (

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM		8.5000		0.2300
PM10				

E.U. 12 Desc: KILN NO. 2 BLENDING SILO W/BAGHOUSE (G-11)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	7.5300	3.5300	2.5100	0.4300

E.U. 13 Desc: NO. 2 KILN FEED SYSTEM W/BAGHOUSE (H-13)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
SO2	47.1500	47.1500		
VOC	30.3400	30.3400		
CO	262.4000	262.4000		
NOX	1025.0000	1025.0000		
PM	55.3500	55.3500	3.3200	0.0500
PM10				

E.U. 14 Desc: CEMENT KILN NO. 2 BAGHOUSE(E-19); REVISED OIL CONC

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
VOC	31.2000	31.2000	7.1600	8.1400
SO2	47.0000	47.0000	24.7400	1.9000
PM	55.3000	55.3000	13.4400	17.6500
NOX	1025.0000	1025.0000	330.0300	298.9100
PM10				
PB				
CO	262.2000	262.2000	130.8400	129.2300

E.U. 15 Desc: NO. 2 CLINKER COOLER W/BAGHOUSE K-09

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	20.5000	20.5000	15.4200	3.9000
PM10				

E.U. 16 Desc: CLINKER SILO NO. 3 W/BAGHOUSE (L-7)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	5.9500	5.9500	4.4700	0.2100

E.U. 17 Desc: CLINKER/GYPSUM TRANSFER BELT W/BAGHOUSE (M-09)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	1.9100	1.9100	0.0020	0.0020

E.U. 18 Desc: FINISH MILL NO. 3 CLINKER/GYPSUM DAY TANK W/BAGHOU

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	5.4400	5.4400	3.7500	0.0900

E.U. 19 Desc: FINISH MILL NO. 3 W/BAGHOUSE (N-23)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	15.0000	15.0000	10.3300	3.6400
PM10				
PB				

E.U. 20 Desc: ONE OF TWO BAGHOUSES @ #3 FINISH MILL (N-27)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	15.0000	15.0000		
PM10				
PB				

E.U. 21 Desc: CEMENT SILOS 7 & 8 W/BAGHOUSE (P-05)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	8.0000	3.7500	3.7500	0.1800

E.U. 22 Desc: MASONRY SILO W/BAGHOUSE (P-07)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	3.7500	1.8800	1.8800	0.1000

E.U. 23 Desc: TRUCK LOADOUT SYSTEM W/BAGHOUSE (Q-17)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	3.7500	1.8800	0.6200	0.1600

E.U. 24 Desc: RAW MATERIAL PRE-MIX BIN W/BAGHOUSE (M-2280)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	2.3700	2.3700	1.9800	0.0900
PM10				

E.U. 25 Desc: ADDITIVE MATERIAL STORAGE BIN W/BAGHOUSE M-1171

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	0.0280	11.3000	2.8100	0.0600
PM10				

E.U. 26 Desc: CEMENT BAG LOADOUT SYSTEM W/BAGHOUSE (M-3514)

Pollutant	Poten(TPY)	Allow(TPY)	1992 Actual(TPY)	1991 Actual(TPY)
PM	1.8700	1.8700	0.4300	0.0800
PM10				

DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR RESOURCES MANAGEMENT SYSTEM
16-JUL-96 FACILITY EMISSION REPORT

AIRS ID: 0530010 # of Emissions Unit: 26
Owner: FLORIDA MINING &
Name: FLORIDA MINING & MATERIALS
City: BROOKSVILLE Office: SWD County: HERNANDO
Status: A Compliance Tracking Code: A DFC: 04-OCT-95
SIC: 3241 PSD: Y PPS: N NSPS: Y NESHAP:
Title V Source: Y Syn Non-Title V Source: Small Business Stationary:
Major of HAPS: Y Major of Non-HAP Pollutants:
Syn Minor of HAPS: Syn Minor of Non-HAP Pollutants:

E.U. 1 Desc: CEMENT PLANT RAW MATL STG & HANDLING C-11, C-11A

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	8.6000	8.6000	3.1300	3.3800
PM10				

E.U. 2 Desc: NO. 1 KILN FEED SYSTEM (BAGHOUSE D-31)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	163.0000	4.1800	11.3400	140.6610
PM10				
PB				

E.U. 3 Desc: CEMENT KILN NO. 1 BAGHOUSE(E-55);REVISED OIL CONCE

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
CO			159.4000	
SO2	2181.2400			
PM	169.8000	169.8000	0.9600	0.9600
NOX			527.7700	
VOC				
PM10				
PB				

E.U. 4 Desc: CEMENT PLANT CLINKER COOLER NO. 1 (BAGHOUSE F-18)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	44.0000	28.1400	5.3300	5.5300
PM10				

E.U. 5 Desc: FINISH MILLS #1 & #2 WITH TWO DUST COLLECTORS

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	158.0000	158.0000	215.7400	206.1200
PM10				
PB				

E.U. 6 Desc: CLINKER STORAGE SILO NOS. 1&2 (BAGHOUSE F-31)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	149.0000	5.7200	130.7800	147.8900

E.U. 7 Desc: CLAY CRUSHER DRYER WITH BAGHOUSE UNIT C-10

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM		18.5000		
SO2				
NOX				
PM10				

E.U. 8 Desc: NO. 1 KILN BLENDING SILOS (BAGHOUSE NOS. E-36,F-17

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	163.0000	9.7200	123.3300	153.0600
PM10				

E.U. 9 Desc: CEMENT PLT STG SILOS DUST UNIT F-3

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	150.0000	155.5000	94.9100	111.0400

E.U. 11 Desc: RAW MAT'L STORAGE SILOS & FEED SYST. W/BAGHOUSES (

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM		8.5000	4.6800	5.0600
PM10				

E.U. 12 Desc: KILN NO. 2 BLENDING SILO W/BAGHOUSE (G-11)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	7.5300	3.5300	15.1300	15.8900

E.U. 13 Desc: NO. 2 KILN FEED SYSTEM W/BAGHOUSE (H-13)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
SO2	47.1500	47.1500		
VOC	30.3400	30.3400		
CO	262.4000	262.4000		
NOX	1025.0000	1025.0000		
PM	55.3500	55.3500	4.3300	3.9400
PM10				

E.U. 14 Desc: CEMENT KILN NO. 2 BAGHOUSE(E-19); REVISED OIL CONC

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
VOC	31.2000	31.2000		
SO2	47.0000	47.0000	8.3000	8.3000
PM	55.3000	55.3000	32.8000	32.8000
NOX	1025.0000	1025.0000	535.5000	535.5000
PM10				
PB				
CO	262.2000	262.2000	153.5000	153.5000

E.U. 15 Desc: NO. 2 CLINKER COOLER W/BAGHOUSE K-09

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	20.5000	20.5000	10.8300	10.8300
PM10				

E.U. 16 Desc: CLINKER SILO NO. 3 W/BAGHOUSE (L-7)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	5.9500	5.9500	2.9100	6.0400

E.U. 17 Desc: CLINKER/GYPSUM TRANSFER BELT W/BAGHOUSE (M-09)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	1.9100	1.9100	2.0300	6.0400

E.U. 18 Desc: FINISH MILL NO. 3 CLINKER/GYPSUM DAY TANK W/BAGHOU

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	5.4400	5.4400	2.9100	2.0900

E.U. 19 Desc: FINISH MILL NO. 3 W/BAGHOUSE (N-23)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	15.0000	15.0000	12.9000	28.6000
PM10				
PB				

E.U. 20 Desc: ONE OF TWO BAGHOUSES @ #3 FINISH MILL (N-27)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	15.0000	15.0000	12.9000	5.2800
PM10				
PB				

E.U. 21 Desc: CEMENT SILOS 7 & 8 W/BAGHOUSE (P-05)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	8.0000	3.7500	9.1600	10.1500

E.U. 22 Desc: MASONRY SILO W/BAGHOUSE (P-07)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	3.7500	1.8800	1.3000	2.6000

E.U. 23 Desc: TRUCK LOADOUT SYSTEM W/BAGHOUSE (Q-17)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	3.7500	1.8800	1.3000	2.6000

E.U. 24 Desc: RAW MATERIAL PRE-MIX BIN W/BAGHOUSE (M-2280)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	2.3700	2.3700	5.9000	6.4000
PM10				

E.U. 25 Desc: ADDITIVE MATERIAL STORAGE BIN W/BAGHOUSE M-1171

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	0.0280	11.3000	0.3800	0.6310
PM10				

E.U. 26 Desc: CEMENT BAG LOADOUT SYSTEM W/BAGHOUSE (M-3514)

Pollutant	Poten(TPY)	Allow(TPY)	1990 Actual(TPY)	1989 Actual(TPY)
PM	1.8700	1.8700	0.2700	0.2700
PM10				

REPORT OPTIONS

AIRS ID	:	0530010
COUNTY	:	%
OFFICE	:	%
FACILITY STATUS	:	%
SORT ORDER	:	A
TITLE V	:	%
YEAR	:	1990
FACILITY SIC	:	%
COMPLIANCE TRACKING CODE	:	%

DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR RESOURCES MANAGEMENT SYSTEM
16-JUL-96 FACILITY EMISSION REPORT

AIRS ID: 0530010 # of Emissions Unit: 26
Owner: FLORIDA MINING &
Name: FLORIDA MINING & MATERIALS
City: BROOKSVILLE Office: SWD County: HERNANDO
Status: A Compliance Tracking Code: A DFC: 04-OCT-95
SIC: 3241 PSD: Y PPS: N NSPS: Y NESHAP:
Title V Source: Y Syn Non-Title V Source: Small Business Stationary:
Major of HAPS: Y Major of Non-HAP Pollutants:
Syn Minor of HAPS: Syn Minor of Non-HAP Pollutants:

E.U. 1 Desc: CEMENT PLANT RAW MATL STG & HANDLING C-11, C-11A

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	8.6000	8.6000		7.9300
PM10				7.9300

E.U. 2 Desc: NO. 1 KILN FEED SYSTEM (BAGHOUSE D-31)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	163.0000	4.1800	3.6000	3.7800
PM10			1.8000	3.1750
PB				0.0015

E.U. 3 Desc: CEMENT KILN NO. 1 BAGHOUSE(E-55);REVISED OIL CONCE

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
CO			217.0000	
SO2	2181.2400		2.3300	5.9400
PM	169.8000	169.8000	45.0000	26.1600
NOX			635.0000	571.4600
VOC			15.4000	8.3600
PM10			38.3000	21.9744
PB				0.0109

E.U. 4 Desc: CEMENT PLANT CLINKER COOLER NO. 1 (BAGHOUSE F-18)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	44.0000	28.1400	26.4800	21.0600
PM10			22.5100	21.0600

E.U. 5 Desc: FINISH MILLS #1 & #2 WITH TWO DUST COLLECTORS

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	158.0000	158.0000	211.6200	214.2100
PM10			179.8800	214.2100
PB				0.0001

E.U. 6 Desc: CLINKER STORAGE SILO NOS. 1&2 (BAGHOUSE F-31)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	149.0000	5.7200	5.1800	5.1100

E.U. 7 Desc: CLAY CRUSHER DRYER WITH BAGHOUSE UNIT C-10

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM		18.5000		
SO2				
NOX				
PM10				

E.U. 8 Desc: NO. 1 KILN BLENDING SILOS (BAGHOUSE NOS. E-36,F-17

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	163.0000	9.7200	8.0400	8.1100
PM10			4.0300	8.1100

E.U. 9 Desc: CEMENT PLT STG SILOS DUST UNIT F-3

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	150.0000	155.5000	133.9200	133.9200

E.U. 11 Desc: RAW MAT'L STORAGE SILOS & FEED SYST. W/BAGHOUSES (

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM		8.5000	7.7000	
PM10			3.8500	

E.U. 12 Desc: KILN NO. 2 BLENDING SILO W/BAGHOUSE (G-11)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	7.5300	3.5300	2.7800	2.9000

E.U. 13 Desc: NO. 2 KILN FEED SYSTEM W/BAGHOUSE (H-13)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
SO2	47.1500	47.1500		
VOC	30.3400	30.3400		
CO	262.4000	262.4000		
NOX	1025.0000	1025.0000		
PM	55.3500	55.3500	3.6300	3.8300
PM10			1.8200	3.8300

E.U. 14 Desc: CEMENT KILN NO. 2 BAGHOUSE(E-19); REVISED OIL CONC

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
VOC	31.2000	31.2000	14.5400	8.4700
SO2	47.0000	47.0000	2.2100	6.0200
PM	55.3000	55.3000	19.8800	23.9400
NOX	1025.0000	1025.0000	601.0000	578.8500
PM10			16.9000	23.9400
PB				0.0099
CO	262.2000	262.2000	191.0000	164.8500

E.U. 15 Desc: NO. 2 CLINKER COOLER W/BAGHOUSE K-09

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	20.5000	20.5000	16.9100	17.8300
PM10			14.3800	17.8300

E.U. 16 Desc: CLINKER SILO NO. 3 W/BAGHOUSE (L-7)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	5.9500	5.9500	4.9100	5.1700

E.U. 17 Desc: CLINKER/GYPSUM TRANSFER BELT W/BAGHOUSE (M-09)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	1.9100	1.9100	0.0020	0.0020

E.U. 18 Desc: FINISH MILL NO. 3 CLINKER/GYPSUM DAY TANK W/BAGHOU

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	5.4400	5.4400	4.4800	4.9500

E.U. 19 Desc: FINISH MILL NO. 3 W/BAGHOUSE (N-23)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	15.0000	15.0000	12.3700	13.6700
PM10			10.5100	13.6700
PB				0.0001

E.U. 20 Desc: ONE OF TWO BAGHOUSES @ #3 FINISH MILL (N-27)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	15.0000	15.0000		
PM10				
PB				

E.U. 21 Desc: CEMENT SILOS 7 & 8 W/BAGHOUSE (P-05)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	8.0000	3.7500	3.4200	5.1800

E.U. 22 Desc: MASONRY SILO W/BAGHOUSE (P-07)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	3.7500	1.8800	0.7900	0.7900

E.U. 23 Desc: TRUCK LOADOUT SYSTEM W/BAGHOUSE (Q-17)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	3.7500	1.8800	1.0400	1.0400

E.U. 24 Desc: RAW MATERIAL PRE-MIX BIN W/BAGHOUSE (M-2280)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	2.3700	2.3700	2.2300	2.2100
PM10			1.1200	2.2100

E.U. 25 Desc: ADDITIVE MATERIAL STORAGE BIN W/BAGHOUSE M-1171

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	0.0280	11.3000	8.5700	2.4800
PM10			7.2800	2.4800

E.U. 26 Desc: CEMENT BAG LOADOUT SYSTEM W/BAGHOUSE (M-3514)

Pollutant	Poten(TPY)	Allow(TPY)	1994 Actual(TPY)	1993 Actual(TPY)
PM	1.8700	1.8700	0.9000	0.5600
PM10			0.7700	0.5600

REPORT OPTIONS

AIRS ID	:	0530010
COUNTY	:	%
OFFICE	:	%
FACILITY STATUS	:	%
SORT ORDER	:	A
TITLE V	:	%
YEAR	:	1994
FACILITY SIC	:	%
COMPLIANCE TRACKING CODE	:	%

DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR RESOURCES MANAGEMENT SYSTEM
16-JUL-96 FACILITY EMISSION REPORT Page:1

AIRS ID: 0530010 # of Emissions Unit: 26
Owner: FLORIDA MINING &
Name: FLORIDA MINING & MATERIALS
City: BROOKSVILLE Office: SWD County: HERNANDO
Status: A Compliance Tracking Code: A DFC: 04-OCT-95
SIC: 3241 PSD: Y PPS: N NSPS: Y NESHAP:
Title V Source: Y Syn Non-Title V Source: Small Business Stationary:
Major of HAPS: Y Major of Non-HAP Pollutants:
Syn Minor of HAPS: Syn Minor of Non-HAP Pollutants:

E.U. 1 Desc: CEMENT PLANT RAW MATL STG & HANDLING C-11, C-11A

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	8.6000	8.6000		
PM10				

E.U. 2 Desc: NO. 1 KILN FEED SYSTEM (BAGHOUSE D-31)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	163.0000	4.1800	3.6000	3.6000
PM10				1.8000
PB				

E.U. 3 Desc: CEMENT KILN NO. 1 BAGHOUSE(E-55);REVISED OIL CONCE

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
CO			208.7900	217.0000
SO2	2181.2400		3.6000	2.3300
PM	169.8000	169.8000	95.6900	45.0000
NOX			596.9200	635.0000
VOC			19.0500	15.4000
PM10			81.3400	38.3000
PB				

E.U. 4 Desc: CEMENT PLANT CLINKER COOLER NO. 1 (BAGHOUSE F-18)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	44.0000	28.1400	22.0300	26.4800
PM10			18.7300	22.5100

E.U. 5 Desc: FINISH MILLS #1 & #2 WITH TWO DUST COLLECTORS

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	158.0000	158.0000	106.7600	211.6200
PM10			90.7400	179.8800
PB				

E.U. 6 Desc: CLINKER STORAGE SILO NOS. 1&2 (BAGHOUSE F-31)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	149.0000	5.7200	4.8300	5.1800

E.U. 7 Desc: CLAY CRUSHER DRYER WITH BAGHOUSE UNIT C-10

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM		18.5000		
SO2				
NOX				
PM10				

E.U. 8 Desc: NO. 1 KILN BLENDING SILOS (BAGHOUSE NOS. E-36,F-17

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	163.0000	9.7200	7.4600	8.0400
PM10				4.0300

E.U. 9 Desc: CEMENT PLT STG SILOS DUST UNIT F-3

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	150.0000	155.5000	124.0600	133.9200

E.U. 11 Desc: RAW MAT'L STORAGE SILOS & FEED SYST. W/BAGHOUSES (

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM		8.5000	9.2800	7.7000
PM10				3.8500

E.U. 12 Desc: KILN NO. 2 BLENDING SILO W/BAGHOUSE (G-11)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	7.5300	3.5300	3.8500	2.7800

E.U. 13 Desc: NO. 2 KILN FEED SYSTEM W/BAGHOUSE (H-13)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
SO2	47.1500	47.1500		
VOC	30.3400	30.3400		
CO	262.4000	262.4000		
NOX	1025.0000	1025.0000		
PM	55.3500	55.3500	3.6700	3.6300
PM10				1.8200

E.U. 14 Desc: CEMENT KILN NO. 2 BAGHOUSE(E-19); REVISED OIL CONC

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
VOC	31.2000	31.2000	19.6100	14.5400
SO2	47.0000	47.0000	1.1900	2.2100
PM	55.3000	55.3000	31.9800	19.8800
NOX	1025.0000	1025.0000	615.0000	601.0000
PM10			27.1900	16.9000
PB				
CO	262.2000	262.2000	215.0000	191.0000

E.U. 15 Desc: NO. 2 CLINKER COOLER W/BAGHOUSE K-09

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	20.5000	20.5000	17.1300	16.9100
PM10			14.5600	14.3800

E.U. 16 Desc: CLINKER SILO NO. 3 W/BAGHOUSE (L-7)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	5.9500	5.9500	4.9700	4.9100

E.U. 17 Desc: CLINKER/GYPSUM TRANSFER BELT W/BAGHOUSE (M-09)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	1.9100	1.9100	0.0020	0.0020

E.U. 18 Desc: FINISH MILL NO. 3 CLINKER/GYPSUM DAY TANK W/BAGHOU

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	5.4400	5.4400	3.8400	4.4800

E.U. 19 Desc: FINISH MILL NO. 3 W/BAGHOUSE (N-23)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	15.0000	15.0000	10.6000	12.3700
PM10			9.0100	10.5100
PB				

E.U. 20 Desc: ONE OF TWO BAGHOUSES @ #3 FINISH MILL (N-27)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	15.0000	15.0000		
PM10				
PB				

E.U. 21 Desc: CEMENT SILOS 7 & 8 W/BAGHOUSE (P-05)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	8.0000	3.7500	2.6500	3.4200

E.U. 22 Desc: MASONRY SILO W/BAGHOUSE (P-07)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	3.7500	1.8800	0.7900	0.7900

E.U. 23 Desc: TRUCK LOADOUT SYSTEM W/BAGHOUSE (Q-17)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	3.7500	1.8800	1.0400	1.0400

E.U. 24 Desc: RAW MATERIAL PRE-MIX BIN W/BAGHOUSE (M-2280)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	2.3700	2.3700	2.5900	2.2300
PM10				1.1200

E.U. 25 Desc: ADDITIVE MATERIAL STORAGE BIN W/BAGHOUSE M-1171

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	0.0280	11.3000	8.5400	8.5700
PM10			7.2600	7.2800

E.U. 26 Desc: CEMENT BAG LOADOUT SYSTEM W/BAGHOUSE (M-3514)

Pollutant	Poten(TPY)	Allow(TPY)	1995 Actual(TPY)	1994 Actual(TPY)
PM	1.8700	1.8700	0.9000	0.9000
PM10				0.7700

REPORT OPTIONS

AIRS ID	:	0530010
COUNTY	:	%
OFFICE	:	%
FACILITY STATUS	:	%
SORT ORDER	:	A
TITLE V	:	%
YEAR	:	1995
FACILITY SIC	:	%
COMPLIANCE TRACKING CODE	:	%

Southdown

Regarding CO:
- Kiln #1 is permitted at 57.7 lbs CO/hr when burning tires. There was a permit modification in April 1994, and a compliance Test conducted in July 94. Results showed Kiln #1 tested at 53.66 lbs/hr. No test in file for 1995. Permit does not address whether facility should test when they are not burning tires.
CO 1995 AOR allowable is 223.4 tons/yr and actual was 208.8 tons/yr. There were 722 tons tires burned that year which is , 10 % of time operated while burning tires. District thinks they are currently not burning tires. In 1995 there were 65,122 tons of coal burned.

- Kiln #2 does not burn tires. Permit says to test annually for CO. Tested in October 1995, passed test with
CO actual of 55.8 lbs/hr vs. allowable of 64 lbs/hr. 1995 AOR reports allowable is 262.4 ton/yr with emissions of 215 tons of CO reported in 1995.

Violations

Attached is a Penalty Computation Worksheet listing the violation types at the emission units and their penalties.

Facility knew of problems with bags in 2nd quarter of 1995. By 3rd quarter of 1995 had replaced over 10,000 bags at Kiln #1. But these bags started failing due to defective snap rings attached to the tube sheet, which allowed the bags to fall and VE's to be emitted. Kiln #2 had ductwork erosion in baghouses in the 1st quarter of 1995. Work on ductwork continued through 4th quarter of 1995. Ductwork repairs were able to be completed in January 1996 when both Kiln #1 and Kiln#2 were taken down for maintenance. Kiln # 2 failed a stack test for PM on October
PM 12, 1995 (actual was 16.8 lbs/hr vs 13.5 lbs/hr allowable). Retested and passed on October 17, 1995. There has been no incidents of non compliance as of January 1996.

At Clinker Cooler #1 facility let Department know the access hatches were not sealing properly during the 2nd quarter of 1995. Clinker Cooler #1 had loose bags in baghouse and failed stack test for PM on October 4, 1995 (actual 12.26 lbs/hr vs allowable of 7.13 lbs/hr). Retested on October 13 and October 16 (2 runs each) and passed
PM averaging 5.95 lbs/hr.

At Clinker Cooler #2 there were holes in the ductwork in the 1st quarter of 1995 and by the 2nd quarter, they had corrected the problem. There were also poor seals on the baghouses.

At Finish Mills #1 and #2 , VE tests were not conducted in 1995.

SWD negotiated a penalty of $130,000 down from original penalty determination of ~$196,000. The lack of timeliness with repairs resulting in suspect maintenance practices was the bases for the penalty. Southdown terminated the individual who was responsible for overseeing the maintenance on the baghouses. A Pollution Prevention project is currently being negotiated with Southdown.

AOR tables attached.

Diana's Summary

AOR Year	Emission Unit	Pollutant	Actual TPY	Allowable TPY
1990	Cement Kiln #1	CO	159.4	?
		SO2		
		PM	0.96	169.8
		NOX	527.77	
1991		CO	159.4	?
		SO2	? 2032.37	
		PM	14.83	169.8
		NOX	527.77	
		VOC	3.98	
1992		CO		?
		SO2	? 0.1	
		PM	21.61	169.8
		NOX	? 0.0001	
		VOC		
1993		CO		?
		SO2	5.94	
		PM	26.16	169.8
		NOX	571.46	
		VOC	8.36	
		PM10	21.97	
1994		CO	217	234.4
		SO2	2.33	65.7
		PM	45	169.8
		NOX	635	
		VOC	15.4	
		PM10	38.3	
1995		CO	208.79	234.4
		SO2	3.6	65.7
		PM	95.69	170.8
		NOX	596.92	
		VOC	19.05	
		PM10	81.34	

VOC

TPY
15.94 (1994)
19.05 (1995)
34.99 TPY ÷ 2
17.491 TPY

3.9845 lb/hr
4.8381
8.8226
4.4113 lb/hr

while burning tires
Permit mod in 94

while burning tires

PM
2 years
45.00
95.69
140.69

11.24 lbs
24.30
35.54 lbs
17.77 lbs

NOx
635.00 1994
596.92 1995
1231.92 ÷ 2
615.96 TPY average

NOx
158.73 lb/hr
151.59 lb/hr
310.32 lb/hr ÷ 2
155.16 lb/hr (average)
70.35 TPY

CO TPY
1994 217
1995 208.79
425.79
÷ 2
212.89

lb/hr
54.24
53.03
107.27 ÷ 2
53.63 lb/hr

Kilns & cooler No. 1 8001 year 1994
Kilns & cooler No. 1 7875 year 1995

AOR Year	Emission Unit	Pollutant	Actual TPY	Allowable TPY
1990	Clinker Cooler #1	PM	5.33	28.14
		PM10		
1991		PM	5.46	28.14
		PM10		
1992		PM	17.58	28.14
		PM10		
1993		PM	21.06	28.14
		PM10	21.06	
1994		PM	26.48	28.14
		PM10	22.51	
1995		PM	22.03	28.14
		PM10	18.73	
1990	Clinker Cooler #2	PM	10.83	20.5
		PM10		
1991		PM	3.9	20.5
		PM10		
1992		PM	15.42	20.5
		PM10		
1993		PM	17.83	20.5
		PM10	17.83	
1994		PM	16.91	20.5
		PM10	14.38	
1995		PM	17.13	20.5
		PM10	14.56	

Cooler No 1

PM

5.33
5.46
17.58
21.06
22.51
18.73
85.34

17.07

PM
26.48
22.03
48.51
24.26

lbs
6.62
5.54
12.21
6.17

2 years PM10
22.51
18.73
41.24
20.62 TPY

lbs
5.63
4.76
10.39
5.195

Cooler No 2

10.83
3.90
15.42
17.83
14.38
14.56
66.09

13.22

PM10
14.38
14.56
28.94
14.47 TPY

3.84
3.74
7.58
3.79
lbs
hr

PM 2 year
16.91
17.13
34.04 TPY

4.42
4.45
8.87
4.44

17.07 TPY

Kiln & Cooler No 1 8001 year 1994
Kiln & Cooler No 1 7875 1995
7938

Kiln & Cooler No 2 7478 year 1994
Kiln & Cooler No 2 7780 1995
7629

allowable × actual hours of operation =

AOR Year	Emission Unit	Pollutant	Actual TPY	Allowable TPY
1990	Cement Kiln #2	VOC		31.2
		SO2	8.3	47
		PM	32.8	55.3
		NOX	535.5	1025
		PM10		
		CO	153.5	262.2
1991		VOC	8.14	31.2
		SO2	1.9	47
		PM	17.65	55.3
		NOX	298.91	1025
		PM10		
		CO	129.23	262.2
1992		VOC	7.16	31.2
		SO2	24.74	47
		PM	13.44	55.3
		NOX	330.03	1025
		PM10		
		CO	130.84	262.2
1993		VOC	8.47	31.2
		SO2	6.02	47
		PM	23.94	55.3
		NOX	578.85	1025
		PM10	23.94	
		CO	164.85	262.2
1994		VOC	14.54	31.2
		SO2	2.21	47
		PM	19.88	55.3
		NOX	601	1025
		PM10	16.9	
		CO	191	262.2
1995		VOC	19.61	31.2
		SO2	1.19	47
		PM	31.98	55.3
		NOX	615	1025
		PM10	27.19	
		CO	215	262.2

CO

~~153.5~~
129.23
130.84
164.85
191.00
215.00
830.92 | 5
166.184

2 year
191.00 5 lb
215.00 55
406.00 106
50
203 TPY

PM/PM10

~~32.80~~
17.65
13.44
23.94
19.88
31.98
106.89 | 5
21.378
≈ 21.38

PM 2 years lb
19.88 5.3
31.98 8.22
51.86 13.53
25.93 TPY
6.77

VOC 2 years lb
14.54 3.84
19.61 5.04
8.93
34.15 4.47
17.075 TPY

Kiln No 2 & Clinker #2 operated 7478 in 1994
7780 in 1995

NOx
601 TPY 1994
615 TPY 1995

160 lb/hr
#158.1 lb/hr
318.1 ÷ 2
159.05

actual data

1995 $\quad 5.95 \frac{lb}{hr} \times \frac{7875\ hr}{yr} \times \frac{1\ ton}{2000\ lb} = 23.428$ TPY

allowable

$7.1 \frac{lb}{hr} \times 7875 \frac{hr}{yr} \times \frac{1\ ton}{2000\ lb} = 27.956$ TPY

		NSPS	BACT	Actual		
Kiln 1	39	(39)	[26]	[25.6]	16-25	.18 lb/ton kiln feed
Kiln 2	13	(39)	[26]	[16.8]	12-18	
Cooler No. 1	7.1	(13)	[13]	[23.2]	10-12	
Cooler No. 2	5.0	(13)	[13]	[10]	8-12	.09 lb/ton kiln feed

Brooksville Cement

A Southdown Company

November 18, 1996

Certified Mail - Return Receipt Requested

Mr. Al Linero, P.E.
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT
Draft Permit No.: 0530010-001-AC, (PSD-FL-233)

Dear Mr. Linero:

The Florida Department of Environmental Protection's notice of its intent to issue an air construction permit modifications to Southdown, Inc., for a revision of the emission limits applicable to its portland cement facility has been published in the Hernando, Pasco, and Citrus County sections of The Tampa Tribune. The notice of intent was published on November 12, 1996. This fulfills the FDEP's requirement to publish the "Notice of Intent to Issue" within the thirty day time period.

A copy of this Notice and affidavit are attached.

If further action is required in regards to issuance of this permit, please do not hesitate to contact me at (352) 796-7241.

Sincerely,

Don B. Kelly

Don B. Kelly
Plant Manager

Attachment

Southdown, Inc.
P.O. Box 6 ; Brooksville, Florida 34605-0006
(904) 796-7241 ; Fax: (904)754-9836

THE TAMPA TRIBUNE

Published Daily
Tampa, Hillsborough County, Florida

State of Florida
County of Hillsborough } ss.

Before the undersigned authority personally appeared R. Putney, who on oath says that he is Accounting Manager of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a

LEGAL NOTICE

in the matter of

PUBLIC NOTICE OF INTENT

was published in said newspaper in the issues of

NOVEMBER 12, 1996

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm, or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

R Putney

Sworn to and subscribed before me, this 12 *day of* ~~NOVEMBER~~, *A.D. 19* 96

*Personally Known*_____ *or Produced Identification*_____

*Type of Identification Produced*_____

INA S. KENNEDY
Notary Public, State of Florida
My comm. expires April 21, 2000
No. CC548841

NOTARY PUBLIC

(SEAL)

Ina S Kennedy

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Draft Permit No.: 0530010-001-AC, (PSD-FL-233)
Southdown Brooksville Cement Manufacturing Facility
Hernando County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification to Southdown, Inc., for a revision of the emission limits applicable to its portland cement facility located on Highway 98, Northwest of Brooksville, Hernando County. A Best Available Control Technology (BACT) determination was required for particulate matter (PM/PM_{10}), and carbon monoxide (CO) pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are: Southdown, Inc., Post Office Box 6, Brooksville, Florida 34605-006.

The new permit will replace four current construction permits for Cement Plants No. 1 and No. 2 which were originally permitted in 1973 and 1980, respectively. Each plant includes a coal/liquid fuel/ gas-fired, dry process cement kiln with a preheater and clinker cooler. Air pollution control is achieved by fabric filters (baghouses) for PM/PM_{10} from the kilns and coolers; absorption of sulfur compounds and metals into the product; and combustion controls for CO, volatile organic compounds (VOC), and nitrogen oxides (NO_x).

The permit will account for increases in the permitted emission of PM/PM_{10} from Coolers No. 1 and No. 2 and Kiln No. 2; decrease of permitted emissions of PM/PM_{10} from Kiln No. 1; establishment of or increase in permitted emission limits of CO and VOC from both kilns; and will set a permit limit for NO_x from Kiln No. 1. The final set of limits are among the lowest in Florida or any other state.

Total emissions of pollutants exhibiting PSD-significant increases shall not exceed the following limits:

Pollutant	Maximum Emissions per ton Year (TPY)
CO	1,441
PM/PM_{10}	331
VOC	110

An air quality impact analysis was conducted. Emissions from the facility will consume PSD increment but will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. The maximum predicted PSD Class II PM_{10} increments consumed by all sources in the area, including this project, will be as follows:

PSD Class II Increment Consumed (ug/m³)		Allowable Increment (ug/m³)	Percent Increment Consumed
PM_{10}			
24-hour	24.0	30	80
Annual	13.8	17	81

The project has an insignificant impact on the Chassahowitzka PSD Class I area for the PM_{10} annual averaging time. The maximum predicted PSD Class I PM_{10} increment consumed by the project for the 24 hour averaging time is 1.02 ug/m³ of 18% of the available 24 hour increment of 8ug/m³.

The Department will issue the FINAL Permit in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue FINAL Permit with the conditions of the DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. or a party requests mediation as an alternative remedy under Section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9370, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of the person's right to request an administrative determination (hearing) under Section 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) statement of how and when each petitioner received notice of the Department's action or proposed action, (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action, (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

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

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone numbers of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and comments introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 904/488-1344
Fax: 904/922-6979

Department of Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619
Telephone: 813/744-6100
Fax: 813/744-6458

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahossee, Florida 32301, or call 904/488-1344, for additional information.

Nov. 12, 1996

November 11, 1996

Mr. A. A. Linero, P.E., Administrator
New Source Review Section
Bureau Of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Draft Permit No. 0530010-001-AC (PSD-FL-233)
Kilns and Coolers No. 1 and No. 2

Dear Mr. Linero

We have the following comments, in addition to those transmitted to you in our letter dated November 5, 1996. In establishing guidelines for conducting emission tests at our Brooksville Plant, we realized that the permits, as drafted, could be interpreted as having set three emission limits in Tables 1-1 and 1-2 of the "DRAFT" permits. These limits are shown in ATTACHMENT 1. The first column sets a limit based on lbs/ton of preheater feed rate, the second column sets a limit in lbs/hour and the third column sets an annual limit in tons per year. It was our understanding that we would have only one set of limits, i.e., lbs/hour. The Florida Department of Environmental Protection (FDEP) should explain that each limit is based on a BACT emission factor for each criteria pollutant, in lbs/ton of preheater feed rate, and a preheater feed rate of 145 tons/hr. ATTACHMENT 1 also shows our understanding of the corresponding test methods and test/frequency and duration for each criteria pollutant. Thank you for this opportunity to provide additional comments on the DRAFT permit. We expect the "Public Notice" to be published this week, a copy of which is attached.

Sincerely,

Amarjit Singh Gill

Amarjit Singh Gill, PE
Director, Air Permitting

c: Don Kelly
John Koogler
Dave Repasz
Dan Heintz

cc: Teresa Heron

Southdown, Inc. — 1200 SMITH STREET — SUITE 2400 — HOUSTON, TEXAS 77002 — (713) 650-6200

Pollutants	New Allowable Lb/Ton Feed*	New Allowable Lb/Hr	New Allowable Tons/Yr	Ref Method	Duration/ Frequency
PM/PM10, Kiln	0.18	26	114	5	3 1-Hr Runs
PM/PM10, Cooler	0.09	13	56.9	5	3 1-Hr Runs
SO2	0.10	15	65.7	6C	3 1-Hr Runs
NOx	1.90	275	1205	7E	3 1-Hr Runs
CO (while using TDF)	1.17	170	745	10	3 1-Hr Runs
VOC	0.09	13	56.9	25 or 25A	3 1-Hr Runs
Opacity, Cooler %	10	10		9	180 Min
Opacity, Kiln %	20	20		9	180 Min

Cement Kiln No. 1 And Cooler No. 1

Pollutants	New Allowable Lb/Ton Feed*	New Allowable Lb/Hr	New Allowable Tons/Yr	Ref Method	Duration/ Frequency
PM/PM10, Kiln	0.18	26	106.6	5	3 1-Hr Runs
PM/PM10, Cooler	0.09	13	53.3	5	3 1-Hr Runs
SO2	0.10	15	61.5	6C	3 1-Hr Runs
NOx	1.90	250	1025	7E	3 1-Hr Runs
CO	1.17	170	697	10	3 1-Hr Runs
VOC	0.09	13	53.3	25 or 25A	3 1-Hr Runs
Opacity, Cooler %	10	10		9	180 Min
Opacity, Kiln %	10	10		9	180 Min

Cement Kiln No. 2 And Cooler No. 2

ALLOWABLE EMISSIONS AND TEST METHODS

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

November 6, 1996

Mr. Amarjit Singh Gill, P.E.
Director, Air Permitting
Southdown, Inc.
1200 Smith Street, Suite 2400
Houston, Texas 77002

Dear Mr. Gill:

RE: Excess Emissions Due to Equipment Malfunctions

As a follow-up to our phone conversation of November 1, 1996, this letter serves to further explain the Southwest District Office Air Program's reasons that we could not approve your request of August 5, 1996 for authorization to be allowed up to 8 hours excess emissions due to malfunctions in any 24 hour period in lieu of the Rule 62-210.700(1), F.A.C. requirement of 2 hours in any 24 hour period.

Your submittal requested prior authorization for up to 8 hours in any 24 hour period for excess emissions resulting from any malfunction. This is a 400% increase from the rule provisions and potentially represents operating in an excess emissions mode for 33% of the time on any given day. The rule does allow for longer durations when specifically authorized by the Department. This authorization would be based upon a showing that the other requirements of the above rule had been met - that best operational practices to minimize the magnitude and duration of excess emissions had been implemented and that the malfunction had not been caused in part by poor maintenance, poor operation or any other failure which may reasonably be prevented - and is appropriately applied by the Department on a specific case-by case basis. To give across the board approval for a greatly expanded malfunction excess emission exemption for all malfunctions would greatly diminish the incentive to keep malfunctions to a minimum. Your submittal failed to adequately justify the need for such a significant increase in excess emission allowances for all malfunctions and fails to provide reasonable assurance that the rule requirement to minimize excess emissions would be met by your current excess emission response and O&M/preventative maintenance procedures.

If you feel that the basic nature of operational and equipment constraints in the cement manufacturing industry makes complying with the 2 hours in any 24 hour period excess emission requirement unreasonable and impractical, then this should be true of the other cement manufacturers in the state as well and this issue is better addressed on a consistent industry-wide basis by requesting a change to the excess emission rule to allow for special excess emission requirements for the cement industry. Changes to the excess emission rule similar to this are currently being considered by the Department for the Pulp and Paper Association for recovery boilers and lime kilns as part of the planned "Compliance Simplification" - rulemaking. The SWD will forward your letter to the Division of Air Resource Management (DARM) in Tallahassee for their information and attention. A more detailed formal request to DARM from all of the cement manufacturers or your industry association would be an appropriate way to insure that this request gets the proper consideration.

If you have any questions concerning this please call either me at (813) 744-6100 extension 107, or David Zell of my staff at extension 118.

Sincerely,

Gerald Kissel, P.E.
District Air Engineer

DRZ/

Copies to:
Al Linero, DARM/New Source Review
Larry George, DARM/Policy Analysis & Program Mgmt.
Jim Pennington, DARM/Compliance & Assurance

sthdwnex.ltr

November 5, 1996

Mr. A. A. Linero, P.E., Administrator
New Source Review Section
Bureau Of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Draft Permit No. 0530010-001-AC (PSD-FL-233)
Kilns and Coolers No. 1 and No. 2

Dear Mr. Linero

Thank you for a copy of the Draft Air Construction Permit for the Southdown cement plant located at US Highway 98, Northwest of Brooksville, Hernando County. We also received the Technical Evaluation and Preliminary Determination along with the Department's Intent to Issue Air Construction Permit and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT." We have reviewed these documents and have the following comments:

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

Third Paragraph, Page 1, states:

> "The permit will account for increases in the permitted emissions of PM/PM_{10} from Coolers No. 1 and No. 2 and Kiln No. 2; decrease of permitted emissions of PM/PM_{10} from Kiln No. 1; increases in permitted emissions of CO and VOC from both kilns; and will set a permit limit for NO_x from Kiln No. 1. The final set of limits are the lowest in Florida or any other state."

COMMENT 1

> It incorrectly implies that there is a limit for CO and VOC from Kiln No. 1 at the present time. The CO limit applies only when burning tires and there is VOC limit. During our meeting on October 2, 1996, it was our understanding no VOC limit would be set for Kiln No. 1. Therefore, we suggest the following language:
>
> "The permit will account for increases in the permitted emissions of PM/PM_{10} from Coolers No. 1 and No. 2 and Kiln No. 2; decrease of permitted emissions of PM/PM_{10} from Kiln No. 1; **increases in permitted emissions of CO and VOC from Kiln No. 2; will set a CO limit for Kiln No. 1 (under all conditions);** and will set a permit limit for NO_x from Kiln No. 1. The final set of limits are the lowest in Florida or any other state."

Southdown, Inc. ■ 1200 SMITH STREET ■ SUITE 2400 ■ HOUSTON, TEXAS 77002 ■ (713) 650-6200

First Paragraph, Page 2.

"The Department will issue the FINAL Permit, in accordance with the conditions of the **enclosed** DRAFT Permit, unless a response received in accordance with the following procedures results in a different decision or significant change in terms or conditions."

COMMENT 2

The word "enclosed" in the above paragraph should be deleted.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATIONS

COMMENT 3

In Section 3.1, under "PROJECT DESCRIPTION", change item 2 of the Southdown requested changes from:

"2 To increase the existing CO emission limits for Kilns 1 from 57.7 lb/hr (while firing tires) to 169.9 lb/hr (under all conditions) and for Kiln 2 from 64.0 to 170.0 lb/hr."

to:

"2 To increase the existing CO emission limits for Kilns 1 from 57.7 lb/hr (while firing tires) to **170.0 lb/hr** (under all conditions) and for Kiln 2 from 64.0 to 170.0 lb/hr."

COMMENT 4

The last sentence in the third paragraph, in Section 3, "RULE APPLICABILITY", states:

"...A CO limit set in 1994 applicable only when burning tires will be removed as will the conditions which allow tire burning in Kiln No. 1."

While it is true that Southdown has suspended its tire burning operations at the Brooksville plant at this time, Southdown has not ruled out the possibility of resuming tire burning in Kiln No. 1 and did not propose or request that tire burning be removed from our permit for Kiln No. 1. Therefore, we respectfully request that tire burning be left intact in our permit.

COMMENT 5

Although the end conclusion remains unchanged, we are submitting an Emission Summary Table for Section 6.2 based on the 1995 test results and the 1995 operating hours.

AIR CONSTRUCTION PERMIT 0530010-001-AC AND PSD-FL-233
SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS.

2.0 Emission Limiting Standards, First Bullet:

"Visible emissions of all minor sources controlled by baghouses shall not exceed 5% opacity (BACT determination).

COMMENT 6

We need clarification as to which "minor" sources controlled by baghouses this refers to. We have permits for many other sources controlled by baghouses at this facility, which specify 10% opacity.

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

Specific Condition B5.

The No. 1 cement fuel heat input rate shall not exceed 300 MMBtu/hr, or specifically:

(a) 24,000 pounds of coal with a heating value of 12,500 Btu/hr
(b) 2,116 gallons/hr of No. 2 fuel oil with a heating value of 141,300 Btu/gal
(c) 2,060 gallons/hr of No. 4 fuel oil with a heating value of 145,600 Btu/gal
(d) 2,016 gallons/hr of No. 5 fuel oil with a heating value of 148,800 Btu/gal
(e) 1,982 gallons/hr of No. 6 fuel oil with a heating value of 151,300 Btu/gal
(f) 92,683 cubic feet/hour of natural gas with a heating value of 1,025 Btu/cubic foot

COMMENT 7

Since the heat input rate is limited to 300 MMBtu/hr, is it really necessary to list the gallons/hr and heating value for each fuel? What happens if the heating value is different from that listed above? Will we be allowed to make the corresponding adjustments, up or down, in the lbs/hr, gallons/hr or the cubic feet/hour based on variations in the heat content? In item (a) the units for the heating value for coal should be "Btu/lb" instead of "Btu/hr". In (f) above, the cubic/feet per for natural gas should be "292,683" instead of "92,683". Tire-Derived-Fuel (TDF) should be included in the list of authorized fuels.

Specific Condition B9.

"Continuous monitors with recorders shall also be installed, calibrated, maintained and operated for this kiln subject to approval by the Department for:

Nitrogen Oxides: During the annual test (30 days compliance performance period) to demonstrate compliance with the permit emission limit of 275 lbs/hour.

Carbon Monoxide: During the initial test [one(1) weeks period] to demonstrate compliance with the permit emission limit. Thereafter, continuous monitors for CO and O_2 to optimize combustion conditions for pollution control shall be part of the process.
[Rules 62-212.400(1)(c), 62-212.400(6) and 62-4.070, F.A.C.]"

Specific Condition B10.

"The monitoring devices shall meet the applicable requirements of **Chapter 62-204, F.A.C., 40 CFR 60, Appendix F**, and **40 CFR 60.13**, including certification of each device in accordance with **40 CFR 60, Appendix B**, Performance Specifications and **40 CFR 60.7(a)(5)** Notification Requirements. Data on monitoring equipment specifications, manufacturer, type calibration and maintenance requirements, and the proposed location of each monitor shall be provided to the Department's Southwest District Office for review 90 days prior to installation of new CEMS.

COMMENT 8

Southdown does not intend to install permanently mounted continuous emission monitors for NO_x and CO for continuous monitoring purposes. It is Southdown's intent to show compliance with the NO_x limit by conducting three (3) 1-hour tests per US EPA Method 7E. If the results from the 3 test runs indicate an exceedance, then conduct a 24-hour test. If the 24-hour test shows an exceedance then conduct a 5-day test. If the results from the 5-day test still indicates an exceedance, then conduct the 30-day test. The same emission monitor that is used in Method 7E, would be used in the above sequence. Since the outside testing firm will already have its monitor set up for collecting the data, the 90 day lead time for review and approval would add unnecessary time to the overall testing schedule. Southdown requests the FDEP to delete reference to the "90 days prior to installation". If the FDEP approves of the above testing sequence for NO_x, then appropriate changes need to be made in Table 2-1. Conditions B10 needs to be either re-written to cover opacity monitors only, or deleted entirely.

TABLE 2-1. Compliance Requirements.
Kiln No.1 and Cooler No. 1

In the column titled "Description", "Cooler No. 3" should be "Cooler No. 1".

In the Column titled "EPA/Reference Method *", for VE, Method 9 should be included for Kiln No. 1 and Cooler No. 1. Based on a conversation between Teresa Heron of FDEP and Amarjit Gill of Southdown, it was determined that compliance for VE would be demonstrated annually using Method 9, and the continuous opacity monitors were there to satisfy the requirements under the Federal New Source Performance Standards.

In the column titled "Testing Time Frequency", "continuous" should be replaced by "annual" for VE for Kiln No. 1 and for Cooler No. 1.

In the column titled "Min. Compliance Test Duration", "3 hr" should be replaced by "3 1-hr tests". For VE, this duration should be "180 minutes".

The column titled "CMS*" should be deleted entirely. Appropriate changes to the footnotes should be made. Any changes made here may necessitate corresponding changes in APPENDIX BD, Best Available Control Technology (BACT).

Specific Condition C5.

The No. 2 cement fuel heat input rate shall not exceed 300 MMBtu/hr, or specifically:

(a) 24,000 pounds of coal with a heating value of 12,500 Btu/hr
(b) 2,116 gallons/hr of No. 2 fuel oil with a heating value of 141,300 Btu/gal
(c) 2,060 gallons/hr of No. 4 fuel oil with a heating value of 145,600 Btu/gal
(d) 2,016 gallons/hr of No. 5 fuel oil with a heating value of 148,800 Btu/gal
(e) 1,982 gallons/hr of No. 6 fuel oil with a heating value of 151,300 Btu/gal
(f) 292,683 cubic feet/hour of natural gas with a heating value of 1,025 Btu/cubic foot

COMMENT 9

Since the heat input rate is limited to 300 MMBtu/hr, is it really necessary to list the gallons/hr and heating value for each fuel? What happens if the heating value is different from that listed above? Will we be allowed to make the corresponding adjustments, up or down, in the lbs/hr, gallons/hr or the cubic feet/hour based on variations in the heat content? In item (a) the units for the heating value for coal should be "Btu/lb" instead of "Btu/hr".

Specific Condition C9.

"Continuous monitors with recorders shall also be installed, calibrated, maintained and operated for this kiln subject to approval by the Department for:

Nitrogen Oxides: During the annual test (30 days compliance performance period).

Carbon Monoxide: During the initial test [one(1) weeks period] to demonstrate compliance with the permit emission limit. Thereafter, continuous process monitors for CO and O2 to optimize combustion conditions for pollution control shall be part of the process. **[Rules 62-212.400(1)(c), 62-212.400(6) and 62-4.070, F.A.C.]**

Specific Condition C10.

The monitoring devices shall meet the applicable requirements of **Chapter 62-204, F.A.C., 40 CFR 60, Appendix F**, and **40 CFR 60.13**, including certification of each device in accordance with **40 CFR 60, Appendix B**, Performance Specifications and **40 CFR 60.7(a)(5)** Notification Requirements. Data on monitoring equipment specifications, manufacturer, type calibration and maintenance requirements, and the proposed location of each monitor shall be provided to the Department's Southwest District Office for review 90 days prior to installation of new CEMS.

COMMENT 10

Southdown does not intend to install permanently mounted continuous emission monitors for NO_x and CO for continuous monitoring purposes. It is Southdown's intent to show compliance with the NO_x limit by conducting three (3) 1-hour tests per US EPA Method 7E. If the results from the 3 test runs indicate an exceedance, then conduct a 24-hour test. If the 24-hour test shows an exceedance then conduct a 5-day test. If the results from the 5-day test still indicates an exceedance, then conduct the 30-day test. The same emission monitor that is used in Method 7E, would be used in the above sequence. Since the outside testing firm will already have its monitor set up for collecting the data, the 90 day lead time for review and approval would add unnecessary time to the overall testing schedule. Southdown requests the FDEP to delete reference to the "90 days prior to installation". If the FDEP approves of the above testing sequence for NO_x, then appropriate changes need to be made in Table 2-2. Conditions C10 needs to be either re-written to cover opacity monitors only, or deleted entirely.

TABLE 2-2. Compliance Requirements.
Kiln No. 2 and Cooler No. 2

In the column titled "Description", "Cooler No. 4" should be "Cooler No. 2".

In the Column titled "EPA/Reference Method *", for VE, Method 9 should be included for Kiln No. 2 and Cooler No. 2. Based on a conversation between Teresa Heron of FDEP and Amarjit Gill of Southdown, it was determined that compliance for VE would be demonstrated annually using Method 9, and the continuous opacity monitors were there to satisfy the requirements under the Federal New Source Performance Standards.

In the column titled "Testing Time Frequency", "continuous" should be replaced by "annual" for VE for Kiln No. 2 and for Cooler No. 2.

In the column titled "Min. Compliance Test Duration", "3 hr" should be replaced by "3 1-hr tests". For VE, this duration should be "180 minutes".

The column titled "CMS*" should be deleted entirely. Appropriate changes to the footnotes should be made. Any changes made here may necessitate corresponding changes in APPENDIX BD, Best Available Control Technology (BACT).

Thank you for this opportunity to provide comments on the DRAFT permit. We will proceed with the "Public Notice" publication as soon as we hear from you.

Sincerely,

Amarjit Singh Gill

Amarjit Singh Gill, PE
Director, Air Permitting

c: Don Kelly
John Koogler
Dave Repasz
Dan Heintz

CC: J. Heron, BAR
EPA
NPS
SWD
Hernando Co.

6.2 Emission Summary

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

	Current	Current	1995	1995	New	New	Net	PSD
Pollutants	Allowable	Allowable	Actual	Actual	Allowable	Allowable	Increase	Sig. Level
	Lb/Hr	Tons/Yr	Lb/Hr	Tons/Yr	Lb/Hr	Tons/Yr	Tons/Yr	Tons/Yr
PM/PM10, Kiln	39	171	25.6	100.8	26	114	13.1	25 / 15
PM/PM10, Cooler	7.1	28.1	12.20	48.0	13	56.9	8.9	25 / 15
SO2	15	65.7	NA	NA	15	65.7	NA	40
NOx	Not Applic.	Not Applic.	Not Applic.	Not Applic.	275	1205	Not Avail.	40
CO (while using TDF)	57.7	234	Not Applic.	Not Applic.	170	745	510.6	100
VOC	Not Applic.	Not Applic.	Not Applic.	Not Applic.	13	56.9	Not Avail.	40
Opacity, Cooler %	10				10			
Opacity, Kiln %	20				20			
			Cement Kiln No. 1 and Cooler No. 1					

	Current	Current	1995	1995	New	New	Net	PSD
Pollutants	Allowable	Allowable	Actual	Actual	Allowable	Allowable	Increase	Sig. Level
	Lb/Hr	Tons/Yr	Lb/Hr	Tons/Yr	Lb/Hr	Tons/Yr	Tons/Yr	Tons/Yr
PM/PM10, Kiln	13.5	55.4	16.80	65.4	26	106.6	41.2	25 / 15
PM/PM10, Cooler	5.0	20.5	9.00	35.0	13	53.3	18.3	25 / 15
SO2	15	65.7	NA	NA	15	61.5	NA	40
NOx	250	1025	NA	NA	250	1025	NA	40
CO	64	262	55.8	217.1	170	697	480	100
VOC	7.4	30.3	5.1	19.8	13	53.3	33.5	40
Opacity, Cooler %	10				10			
Opacity, Kiln %	10				10			
			Cement Kiln No. 2 and Cooler No. 2					

AS PREPARED BY SOUTHDOWN

6.2 Emission Summary

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Pollutants	Current Allowable Lb/Hr	Current Allowable Tons/Yr	Current Actual Lb/Hr	Current Actual Tons/Yr	New Allowable Lb/Hr	New Allowable Tons/Yr	Net Increase Tons/Yr	PSD Sig. Level Tons/Yr
PM/PM10, Kiln	39	171	17.8 [4]	70.4 [4]	26	114	43.6	25 / 15
PM/PM10, Cooler	7.1	28.1	6.17 [4]	24.3 [4]	13	56.9	32.6	25 / 15
SO2	15	65.7	NA	NA	15	65.7	NA	40
NOx	NA [6]	NA [6]	NA [6]	NA [6]	275	1205	NA	40
CO	57.7 [3]	234 [3]	31.6 [5]	138 [5]	170	745	606.0	100
VOC	NA	NA	NA	NA	13	56.9	< 40	40
Opacity, Cooler %	10				10			
Opacity, Kiln %	20				20			

Cement Kiln No. 1 and Cooler No. 1

Pollutants	Current Allowable Lb/Hr	Current Allowable Tons/Yr	Current Actual Lb/Hr	Current Actual Tons/Yr	New Allowable Lb/Hr	New Allowable Tons/Yr	Net Increase Tons/Yr	PSD Sig. Level Tons/Yr
PM/PM10, Kiln	13.5	55.4	6.77	25.9	26	106.6	80.7	25 / 15
PM/PM10, Cooler	7.1	20.5	4.44	17.1	13	53.3	36.2	25 / 15
SO2	15	65.7	NA	NA	15	61.5	NA	40
NOx	250	1025	NA	NA	250	1025	NA	40
CO	64	262	53.0	203	170	697	494	100
VOC	7.4	30.3	4.5	17.1	13	53.3	36.2	40
Opacity, Cooler %	10				10			
Opacity, Kiln %	10				10			

Cement Kiln No. 2 and Cooler No. 2

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

October 31, 1996

Certified Mail - Return Receipt Requested

Mr. Lawrence Jennings, Director
Hernando County Planning Department
20 North Main Street, Room 262
Brooksville, Florida 34601

Dear Mr. Jennings:

RE: Your letter of March 8, 1996 - Southdown Brooksville Facility

Based on my telephone conversation today with Ms. Lizanne Garcia, following are the answers to your questions in the same order as raised in your letter:

1. This is correct. The Southdown and Florida Crushed Stone operations are similar enough to warrant equivalent BACT emission rates. Both are Polysius-designed dry process cement kilns with preheaters using the same raw materials and located in the same area.

2. A VOC emission limit was established for Kiln No. 1. Please refer to Table 1-1, "Air Pollutant Standards and Terms" of the draft permit we provided for your review and comment.

3. The National Park Service (NPS) reviewed this proposed modification and commented in a letter dated April 8, 1996. We provided a copy of this letter to your Department. The NPS had no substantial comments which affected our review of the application. They are reviewing the draft permit and public notice package at this time as is EPA and Hernando County. We may yet receive comments from any of these agencies.

4. Your statement about specific condition #14 in the current permit AC27-258571 is correct. The proposed CO emission levels while *burning coal* require New Source Review (NSR) as addressed in the draft permit and public notice package we provided. Prevention of Significant Deterioration (PSD) is a subset of NSR and is the process for reviewing projects in areas which meet the National Ambient Air Quality Standards. Although the proposed draft permit 0530010-001-AC, PSD-FL-233 does not include the burning of tires, Southdown has already requested that we roll over the conditions referring to tire burning into the final permit. Generally tire burning is favorable with respect to pollutant emissions from cement kilns.

5. The net increase in carbon monoxide (CO) emissions is actually not significant on the basis of the impacts at ground level. Maximum predicted CO impacts based on approved ISCST3 modeling showed that the project would have impacts less than EPA and Department-established Significant Impact

Levels. The maximum predicted CO impacts from this project are 411 ug/m3 and 146 ug/m3 for the 1-hour and 8-hour averaging times, respectively. These values are less than the Significant Impact Levels for CO which are 2000 ug/m3 and 500 ug/m3 for 1-hour and 8-hour averaging times, respectively. These predicted CO values are much less than the applicable national and state ambient air quality standards of 40000 ug/m3 for the 1-hour averaging time and 10000 ug/m3 for the 8-hour averaging time.

Overall the allowable emission limits proposed for this facility are among the lowest in the country. Specifically the sulfur dioxide SO_2 limits are the lowest we are aware of. The particulate limits for the kilns are also equal to the lowest we were able to find based on data available to us. Nitrogen oxide (NO_x) emission limits from both kilns are among the lowest in the country despite the ages of these kilns. From an overall air quality point-of-view, the pollutants of greatest concern are NO_x, (which contributes to formation of smog and affects visibility) and SO_2 (for which a study is planned to determine impacts on the Chassahowitzka). Flexibility in CO emissions will help insure that emissions of both SO_2 and NO_x are minimized without any significant impacts from the extra CO.

If you have any additional questions or you need any document listed in the draft permit, please let us know. Please contact Teresa Heron (review engineer) or Cleve Holladay (meteorologist) at (904) 488-1344 or write to me at the Department's address.

Sincerely,

10/31

A. A. Linero, P.E.
Administrator
New Source Review Section

AAL/TH/kt

RECEIVED
OCT 21 1996
BUREAU OF
AIR REGULATION

October 17, 1996

VIA FAX AND UPS OVERNIGHT

Mr. C. H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Correspondence dated October 14, 1996 from Amarjit Singh Gill;
Southdown, Inc. Permit Application Dated February 22, 1996

Dear Mr. Fancy:

On October 14, 1996 Southdown, Inc. submitted a letter regarding the above referenced permit application previously submitted to the Florida Department of Environmental Protection ("FDEP"). However, we have decided to retract the October 14, 1996 letter and request that the FDEP return this letter. Please return the original and all copies of the October 14, 1996 letter to Amarjit Gill as soon as possible and we will destroy each of those copies accordingly.

Sincerely,

Amarjit S. Gill /leg

Amarjit Singh Gill, PE
Director of Air Permitting

c: Bill Thomas
John Koogler
Don Kelly

October 14, 1996

Mr. C. H. Fancy, P.E., Chief
Bureau Of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Southdown, Inc.; Application Dated February 22, 1996
Modifications to Permits:

AC27-258569	Clinker Cooler No. 1
AC27-258570	Clinker Cooler No. 2
AC27-258571	Kiln No. 1
AC27-258572	Kiln No. 2

Dear Mr. Fancy:

As a result of your September 23, 1996 letter, pertaining to the above referenced application, we met with you and your staff on October 3, 1996 to review the status of the permitting process and to present our perspective on the past history of permitting for these units. During that meeting we discussed, at length, how a possible error was made in establishing the 7.13 lb/hr total suspended particulate (TSP) matter limit on Clinker Cooler No. 1. Your staff agreed to look into that matter. Since that time we have been informed that to correct the TSP limit for Clinker Cooler No. 1, the Florida Department of Environmental Protection (FDEP) would have to retroactively review if Kiln No. 1 should have gone through a prevention of significant deterioration (PSD) review during past permitting. If FDEP determines that PSD was applicable, then a NO_x limit would be imposed.

During the meeting we told you that we would voluntarily accept a NO_x limit providing that today's BACT was not applied to this 20 year old kiln. However, the Professional Engineer working on this application informed me on October 11, 1996 that the NO_x limit would have to be the same as the limit on Kiln No. 2., i.e. 250 lb/hr, which was established as a result of a PSD review in 1992. We are confused by the approach being applied by the FDEP today, to overrule the Department's own past permitting actions. On March 22, 1991, FDEP established the federally enforceable limits for TSP for Kiln No.1. and determined that no NO_x limit was necessary. Then in 1993, during permitting to allow the burning of tires in Kiln No. 1, another review was conducted by FDEP and the Department concluded that PSD was not triggered.

Southdown, Inc. ▬ 1200 SMITH STREET ▬ SUITE 2400 ▬ HOUSTON, TEXAS 77002 ▬ (713) 650-6200

We included Kiln No. 1 in this application for the sole purpose of providing TSP emission offsets by reducing our allowable TSP limit from 39.0 lb/hr to 26.0 lb/hr on the main stack. Since FDEP does not agree that this provides meaningful reductions, we hereby withdraw the Kiln No. 1 permit, AC27-258571, from this permitting process. We request that the remainder of the application be evaluated to address the following requested changes:

1) Correct the TSP allowable limit on Clinker Cooler No. 1 from 7.13 lb/hr to the allowable limit of 13.0 lb/hr under NSPS, i.e., 0.1 lb/ton of feed.

2) Increase the TSP limit for Clinker Cooler No. 2 from 5.0 lb/hr to a BACT determined limit of 13.0 lb/hr. Up until 1995, the permit was written in a manner that did not require annual testing for TSP as long as the annual visible emission test, using Method 9, showed that the opacity was less than 5%. Therefore, no data exists to show whether this limit was being routinely met. During three preparatory tests conducted in October 1995, we could not meet the 5.0 lb/hr limit.

3) Increase the TSP limit for Kiln No. 2 main stack from 13.5 lb/hr, set in 1990, to 26.0 lb/hr. This limit used to be 24.0 lb/hr, set during the initial PSD review, and a BACT determination of 0.2 lb/ton dry feed. Somewhere along the line, incorrect information was provided to FDEP which stated the moisture content of the feed is 9.8%, which resulted in a lowering of the limit from 24 lb/hr to 21.6 lb/hr. In 1990, Florida Mining & Materials, took reductions in TSP from 21.6 to 13.5 lb/hr, SO_2 from 12.0 lbs/hr to 11.5 lb/hr, and NO_x from 250 lb/hr to 162.3 lb/hr to avoid a PSD review. In hind sight, this was clearly the wrong approach. As you know, Southdown went through a PSD review to regain the NO_x limit of 250 lbs/hr in 1992. This application seeks to regain the BACT determined TSP limit of 0.2 lb/ton of dry feed, i.e. 26.0 lb/hr. The requested emission increase for TSP would trigger the requirements for a BACT determination as stated in the Technical Evaluation, dated April 26, 1990:

"It is presumed that the applicant will accept reductions in allowable emission limits that are necessary to avoid PSD review for particulate matter (PM), SO_2, and NO_x. Any emission increase above these levels would require another evaluation including a Best Available Control Technology (BACT) determination, additional $4,000 application fee, and perhaps additional air modeling data (this evaluation does not address the air modeling data submitted with this application.)"

4) Increase CO emission limit from 64 lb/hr to 169 lb/hr for Kiln No. 2. This CO limit increase is necessary so that we can use available flyash as a source of alumina and silica. The varying carbon content of the flyash contributes to the fluctuations in CO emissions.

Please advise us as to what information is required so that your staff may continue to process our application. If you have any questions, please call me at (713) 653-8098.

Sincerely,

Amarjit Singh Gill

Amarjit Singh Gill, PE
Director Air Permitting

c: Bill Thomas, SWD
John Koogler
Don Kelly
~~EPA~~
~~NPS~~
TERESA HERON, BAR
~~HCEPC~~
~~Hernando Co.~~

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

September 23, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Don Kelly, Plant Manager
Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006

Re: Southdown Inc. Modification of Permits
Kilns 1 and 2, Coolers 1 and 2

Dear Mr. Kelly:

Thank you for meeting with Mr. Linero and Mr. Zell and providing them with a tour of your facility. We have since received Mr. Gill's letter of August 23 in response to our completeness review letter of July 10. We have been in communication with him on various issues related to his letter and are continuing review of the subject application.

We emphasize that the correct method for the PSD netting calculation is the comparison of past actual to future potential emissions. We received no data on past emissions with the August 23 submittal. We specifically asked for information on past emissions tests in our letters of March 21 and July 10. In addition to the reasons cited in Southdown's letter, we require the past actual record in order to provide our staff and the professional engineer sealing the technical review with a full appreciation of the effects of the requested changes (irrespective of PSD applicability). We point out as well that EPA Region IV previously advised the Department (letter dated January 10, 1990) that Florida Mining and Materials (previous owner of the facility) used incorrect netting calculations in another application.

Southdown claims that it cannot meet emission limits on Kiln 1 and Coolers 1 and 2 and gives this as the reason for using the allowable emissions as the baseline for review. We have been provided no data by Southdown to substantiate this claim. Our own search of data in Department records indicates that the emissions limits have been met in recent years. Therefore we have no basis for changing the existing permit conditions. Using our data, the net emissions increases also appear to be greater than estimated by Southdown. The information provided by Southdown does not meet the "Standards of Issuing or Denying Permits" given in F.A.C. 62-4.070. We do not have affirmative reasonable assurance (provided by the applicant) based on plans, test results, control equipment, etc. necessary to issue the requested permit.

We understand that Southdown does not wish to have NO_x limits imposed on Kiln 1 because of the resulting $30,000 to $40,000 annual emission fees. Ostensibly, the change in your operation which requires a review for Prevention of Significant Deterioration (PSD) is the increase in permitted CO emissions for Kiln 1. Since we do not believe that NO_x emissions will increase due to this CO increase, we would not normally conduct an evaluation for Best Available Control Technology (BACT) for NO_x and impose a limit. However, a more thorough review of past permitting related to Kiln 1 reveals that there may have been previous production increases which very likely caused proportionate increases in NO_x emissions but which did not result in establishment of appropriate limits to comply with or get exempted from PSD/BACT. For that reason, it may be appropriate to set such a limit now. The applicability of a fee would need to be reviewed by our management.

At the present time, there are limits in preheater feed rate, kiln feed rate and clinker production rate. In reviewing past information, however, it appears that kiln feed rates of 120 tons per hour (TPH) set in the past were in fact preheater feed rates. For example, in the original EPA-issued PSD permit, the feed rate for Kiln 2 was specified as 120 TPH on the basis of 9.8 % moisture, which could only have occurred prior to the actual kiln entrance. Subsequently, this value was increased to 130 and then to 145 TPH and specified as the preheater feed rate. Then it was put on a 30-day rolling average basis and an hourly maximum value of 165 TPH was established as a preheater feed rate. Similar changes were made in the virtually identical Kiln 1 which was originally permitted before promulgation of the PSD rules.

Similarly, production limits for clinker have increased from 71 TPH to 90 TPH as hourly maxima. Without a limit on clinker production, we understand that it may be possible to produce more that 90 TPH. The limit on clinker production may be one of the mitigating factors to the previously permitted increase of preheater feed rate. While Kiln 2 has always been a PSD kiln, it appears that Kiln 1 may have been subject to PSD/BACT due to the production increases. Limits for all PSD pollutants (including NO_x) could or should have been imposed. Until these matters are fully resolved, we cannot revert to the single production parameter basis which we agree is more desirable based on the New Source Performance Standard for cement plants. We would be interested in knowing what the manufacturer actually considers the capacity of these kilns and coolers to be.

We are continuing to process your application with the data that we have developed from the Department files. As mentioned above, it appears to suggest that there is no basis for the relaxation of limits in the existing permits and that information from Southdown does not meet the reasonable assurance tests. Please advise by October 1 if you wish to withdraw or modify your application. If you have any questions regarding this matter, please call Teresa Heron or Al Linero at (904)488-1344.

Sincerely,

for C. H. Fancy, P.E., Chief
Bureau of Air Regulation

AAL/aal/l

cc: Brian Beals, EPA
John Bunyak, NPS
Bill Thomas, SWD
Pat Comer, DEP
Doug Beason, DEP
Amarjit Gill, Southdown
John Koogler, K&A

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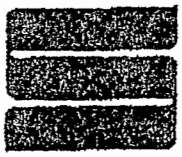
Kilns 1 + 2
Coolers 1 + 2

PS Form **3800**, April 1995

Southdown



ENVIRONMENTAL AFFAIRS DEPARTMENT
Telecopy Number (713) 653-8567

High Priority ✓ Medium Priority ____ Normal Priority ____

DATE: Sept. 13, 1996 TOTAL PAGES: 6

TO: Teresa Heron

AT: FDEP

FAX NO: 904-922-6979

FROM: Amarjit Gill

If problems occur during transmission, please phone (713) 653-6852.

MESSAGE: This is Work In Progress.!!

Environmental Affairs Group: Ivone Garcia / Amarjit ("Jeet") S. Gill / Daniel W. Heintz / Ellen Hofmann-Haynie / Janet Krolczyk

AMERICAN PORTLAND CEMENT ALLIANCE
1225 EYE STREET, N.W. • SUITE 300 • WASHINGTON, D.C. 20005
TELEPHONE (202) 408-9494 • FACSIMILE (202) 408-0877

FAX

TO: Amarjit Gill

COMPANY: Southdown

FROM: Andy

DATE: 7/19/96

COMMENTS: Work in progress on the definition of Dry Kiln feed. Please call to discuss

No. of Pages (Incl. Cover Page) 5

apca
AMERICAN PORTLAND CEMENT ALLIANCE
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December 7, 1995

MEMORANDUM

TO: HAPs Task Force

FROM: Andy O'Hare

SUBJECT: **DRAFT DEFINITION OF "DRY KILN FEED"**

As you are probably aware, there has been confusion within the cement industry and EPA as to what constitutes "dry kiln feed," ever since the original portland cement kilns NSPS was first promulgated in the 1970s. Un-answerable questions have arisen from both a compliance and enforcement perspective as to what was is meant in the regulations by "kiln feed (dry basis)." Compliance with the NSPS is utterly reliant upon how one interprets this term. I understand that EPA on previous occasions -- before my tenure -- has expressed an interest in having the industry clarify what it believes this term means.

This issue came up most recently at the November 8, 1995 meeting with Joe Wood and other OAQPS staff, where Mr. Wood explained that EPA was contemplating making revisions to the existing NSPS requirements to address new, recent Agency interpretations as to the opacity standard for kilns with in-line raw mills. (Referenced, as you know, in a September 7, 1995 EPA memorandum.) Joe explained that the Agency would like to -- once and for all -- clarify this "kiln feed" issue. APCA committed to providing EPA with a draft definition of "dry kiln feed."

Subsequent to the November 8, 1995 meeting, Walter Greer of Ash Grove Cement graciously volunteered to craft the first draft of a definition of "dry kiln feed" and a supporting rationale. The product of his efforts is attached.

Comments Requested

We have not committed to transmitting this to EPA on any date certain, however I would prefer to do so before the end of 1995. Accordingly, I would appreciate your comments on this draft by COB, December 15, 1995, so that I may turn it around before Christmas. Depending on the comments received, a conference may be scheduled to reconcile differing approaches/concerns. The conference call (if one is warranted) would be scheduled for some time the week of December 18, 1995. Please call with any questions. I may be reached at (202) 408-9494. Regards!

P.S. I take full credit for the awful drawings!!

12/7/95, Draft

"DRY KILN FEED" DEFINITION

Dry Kiln Feed: All solid feed to the kiln excluding fuel, but including all recycled CKD, whether the CKD is commingled with "new" or raw kiln feed or introduced into the pyroprocessing system as a separate feed stream at the feed end or firing end (insufflation) of the kiln or elsewhere.

Supporting Rationale

The rationale for this definition is that powdered solids (or finely divided particles in slurry) represent a source of potential particulate loading to the air pollution control device. Therefore, this definition tends to "level the playing field" for all pyroprocessing systems. "New" solids or recycled solids all represent potential clinker. To exclude recycled CKD from the definition of dry kiln feed gives an "advantage" to kiln systems that derive all potential clinker from "new" feed. (As you are aware, the NSPS is 0.3 pounds of particulate per ton of dry feed for kiln stack emissions and 0.1 pounds of particulate per ton of dry feed for all other sources). A kiln system with only "new" feed could, therefore, emit more particulate per ton of clinker than a kiln system of identical capacity from which the recycled CKD is excluded from the definition of dry kiln feed.

In the early days (I don't exactly remember when, but probably in the 70s), there were efforts to include solid residues from fuel (e.g., coal ash) in the definition of kiln feed. I don't know why but the effort failed. Maybe it wasn't too important to the cement industry because many kilns were gas or oil fired. Excluding solid fuel residues also tends to "level the playing field" between kilns fired with different fuels. It is doubtful that any effort to include coal ash at this point in time would be successful. This opinion notwithstanding, there may be a kiln somewhere that is allowed to include coal ash in the definition of dry kiln feed. There is always an exception.

The following are sketches of common methods of returning CKD to kiln systems. The chemistry of CKD derived from wet kilns, long dry kilns and the bypass stack of preheaters/precalciners kilns is different from that of raw kiln feed. However, CKD from a preheater tower is generally similar chemically to kiln feed.[1] These particles are, however, generally finer than kiln feed due to the operating characteristics of the cyclone preheater vessels. In addition, the chemistry this "preheater tower CKD" may be different than that of raw kiln feed.

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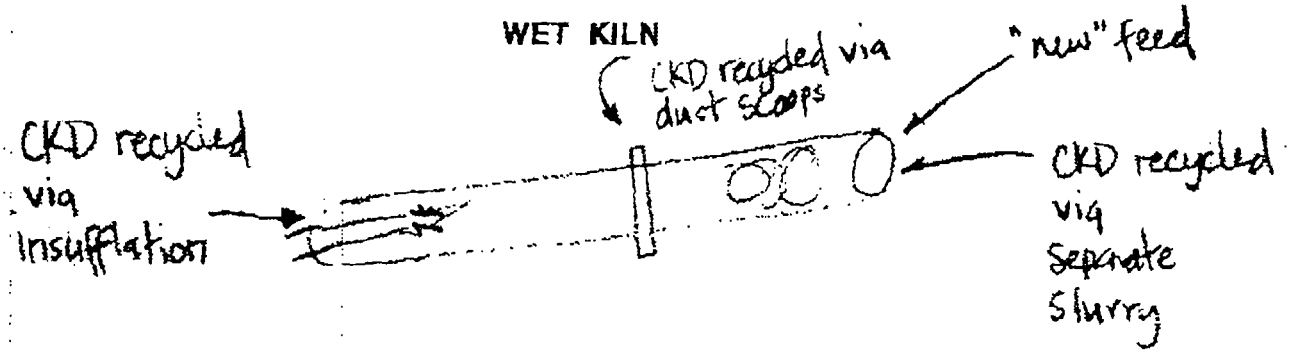
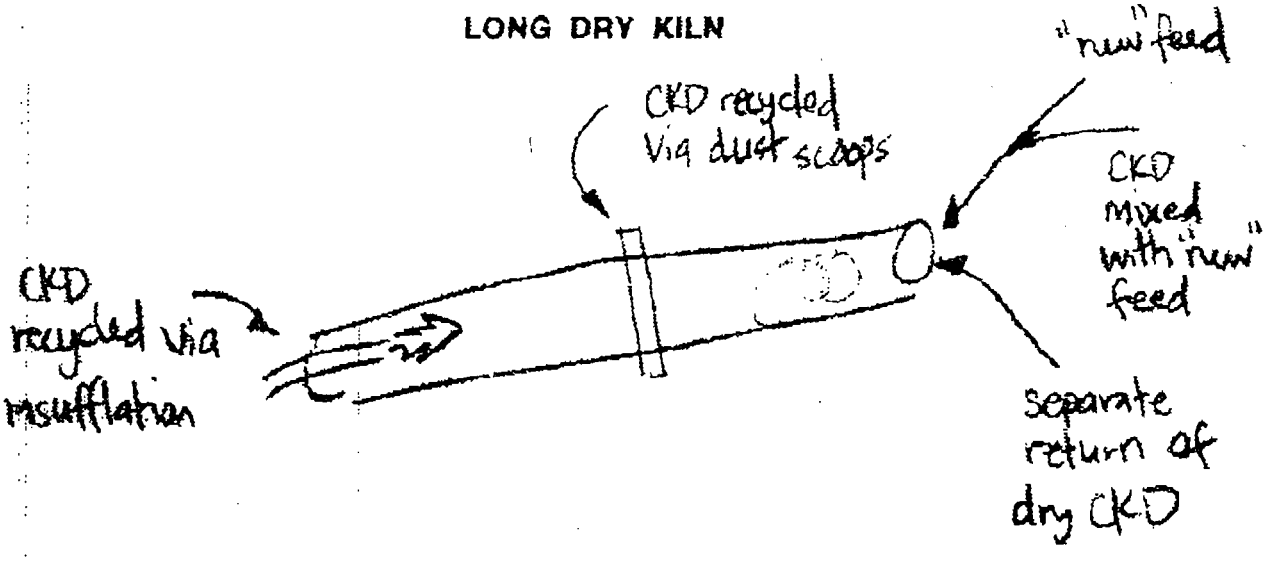
[1] Material derived from a preheater tower should perhaps not be referred to as CKD. It may more properly be referred to as "recycled raw mix," since it has only been "warmed up" and not subjected to significant thermal treatment.

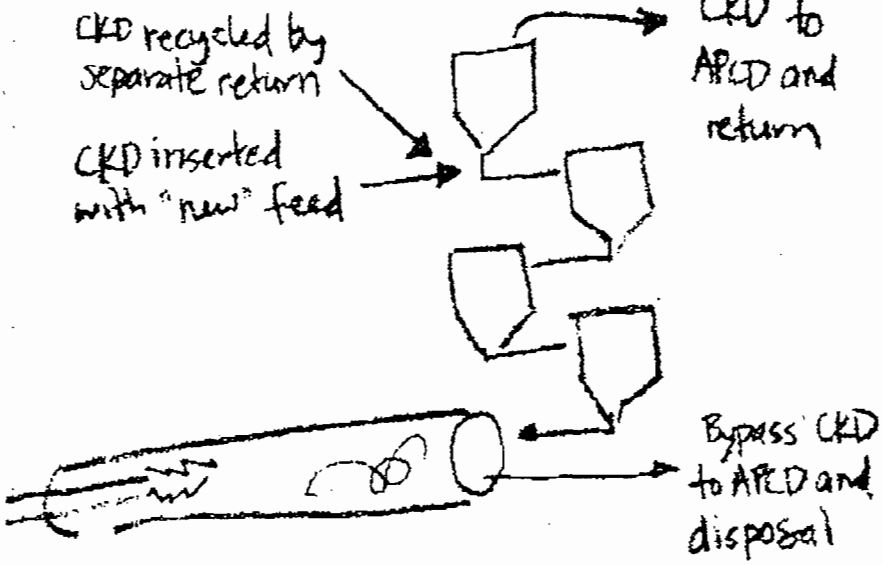


CKD is rarely, if ever, mixed with new kiln feed slurry because of thickening problems with the slurry. CKD inserted via a separate slurry decreases overall energy efficiency of the kiln and may contribute to operating problems in the form of "mud rings" in the claim system. Dust scoops fell into disfavor due to operating and maintenance problems. However, Fuller/FLS is now marketing a CKD recycling system that they claim works. Insufflation is probably the current method of choice for CKD return to wet kilns.



The same comments for wet kilns applies to long dry kilns. I don't know of any reason to slurry CKD for return to the kiln.

PREHEATER/PRECALCINER
(Without in-line raw mill)



There are few good reasons to insufflate CKD into a preheater/precalciner. An exception to this rule may exist; however, operations are likely to be unnecessarily complicated. (For your information, insufflating raw mix at Lone Star's Santa Cruz PH/PC kiln cut NO_x emissions by about 10%).

For preheater/precalciner kilns with in-line raw mills, CKD is trapped within the raw mill product, "automatically" becomes part of the raw mix, and, therefore, part of the raw or "new" feed.

Other Points of Note:

- In cases where CKD is recycled, if recycling is stopped, CKD may be replaced with new feed to keep the same rate of kiln production.
- ESPs provide an advantage over fabric filters for CKD recycling, because CKD is segregated chemically in a ESP. Consequently, CKD derived from one or more of the first fields of an ESP may be recycled, whereas CKD from a fabric filter may not be recycled -- certainly in amounts similar to those from an ESP.

August 23, 1996

Mr. A. A. Linero, P.E., Administrator
New Source Review Section
Bureau Of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Southdown, Inc. Modification of Permits
AC27-258569, -258570, -258571, & -258572
Kilns 1 & 2, and Coolers 1 & 2.

Dear Mr. Linero

Thank you for visiting our Brooksville plant on August 13, 1996. In accordance with our discussion on "kiln feed" during the meeting, we will not seek an increase in the emission limits above those submitted in our PSD application. However, we have re-calculated our emissions in terms of lb/ton of feed to the preheater, based on a preheater feed of 145 tons per hour as shown in the attached TABLE 1, which also shows the revised PSD netting calculations. In the past, you have asked us to provide "reasonable assurance" that we will be able to meet the new limits for TSP, CO and VOC. Based on data that we collected in September/October of 1995, utilizing the most commonly available flyash and mill scale, we believe our typical emissions will be as shown in TABLE II.

Southdown does intend to install non-certified CO monitors in the exiting gas flow, near the top of the preheater, in each kiln, for purposes of providing valuable process information to the control room operators. As you are aware, we already have oxygen monitors in the back end of each kiln. During our compliance testing, we will not only measure the appropriate emissions in the stack, but also measure the oxygen in the back end of the kiln and the CO exiting from the preheater. We will then establish operating ranges for the oxygen and CO levels, which will be used by the control room operators for controlling the kiln. The mass emission rate of CO should remain fairly constant between the top the preheater and the exhaust stack. Therefore, the CO monitor will also, indirectly, provide an indication of the CO emissions from the main stack.

The remainder of this letter is in response to your July 10, 1996 letter. Pertinent paragraphs from your letter are reproduced below in bold lettering, followed by our response.

PSD Netting Calculation

"The netting calculation for PSD applicability should have been based on comparisons of future potential emissions to past actual emissions. Southdown's calculations were based on

Southdown, Inc. ■ 1200 SMITH STREET ■ SUITE 2400 ■ HOUSTON, TEXAS 77002 ■ (713) 650-6200

comparisons of allowable emissions limits before and after the changes. If some of the emissions units were operating out of compliance, then it would be appropriate to use past allowable emission rates (for those units) together with past actual hours of operation for comparison with future potential emissions. Please provide a revised netting calculation [Rule 62-212.400(2)(e)]. This was specifically requested in the section entitled "Emission Data" in our March 21 letter."

Response

The netting calculation is performed primarily to determine if the increase in emissions for any of the criteria pollutants would exceed the significant levels, and thereby be classified as "major modification". A major modification is subject to the prevention of significant deterioration (PSD) review. In this case, we had determined that the requested increases for total suspended particulates and carbon monoxide were greater than the significant thresholds of 25 tons/year and 100 tons/year respectively, and therefore a PSD review was applicable. Since the netting calculations were not used to avoid a PSD review, any further refinements to those calculations would not change the end conclusion. The dispersion modeling is not based on tons/year, but rather lbs/hr. Therefore, the impacts on the ground level concentrations, as presented in our analysis, would not be affected by any increases or decreases in the PSD netting calculations.

The reason Southdown requested an increase in the particulate emission limits for Kiln #2, Clinker Cooler #2 and Clinker Cooler #1 was that we could not meet these limits on an on-going basis. As a matter of fact, the limits were exceeded during the compliance testing for these units in 1995. We are in the process of negotiating a settlement with the Florida Department of Environmental Protection's Southwest District office in Tampa, FL. Therefore, as stated in your letter, it is appropriate to use the allowable mass emission rates (lb/hr) in calculating the annual tons per year. It is true that we should have used actual hours of operation for 1994 and 1995 to calculate the annual average instead of using allowable hours of operation. A revised emission netting, based on a feed rate of 145 tons per hour to the preheater, is attached. Dispersion modeling has been re-run.

BACT Determination

"We need better information on historical actual emissions and knowledge on how these were or can be minimized to insure that emission rates reflective of Best Available Control Technology are selected. We cannot justify increases in selected emission limits based on recent BACT determinations alone. Those determinations also addressed other pollutants with tighter limits (e.g. nitrogen oxides) which Southdown does not seek to change at its facility."

Response

OXIDES OF NITROGEN (NO_x)

The NO_x limit for Kiln No. 2 is 250 lbs/hr. This limit was not established on the basis of any emission

factors related to either kiln feed or clinker production. However, it is equivalent to 1.724 lb/ton dry feed to the preheater. The conversion factor from preheater feed to clinker production can vary from 0.55 to 0.62. Therefore, the clinker production can vary from 79.8 tons/hour to 89.9 tons/hour. Since our NO_x limit is fixed at 250 lbs/hour, for comparison purposes, it can be expressed as 3.13 lb/ton clinker to 2.78 lb/ton of clinker. The NO_x limit for Kiln No. 2 is the lowest for any of our operating kilns. This limit compares very well with the most recent BACT determinations made by FDEP for both Florida Crushed Stone (FCS) and Florida Rock Industries (FRI). Therefore, it is not clear why FDEP would consider tightening the existing NO_x for Kiln #2. There is no NO_x limit for Kiln #1 and we strongly oppose any suggestion by FDEP to establish one at this time for the simple reason that it will result in additional emission fees approaching $30,000 to $40,000 annually.

CARBON MONOXIDE (CO)

As we have stated in previous submittals, the carbon monoxide is not just a combustion related pollutant. Southdown uses flyash as an additive to the raw feed mix primarily as a source of alumina and silica. Flyash also contains carbon, which can vary in concentration depending on the source of the flyash. As the raw feed travels down the preheater tower, most of the carbon present in the flyash is burned off but some of it leaves as carbon monoxide. This results in fluctuating carbon monoxide emissions. Exhaust gas sampling, while using typical flyash from Tampa Electric Power Company (TEPCO) has indicated that CO concentrations can fluctuate between 60 to 200 ppm. Based on these results, we feel confident that the BACT limit for carbon monoxide of 1.172 lb/ton of feed to the preheater (1.307 lb/ton kiln feed, as used previously) can be met consistently on an on-going basis.

VOLATILE ORGANIC COMPOUNDS EMISSIONS (VOC)

Southdown uses mill scale as an additive to the raw feed as a source of iron. Mill scale is generally contaminated with oils from the various processes in the mill. As the mill scale travels down the preheater tower, as a part of the raw feed, the organics volatilize and exit through the main stack. The existing limit of 7.4 lb/hr is too low. Exhaust gas sampling, while using typical mill scale, containing up to 2% hydrocarbons, has indicated that VOC concentrations can fluctuate between 5 to 10 ppm. Based on these results, we feel confident that a limit of 0.09 lb/ton feed for volatile organic compounds can be met consistently on an on-going basis.

SULFUR DIOXIDE (SO_2)

Southdown had requested FDEP to delete Flolite as an alternate fuel for both kilns. This request was approved and is reflected in the most recent permit renewal, AC27-258570 for Kiln No. 2 dated May 19, 1995, and AC27-258571 for Kiln No. 1 dated August 3, 1995. The new SO_2 emission limit for each kiln is 15.0 lb/hr. This limit is more stringent than limits established by FDEP for both FCS and FRI. As discussed during our meeting on August 13, 1996, increasing this limit to 25 lb/hr for each kiln would make it not only consistent with other kilns in the state, but also in line with the most recent BACT determinations.

Incomplete Determination

"The main reason is that it does not adequately describe the manner in which Southdown intends to operate its kilns to insure that the proposed limits will be met."

Response

As stated earlier in the letter, Southdown does intend to install CO monitors (non-certified) in the exiting gas stream from the preheaters for process controls. These CO monitors, in conjunction with the existing O2 monitors in the back end of the kiln will be used to define operating ranges for the control room operators. These ranges will be determined during the compliance testing. We have every reason to believe that we will be able to meet the requested limits for CO, VOC and TSP.

OTHER ITEMS

In the cement industry, "kiln feed" for a preheater/precalciner kiln is generally assumed to be the feed entering the preheater tower. It is the only "feed" rate that is actually measured. The so called "kiln feed" (as used by FDEP) is calculated by assuming that a certain percentage of the feed is carried away by the counter flowing gases and is collected in the dust collectors, from where it is recycled. Clinker production is also calculated based on a conversion factor. It is Southdown's position that feed rate to the preheater is most significant and verifiable number for tracking production. In our permits for Kiln #1 & #2, we have the following limits in Condition No. 4, under "PROCESS OPERATING LIMITATIONS":

"The maximum material handling rates, based upon a rolling 30 production-day average, are as follows:

Kiln preheater feed rate	= 145 tons/hour
Cement Kiln Feed Rate	= 130 tons/hour
Clinker production rate	= 79.6 tons/hour

The maximum material handling rates for any one hour of operation are as follows:

Kiln preheater feed rate	= 165 tons/hour
Cement Kiln Feed Rate	= 148 tons/hour
Clinker production rate	= 90.0 tons/hour"

We do not see any need for a three-tier limit on production. We believe there should only be one limit and that should be the limit on feed to the preheater. Therefore, we respectfully request that Condition No. 4, in both permits, be amended to read as:

"The maximum material handling rate, based upon a rolling 30 production-day average, is 145 tons/hour and the maximum material handling rate for any one hour of operation is 165 tons/hour."

We hope this response adequately addresses the concerns raised in your July 10, 1996 letter and will allow you to proceed in the issuance of the "Draft Permits". If you need additional information or have any questions please call me at (713) 653-8098.

Sincerely,

Amarjit Singh Gill

Amarjit Singh Gill, PE
Director, Air Permitting

c: Don Kelly
John Koogler

CC: EPA
NPS
SWD

SOUTHDOWN, INC.
BROOKSVILLE PLANT

	Pollutant	Allowable Hrs.	Allowable Lb/Hr	1994 TPY	1995 TPY	2 Yr. Avg. TPY	Preheater Feed TPH	BACT Lb/Ton Feed	Calculated Emis. Limit Lb/Hr	PTE TPY	NET TPY
Kiln #1	TSP	8760	43.5	174.0	171.3	172.7	145.0	0.180	26.1	114.3	-58.3
Kiln #2	TSP	8200	13.5	50.5	52.5	51.5	145.0	0.180	26.1	107.0	55.5
Cooler #1	TSP	8760	7.1	28.4	28.0	28.2	145.0	0.090	13.1	57.2	29.0
Cooler #2	TSP	8200	5.0	18.7	19.5	19.1	145.0	0.090	13.1	53.5	34.4
Net TSP											**60.6**
Kiln #1	CO	8760	57.7	230.8	227.2	229.0	145.0	1.172	169.9	744.3	515.3
Kiln #2	CO	8200	64.0	239.3	249.0	244.1	145.0	1.172	169.9	696.8	452.6
Net CO											**968.0**
Kiln #2	VOC	8200	7.4	27.7	28.8	28.2	145.0	0.090	13.1	53.5	25.3
Net VOC											**25.3**
Kiln #1 & Clinker Cooler #1 operated 8001 hours in 1994 and 7875 hours in 1995											
Kiln #2 & Clinker Cooler #2 operated 7478 hours in 1994 and 7780 hours in 1995											

TABLE I

PSD NETTING CALCULATIONS

145 TONS/HOUR PREHEATER FEED RATE

BROOKSVILLE, FLORIDA

Pollutants	Ave Meas	Exh Flow	Temp	Moisture	Baro. Press	Exh Flow	Phtr. Feed	Pmt. Limit	Calculated	Limit	Margin
	PPM or %	ACFM	(F)	%	Inch Hg	DSCFM	Tons/Hr	Lb/Hr	Lb/Hr	Lb/Hr	%
NOx	160.0	278000.0	230.0	9.0	29.7	192525.2	145.0	250.0	220.8	250.0	11.7
SO2	7.0	278000.0	230.0	9.0	29.7	192525.2	145.0	15.0	13.4	15.0	10.4
VOC	7.5	278000.0	230.0	9.0	29.7	192525.2	145.0	7.4	9.9	13.1	24.4
CO	180.0	278000.0	230.0	9.0	29.7	192525.2	145.0	64.0	151.2	169.9	11.0
TSP		278000.0	230.0	9.0	29.7	192525.2	145.0	13.5	19.8	26.1	24.1
O2 - % *	13.2										

Kiln #2

Pollutants	Ave Meas	Exh Flow	Temp	Moisture	Baro. Press	Exh Flow	Phtr. Feed	Pmt. Limit	Calculated	Limit	Margin
	PPM or %	ACFM	(F)	%	Inch Hg	DSCFM	Tons/Hr	Lb/Hr	Lb/Hr	Lb/Hr	%
SO2	7.0	275000.0	250.0	9.0	29.7	185082.9	145.0	15.0	12.9	15.0	13.9
CO	175.0	275000.0	250.0	9.0	29.7	185082.9	145.0	57.7	141.3	169.9	16.8
TSP		275000.0	250.0	9.0	29.7	185082.9	145.0	43.5	20.6	26.1	21.0
O2 - %*	13.7										

Kiln #1

* Oxygen is shown for information only. It can vary from 10% to 15%, depending on the air leakage into the system.

To Southdown File (active)

[redacted]

ENVIRONMENTAL AFFAIRS DEPARTMENT
Telecopy Number (713) 653-8567

High Priority ✓ **Medium Priority** _____ **Normal Priority** _____

DATE July 24, 1996 **TOTAL PAGES:** 3

TO: Teresa Heron T.H.

AT: FDEP

FAX NO: 904-922-6979

FROM: Amarjit S. Gill

If problems occur during transmission, please phone (713) 653-6852.

MESSAGE:

Environmental Affairs Group: George Caine / Ivone Garcia / Amarjit ("Jeet") S. Gill / David T. Hagerman / Daniel W. Heintz / Ellen Hofmann-Haynie / Janet Krolczyk / Michael A. Tilton

July 24, 1996

Mr. Richard Biondi
MC 223A
US Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Re: Definition Of Kiln Feed
Standards of Performance for Portland Cement Plants
40 CFR 60, Subpart F

Dear Mr. Biondi:

I spoke to you over the telephone on Monday, July 22, 1996 regarding the definition of "Kiln Feed" as it applies in 40 CFR 60.62(a)1 for kiln gases, and 40 CFR 60.62(b)1 for clinker cooler gases.

40 CFR 62(a): On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this Subpart shall cause to be discharged into the atmosphere from any kiln any gases which:

40 CFR 60.62(a)1: Contain particulate matter in excess of 0.15 kg per **metric ton of feed** (dry basis) to the kiln (**0.30 lb per ton**).

40 CFR 62(b): On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this Subpart shall cause to be discharged into the atmosphere from any **clinker cooler** any gases which:

40 CFR 60.62(b)1: Contain particulate matter in excess of 0.05 kg per **metric ton of feed** (dry basis) to the kiln (**0.10 lb per ton**).

Southdown owns and operates two preheater kilns at its cement manufacturing plant near Brooksville, Florida. The existing permits have the following limits on material handling rates:

"The maximum material handling rates, based upon a rolling 30 production-day average, are as follows:

Kiln preheater feed rate	**= 145 tons/hour**
Cement Kiln Feed Rate	**= 130 tons/hour**
Clinker production rate	**= 79.6 tons/hour**

Approximately 11% of the total feed entering the preheater tower is carried away by the counter flowing gases, which is collected in the dust collector and recycled. The remaining 89% enters the inclined horizontal section of the cement kiln. The two feed rates, i.e., preheater feed rate and the kiln feed rate have caused confusion as to which feed rate should be used in calculating the allowable particulate emissions.

If the 145 tons/hour is used, the allowable kiln particulate emission rate is 145*0.3 = 43.5 lb/hr, whereas, if 130 tons/hour is used, the allowable particulate emission rate is 130*0.3 = 39.0 lbs/hr. Similarly, the particulate emissions from the clinker cooler are 14.5 lbs/hr and 13.0 lbs/hr respectively. Southdown operates 9 other kilns in seven other states, and we have always used the preheater feed rate in calculating the allowable particulate emission rates.

In our discussion on Monday, we agreed that the intent of the NSPS was to use the preheater feed rate in calculating the allowable emission rates from a preheater/precalciner kiln. Could you be kind enough to give us USEPA's interpretation as to their understanding of kiln feed rate for a preheater kiln.

On a separate issue, 40 CFR 60.63(a), Monitoring of Operations states:

> "The owner or operator of any portland cement plant subject to the provisions of this part shall record the daily production rates and kiln feed rates."

If a limit on the feed rate is established, the production rate is also indirectly established depending on the conversion factor for a specific kiln. This conversion factor can vary from 0.54 to 0.62 ton of clinker for each ton of feed, and is dependant not only on the amount of material recycled, but also on air leakage into the preheater tower. Owners and operators strive hard to gain even the slightest production increases for a fixed feed rate. Therefore, is it necessary to establish both a front-end feed rate limit and a back-end production rate limit? Establishing just the feed rate limit does not prevent the owner/operator from recording the daily production rates and kiln feed rates.

An early response would be greatly appreciated. If you have any questions, or need additional information, please call ma at (713) 653-8098.

Sincerely,

Amarjit Singh Gill

Amarjit Singh Gill, PE
Director, Air Permitting

c: Clair Fancy, FDEP, Tallahassee, FL
Don Kelly, Southdown, Brooksville Plant
John Koogler, PhD, Koogler & associates

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

July 10, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Don Kelly, Plant Manager
Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006

Re: Southdown Inc. Modification of Permits
Kilns 1 and 2, Coolers 1 and 2

Dear Mr. Kelly:

The Department has reviewed the information submitted subsequent to our completeness letters of March 8 and March 21. We received a letter on April 2 from your Houston office describing the purpose of the request. We received a thorough chronology on June 17 of previous permitting actions from your consultant, Koogler and Associates. We also received a diskette containing your Title V application. We have not yet been able to download the diskette and request a hard copy version if possible.

Based on our review, the application is still incomplete [Rule 62-4.055(3)]. The main reason is that it does not adequately describe the manner in which Southdown intends to operate its kilns to insure that the proposed limits will be met. The netting calculation for PSD applicability should have been based on comparisons of future potential emissions to past actual emissions. Southdown's calculations were based on comparisons of allowable emissions limits before and after the changes. If some of the emissions units were operating out of compliance, then it would be appropriate to use past allowable emission rates (for those units) together with past actual hours of operation for comparison with future potential emissions. Please provide a revised netting calculation [Rule 62-212.400(2)(e)]. This was specifically requested in the section entitled "Emissions Data" in our March 21 letter.

We need better information on historical actual emissions and knowledge on how these were or can be minimized to insure that emission rates reflective of Best Available Control Technology are selected. We cannot justify increases in selected emission limits based on recent BACT determinations alone. Those determinations also addressed other pollutants with tighter limits (e.g. nitrogen oxides) which Southdown does not seek to change at its facility.

We, are in fact, processing your application, but require the above information for the reasonable assurance needed by the Department prior to issuance of an Intent [Rule 62-4.070.(3), F.A.C.].

If you have any questions regarding this matter, please call me or Teresa Heron at (904)488-1344.

Sincerely,

A. A. Linero, P.E. Administrator
New Source Review Section

AAL/aal/l

cc: J. Harper, EPA
J. Bunyak, NPS
W. Thomas, SWD
A. Gill, Southdown
J. Koogler, K&A

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

MEMORANDUM

VIA FAX

TO: Teresa Heron
FDEP

FROM: John B. Koogler / Pradeep Raval

DATE: June 5, 1996

SUBJECT: Southdown, Inc. d/b/a
Florida Mining & Materials
Permitting History
Kilns 1 and 2 and Clinker Coolers 1 and 2

In accordance with your request during our meeting on April 25, 1996, enclosed is a historical summary of permitting actions for Kilns 1 and 2 and Clinker Coolers 1 and 2 based on available information.

If you have any questions, please do not hesitate to contact us.

PERMITTING HISTORY OF KILN NO. 1

SOUTHDOWN, INC d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NOx	SO2	CO	VOC	VE	
Effective date of NSPS 8/17/71	0.30 lb/ton kiln feed	-	-	-	-	20%	
AC27-2251 Issued 12/18/73 Expired 3/1/76 Extended	Test requirement	-	-	-	-	Test requirement	No specific limits in permit for kiln feed or PM or VE.
January 6, 1975 PSD rules effective	-	-	-	-	-	-	No major modification or construction after this date without PSD permit.
AO27-20213 Issued 8/13/79 Modified 8/22/79 Expired 8/7/84 Replaced AC27-2251	Test requirement	-	-	-	-	Test requirement 10% limit	No specific limits in permit for kiln feed or PM.
AO27-89814 Issued 10/5/84 Expired 10/3/89 Replaced AO27-20213	0.3 lb/ton 36.0 lb/hr	-	-	-	-	10%	Reference made to NSPS applicability and to 120 tph feed rate.
AO27-169616 Issued 1/23/90 Expired 1/18/95 Replaced AO27-89814	0.3 lb/ton 36.0 lb/hr 151.2 tpy	-	-	-	-	10%	*Kiln Feed*-120 tph (no reference to wet or dry) *Fuel*-coal or No. 6 oil *Baghouse*-16 separate vents

PERMITTING HISTORY OF KILN NO. 1

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NOx	SO2	CO	VOC	VE	
Application to Modify Permit AO27-169616 Filed 9/5/89 Complete 11/1/89	-	-	-	-	-	-	To use Flolite 250 hr/yr during start-up
Intent to Issue AC27-169616 Dated 1/9/90 Proposed expiration 9/30/90 **(PERMIT NOT ISSUED)**	0.3 lb/ton 33.0 lb/hr 130.7 tpy	-	-	-	-	10%	To use Flolite *Hours*-7920/yr *Kiln Feed*-120 tph (wet basis) *Clinker*-71 tph (dry basis) *Heat Input*-208.1 MMBtu/hr except during start-up *Coal*-16800 lb/hr @ 1.0% S and 12387 Btu/lb *Flolite*-250 hr/yr Heat input 7.62 MMBtu/hr Sulfur - 1.0% *No. 6 Oil*-0.77% sulfur
Application to Modify Permit AO27-169616 Filed 9/24/90 Complete 1/10/91	-	-	-	-	-	-	To use Flolite at rate of 2069 gal/hr for 250 hr/yr.

PERMITTING HISTORY OF KILN NO. 1

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NOx	SO2	CO	VOC	VE	
Technical Evaluation and Prel. Determination Application 9/24/90 Complete 1/10/91 TE&PD 1/18/91 Proposed Expiration 12/31/91	0.30 lb/ton 39.0 lb/hr 169.8 tpy	-	-	-	-	20%	To use Flolite during start-up/ idle/fuel supplement for 250 hr/yr --- AC27-2255 issued 12/18/73, therefore plant subject to NSPS No AC issued after 1/6/75 (PSD applicability date), therefore this permit will establish federally enforceable conditions for Kiln No. 1 --- *Hours*-8760/yr *Kiln Feed*-130 tph (wet basis) *Clinker*-79.6 tph (dry basis) *Heat Input*-300 MMBtu/hr *Coal*-24000 lb/hr @ 1.0% S and 12500 Btu/lb *Flolite*-250 hr/yr -2069 gal/hr @ 1.0% S *No. 6 Oil*-1974 gal/hr @ 0.77%S *Sulfur/Heat Ratio*-0.83 lb/SO_2 per MMBtu heat input
AC27-186923 Issued 3/8/91 Expired 12/31/91 Extended 5/31/92 Extended 5/31/93							Same conditions as above

PERMITTING HISTORY OF KILN NO. 1

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NOx	SO2	CO	VOC	VE	
Stack Replacement Initial Request 6/4/91 FDER Approval 6/25/91	-	-	-	-	-	-	Replaced existing 16 individual baghouse vents with single 150-foot stack.
Request to Amend AC27-186923 8/10/92 **(NO ACTION)**	-	-	-	-	-		Delete limit on clinker production
Amendment to AC27-182923 Intent to Issue 4/9/91 **(NO ACTION)**	-	-	-	-	-	-	Allow testing while burning TDF. Conditions of AC27-186923 remain unchanged.
AO27-213207 Issued 6/16/92 Expired 6/15/97 Supersedes AC27-186923	NSPS 0.3 lb/ton 39.0 lb/hr 169.8 tpy	-	-	-	-	NSPS 20%	*Hours*-8760/yr *Kiln Feed*-130 tph *Clinker*-79.6 tph, 30 day average *Heat Input*-300 MMBtu/hr *Coal*-24000 lb/hr @ 1.0% S and 12500 Btu/lb -Sulfur/heat ratio 0.83 lb SO_2 per MMBtu *Flolite*-2069 gal/hr @ 1.0%S for 250 hr/hr -Start-up/Idle/fuel supplement

PERMITTING HISTORY OF KILN NO. 1

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NOx	SO2	CO	VOC	VE	
Requested Amendment AO27-213207 1/22/92	-	-	-	-	-	-	Allow testing while burning TDF as fuel supplement.
Intent to Issue Amendment to AO27-213207 12/17/92	-	-	-	-	-	-	Allow testing with TDF
Amendment to AO27-213207 2/5/93	-	-	-	-	-	-	Approval to conduct tests while burning TDF.
AC27-240349 Issued 4/15/94 Expired 12/31/94	-	-	-	57.7 lb/hr 234.4 tpy (limits when burning TDF only)	-	-	Allows use of TDF to provide 20% of heat input 8760 hr/yr. TDF also limited to 2.14 tph. --- All conditions of AC27-186923 and AO27-213207 are incorporated by reference. --- Thallium monitoring in baghouse dust required.

PERMITTING HISTORY OF KILN NO. 1

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NOx	SO2	CO	VOC	VE	
AO27-254098 Issued (?) Expires 10/31/99 Replaces AO27-213207 and AC27-240349	0.30 lb/ton 39.0 lb/hr 169.8 tpy	-	-	57.7 lb/hr 234.4 tpy (while burning TDF only)	-	20%	*Hours*-8760/yr *Kiln Feed*-130 tph *Clinker*-79.6 tph, 30 day average *Heat Input*-300 MMBtu/hr, except during start-up *Coal*-24000 lb/hr @ 1.0%S and 12500 Btu/lb -Sulfur/heat ratio 0.83 lb SO_2 per MMBtu *Flolite*-2069 gal/hr @ 1.0%S for 250 hr/hr *TDF*-20% of heat input or 2.14 tph Thallium monitoring of baghouse dust

PERMITTING HISTORY OF KILN NO. 1

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NOx	SO2	CO	VOC	VE	
AC27-258571 Issued 8/3/95 Expired 3/31/96 Extended by Title V Replaces AC27-186923 and AO27-254098	0.30 lb/ton kiln feed on dry basis	-	15.0 lb/hr in lieu of fuel sulfur limits	57.7 lb/hr 234.4 tpy while burning TDF only	-	20%	Deletes use of Flolite and adds natural gas as primary fuel and No. 2-6 oils as stand-by fuels ---------- *Hours*-8760/yr *Preheater feed*-145 tph) *Kiln feed* -130 tph) 30-day avg *Clinker* -79.6 tph) *Preheater fuel*-165 tph) *Kiln feed* -148 tph) Max 1-hr *Clinker* - 90 tph) *Heat Input*-300 MMBtu/hr Fuels / Firing Rate (-/hr) / Heat Value (Btu/-) Coal 24,000 lb 12,500 lb No. 2 2,116 gal 141,300 gal No. 4 2,060 gal 145,600 gal No. 5 2,016 gal 148,800 gal No. 6 1,982 gal 151,300 gal Gas 292,683 ft3 1,025 ft3 TDF 2.14 ton (or 20% of heat input for 8760 hr/yr) Thallium monitoring of baghouse dust.

5/28/96 - End

PERMITTING HISTORY OF KILN NO. 2

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit	Permit Limit							
	Emissions					Kiln Feed Rate	Clinker Production	Oper. Hrs
	TSP	NOx	SO2	CO	VOC	TPH	TPH	
Construction Permit AC27-30450 and Final Determination, (PSD-FL-063) Issued 7/25/80 Expired 12/31/83	21.6 lb/hr(1) VE = 10% --- 24.0 lb/hr(2) 94.5 tpy	(3), (4) 195.3 lb/hr 771.0 tpy	(3), (4) 3.0 lb/hr 11.8 tpy	(3), (4) 8.9 lb/hr 35.1 tpy	(3), (4) 2.7 lb/hr 10.7 tpy	120 tph wet @ 9.8% moist(1) --- 120 tph(2)		7,896
Operating Permit AO27-65207 Issued 8/29/83 Expired 8/16/88 Replaces AC27-30450)	24.0 lb/hr 94.5 tpy	195.3 lb/hr 771.0 tpy	3.0 lb/hr 11.8 tpy	8.9 lb/hr 35.1 tpy	2.7 lb/hr 10.7 tpy	120 tph		7,896

Comments:

- The plant consistently met particulate emissions (see Exhibit A, memo dated 5/15/91).
- From 1984 to 1987, the limits for SO2 and NOx were "unreasonably low" and Kiln No. 2 consistently had problems meeting the limits (see Exhibit A).
- Based upon exceedances, compliance testing and, in particular, as agreed upon in Consent Orders issued by DER in 1987, the limits of SO2 and NOx emissions were increased (see Exhibit B, Consent Orders). In 1986, compliance testing demonstrated NO2 emissions rates of 403 lbs/hr and 244 lb/hr. FMM stated that the most probable cause of the exceedance was the flyash coming from Tampa Electric and agreed to limit this particular flyash. FDER ordered FMM to submit application for a construction permit to increase the allowable emissions.

(1) EPA Permit PSD-FL-063 (3/2/581).
(2) Based on BACT of 0.2 lb/ton of feed and 120 tph; 0.3 lb/ton (36.0 lb/hr) requested in application (AC27-30450).
(3) Limit in AC27-30450 and PSD-FL-063.
(4) BACT dated 6/6/80. BACT limit was proposed by applicant.

PERMITTING HISTORY OF KILN NO. 2

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit	Permit Limit								
	Emissions					Kiln Feed Rate	Clinker Production	Oper. Hrs.	Heat Input
	TSP	NOx	SO2	CO	VOC	TPH	TPH		
Application for construction permit application to increase SO2 and NOx emission limits Submitted 8/8/87	24.0 lb/hr 90.7 tpy	330.0 lb/hr(5) 1247.4 tpy	20.0 lb/hr(5) 75.6 tpy	10.0 lb/hr 37.8 tpy	3.0 lb/hr 11.3 tpy				
BACT Determination, issued by Florida DER 11/3/88 (see Exhibit C, BACT)		250.0 lb/hr	12.0 lb/hr						
Construction Permit AC27-138850 and Final Determination, PSD-FL-124 Issued 11/3/88 Expired 6/1/89 Extended 4/1/90	21.6 lb/hr 85.3 tpy --- VE = 10%	250.0 lb/hr 987.0 tpy	12.0 lb/hr 47.4 tpy	8.9 lb/hr 35.1 tpy	2.7 lb/hr 10.7 tpy	120 tph wet feed	71 tph, clinker	7,896	213.6 MMBtu/hr (coal @ 1%S)

Comments:

- On October 20, 1989, FMM met with FDER and advised the plant was having difficulty in complying with the stringent air permit limitation.
- FDER indicated that if the plant could demonstrate a lower emissions factor for the pounds of production at the higher production rate, it could avoid PSD. FDER indicated that the plant could increase the permitted hours of operation without triggering PSD if it could show a lower pounds per hour of emissions.

(5) Requested emission limits in application.

PERMITTING HISTORY OF KILN NO. 2

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit	Permit Limit							
	Emissions					Kiln Feed Rate	Clinker Production	Oper. Hrs.
	TSP	NOx	SO2	CO	VOC	TPH	TPH	
Application to amend Permit AC27-138850 to increase production rate Submitted 12/1/89	21.6 lb/hr 90.72 tpy	244.0 lb/hr 1025 tpy	12.0 lb/hr 50.4 tpy	79.2 lb/hr 332.6 tpy	7.44 lb/hr 31.3 tpy	130		8,400
Addendum - Application to amend Permit AC27-138850 Submitted 3/21/90 (Based on actual emission rates)	21.0 lb/hr	247.0 lb/hr	12.0 lb/hr	79.2 lb/hr	7.44 lb/hr			8,200

Comments:

- Allowable emissions for SO2 and NOx have been established by BACT determination as stated in existing construction permit.
- On January 10, 1990, EPA Region IV advised the netting calculations performed by applicant was incorrect. FMM used permitted allowable emissions as actual emissions rather than using existing emissions based on previous two years of data.
- On March 21, 1990, FMM submitted application Addendum to FDER in response to EPA comments and accepted the emission calculations in the manner suggested. The annual hours of operation were revised from 8,400 to 8,200.

PERMITTING HISTORY OF KILN NO. 2

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit	Permit Limit									
	Emissions						Kiln Feed Rate	Clinker Production	Oper. Hrs.	Heat Input (MMBtu/hr)
	TSP	NOx	SO2	CO	VOC	VE	TPH	TPH		
Construction Permit AC27-173474 (Supersedes AC27-138850) Issued 7/20/90 Expired 12/31/91	Requested: 21.0 lb/hr 86.1 tpy --- Permit: 13.5 lb/hr 55.3 tpy	Requested: 247.0 lb/hr 1012.7 tpy --- Permit: 162.3 lb/hr 665.3 tpy	Requested: 12.0 lb/hr 49.2 tpy --- Permit: 11.5 lb/hr 47.0 tpy	Requested: 79.2 lb/hr 324.7 tpy --- 64.0 lb/hr 262.2 tpy	Requested: 7.4 lb/hr 30.5 tpy --- 7.4 lb/hr 31.2 tpy	10%	130	79.6 30-day avg. production period	8,200	300 (24,219 lb/hr coal @ 1%S & 12,387 Btu/lb)
Operating Permit AO27-194660 (Replaces AC27-173474) Issued 5/9/91 Expires 4/30/96	13.5 lb/hr 55.3 tpy	162.3 lb/hr 665.3 tpy	11.5 lb/hr 47.0 tpy	64.0 lb/hr 262.2 tpy	7.4 lb/hr 31.2 tpy	10%	130	79.6 30-day avg. production period	8,200	300 MMBtu/hr Coal @ 1%S Flolite @ 1%S 250 hr/yr

Comments:

- FDER issued construction permit and based upon the highest two 1989 stack test results, concluded that the new allowable NOx limit should be 162.3 lb/hr.
- On May 21, 1990, in a meeting with FDER, FMM advised the new proposed limit on NOx of 162.3 lb/hr are severely restrictive and difficult to achieve. FMM advised that the 250 lb/hr limit will be pursued with EPA Region IV.
- FDER advised that EPA's policy on netting calculations will not allow an increase in the proposed limit. To obtain a higher limit, the application would have to be refiled under the PSD rule.
- The new 1990 SO2 emission limit of 11.5 lb/hr is still an extremely low figure. Its only equivalent to 0.142 lbs of SO2 per ton of clinker (per Exhibit A).
- In 1991, we demonstrated that Kiln No. 2 could be operated with less than 1/10 of the permitted SO2 emission. We demonstrated compliance with NOx emission limit of 162 lb/hr with a 110 lb/hr emission rate. The permit limit of 162 lb/hr represents 2 lb/ton of clinker. This may be the lowest NOx limit for a cement kiln in the country (see Exhibit A).

PERMITTING HISTORY OF KILN NO. 2

SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NOx	SO2	CO	VOC	VE	
Request to Amend AO27-194660 4/21/92	-	250 lb/hr from 162.3 lb/hr	-	-	-	-	
AC27-212252 PSD-FL-188 Issued 1/26/93 Expired 12/31/93 Supersedes AC27-173474 and AO27-194660	13.5 lb/hr 55.4 tpy	250 lb/hr 30-day avg 1025.0 tpy BACT dated 1/26/93	11.5 lb/hr 47.2 tpy	64.0 lb/hr 262.4 tpy	7.4 lb/hr 30.3 tpy	10%	*Hours*-8200/yr *Kiln Feed*-130 tph (wet basis) *Clinker*-79.6 tph, 30-day avg *Heat Input*-300 MMBtu/hr *Coal*-1.0%S *Flolite*-1.0%S for start-up and fuel supplement --- Emission limits except NOx established by AC27-173474 (PSD-FL-124A) issued 7/20/90
AO27-234710A Issued 10/12/93 Amended 11/4/93 Expires 10/15/98 Replaces AC27-212252 and AO27-194660	13.5 lb/hr 55.4 tpy	250 lb/hr 30-day avg 1025 tpy	11.5 lb/hr 47.2 tpy	64.0 lb/hr 262.4 tpy	7.4 lb/hr 30.3 tpy	10%	*Hours*-8200/yr *Preheater Feed* (in description of system)-145 tph *Kiln Feed*-130 tph *Clinker*-79.6 tph *Heat Input*-300 MMBtu/hr *Coal*-1.0%S *Flolite*-1.0%S for 250 hr/yr -2069 gal/hr

PERMITTING HISTORY OF KILN NO. 2
SOUTHDOWN, INC. d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits						Permit Limit or Comment
	PM	NOx	SO2	CO	VOC	VE	
AO27-234710B Issued 10/12/93 Amended 11/4/93 Amended 2/11/94 Expires 10/15/98 Replaces AC27-212252 AO27-194660 AO27-234710 AO27-234710A							Adds additional constituent limits to Flolite.
AC27-258571 Issued 8/3/95 Expired 3/31/96 Extended by Title V Replaces AC27-234710B AC27-138850 AC27-212252 are incorporated by reference	13.5 lb/ton 55.4 tpy	250 lb/hr 30 day avg 1025.0 tpy	15.0 lb/hr 61.5 tpy	64.0 lb/hr 262.4 tpy	7.4 lb/hr 30.3 tpy	10%	Deletes Flolite and adds natural gas as primary fuel and No. 2-6 virgin oils as stand-by fuels --- Imposes 15.0 lb/hr SO2 limit in lieu of fuel sulfur limits --- *Hours*-8200/yr *Preheater feed* -145 tph) *Kiln* -130 tph) 30-day avg *Clinker* -79.6 tph) *Preheater fuel* -165 tph) *Kiln* -148 tph) Max 1-hr *Clinker* - 90 tph) *Heat Input*-300 MMBtu/hr Fuels / Firing Rate (-/hr) / Heat Value (Btu/-) Coal 24,000 lb 12,500 lb No. 2 2,116 gal 141,300 gal No. 4 2,060 gal 145,600 gal No. 5 2,016 gal 148,800 gal No. 6 1,982 gal 151,300 gal Gas 292,683 ft3 1,025 ft3

5/30/96 - End

PERMITTING HISTORY
CLINKER COOLER NO. 1

SOUTHDOWN, INC d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits		Permit Limit or Comment
	PM	VE	
Effective date of NSPS 8/1/71	0.10 lb/hr kiln feed	10%	
Initial Construction Permit Issued ~12/18/73			Permit not available.
January 6, 1975 PSD rules effective			No major modification or construction after this date without PSD permit.
AC27-186923 Issued 3/8/91 Expired 12/31/91 Extended 5/31/92 Extended 5/31/93			Permit issued for Kiln No. 1 to establish federally enforceable permit limits. --- *Kiln Feed* - 130 tph (wet basis) *Clinker Production* - 79.6 tph (dry basis) *Hours* - 8760/yr
Application to Modify No. 1 System Auxiliary sources to be consistent with AC27-186923 Filed 1/18/91			

PERMITTING HISTORY
CLINKER COOLER NO. 1

SOUTHDOWN, INC d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits		Permit Limit or Comment
	PM	VE	
AC27-191611 Issued 12/31/91 Expired ?			Permit not available --- Clinker throughput - 84 tph --- Permit AC27-186923 for Kiln No. 1 as proposed (1/18/91) had PM limits for Clinker Cooler No. 1 of 0.1 lb/ton kiln feed, 13.0 lb/hr and 56.6 tpy (8700 hr/yr). Applicant requested these limits be removed because of ongoing amendments to Cooler No. 1 permit. Emission limits in subsequent AO27-201252 are similar to Cooler No. 2 limits in AC27-185906 (1/25/91). Cooler No. 2 limits were established to avoid PSD review. This is probably the reason for limits in AO27-201252.
AO27-201252 Issued 1/23/92 Expires 1/19/97 Amended 2/12/92 Replaces AC27-191611	7.13 lb/hr 28.14 tpy	10%	Clinker throughput - 84 tph Hours - 7896/yr (issued) Hours - 8760/yr (amended)
AC27-258569 Issued ~ 4/95 Expired 3/31/96 Extended by Title V Replaces AO27-210252	7.13 lb/hr 28.14 tpy	10%	Clinker throughput -90 tph; maximum 1-hour 84 tph, 30-day average Hours - 8760/yr

6/4/96 - End

PERMITTING HISTORY
CLINKER COOLER NO. 2

SOUTHDOWN, INC d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits		Permit Limit or Comment
	PM	VE	
Initial Construction Permit Application 5/15/80	7.1 lb/hr 28.0 tpy	10%	Requested emission limits based on NSPS limit of 0.1 lb PM/ton kiln feed. However, clinker production of 71 tph was used to calculate mass emission rate rather than kiln feed rate of 120 tph. ---------- Hours - 7896/yr
Permit AC27-30449 Issued 7/25/80 Expired 12/31/83	7.1 lb/hr 28.0 tpy	10%	Cooler throughput - 71 tph Hours - 7896/yr
PSD-FL-063 3/25/81	7.1 lb/hr	10%	EPA calculated mass emission rate as 71 tph kiln feed @ 9.8% moisture x 0.066 lb PM/ton dry kiln feed
AO27-65210 Issued 4/21/83 Expired 4/5/88 Supersedes AC27-30449			Permit not available.

PERMITTING HISTORY
CLINKER COOLER NO. 2

SOUTHDOWN, INC d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits		Permit Limit or Comment
	PM	VE	
AO27-143885 Issued 4/5/88 Expired 4/1/93 Replaced AC27-65210			Permit not available.
Application to Modify AC27-30449 and AO27-143885 Filed 8/30/90	5.0 lb/hr 20.5 tpy	10%	Clinker throughput - 84 tph Hours - 8200 hr/yr --- Emission limit based on actual emissions of 3.8 lb/hr. Intent was to avoid PSD review.
Permit AC27-185906 Issued 1/25/91 Expired 12/31/91 Replaced AC27-30449 and AO27-143885	5.0 lb/hr 20.5 tpy	10%	Clinker throughput - 84 tph Hours - 8200/yr

PERMITTING HISTORY
CLINKER COOLER NO. 2

SOUTHDOWN, INC d/b/a
FLORIDA MINING & MATERIALS
BROOKSVILLE PLANT

Permit or Action Taken	Emission Limits		Permit Limit or Comment
	PM	VE	
AO27-194670 Issued ? Expired 4/30/96 Supersedes AC27-185906	5.0 lb/hr 20.5 tpy	10%	Clinker throughput - 84 tph Hours - 8200/yr
Permit AC27-258570 Issued ? Expired 3/31/96 Extended by Title V Replaced AC27-185906 and AO27-194670	5.0 lb/hr 20.5 tpy	10%	Clinker throughput - 90 tph maximum 1-hour 84 tph 30-day average Hours - 8200/yr

6/4/96 - End

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1875 Century Boulevard
Atlanta, Georgia 30345

IN REPLY REFER TO:

APR 0 8 1996

RECEIVED
APR 11 1996
BUREAU OF
AIR REGULATION

Mr. Clair Fancy
Chief, Bureau of Air Regulation
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

We have reviewed the information submitted by Southdown, Inc., and your department regarding the proposed permit amendment for the Southdown Brooksville Portland cement facility, located 15 km southeast of Chassahowitzka Wilderness Area. The enclosed technical review document summarizes comments from our Air Quality Branch.

If you have any further questions, please call Ms. Ellen Porter of our Air Quality Branch in Denver at 303/969-2617.

Sincerely yours,

For Noreen K. Clough
Regional Director

Enclosure

CC: EPA
SWD
Hernando Co.
A. Gill, SD
J. Koogler
Teresa Heron, BAR

Technical Review of the
Permit Amendment Application
for Southdown, Inc.
Brooksville Plant
Hernando County, Florida

by

Air Quality Branch, U.S. Fish and Wildlife Service, Denver, Colorado

Southdown, Inc., is requesting a permit amendment for their Brooksville portland cement facility in order to allow for fluctuations in emission rates during normal operation. Emissions of particulate matter (PM-10) would increase 56 tons per year (TPY); emissions of carbon monoxide would increase 1043 TPY. The Southdown facility is located 15 km southeast of Chassahowitzka Wilderness Area (WA), a Class I air quality area administered by the U.S. Fish and Wildlife Service.

In summary, we do not expect Southdown's emissions increases to affect resources at the wilderness area. However, we have concerns, discussed below, regarding the Class I PM-10 increment.

Best Available Control Technology (BACT) Analysis

The BACT analysis is complete.

Class I Increment Analysis

Southdown modeled PM-10 sources up to 120 km from the proposed project to evaluate cumulative consumption of the PM-10 Class I increment at Chassahowitzka WA. Five years (1987-1991) of Tampa meteorological data were used in the modeling. The analysis predicted that the PM-10 Class I increment of 8 micrograms per cubic meter would be exceeded for two 24-hour periods in the five years; however, Southdown did not contribute significantly to either predicted exceedance.

We recommend that the Florida Department of Environmental Regulation (FDEP) determine the source(s) responsible for the predicted PM-10 Class I increment exceedances and take action to alleviate the exceedances. We suggest that FDEP adopt a regional approach to this study, similar to the approach recently proposed by FDEP to resolve questions regarding consumption of the Class I sulfur dioxide (SO_2) increment. We recommend that all PM-10 and SO_2 increment-consuming sources up to 200 km from the Class I area be considered in this analysis.

Air Quality Related Values Analysis

No adverse impacts on vegetation, wildlife, soils, or water are expected as a result of this project.

Visibility Analyses

A VISCREEN analysis predicted a low potential for visible plumes in Chassahowitzka WA due to this project. A regional haze analysis predicted a deciview change of 0.5 due to Southdown's PM-10 emissions increase. This is acceptable because it is less than a deciview change of 1.0. A deciview change of 1.0 is perceptible and would constitute an adverse impact to visibility in the Class I area.

Contact: Ellen Porter
(303) 969-2617

AL 4/2

SOUTHDOWN, INC

ENVIRONMENTAL AFFAIRS

TELECOPIER COVER SHEET

NAME: Mr Clare Fancy, FDEP, Tallahassee, FL

FROM: Amarjit Gill (713) 653-8098 (Voice)
(713) 653-8567 (Fax)

Jeet Gill

DATE: April 1, 1996

FAX NO: (904) 922-6979

NO. PAGES: 6 (Including the cover sheet)

MESSAGE: Dear Mr. Fancy:

The attached letter is in response to your March 8, 1996 letter. Since that letter we have received another letter dated March 21, 1996 which apparently asks for a lot of the information that is required by the TITLE V operating permit application. We are still reviewing that letter and will respond to it separately. If it convenient for you we would like to discuss the second letter in person at your earliest convenience. I can be reached at (713) 653-8098.

_XX_ HIGH PRIORITY

_____ NORMAL DELIVERY

My Fax Number is: (713) 653-8567.

April 1, 1996

Mr. Claire H. Fancy, P.E., Chief
Bureau Of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Modification of Permit AC27-258569, -258570, -258571, & -258572
Kilns 1 & 2, and Coolers 1 & 2.

Dear Mr. Fancy:

Your March 8, 1996 letter refers to Southdown, Inc.'s application dated February 22, 1996, submitted to the Florida Department of Environmental Protection (FDEP) in which certain changes to the existing emissions limits for Kilns No. 1 & 2 were requested. These changes are summarized in TABLE I for Kiln No. 1 and TABLE II for Kiln No. 2.

Your letter states:

> "It is not clear what specific modification or operational change is responsible for triggering PSD review."

Specifically there are two reasons for going through the PSD review process. First a recognition that the particulate emission limits for Kiln No. 2 Main Stack (13.0 lb/hr), Clinker Cooler No. 1 (7.1 lb/hr) and Clinker Cooler No. 2 (5.0 lb/hr) cannot be met on an on going basis, because they were set unrealistically low in the first place. Secondly, the carbon monoxide limit for Kiln No. 1 (57.7 lb/hr) and Kiln No. 2 (64.0 lb/hr) are dependant on the variability of the carbon content in the flyash. Variations in the carbon content cause variations in the carbon monoxide emissions.

We did not request a "correction" of limits simply to comply with recent BACT determinations at similar facilities. BACT determinations at other facilities were used as guidance to establish new more realistic limits. The reason for performing a PSD review was to show that the new limits Southdown sought were not only consistent with FDEP's guidelines used in other permits, but also to show that there was no "Significant Deterioration" of the National Ambient Air Quality Standards (NAAQS) for TSP and CO as a result of the emission increases requested. FDEP has used this approach in the past on other permit revisions. Specifically, when the NO_x limit for Kiln No. 2 was increased from 163 lb/hr to 250 lb/hr in 1992.

Southdown, Inc. ■ 1200 SMITH STREET ■ SUITE 2400 ■ HOUSTON, TEXAS 77002 ■ (713) 650-6200

PARTICULATE EMISSIONS - MAIN STACKS

Since the existing limit of 13.5 lb/hr for Kiln No. 2 cannot be met on an on going basis, Southdown proposes to increase the particulate emission limit for Kiln No. 2 from 13.5 lb/hr to 0.2 lb/ton of feed (26.0 lb/hr) and offset this increase by lowering the particulate emission limit for Kiln No. 1 from 0.3 lb/ton of feed (39.0 lb/hr) to 0.2 lb/ton of feed (26.0 lb/hr). The new limits for both kilns are consistent with the most recent BACT determination made by FDEP for two brand new kilns, such as Florida Crushed Stone (FCS) and Florida Rock Industries (FRI). For the main stacks, this results in a net decrease in particulate emissions of 5.69 tons per year.

PARTICULATE EMISSIONS - CLINKER COOLER STACKS

The existing limits for Clinker Coolers No. 1 & No. 2 are 7.1 & 5.0 lb/hr respectively. These limits are more restrictive than any other in the industry, which are based on 0.1 lb/ton of feed. Southdown cannot meet the existing limits on an on going basis. We have not been able to determine the basis used by FDEP for such restrictive limits. To the best of our knowledge, these limits were not established to avoid any PSD review in the past but were rather arbitrarily assigned. We have been unable to determine the rationale used by FDEP to establish these limits. These limits are more restrictive than those established by FDEP recently for two brand new kilns, FCS and FRI. Southdown proposes that the limit for each clinker cooler be set at 0.1 lb/ton of feed which is equivalent to 13.0 lb/hr. This will result in a combined net annual increase in particulate emissions, from both these clinker coolers, of 58.64 tons.

CARBON MONOXIDE (CO)

Southdown uses flyash as an additive to the raw feed mix primarily as a source of alumina and silica. Flyash also contains carbon, which can vary in concentration depending on the source of the flyash. As the raw feed travels down the preheater tower, most of the carbon present in the flyash is burned off but some of it leaves as carbon monoxide. This results in fluctuating carbon monoxide emissions.

Another source of of carbon monoxide is the combustion process itself. It is a well established fact that thermal NO_x goes up as the CO goes down and vice versa. Since NO_x is a pollutant of greater concern, Southdown operates Kiln No. 2 to keep the NO_x below the 250 lb/hr limit. Consequently CO is generally on the high side. The limit for CO Southdown proposes is based on 1.307 lb/ton of feed, consistent with the more restrictive of the two most recent BACT determinations made by FDEP for FCS and FRI. This will result in a combined net annual increase in carbon monoxide emissions, from both kilns, of 925.6 tons.

VOLATILE ORGANIC COMPOUNDS EMISSIONS (VOC)

Southdown uses mill scale as an additive to the raw feed as a source of iron. Mill scale is generally contaminated with oils from the various processes in the mill. As the mill scale travels down the preheater tower, as a part of the raw feed, the organics volatilize and exit through the main stack.

The existing limit of 7.4 lb/hr is too low. These VOC emissions are not solely due to the combustion process. Therefore, Southdown is requesting that this limit be set at 0.1 lb/ton of feed (i.e. 13.0 lb/hr) This will result in a net annual increase in VOC emissions from Kiln No. 2 of 22.96 tons.

OXIDES OF NITROGEN (NO_x)

The NO_x limit for Kiln No. 2 is 250 lbs/hr. This is equivalent to 1.724 lb/ton dry feed to the preheater. There is no NO_x limit for Kiln No. 1. The NO_x limit for Kiln No. 2 is the lowest for any of our operating kilns.

SULFUR DIOXIDE (SO_2)

Southdown had requested FDEP to delete Flolite as an alternate fuel for both kilns. This request was approved and is reflected in the most recent permit renewal, AC27-258570 for Kiln No. 2 dated May 19, 1995, and AC27-258571 for Kiln No. 1 dated August 3, 1995. The new SO_2 emission limit for each kiln is 15.0 lb/hr.

You have requested a chronological listing of the emission limitations (SO_2, CO, NO_x, PM, VOC) for each kiln and cooler as they have been amended by the various permitting actions by the Department. Since permitting has been conducted by various consultants and in-house personnel in the past, who are no longer with Southdown, there is no assurance that our files are complete. Therefore, we will have to go through the FDEP files. We will be glad to review those records if it is necessary.

Since your March 8, 1996 letter, we have received another letter from FDEP dated March 21, 1996. We were surprised at the additional information requested in that letter. It appears to treat this application as if it were a Title V application for a brand new plant. We are still reviewing that letter and will respond separately to it within the very near future. If it is convenient for you, we would like to discuss the second letter in person at your earliest convenience. In the mean time, if you have any questions please call me at (713) 653-8098.

Sincerely,

Amarjit Singh Gill.

Amarjit Singh Gill, PE
Director, Air Permitting

c: Don Kelly
John Koogler
Richard T. Donelan, Jr

cc: EPA
NPS
SWD
Hernando Co.

KILN NO. 1

PERMIT NO.	AC27-258571	AC27-258571	AC27-258571
DESCRIPTION	Present Limit	Proposed Limit	Net Change
Operating Hours/Year	8760	8760	None
Preheater Feed, TPH Avg.	145	145	None
Kiln Feed, TPH Avg.	130	130	None
Clinker Product., TPH Avg.	79.6	79.6	None
NO_x - lb/hr	None	None	None
SO_2 - lb/hr	15.0	15.0	None
CO - lb/hr	57.7	169.9	112.2
VOC - lb/hr	None	None	None
TSP - Clinker Cooler lb/hr	7.1	13.0	5.9
Opacity - Clinker Cooler %	10	10	None
TSP - Kiln Main Stack - lb/hr	39.0	26.0	-13.0
Opacity - Kiln Main Stack %	20	20	None

TABLE I - PRESENT & PROPOSED EMISSION LIMITS

KILN NO.2

PERMIT NO.	AC27-258572	AC27-258572	AC27-258572
DESCRIPTION	Present Limit	Proposed Limit	Net Change
Operating Hours/Year	8200	8200	0
Preheater Feed, TPH Avg.	145	145	0
Kiln Feed, TPH Avg.	130	130	0
Clinker Product., TPH Avg.	79.6	79.6	0
NO_x - lb/hr	250.0	250.0	None
SO_2 - lb/hr	15.0	15.0	None
CO - lb/hr	64.0	169.9	105.9
VOC - lb/hr	7.4	13.0	5.6
TSP - Clinker Cooler lb/hr	5.0	13.0	8.0
Opacity - Clinker Cooler %	10	10	None
TSP - Kiln Main Stack - lb/hr	13.5	26.0	12.5
Opacity - Kiln Main Stack %	10	20	*

TABLE II - PRESENT & PROPOSED EMISSION LIMITS

* The language in the existing permit is unclear as to what the opacity limit is, and how it is to be measured.

Specific Condition 6.	"Visible emissions from Kiln No. 2 shall not exceed 10% opacity." [Rule 62-296.800, F.A.C. and 40 CFR 60.62(a)(2)]
Rule 62-296.800, F.A.C	Incorporates the Federal Standards of Performance for New Stationary Sources (NSPS) 40 CFR 60.60 Subpart F, Portland Cement Plants.
40 CFR 60.62(a)(2)	"On and after the date on which the performance test required to be conducted by 60.8 is completed, no owner or operator subject to the provisions of this Subpart shall cause to be discharged into the atmosphere from any kiln any gases which exhibit greater than 20 percent opacity."
Specific Condition 12.	The visible emissions test shall be conducted by a certified observer and be a minimum of 180 minutes in duration. The test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. [40 CFR 60.11].
40 CFR 60.11	Compliance with opacity standards in this part shall be determined by conducting observations in accordance with Reference Method 9 in Appendix A of this part.... The opacity standards set forth in this part shall apply at all times except during periods of startup, shutdown, malfunctions, and as otherwise provided in the applicable standard.

Department of
Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

March 21, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Don Kelly, Plant Manager
Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006

Dear Mr. Kelly:

Re: Southdown, Inc. Modification of Permits
Kilns 1 and 2, Coolers 1 and 2
Permit No. 001-0530010 AC (PSD-FL-233)

Further to our letter of March 8, 1996, the Department has reviewed the request to modify the above referenced permits. Based on a technical review, the application is deemed incomplete. Pursuant to Rules 62-210, 62-212, 62-272, 62-275, 62-296, 62-297 and 62-4.070, F.A.C., please submit the following information to the Department, including all assumptions, reference materials and calculations:

GENERAL

1. The information requested in our letter of March 8 to allow a determination as to the applicability of Prevention of Significant Deterioration (PSD). Without that information, it is not at all clear that the request is a PSD matter and insufficient reasons are presented to warrant any amendment of existing limits.

2. Does this facility comply with all the Hernando County air pollution control regulations? Please provide brief input so we can respond to the attached letter from the County.

EMISSION DATA

3. Submit existing test data (last five years) for NOx, SO2, PM/PM10, Sulfuric Acid Mist, CO, and VOC, Pb , as well any non-criteria PSD pollutants for kilns No.1 and No. 2. This is necessary to calculate all contemporaneous emissions changes.

4. Submit existing data for all other HAPs pollutants that have been tested at this facility in the past five years. Include dates, baseline conditions, production rates and fuel burned.

PROCESS EVALUATION

5. Submit for this facility an operation and maintenance plan for the particulate control devices, the collection systems, and the processing systems. The Operation and Maintenance plan shall also include identification of control device(s) for each emissions unit (manufacturer, model name, number, etc.).

6. Indicate the performance parameters of the control devices (baghouses) used on the kilns and coolers, such as:

Bag pressure drop
Gas flowrate: direct method preferred; indirect method acceptable
Air to Cloth ratio
Bag Weave
Bag Material
Gas Temperature, inlet and outlet

Bag cleaning conditions:
- Pulse: Air Pressure
- Shake: Shaker motor current
- Reverse: Reverse air fan current

Bag Cleaning cycle:
- Shake: Duration, frequency, and delay periods
- Reverse: Duration, frequency, and delay periods.

Please submit an outline of the record of inspections, maintenance and performance data.

7. Submit design specifications for the kiln and cooler stack transmissometers. When were they certified? How often have they been audited?

8. Describe procedures used for startup and shutdown of the process equipment to minimize excess emissions.

9. Include a detailed engineering design specification of the control devices (baghouses) used at this facility. If these designs have already been submitted with a previous application, please indicate the appropriate permit number.

10. Include a detailed process flow diagram of the facility. If this process flow diagram has already been submitted with a previous application, please indicate the appropriate permit number.

11. Describe good combustion practices to minimize NOx, CO, and VOC emissions from the kiln.

12. Submit a detailed analysis of specifications and quantities of the different fuels to be burned at each kiln.

13. Submit a detailed analysis of the components of all the feedstreams. Indicate the precise mix proportion for the raw mill feed.

14. Describe how captured dust from the baghouses (Kiln No.1 and Kiln No.2) is removed from the system and disposed. What precautions are used to minimize unconfined emissions while handling the dust?

15. What reasonable precautions are used to minimize unconfined particulate matter emissions from this plant (quarries, haul roads, CKD handling system equipment, dust disposal piles, manufacturing area, etc.)?

16. Is this facility subject to 40 CFR 60, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants?

17. Is any storage tank at this facility subject to 40 CFR 60, Subpart K, Ka, or Kb? What is the capacity of each tank used to storage the different fuel at this facility?

18. It is our understanding that this facility stopped burning tires and flolite in the two kilns. Please verify and advise if the permit should be amended accordingly.

BACT EVALUATION

19. Although this facility is already operating, and Southdown is proposing emission increases only for CO, VOC and PM/PM10, the Department will consider revising limits for SO2, NOx and other PSD pollutants as part of the review. Based on this rationale, the BACT analysis must be expanded to cover all PSD pollutants emitted at this facility.

COAL PREPARATION PLANT

20. Describe how coal is being handled at this facility. Is this facility subject to 40 CFR 60, Subpart Y?

COAL ASH HANDLING

21. Describe how coal ash is being handled at this facility? Submit an analysis of the coal ash being used.

AIR QUALITY ANALYSIS

22. Perform an expanded Air Quality Related Values analysis to address impacts of the proposed changes on soils, vegetation, and visibility in the Class II area in the vicinity of the plant.

We will resume processing the application as soon as we receive the responses from our first letter. Please provide the information requested in the present letter in a timely fashion so we can continue processing the permit application thereafter.

If you have any questions on this matter write to me or call Teresa Heron (Review Engineer) or Cleve Holladay (meteorologist) at (904) 448-1344.

Sincerely,

for A. A. Linero, P.E.
Administrator
New Source Review Section

AAL/th/t

cc: J. Harper, EPA
J. Bunyak, NPS
B. Thomas, SWD
L. Garcia, HCEPD
A. Gill, Southdown
J. Koogler, P.E.

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Don Kelley, Plant Mgr
Southdown, Inc
PO Box 6
Brooksville, Fl
34605-0006

4a. Article Number
Z 127 633 192

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
MAR 25 1996

8. Addressee's Address (Only if requested and fee is paid)
[redacted]

5. Signature (Addressee)

6. Signature (Agent)
[signature]

BROOKSVILLE DOWNTOWN FL 34601

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.

Z 127 633 192

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to: Don Kelley	
Street and No. Southdown Inc	
P.O., State and ZIP Code. Brooksville, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date PSD-Fl-233 3-21-96	

PS Form 3800, March 1993

Board of County Commissioners

Hernando County

PLANNING DEPARTMENT

Government Center / Administration Building
20 North Main Street, Room 262
Brooksville, Florida 34601 - 2828

Planning - (904) 754-4057
Fax - (904) 754-4420

March 8, 1996

Mr. Cleve Holladay
Bureau Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Southdown, Inc. Brooksville Plant, Hernando County
Permit Number 0530010-001-AC
PSD-FL-233

Dear Mr. Holladay:

Hernando County staff have reviewed the above referenced PSD application. Our comments and questions are provided below.

1. Based on our staff review of the application it appears that Southdown is requesting that they be allowed the same BACT emission rates as Florida Crushed Stone was allowed in their recent AC permit. These requested BACT emission rates result in significant increases in the annual emissions of PM/PM10 and CO. Are the two operations similar enough to warrant equivalent BACT emission rates?

2. Why is there no emission limit for VOCs for Kiln #1? Could a VOC emission limit be established for Kiln #1 during this permitting process?

3. Has the National Park Service (NPS) been notified of the proposed modification? Please copy this Department on any correspondence between your agency and the NPS.

4. According to AC27-258571 (Specific condition #14), the CO emission rate shall not exceed 57.7 lbs/hr, 234.4 tons per year while firing waste tire derived fuel with coal. This limit was requested by the permittee (Southdown) to avoid new source review requirements pursuant to Rules 62-212.400(2)(d) and (g) and 62-212.400(5), FAC. Does the proposed

CO emission increase require NSR review? Is NSR review different from PSD review?

5. The net increase in annual emissions for CO from 496.8 TPY to 1439 TPY is more than than a 200% increase. To the lay person, it certainly seems that an increase in emissions of this magnitude could have significant negative impacts on the air quality in the vicinity of the source. Please address these increases and explain why they will or will not have significant impacts on ambient air quality

I would appreciate a written response from DEP staff regarding these questions and comments so that we may include them in our files. I realize these questions may be simple and a result of our staff's inexperience in air permitting, however, by answering these questions, you enable us to answer questions brought up by our Board of County Commissioners. Additionally, please note that these are initial comments and questions by staff, and do not reflect comments or questions that may be submitted at a later date following review by the Board of County Commissioners.

If you have any questions or would like to discuss this information, please contact Ms. Lizanne Garcia at (352)754-4057 (SunCom 669-4057).

Thank you for your cooperation in this matter.

Sincerely,

Lawrence Jennings
Department Director

KLG

pc: Charles Hetrick, County Administrator
T. Heron, DEP Bureau of Air Regulation

cc: EPA
NPS
SWD
Koogler & Assoc.

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

March 8, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Don Kelly, Plant Manager
Southdown, Inc., Brooksville Plant
Post Office Box 6
Brooksville, Florida 34605-0006

Dear Mr. Kelly:

RE: Modification of Permit AC27-258569, -258570, -258571, -258572
Kilns 1 and 2, Coolers 1 and 2 (PSD-FL-233)

The Department is in receipt of your application dated February 22, 1996 requesting changes in the permitted carbon monoxide and particulate emission limitations for the subject kilns and coolers. The staff has started its review and will prepare a more detailed completeness letter shortly. In the meantime we wanted to pass along to you some concerns following a cursory review.

It is not clear what specific modification or operational change is responsible for triggering PSD review. The "correction" of limits to comply with recent BACT determinations at similar facilities is not a sufficient reason to amend a previous determination which was made specifically to avoid PSD. To conform to recent BACT determinations, we would necessarily need to look at all emitted pollutants including SO_2 and NO_x, as well as the ones for which changes have been requested.

In reviewing the existing permits which Southdown provided in the application, we note that there are various references to triggering PSD if emissions increase beyond certain values as a result of burning tires. We understand that Southdown is not burning tires now.

Please provide a chronological listing of the emission limitations (SO_2, CO, NO_x, PM, VOC) for each kiln and cooler as they have been amended by the various permitting actions by the Department. Include the activity which required the amendments and whether or not Southdown is still authorized to engage in the activity. This will aid us in determining exactly what has caused the requested emission increases.

With respect to increasing visible emissions we need to know what fraction of the time Southdown exceeds (or plans to exceed) the presently applicable 10 percent opacity limit. We would prefer not to increase the 10 percent standard to 20 percent especially if such an increase is not needed at all times. Please provide assurances that Southdown can meet the permitted and requested PM limits while exhibiting an opacity of 20 percent.

If you have any questions regarding this matter, please call Teresa Heron or Al Linero at (904)488-1344.

Sincerely,

C. H. Fancy
Chief
Bureau of Air Regulation

CHF/th/t

cc: J. Harper, EPA
P. Bunyak, NPS
J. Braswell, DEP
W. Thomas, SWD
J. Koogler, P.E.
A. Gill, Southdown

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

KA 521-95-09

February 22, 1996

Mr. Cleve Holladay
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Class I Area AQRV Analysis
Southdown, Inc., Brooksville Plant
PSD Permit Application
Hernando County, Florida

Dear Mr. Holladay:

This is in response to your request today, during your meeting with representatives from Southdown, Inc. and Pradeep Raval, for a Class I Area Air Quality Related Values (AQRV) Analysis.

The requested analysis is attached.

If you have any questions, please call Pradeep Raval or me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:par

Enc.

cc: J. Gill, Southdown
D. Kelly, Southdown

CC: J. Heron
A. Linero
EPA
NPS
SWD
Hernando Co.

IMPACTS ON AIR QUALITY RELATED VALUES FOR CLASS I AREA
SOUTHDOWN, INC., BROOKSVILLE PLANT

The impact of the air emission increases on air quality related values in the vicinity of the proposed Southdown project was addressed in the PSD permit application previously submitted. The discussion presented in this submittal extends the review of the impact of increased emissions on air quality related values to the Chassahowitzka Class I PSD area; an area around 14 kilometers from the Southdown facility.

Impact on Vegetation

The response of vegetation to air pollutants is influenced by the concentration of the pollutant, the duration of the exposure and the frequency of the exposure. The pattern of exposure expected from a single facility is that of a few episodes of relatively high concentrations interdispersed with long periods of no exposure or extremely low concentrations. This is the pattern of exposure that would be expected from carbon monoxide and particulate matter emissions from the proposed project at Chassahowitzka.

The vegetation in the Chassahowitzka area is characterized by flatwoods, brackish-water, marine and halothytic terrestrial species. Predominant tree species are slash pine, laurel oak, sweet gum and palm. Other plants in the area include needlegrass rush, seashore saltgrass, marsh hay and red mangrove.

Vegetation responds to a dose of an air pollutant with a dose being defined as the product of the concentration of the pollutant and the duration of the exposure. The maximum predicted concentrations of carbon monoxide in the Chassahowitzka area resulting from the increased emissions from the Southdown facility are less than significant. Consequently, no adverse impacts are expected on the vegetation.

The maximum predicted concentrations of particulate matter at Chassahowitzka area resulting from the increased emissions from the Southdown facility are less than significant for the annual period, and just over the significant level for the 24-hour period, at 1.02 micrograms per cubic meter. This impact is less than one percent of the ambient air quality standard. Further, it should be noted that particulate matter concentration in the form of salt deposition in coastal areas are in the range of 25-300 pounds per acre per year and may be as high as 4000 pounds per acre per year on exposed shorelines. Consequently, no adverse impacts on vegetation are expected from the increased particulate matter emissions from the proposed project.

Impact on Soils

The major soil classification in the Chassahowitzka area is Weeki Wachee-Durbin muck. This is an euic, hyderthermic typic sufihemist that is characterized by high levels of sulfur and organic matter. This soil is flooded daily with the advent of high tide and the pH ranges between 6.1 and 7.8. The upper level of this soil may contain as much as four percent sulfur (USDA, 1991).

Based upon the maximum predicted carbon monoxide and particulate matter concentrations in the Chassahowitzka area resulting from the increased emissions from the Southdown facility, it is not expected that there will be any adverse impact on the native soils.

Impacts on Wildlife

As the predicted carbon monoxide and particulate matter levels are below those known to affect vegetation, the proposed project is not expected to have any adverse impact on the wildlife in the Chassahowitzka area.

Visibility Impairment Analysis

Visibility impairment analysis was performed to determine potential visibility effects of the proposed project in the Chassahowitzka area. The VISCREEN - Level 1 modeling results (attached) indicate that no adverse visibility impacts are expected within the Class I area as a result of the proposed project.

REFERENCES

Curtis, C.R., L.R. Krusbert, T.L. Lauver, and B.A. Francis. 1975. Chalk Point Cooling Tower Project: Field Research on Native Vegetation. Maryland Water Resources Research Center. Maryland Department of Natural Resources - Power Plant Siting Program. p.107.

McLaughlin, S.B. and N.T. Lee. 1974 Botanical Studies in the Vicinity of the Widows Creek Steam Plant. Review of Air Pollution Effects Studies, 1952-1972, and Results of 1973 Surveys. Internal Report I-EB-74-1. TVA.

United States Environmental Protection Agency, 1988. Workbook for Plume Visual Impact Screen and Analysis. EPA-450/4-88-015, September 1988.

United States Department of Agriculture, 1991. Surveys of Hernando and Citrus Counties, Florida. USDA Soil Conservation Service in cooperation with University of Florida, Institute of Food and Agricultural Sciences, Agricultural Experiment Stations and Soil Science Department.

Woltz, S.S. and T.K. Howe, 1981. Effects of Coal Burning Emissions on Florida Agriculture. In: The Impact of Increased Coal Use in Florida. Interdisciplinary Center for Aeronomy and (other) Atmospheric Sciences. University of Florida, Gainesville, Florida.

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

KA 521-95-09

February 22, 1996

Mr. A. A. Linero
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: PSD Permit Application
Southdown, Inc., Brooksville Plant
Hernando County, Florida

Dear Mr. Linero:

Enclosed are eight copies of an application for a PSD permit along with 2 disks, and a check in the amount of $7500.00 (application processing fee).

If you have any questions, please call me.

Very truly yours,

KOOGLER & ASSOCIATES

Pradeep Raval

par
Enc.

c: J. Gill, Southdown
D. Kelly, Southdown

Heron, Teresa

From: Fancy, Clair
Sent: Thursday, February 22, 2001 10:40 AM
To: Ellison, Tom
Cc: Linero, Alvaro; Heron, Teresa
Subject: Southdown

Tom, We appreciate your attendance at the meeting with Southdown on February 2. We could not have made the progress we did without your participation.
The condition about testing within 60 days of achieving maximum production or 180 days after startup is the first issue. Southdown sent us work orders as requested about when the construction was completed. Kiln 1 was completed on June 28, 2000 and kiln 2 on July 31,1999. In both cases the annual stack tests were done in August of each year. As this was a modification rather than construction of a new source, it seems that the maximum production date is not as important as just testing within 180 days, which they did. This condition is really intended for a newly constructed source. Whether the maximum production is based on a 165 ton hourly number or a 150 ton 30-day average becomes unimportant if you don't consider the 60 days after achieving maximum production.
The metals testing is the second issue. They should have tested for metals and the did in August 2000. This was late by any criterion, however the quantity of metals emitted was very low. The only reason for testing was to provide reasonable assurance that the values were in fact low. Due to the very low emission rates, the potential for harm should probably be considered low. Due to the long delay in the testing the extent of deviation should be high. This would give a penalty range of $600-1200. To call this one violation would be appropriate, but you could call it three as there were 3 metals.
I hope this helps the District in settling this enforcement case. Clair Fancy

ENDOR NO.	INVOICE DATE	DOCUMENT NO.	REMARKS	GROSS	DISCOUNT	NET AMOUNT
33659	2 10 97 AT	97041 PERMIT #0530010001AC		7,500.00	.00	7,500.0
	2 14 97	336633	** TOTAL	7,500.00	.00	7,500.0

DETACH BEFORE DEPOSITING

SOUTHDOWN, INC.

1200 SMITH STREET
HOUSTON, TEXAS 77002

THE FACE OF THIS DOCUMENT CONTAINS MICRO PRINTING

DRAWN ON
Pittsburgh National Bank
JEANNETTE, PENNSYLVANIA
IN COOPERATION WITH
WELLS FARGO BANK, N.A.
#4759-006604

SOUTHDOWN, INC.
1200 SMITH STREET, SUITE 2400
HOUSTON, TEXAS 77002

60-162 / 433

No. 336633

DATE OF CHECK	CHECK NO.	AMOUNT OF CHECK
2 14 97	336633	******7,500.00

VOID AFTER 90 DAYS
SOUTHDOWN, INC.

PAY
TO THE
ORDER OF

FLORIDA DEPT OF ENVIRONMENTAL
BUREAU OF AIR REGULATION
TWIN TOWERS OFFICE BLDG
2600 BLAIR STONE ROAD
TALLAHASSEE FL 32399-2400

Thomas E. Damm

[redacted] [redacted] [redacted]

THE ORIGINAL DOCUMENT HAS A REFLECTIVE WATERMARK ON BACK. HOLD AT AN ANGLE TO VIEW WHEN CHECKING THE ENDORSEMENT

Department of
Environmental Protection

DIVISION OF AIR RESOURCES MANAGEMENT

APPLICATION FOR AIR PERMIT - LONG FORM

RECEIVED
FEB 22 1996
BUREAU OF
AIR REGULATION

See Instructions for Form No. 62-210.900(1)

I. APPLICATION INFORMATION

This section of the Application for Air Permit form provides general information on the scope of this application, the purpose for which this application is being submitted, and the nature of any construction or modification activities proposed as a part of this application. This section also includes information on the owner or authorized representative of the facility (or the responsible official in the case of a Title V source) and the necessary statements for the applicant and professional engineer, where required, to sign and date for formal submittal of the Application for Air Permit to the Department. If the application form is submitted to the Department on diskette, this section of the Application for Air Permit must also be submitted in hard-copy.

Identification of Facility Addressed in This Application

Enter the name of the corporation, business, governmental entity, or individual that has ownership or control of the facility; the facility name, if any; and a brief reference to the facility's physical location. If known, also enter the ARMS or AIRS facility identification number. This information is intended to give a quick reference, on the first page of the application form, to the facility addressed in this application. Elsewhere in the form, numbered data fields are provided for entry of the facility data in computer-input format.

Southdown, Inc., Brooksville Plant
P.O. Box 6, Brooksville, Florida 34605-0006

ID: 0530010

Clinker Cooler / 20
AC27-196611
Issued 12/21/91

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	2-22-96
2. Permit Number:	0530010-001-AC
3. PSD Number (if applicable):	PSD-FL-233
4. Siting Number (if applicable):	

Scope of Application

This Application for Air Permit addresses the following emissions unit(s) at the facility (or Title V source). An Emissions Unit Information Section (a Section III of the form) must be included for each emissions unit listed.

Emissions Unit ID	Description of Emissions Unit
001	No. 1 Cement Kiln
002	No. 2 Cement Kiln
003	No. 1 Clinker Cooler
004	No. 2 Clinker Cooler

Purpose of Application and Category

Check one (except as otherwise indicated):

Category I: All Air Operation Permit Applications Subject to Processing Under Chapter 62-213, F.A.C.

This Application for Air Permit is submitted to obtain:

[ ] Initial air operation permit under Chapter 62-213, F.A.C., for an existing facility which is classified as a Title V source.

[ ] Initial air operation permit under Chapter 62-213, F.A.C., for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.

Current construction permit number: _____

[ ] Air operation permit renewal under Chapter 62-213, F.A.C., for a Title V source.

Operation permit to be renewed: _____

[ ] Air operation permit revision for a Title V source to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number: _____

Operation permit to be revised: _____

[ ] Air operation permit revision or administrative correction for a Title V source to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. Also check Category III.

Operation permit to be revised/corrected: _____

[ ] Air operation permit revision for a Title V source for reasons other than construction or modification of an emissions unit. Give reason for the revision; e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.

Operation permit to be revised: _____

Reason for revision: _____

_____

Category II: All Air Operation Permit Applications Subject to Processing Under Rule 62-210.300(2)(b), F.A.C.

This Application for Air Permit is submitted to obtain:

[ ] Initial air operation permit under Rule 62-210.300(2)(b), F.A.C., for an existing facility seeking classification as a synthetic non-Title V source.

Current operation/construction permit number(s): _____

[ ] Renewal air operation permit under Rule 62-210.300(2)(b), F.A.C., for a synthetic non-Title V source.

Operation permit to be renewed: _____

[ ] Air operation permit revision for a synthetic non-Title V source. Give reason for revision; e.g., to address one or more newly constructed or modified emissions units.

Operation permit to be revised: _____

Reason for revision: _____

_____

Category III: All Air Construction Permit Applications for All Facilities and Emissions Units

This Application for Air Permit is submitted to obtain:

[X] Air construction permit to construct or modify one or more emissions units within a facility (including any facility classified as a Title V source). **Current construction permits:**

Current ~~operation~~ permit number(s), if any: **AC27-258569, -258570, -258571, -258572**

[ ] Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.

Current operation permit number(s): _____

[ ] Air construction permit for one or more existing, but unpermitted, emissions units.

Application Processing Fee

Check one:

[X] Attached - Amount: $7,500 [ ] Not Applicable.

Construction/Modification Information

1. Description of Proposed Project or Alterations:

This application is submitted to FDEP to request a change in the allowable emission rates for particulate matter (PM/PM10) from Kilns No. 1 and No. 2 and Clinker Coolers No. 1 and No. 2. The proposed PM limits for the two kilns are based on 0.2 lb/ton feed, and for the two clinker coolers are based on 0.1 lb/ton feed. This is not only consistent with the intent of the federal New Source Performance Standards (NSPS) but is also consistent with the most recent BACT determinations for other similar cement kilns in Florida. Although this will result in an increase for Kiln No. 2 PM emissions from 13.5 lbs/hr to 26.0 lbs/hr, it will also result in a decrease in PM emissions for Kiln No. 1 from 39.0 lbs/hr to 26.0 lbs/hr. The proposed limit for the two clinker coolers is 13.0 lbs/hr, each.

The existing carbon monoxide (CO) limits for Kilns No. 1 and No. 2 are extremely restrictive and provide no margin for fluctuations due to material and process variations under normal operations. The proposed limit for each kiln is 169.9 lbs/hr and is based on the most recent BACT determinations. Allowing variations in CO provides a greater control in NOx emissions.

A slight increase in the volatile organic compounds (VOCs) emission limit for Kiln No. 2 is requested from 7.4 lbs/hr to 13.0 lbs/hr.

As the proposed increases in PM and CO exceed the significant emission rates, a PSD review is required. In accordance with previous guidance from FDEP's Tallahassee office, only the information associated with the permit modification is submitted in this application.

2. Projected or Actual Date of Commencement of Construction (DD-MON-YYYY):
01-MAY-1996

3. Projected Date of Completion of Construction (DD-MON-YYYY):
01-OCT-1996

MACT
PM as surrogate for metals.
NSPS for PM
1½ years
grain loading
PM = 0.026 gr/dscf
0.02

7% O_2 correction for Solid Waste
0.025 gr/dscf

---

new dust collected
0.01 gr/dscf
one fee guarantee

Professional Engineer Certification

1. Professional Engineer Name: **John B. Koogler, Ph.D., P.E.**
   Registration Number: **12925**

2. Professional Engineer Mailing Address:

   Organization/Firm: **Koogler & Associates**
   Street Address: **4014 NW 13th Street**
   City: **Gainesville** State: **FL** Zip Code: **32609**

3. Professional Engineer Telephone Numbers:
   Telephone: **(352) 377-5822** Fax: **(352) 377-7158**

4. 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 (a) 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; or (b) for any application for a Title V source air operation permit, 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 schedule is submitted with this application;

(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; and

(3) For any application for an air construction permit for one or more proposed new or modified emissions units, 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.

Signature 2/21/96
Date

(seal)

* Attach any exception to certification statement.

January 1997

lb/ton feed

145 TPH (30-day average)

8350 hours of operation → proposed

145 TPH to 150 TPH

NOx short term

Check NOx in 1993

Application Contact

1. Name and Title of Application Contact:

   Amarjit Singh Gill, P.E.,
   Director, Air Permitting

2. Application Contact Mailing Address:

   Organization/Firm: **Southdown, Inc.**
   Street Address: **1200 Smith Street, Suite 2400**
   City: **Houston** State: **TX** Zip Code: **77002**

3. Application Contact Telephone Numbers:
   Telephone: **(713) 653-8098** Fax: **(713) 653-8567**

Application Comment

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Name, Location, and Type

1. Facility Owner or Operator: **Southdown, Inc.**			
2. Facility Name: **Brooksville Plant**			
3. Facility Identification Number: **0530010** [ ] Unknown			
4. Facility Location Information: Facility Street Address: **Highway 98, NW of Brooksville** City: **Brooksville** County: **Hernando** Zip Code: **34605**			
5. Facility UTM Coordinates: Zone: **17** East (km): **356.0** North (km): **3169.9**			
6. Facility Latitude/Longitude: Latitude (DD/MM/SS): Longitude (DD/MM/SS):			
7. Governmental Facility Code: **0**	8. Facility Status Code: **A**	9. Relocatable Facility? [ ] Yes [X] No	10. Facility Major Group SIC Code: **32**
11. Facility Comment: **Existing facility.**			

Facility Contact

1. Name and Title of Facility Contact: **Matt Stone**
2. Facility Contact Mailing Address: Organization/Firm: **Southdown, Inc., Brooksville Plant** Street Address: **Highway 98, NW of Brooksville** City: **Brooksville** State: **Florida** Zip Code: **34605**
3. Facility Contact Telephone Numbers: Telephone: **(352) 796-7241** Fax: **(352) 754-9836**

Facility Regulatory Classifications

1. Small Business Stationary Source?	[ ] Yes [X] No [ ] Unknown
2. Title V Source?	[X] Yes [ ] No
3. Synthetic Non-Title V Source?	[ ] Yes [X] No
4. Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)?	[X] Yes [ ] No
5. Synthetic Minor Source of Pollutants Other than HAPs?	[ ] Yes [X] No
6. Major Source of Hazardous Air Pollutants (HAPs)?	[ ] Yes [ ] No [X] Possible
7. Synthetic Minor Source of HAPs?	[ ] Yes [X] No
8. One or More Emissions Units Subject to NSPS?	[X] Yes [ ] No
9. One or More Emission Units Subject to NESHAP?	[ ] Yes [X] No
10. Title V Source by EPA Designation?	[ ] Yes [X] No
11. Facility Regulatory Classifications Comment:	

B. FACILITY REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of federal, state, and local regulations applicable to the facility as a whole. (Regulations applicable to individual emissions units within the facility are addressed in Subsection III-B of the form.)

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

NA

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

T-V Core List	
Rule 62-4, FAC	
Rule 62-103, FAC	
Rule 62-210, FAC	
Rule 62-212, FAC	
Rule 62-213, FAC	
Rule 62-272, FAC	
Rule 62-275, FAC	
Rule 62-296, FAC	
Rule 62-297, FAC	

C. FACILITY POLLUTANT INFORMATION

This subsection of the Application for Air Permit form allows for the reporting of potential and estimated emissions of selected pollutants on a facility-wide basis. It must be completed for each pollutant for which the applicant proposes to establish a facility-wide emissions cap and for each pollutant for which emissions are not reported at the emissions-unit level.

Facility Pollutant Information: Pollutant _____ of _____

NA

1. Pollutant Emitted:		
2. Estimated Emissions:		(tons/year)
3. Requested Emissions Cap:	(lb/hour)	(tons/year)
4. Basis for Emissions Cap Code:		
5. Facility Pollutant Comment:		

Facility Pollutant Information: Pollutant _____ of _____

NA

1. Pollutant Emitted:		
2. Estimated Emissions:		(tons/year)
3. Requested Emissions Cap:	(lb/hour)	(tons/year)
4. Basis for Emissions Cap Code:		
5. Facility Pollutant Comment:		

Facility Pollutant Information: Pollutant _____ of _____

NA

1. Pollutant Emitted:		
2. Estimated Emissions:		(tons/year)
3. Requested Emissions Cap:	(lb/hour)	(tons/year)
4. Basis for Emissions Cap Code:		
5. . Facility Pollutant Comment:		

Facility Pollutant Information: Pollutant _____ of _____

NA

1. Pollutant Emitted:		
2. Estimated Emissions:		(tons/year)
3. Requested Emissions Cap:	(lb/hour)	(tons/year)
4. Basis for Emissions Cap Code:		
5. Facility Pollutant Comment:		

D. FACILITY SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the facility as a whole. (Supplemental information related to individual emissions units within the facility is provided in Subsection III-I of the form.) Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Area Map Showing Facility Location: [X] Attached, Document ID: **Report** [ ] Not Applicable [ ] Waiver Requested
2. Facility Plot Plan: [X] Attached, Document ID: **Report** [ ] Not Applicable [ ] Waiver Requested
3. Process Flow Diagram(s): [X] Attached, Document ID: **Report** [ ] Not Applicable [ ] Waiver Requested
4. Precautions to Prevent Emissions of Unconfined Particulate Matter: [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
5. Fugitive Emissions Identification: [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
6. Supplemental Information for Construction Permit Application: [ ] Attached, Document ID:_____ [X] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

7. List of Insignificant Activities: [ ] Attached, Document ID:_____ [X] Not Applicable
8. List of Equipment/Activities Regulated under Title VI: [ ] Attached, Document ID:_____ [ ] Equipment/Activities Onsite but Not Required to be Individually Listed [X] Not Applicable

9. Alternative Methods of Operation: [ ] Attached, Document ID:_____ [X] Not Applicable
10. Alternative Modes of Operation (Emissions Trading): [ ] Attached, Document ID:_____ [X] Not Applicable
11. Enhanced Monitoring Plan: [ ] Attached, Document ID:_____ [X] Not Applicable
12. Risk Management Plan Verification: [ ] Plan Submitted to Implementing Agency - Verification Attached, Document ID:_____ [ ] Plan to be Submitted to Implementing Agency by Required Date [X] Not Applicable
13. Compliance Report and Plan [ ] Attached, Document ID:_____ [X] Not Applicable
14. Compliance Statement (Hard-copy Required) [ ] Attached, Document ID:_____ [X] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION

This subsection of the Application for Air Permit form provides general information on the emissions unit addressed in this Emissions Unit Information Section, including information on the type, control equipment, operating capacity, and operating schedule of the emissions unit.

Type of Emissions Unit Addressed in This Section

Check one:

[ ] This Emissions Unit 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).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, an individually-regulated emission point (stack or vent) serving a single process or production unit, or activity, which also has other individually-regulated emission points.

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a collectively-regulated 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.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section: **No. 1 Cement Kiln**		
2. ARMS Identification Number: [ ] No Corresponding ID [X] Unknown		
3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **32**
6. Initial Startup Date (DD-MON-YYYY): **NA**		
7. Long-term Reserve Shutdown Date (DD-MON-YYYY): **NA**		
8. Package Unit: **NA** Manufacturer:	Model Number:	
9. Generator Nameplate Rating: **NA**	MW	
10. Incinerator Information: **NA** Dwell Temperature: Dwell Time: Incinerator Afterburner Temperature :		°F seconds °F
11. Emissions Unit Comment:		

Emissions Unit Control Equipment

A.

1. Description: **Baghouse**
2. Control Device or Method Code: **016**

B.

1. Description: **NA**
2. Control Device or Method Code:

C.

1. Description: **NA**
2. Control Device or Method Code:

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate: **300**		mmBtu/hr
2. Maximum Incineration Rate: **NA**	lb/hr	tons/day
3. Maximum Process or Throughput Rate: **130 tons per hour**		
4. Maximum Production Rate: **NA**		
5. Operating Capacity Comment: **Although the USEPA interprets feed to the preheater as the feed to the kiln for NSPS purposes, FDEP differentiates ~~between~~ feed to the preheater and feed to the kiln. Consequently, a preheater feed rate of 145 tons per hour of raw feed corresponds to a feed rate of 130 tons ~~per hour to the kiln.~~**		

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/year	**8760** hours/year

B. EMISSIONS UNIT REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of all federal, state, and local regulations applicable to the emissions unit addressed in this Emissions Unit Information Section.

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

NA

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

See Page 12 and attached Report.	

C. EMISSION POINT (STACK/VENT) INFORMATION

This subsection of the Application for Air Permit form provides information about the emission point associated with the emissions unit addressed in this Emissions Unit Information Section. An emission point is typically a stack or vent but can be any identifiable location at which air pollutants, including fugitive emissions, are discharged into the atmosphere.

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **1**	
2. Emission Point Type Code: [**X**] 1 [ ] 2 [ ] 3 [ ] 4	
3. Descriptions of Emissions Points Comprising this Emissions Unit: **NA**	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: **NA**	
5. Discharge Type Code: [ ] D [ ] F [ ] H [ ] P [ ] R [**X**] V [ ] W	
6. Stack Height: **150**	feet
7. Exit Diameter: **13**	feet
8. Exit Temperature: **285**	°F
9. Actual Volumetric Flow Rate: **275,000**	acfm

10. Percent Water Vapor : **NA**	%
11. Maximum Dry Standard Flow Rate: **NA**	dscfm
12. Nonstack Emission Point Height: **NA**	feet
13. Emission Point UTM Coordinates: **NA** Zone: East (km): North (km):	
14. Emission Point Comment:	

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate: Segment __1___ of __1__

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Raw material feed rate**	
2. Source Classification Code (SCC): **3-05-006-99**	
3. SCC Units: **Tons Material Processed**	
4. Maximum Hourly Rate: **130**	5. Maximum Annual Rate: **1,138,800**
6. Estimated Annual Activity Factor: **NA**	
7. Maximum Percent Sulfur: **NA**	8. Maximum Percent Ash: **NA**
9. Million Btu per SCC Unit:**2.3**	
10. Segment Comment: **Although the USEPA interprets feed to the preheater as the feed to the kiln for NSPS purposes, FDEP differentiates between feed to the preheater and feed to the kiln. Consequently, a preheater feed rate of 145 tons per hour of raw feed corresponds to a feed rate of 130 tons per hour to the kiln.**	

Emission Unit 1 of 4

Segment Description and Rate: Segment _____ of _____

NA

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode):	
2. Source Classification Code (SCC):	
3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant ____1____ of ____3____

1. Pollutant Emitted: **PM/PM10**
2. Total Percent Efficiency of Control: **99+** %
3. Primary Control Device Code: **016**
4. Secondary Control Device Code: **NA**
5. Potential Emissions: **26.0** lb/hour **113.9** tons/year
6. Synthetically Limited? [ ] Yes [**X**] No
7. Range of Estimated Fugitive/Other Emissions: [**X**] 1 [ ] 2 [ ] 3 _____ to _____ tons/year
8. Emission Factor: **0.2 lb/ton dry feed** Reference: **BACT for FCS Kiln 2**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5
10. Calculation of Emissions: **See Appendix I.**
11. Pollutant Potential/Estimated Emissions Comment: **The 26.0 pounds per hour emission rate is calculated by multiplying 130 tons per hour by 0.2 lb/ton.**

Allowable Emissions (Pollutant identified on front of page)

A.

1. Basis for Allowable Emissions Code: **Rule**
2. Future Effective Date of Allowable Emissions: **NA**
3. Requested Allowable Emissions and Units: **0.2 lb/ton dry feed**
4. Equivalent Allowable Emissions: **26.0** lb/hour **113.9** tons/year
5. Method of Compliance: **EPA Method 5**
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **Consistency with BACT determination for FCS Kiln 2, pursuant to Rule 62-212.400, FAC.**

B.

1. Basis for Allowable Emissions Code: **NA**
2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:
4. Equivalent Allowable Emissions: lb/hr tons/year
5. Method of Compliance:
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 2 of 3

1. Pollutant Emitted: **CO**
2. Total Percent Efficiency of Control: **NA** %
3. Primary Control Device Code: **NA**
4. Secondary Control Device Code: **NA**
5. Potential Emissions: **169.9** lb/hour **742.8** tons/year
6. Synthetically Limited? [ ] Yes [X] No
7. Range of Estimated Fugitive/Other Emissions: [X] 1 [ ] 2 [ ] 3 _____ to _____ tons/year
8. Emission Factor: **1.307 lb/ton dry feed** Reference: **BACT**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [X] 5
10. Calculation of Emissions: **See Appendix I.**
11. Pollutant Potential/Estimated Emissions Comment: **The 169.9 pounds per hour emission rate is calculated by multiplying 130 tons per hour by 1.307 lb/ton.**

Allowable Emissions (Pollutant identified on front of page)

A.

1. Basis for Allowable Emissions Code: **Rule**		
2. Future Effective Date of Allowable Emissions: **NA**		
3. Requested Allowable Emissions and Units: **1.307 lb/ton dry feed**		
4. Equivalent Allowable Emissions:	**169.9** lb/hour	**742.8** tons/year
5. Method of Compliance: **EPA Method 10**		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT determination pursuant to Rule 62-212.400, FAC.**		

B.

1. Basis for Allowable Emissions Code: **NA**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hr	tons/year
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 3 of 3

1. Pollutant Emitted: **VOC**
2. Total Percent Efficiency of Control: **NA** %
3. Primary Control Device Code: **NA**
4. Secondary Control Device Code: **NA**
5. Potential Emissions: **13.0** lb/hour **56.9** tons/year
6. Synthetically Limited? [ ] Yes [**X**] No
7. Range of Estimated Fugitive/Other Emissions: [**X**] 1 [ ] 2 [ ] 3 _____ to _____ tons/year
8. Emission Factor: **0.1 lb/ton dry feed** Reference: **Estimate**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5
10. Calculation of Emissions: **VOC = 0.1 lb/ton dry feed x 130 tph feed = 13.0 lb/hr** **x 8760 hrs/yr x ton/2000 lbs =56.9 tpy**
11. Pollutant Potential/Estimated Emissions Comment:

Allowable Emissions (Pollutant identified on front of page)

A.

1. Basis for Allowable Emissions Code: **NA**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hour	tons/year
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

B.

1. Basis for Allowable Emissions Code: **NA**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hr	tons/year
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

F. VISIBLE EMISSIONS INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are subject to a visible emissions limitation. The intent of this subsection of the form is to identify each activity associated with the emissions unit addressed in this section for which a separate opacity limitation would be applicable. Visible emission subtype codes for each such activity are listed in the instructions for Field 1. Most emissions units will be subject to a "subtype VE" limit only.

Visible Emissions Limitation: Visible Emissions Limitation ____1__ of ___1___

1. Visible Emissions Subtype: **VE**
2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: **20 %** Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4. Method of Compliance:**EPA Method 9**
5. Visible Emissions Comment: **40 CFR 60, Subpart F.**

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

NA

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

NA

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4. Method of Compliance:
5. Visible Emissions Comment:

G. CONTINUOUS MONITOR INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are required by rule or permit to install and operate one or more continuous emission, opacity, flow, or other type monitors. A separate set of continuous monitor information (Fields 1-6) must be completed for each monitoring system required.

Continuous Monitoring System: Continuous Monitor _____ of _____

NA

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Continuous Monitoring System: Continuous Monitor _____ of _____

NA

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Continuous Monitoring System: Continuous Monitor _____ of _____

NA

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

H. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

This subsection of the Application for Air Permit form must be completed for all applications, not just those undergoing prevention-of-significant-deterioration (PSD) review pursuant to Rule 62-212.400, F.A.C. The intent of this subsection is to make a preliminary determination as to whether the emissions unit addressed in this Emissions Unit Information Section consumes PSD increment. PSD increment is consumed (or expanded) as a result of emission increases (decreases) occurring after pollutant-specific baseline dates. Pollutants for which baseline dates have been established are sulfur dioxide, particulate matter, and nitrogen dioxide.

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [ ] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [X] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide? **NA**

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:			
PM	[ ] C	[ ] E	[ ] Unknown
SO2	[ ] C	[ ] E	[ ] Unknown
NO2	[ ] C	[ ] E	[ ] Unknown

4. Baseline Emissions:		
PM	lb/hour	tons/year
SO2	lb/hour	tons/year
NO2		tons/year

5. PSD Comment:

I. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the emissions unit addressed in this Emissions Unit Information Section. Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Process Flow Diagram [X] Attached, Document ID: **Report** [ ] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID: [ ] Previously submitted, Date:_____ [X] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID:_____ [X] Not Applicable
7. Operation and Maintenance Plan [ ] Attached, Document ID:_____ [X] Not Applicable
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:_____ [X] Not Applicable
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:_____ [X] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

NA

10. Alternative Methods of Operation
[ ] Attached, Document ID:_____ [ ] Not Applicable

11. Alternative Modes of Operation (Emissions Trading)
[ ] Attached, Document ID:_____ [ ] Not Applicable

12. Enhanced Monitoring Plan
[ ] Attached, Document ID:_____ [ ] Not Applicable

13. Identification of Additional Applicable Requirements
[ ] Attached, Document ID:_____ [ ] Not Applicable

14. Acid Rain Application (Hard-copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID:_____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID:_____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID:_____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID:_____

[ ] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION

This subsection of the Application for Air Permit form provides general information on the emissions unit addressed in this Emissions Unit Information Section, including information on the type, control equipment, operating capacity, and operating schedule of the emissions unit.

Type of Emissions Unit Addressed in This Section

Check one:

[ ] This Emissions Unit 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).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, an individually-regulated emission point (stack or vent) serving a single process or production unit, or activity, which also has other individually-regulated emission points.

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a collectively-regulated 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.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section:

No. 2 Cement Kiln

2. ARMS Identification Number: [ ] No Corresponding ID [X] Unknown

3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **32**

6. Initial Startup Date (DD-MON-YYYY): **NA**

7. Long-term Reserve Shutdown Date (DD-MON-YYYY): **NA**

8. Package Unit: **NA**
Manufacturer: Model Number:

9. Generator Nameplate Rating: **NA** MW

10. Incinerator Information: **NA**
Dwell Temperature: °F
Dwell Time: seconds
Incinerator Afterburner Temperature : °F

11. Emissions Unit Comment:

Emissions Unit Control Equipment

A.

1. Description: **Baghouse**
2. Control Device or Method Code: **016**

B.

1. Description: **NA**
2. Control Device or Method Code:

C.

1. Description: **NA**
2. Control Device or Method Code:

Emission Unit 2 of 4

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate: **300**		mmBtu/hr
2. Maximum Incineration Rate: **NA**	lb/hr	tons/day
3. Maximum Process or Throughput Rate: **130 tons per hour**		
4. Maximum Production Rate: **NA**		
5. Operating Capacity Comment: **Although the USEPA interprets feed to the preheater as the feed to the kiln for NSPS purposes, FDEP differentiates between feed to the preheater and feed to the kiln. Consequently, a preheater feed rate of 145 tons per hour of raw feed corresponds to a feed rate of 130 tons per hour to the kiln.**		

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/year	**8200** hours/year

Emission Unit 2 of 4
B. EMISSIONS UNIT REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of all federal, state, and local regulations applicable to the emissions unit addressed in this Emissions Unit Information Section.

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

NA

Emission Unit 2 of 4

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

See Page 12 and attached Report.	

Emission Unit 2 of 4

C. EMISSION POINT (STACK/VENT) INFORMATION

This subsection of the Application for Air Permit form provides information about the emission point associated with the emissions unit addressed in this Emissions Unit Information Section. An emission point is typically a stack or vent but can be any identifiable location at which air pollutants, including fugitive emissions, are discharged into the atmosphere.

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **2**	
2. Emission Point Type Code: [X] 1 [ ] 2 [ ] 3 [ ] 4	
3. Descriptions of Emissions Points Comprising this Emissions Unit: **NA**	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: **NA**	
5. Discharge Type Code: [ ] D [ ] F [ ] H [ ] P [ ] R [X] V [ ] W	
6. Stack Height: **105**	feet
7. Exit Diameter: **14**	feet
8. Exit Temperature: **250**	°F
9. Actual Volumetric Flow Rate: **300,000**	acfm

Emission Unit 2 of 4

10. Percent Water Vapor : **NA**	%
11. Maximum Dry Standard Flow Rate: **NA**	dscfm
12. Nonstack Emission Point Height: **NA**	feet
13. Emission Point UTM Coordinates: **NA** Zone: East (km): North (km):	
14. Emission Point Comment:	

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate: Segment __1___ of __1__

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Raw Material Feed Rate**	
2. Source Classification Code (SCC): **3-05-006-99**	
3. SCC Units: **Tons Material Processed**	
4. Maximum Hourly Rate: **130**	5. Maximum Annual Rate: **1,066,000**
6. Estimated Annual Activity Factor: **NA**	
7. Maximum Percent Sulfur: **NA**	8. Maximum Percent Ash: **NA**
9. Million Btu per SCC Unit: **2.3**	
10. Segment Comment: **Although the USEPA interprets feed to the preheater as the feed to the kiln for NSPS purposes, FDEP differentiates between feed to the preheater and feed to the kiln. Consequently, a preheater feed rate of 145 tons per hour of raw feed corresponds to a feed rate of 130 tons per hour to the kiln.**	

Emission Unit 2 of 4

Segment Description and Rate: Segment _____ of _____

NA

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode):	
2. Source Classification Code (SCC):	
3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

Emission Unit 2 of 4
E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant ____1_____ of ____3____

1. Pollutant Emitted: **PM/PM10**
2. Total Percent Efficiency of Control: **99+** %
3. Primary Control Device Code: **016**
4. Secondary Control Device Code: **NA**
5. Potential Emissions: **26.0** lb/hour **106.6** tons/year
6. Synthetically Limited? [**X**] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [**X**] 1 [ ] 2 [ ] 3 _____ to _____ tons/year
8. Emission Factor: **0.2 lb/ton dry feed** Reference: **BACT**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5
10. Calculation of Emissions: **See Appendix I.**
11. Pollutant Potential/Estimated Emissions Comment: **The 26.0 pounds per hour emission rate is calculated by multiplying 130 tons per hour by 0.2 lb/ton.**

Emission Unit 2 of 4

Allowable Emissions (Pollutant identified on front of page)

A.

1. Basis for Allowable Emissions Code: **Rule**			
2. Future Effective Date of Allowable Emissions: **NA**			
3. Requested Allowable Emissions and Units: **0.2 lb/ton dry feed**			
4. Equivalent Allowable Emissions:	**26.0** lb/hour	**106.6** tons/year	
5. Method of Compliance: **EPA Method 5**			
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT determination pursuant to Rule 62-212.400, FAC.**			

B.

1. Basis for Allowable Emissions Code: **NA**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hr	tons/year
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

Emission Unit 2 of 4
E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant ____2_____ of ____3____

1. Pollutant Emitted: **CO**
2. Total Percent Efficiency of Control: **NA** %
3. Primary Control Device Code: **NA**
4. Secondary Control Device Code: **NA**
5. Potential Emissions: **169.9** lb/hour **696.6** tons/year
6. Synthetically Limited? [**X**] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [**X**] 1 [ ] 2 [ ] 3 _____ to _____ tons/year
8. Emission Factor: **1.307 lb/ton dry feed** Reference: **BACT**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5
10. Calculation of Emissions: **See Appendix I.**
11. Pollutant Potential/Estimated Emissions Comment: **The169.9 pounds per hour emission rate is calculated by multiplying 130 tons per hour by 1.307 lb/ton.**

Emission Unit 2 of 4

Allowable Emissions (Pollutant identified on front of page)

A.

1. Basis for Allowable Emissions Code: **Rule**		
2. Future Effective Date of Allowable Emissions: **NA**		
3. Requested Allowable Emissions and Units: **1.307 lb/ton dry feed**		
4. Equivalent Allowable Emissions:	**169.9** lb/hour	**696.6** tons/year
5. Method of Compliance: **EPA Method 10**		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT determination pursuant to Rule 62-212.400, FAC.**		

B.

1. Basis for Allowable Emissions Code: **NA**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hr	tons/year
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

Emission Unit 2 of 4
E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant 3 of 3

1. Pollutant Emitted: **VOC**
2. Total Percent Efficiency of Control: **NA** %
3. Primary Control Device Code: **NA**
4. Secondary Control Device Code: **NA**
5. Potential Emissions: **13.0** lb/hour **53.3** tons/year
6. Synthetically Limited? [**X**] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [**X**] 1 [ ] 2 [ ] 3 _____ to _____ tons/year
8. Emission Factor: **0.1 lb/ton dry feed** Reference: **Estimate**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5
10. Calculation of Emissions: **See Appendix I.**
11. Pollutant Potential/Estimated Emissions Comment:

Emission Unit 2 of 4

Allowable Emissions (Pollutant identified on front of page)

A.

1. Basis for Allowable Emissions Code: **ESCPSD**
2. Future Effective Date of Allowable Emissions: **NA**
3. Requested Allowable Emissions and Units: **0.1 lb/ton dry feed**
4. Equivalent Allowable Emissions: **13.0** lb/hour **53.3** tons/year
5. Method of Compliance: **EPA Method 25A**
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT determination pursuant to Rule 62-212.400, FAC .**

B.

1. Basis for Allowable Emissions Code: **NA**
2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:
4. Equivalent Allowable Emissions: lb/hr tons/year
5. Method of Compliance:
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):

Emission Unit 2 of 4

F. VISIBLE EMISSIONS INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are subject to a visible emissions limitation. The intent of this subsection of the form is to identify each activity associated with the emissions unit addressed in this section for which a separate opacity limitation would be applicable. Visible emission subtype codes for each such activity are listed in the instructions for Field 1. Most emissions units will be subject to a "subtype VE" limit only.

Visible Emissions Limitation: Visible Emissions Limitation ___1___ of __1___

1. Visible Emissions Subtype: **VE**	
2. Basis for Allowable Opacity:	[X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: **20%** Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **EPA Method 9**	
5. Visible Emissions Comment: **40 CFR 60, Subpart F.**	

Emission Unit 2 of 4

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

NA

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

NA

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4. Method of Compliance:
5. Visible Emissions Comment:

Emission Unit 2 of 4

G. CONTINUOUS MONITOR INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are required by rule or permit to install and operate one or more continuous emission, opacity, flow, or other type monitors. A separate set of continuous monitor information (Fields 1-6) must be completed for each monitoring system required.

Continuous Monitoring System: Continuous Monitor _____ of _____

NA

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Emission Unit 2 of 4

Continuous Monitoring System: Continuous Monitor _____ of _____

NA

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Continuous Monitoring System: Continuous Monitor _____ of _____

NA

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Emission Unit 2 of 4
H. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

This subsection of the Application for Air Permit form must be completed for all applications, not just those undergoing prevention-of-significant-deterioration (PSD) review pursuant to Rule 62-212.400, F.A.C. The intent of this subsection is to make a preliminary determination as to whether the emissions unit addressed in this Emissions Unit Information Section consumes PSD increment. PSD increment is consumed (or expanded) as a result of emission increases (decreases) occurring after pollutant-specific baseline dates. Pollutants for which baseline dates have been established are sulfur dioxide, particulate matter, and nitrogen dioxide.

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide? **YES**

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [X] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

Emission Unit 2 of 4

2. Increment Consuming for Nitrogen Dioxide? **NA**

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:			
PM	[X] C	[ ] E	[ ] Unknown
SO2	[ ] C	[ ] E	[ ] Unknown
NO2	[ ] C	[ ] E	[ ] Unknown

4. Baseline Emissions:		
PM	lb/hour	tons/year
SO2	lb/hour	tons/year
NO2		tons/year

5. PSD Comment:

Emission Unit 2 of 4

I. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the emissions unit addressed in this Emissions Unit Information Section. Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Process Flow Diagram [X] Attached, Document ID: **Report** [ ] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID: [ ] Previously submitted, Date:_____ [X] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID:_____ [X] Not Applicable
7. Operation and Maintenance Plan [ ] Attached, Document ID:_____ [X] Not Applicable
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:_____ [X] Not Applicable
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:_____ [X] Not Applicable

Emission Unit 2 of 4

Additional Supplemental Requirements for Category I Applications Only

NA

10. Alternative Methods of Operation
[ ] Attached, Document ID:_____ [ ] Not Applicable

11. Alternative Modes of Operation (Emissions Trading)
[ ] Attached, Document ID:_____ [ ] Not Applicable

12. Enhanced Monitoring Plan
[ ] Attached, Document ID:_____ [ ] Not Applicable

13. Identification of Additional Applicable Requirements
[ ] Attached, Document ID:_____ [ ] Not Applicable

14. Acid Rain Application (Hard-copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID:_____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID:_____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID:_____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID:_____

[ ] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION

This subsection of the Application for Air Permit form provides general information on the emissions unit addressed in this Emissions Unit Information Section, including information on the type, control equipment, operating capacity, and operating schedule of the emissions unit.

Type of Emissions Unit Addressed in This Section

Check one:

[ ] This Emissions Unit 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).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, an individually-regulated emission point (stack or vent) serving a single process or production unit, or activity, which also has other individually-regulated emission points.

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a collectively-regulated 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.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section: **No. 1 Clinker Cooler**		
2. ARMS Identification Number: [ ] No Corresponding ID [X] Unknown		
3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **32**
6. Initial Startup Date (DD-MON-YYYY): **NA**		
7. Long-term Reserve Shutdown Date (DD-MON-YYYY): **NA**		
8. Package Unit: **NA** Manufacturer:	Model Number:	
9. Generator Nameplate Rating: **NA**	MW	
10. Incinerator Information: **NA** Dwell Temperature: Dwell Time: Incinerator Afterburner Temperature :		°F seconds °F
11. Emissions Unit Comment:		

Emissions Unit Control Equipment

A.

1. Description: **Baghouse**
2. Control Device or Method Code: **016**

B.

1. Description: **NA**
2. Control Device or Method Code:

C.

1. Description: **NA**
2. Control Device or Method Code:

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate: **NA**		mmBtu/hr
2. Maximum Incineration Rate: **NA**	lb/hr	tons/day
3. Maximum Process or Throughput Rate: **130 tons per hour**		
4. Maximum Production Rate: **NA**		
5. Operating Capacity Comment: **Although the USEPA interprets feed to the preheater as the feed to the kiln for NSPS purposes, FDEP differentiates between feed to the preheater and feed to the kiln. Consequently, a preheater feed rate of 145 tons per hour of raw feed corresponds to a feed rate of 130 tons per hour to the kiln.**		

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/year	**8760** hours/year

B. EMISSIONS UNIT REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of all federal, state, and local regulations applicable to the emissions unit addressed in this Emissions Unit Information Section.

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

NA

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

See Page 12 and attached Report.	

C. EMISSION POINT (STACK/VENT) INFORMATION

This subsection of the Application for Air Permit form provides information about the emission point associated with the emissions unit addressed in this Emissions Unit Information Section. An emission point is typically a stack or vent but can be any identifiable location at which air pollutants, including fugitive emissions, are discharged into the atmosphere.

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **3**	
2. Emission Point Type Code: [**X**] 1 [ ] 2 [ ] 3 [ ] 4	
3. Descriptions of Emissions Points Comprising this Emissions Unit: **NA**	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: **NA**	
5. Discharge Type Code: [ ] D [ ] F [ ] H [ ] P [ ] R [**X**] V [ ] W	
6. Stack Height: **77**	feet
7. Exit Diameter: **7.5**	feet
8. Exit Temperature: **250**	°F
9. Actual Volumetric Flow Rate: **110,000**	acfm

Emission Unit 3 of 4

10. Percent Water Vapor : **NA**	%
11. Maximum Dry Standard Flow Rate: **NA**	dscfm
12. Nonstack Emission Point Height: **NA**	feet
13. Emission Point UTM Coordinates: **NA** Zone: East (km): North (km):	
14. Emission Point Comment:	

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate: Segment __1___ of __1__

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Raw material feed rate**	
2. Source Classification Code (SCC): **3-05-006-99**	
3. SCC Units: **Tons Material Processed**	
4. Maximum Hourly Rate: **130**	5. Maximum Annual Rate: **1,138,800**
6. Estimated Annual Activity Factor: **NA**	
7. Maximum Percent Sulfur: **NA**	8. Maximum Percent Ash: **NA**
9. Million Btu per SCC Unit:**NA**	
10. Segment Comment: **Although the USEPA interprets feed to the preheater as the feed to the kiln for NSPS purposes, FDEP differentiates between feed to the preheater and feed to the kiln. Consequently, a preheater feed rate of 145 tons per hour of raw feed corresponds to a feed rate of 130 tons per hour to the kiln.**	

Emission Unit 3 of 4

Segment Description and Rate: Segment _____ of _____

NA

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode):	
2. Source Classification Code (SCC):	
3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant ____1____ of ____1____

1. Pollutant Emitted: **PM/PM10**
2. Total Percent Efficiency of Control: **99+** %
3. Primary Control Device Code: **016**
4. Secondary Control Device Code: **NA**
5. Potential Emissions: **13.0** lb/hour **56.9** tons/year
6. Synthetically Limited? [ ] Yes [**X**] No
7. Range of Estimated Fugitive/Other Emissions: [**X**] 1 [ ] 2 [ ] 3 _____ to _____ tons/year
8. Emission Factor: **0.1 lb/ton dry feed** Reference: **BACT**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5
10. Calculation of Emissions: **See Appendix I.**
11. Pollutant Potential/Estimated Emissions Comment: **The 13.0 pounds per hour emission rate is calculated by multiplying 130 tons per hour by 0.1 lb/ton.**

Allowable Emissions (Pollutant identified on front of page)

A.

1. Basis for Allowable Emissions Code: **Rule**			
2. Future Effective Date of Allowable Emissions: **NA**			
3. Requested Allowable Emissions and Units: **0.1 lb/ton dry feed**			
4. Equivalent Allowable Emissions:	**13.0** lb/hour	**56.9** tons/year	
5. Method of Compliance: **EPA Method 5**			
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT determination pursuant to Rule 62-212.400, FAC.**			

B.

1. Basis for Allowable Emissions Code: **NA**		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hr	tons/year
5. Method of Compliance:		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):		

F. VISIBLE EMISSIONS INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are subject to a visible emissions limitation. The intent of this subsection of the form is to identify each activity associated with the emissions unit addressed in this section for which a separate opacity limitation would be applicable. Visible emission subtype codes for each such activity are listed in the instructions for Field 1. Most emissions units will be subject to a "subtype VE" limit only.

Visible Emissions Limitation: Visible Emissions Limitation ___1__ of ___1___

1. Visible Emissions Subtype: **VE**
2. Basis for Allowable Opacity: [**X**] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: **10** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4. Method of Compliance:**EPA Method 9**
5. Visible Emissions Comment: **40 CFR 60, Subpart F.**

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

NA

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

NA

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4. Method of Compliance:
5. Visible Emissions Comment:

G. CONTINUOUS MONITOR INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are required by rule or permit to install and operate one or more continuous emission, opacity, flow, or other type monitors. A separate set of continuous monitor information (Fields 1-6) must be completed for each monitoring system required.

Continuous Monitoring System: Continuous Monitor _____ of _____

NA

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Continuous Monitoring System: Continuous Monitor _____ of _____

NA

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Continuous Monitoring System: Continuous Monitor _____ of _____

NA

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

H. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

This subsection of the Application for Air Permit form must be completed for all applications, not just those undergoing prevention-of-significant-deterioration (PSD) review pursuant to Rule 62-212.400, F.A.C. The intent of this subsection is to make a preliminary determination as to whether the emissions unit addressed in this Emissions Unit Information Section consumes PSD increment. PSD increment is consumed (or expanded) as a result of emission increases (decreases) occurring after pollutant-specific baseline dates. Pollutants for which baseline dates have been established are sulfur dioxide, particulate matter, and nitrogen dioxide.

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide? **YES**

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [X] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide? **NA**

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:

PM	[X] C	[ ] E	[ ] Unknown
SO2	[ ] C	[ ] E	[ ] Unknown
NO2	[ ] C	[ ] E	[ ] Unknown

4. Baseline Emissions:

PM	lb/hour	tons/year
SO2	lb/hour	tons/year
NO2		tons/year

5. PSD Comment:

I. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the emissions unit addressed in this Emissions Unit Information Section. Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Process Flow Diagram [X] Attached, Document ID: **Report** [ ] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID: [ ] Previously submitted, Date:_____ [X] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID:_____ [X] Not Applicable
7. Operation and Maintenance Plan [ ] Attached, Document ID:_____ [X] Not Applicable
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:_____ [X] Not Applicable
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:_____ [X] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

NA

10. Alternative Methods of Operation
[ ] Attached, Document ID:_____ [ ] Not Applicable

11. Alternative Modes of Operation (Emissions Trading)
[ ] Attached, Document ID:_____ [ ] Not Applicable

12. Enhanced Monitoring Plan
[ ] Attached, Document ID:_____ [ ] Not Applicable

13. Identification of Additional Applicable Requirements
[ ] Attached, Document ID:_____ [ ] Not Applicable

14. Acid Rain Application (Hard-copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID:_____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID:_____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID:_____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID:_____

[ ] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION

This subsection of the Application for Air Permit form provides general information on the emissions unit addressed in this Emissions Unit Information Section, including information on the type, control equipment, operating capacity, and operating schedule of the emissions unit.

Type of Emissions Unit Addressed in This Section

Check one:

[ ] This Emissions Unit 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).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, an individually-regulated emission point (stack or vent) serving a single process or production unit, or activity, which also has other individually-regulated emission points.

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a collectively-regulated 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.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section: **No. 2 Clinker Cooler**		
2. ARMS Identification Number: [ ] No Corresponding ID [X] Unknown		
3. Emissions Unit Status Code: **A**	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code: **32**
6. Initial Startup Date (DD-MON-YYYY): **NA**		
7. Long-term Reserve Shutdown Date (DD-MON-YYYY): **NA**		
8. Package Unit: **NA** Manufacturer:	Model Number:	
9. Generator Nameplate Rating: **NA**	MW	
10. Incinerator Information: **NA** Dwell Temperature: Dwell Time: Incinerator Afterburner Temperature :		°F seconds °F
11. Emissions Unit Comment:		

Emissions Unit Control Equipment

A.

1. Description: **Baghouse**
2. Control Device or Method Code: **016**

B.

1. Description: **NA**
2. Control Device or Method Code:

C.

1. Description: **NA**
2. Control Device or Method Code:

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate: **NA**		mmBtu/hr
2. Maximum Incineration Rate: **NA**	lb/hr	tons/day
3. Maximum Process or Throughput Rate: **130 tons per hour**		
4. Maximum Production Rate: **NA**		
5. Operating Capacity Comment: **Although the USEPA interprets feed to the preheater as the feed to the kiln for NSPS purposes, FDEP differentiates between feed to the preheater and feed to the kiln. Consequently, a preheater feed rate of 145 tons per hour of raw feed corresponds to a feed rate of 130 tons per hour to the kiln.**		

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule:	
24 hours/day	7 days/week
52 weeks/year	**8200** hours/year

B. EMISSIONS UNIT REGULATIONS

Depending on the application category, this subsection of the Application for Air Permit form provides either a brief analysis or detailed listing of all federal, state, and local regulations applicable to the emissions unit addressed in this Emissions Unit Information Section.

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

NA

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

See Page 12 and attached Report.	

C. EMISSION POINT (STACK/VENT) INFORMATION

This subsection of the Application for Air Permit form provides information about the emission point associated with the emissions unit addressed in this Emissions Unit Information Section. An emission point is typically a stack or vent but can be any identifiable location at which air pollutants, including fugitive emissions, are discharged into the atmosphere.

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: 4	
2. Emission Point Type Code: [X] 1 [ ] 2 [ ] 3 [ ] 4	
3. Descriptions of Emissions Points Comprising this Emissions Unit: **NA**	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: **NA**	
5. Discharge Type Code: [ ] D [ ] F [ ] H [ ] P [ ] R [X] V [ ] W	
6. Stack Height: **90**	feet
7. Exit Diameter: **9.7**	feet
8. Exit Temperature: **250**	°F
9. Actual Volumetric Flow Rate: **110,000**	acfm

10. Percent Water Vapor : **NA**	%
11. Maximum Dry Standard Flow Rate: **NA**	dscfm
12. Nonstack Emission Point Height: **NA**	feet
13. Emission Point UTM Coordinates: **NA** Zone: East (km): North (km):	
14. Emission Point Comment:	

D. SEGMENT (PROCESS/FUEL) INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of segment data (Fields 1-10) must be completed for each segment required to be reported and for each alternative operating method or mode (emissions trading scenario) under Chapter 62-213, F.A.C., for which the maximum hourly or annual segment-related rate would vary. A segment is a material handling, process, fuel burning, volatile organic liquid storage, production, or other such operation to which emissions of the unit are directly related. See instructions for further details on this subsection of the Application for Air Permit.

Segment Description and Rate: Segment __1___ of __1__

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode): **Raw Material Feed Rate**	
2. Source Classification Code (SCC): **3-05-006-99**	
3. SCC Units: **Tons Material Processed**	
4. Maximum Hourly Rate: **130**	5. Maximum Annual Rate: **1,066,000**
6. Estimated Annual Activity Factor: **NA**	
7. Maximum Percent Sulfur: **NA**	8. Maximum Percent Ash: **NA**
9. Million Btu per SCC Unit: **NA**	
10. Segment Comment: **Although the USEPA interprets feed to the preheater as the feed to the kiln for NSPS purposes, FDEP differentiates between feed to the preheater and feed to the kiln. Consequently, a preheater feed rate of 145 tons per hour of raw feed corresponds to a feed rate of 130 tons per hour to the kiln.**	

Segment Description and Rate: Segment _____ of _____

NA

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode):	
2. Source Classification Code (SCC):	
3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur:	8. Maximum Percent Ash:
9. Million Btu per SCC Unit:	
10. Segment Comment:	

E. POLLUTANT INFORMATION

For the emissions unit addressed in this Emissions Unit Information Section, a separate set of pollutant information must be completed for each pollutant required to be reported. See instructions for further details on this subsection of the Application for Air Permit.

Pollutant Potential/Estimated Emissions: Pollutant ____1____ of ____3____

1. Pollutant Emitted: **PM/PM10**
2. Total Percent Efficiency of Control: **99+** %
3. Primary Control Device Code: **016**
4. Secondary Control Device Code: **NA**
5. Potential Emissions: **13.0** lb/hour **53.3** tons/year
6. Synthetically Limited? [**X**] Yes [ ] No
7. Range of Estimated Fugitive/Other Emissions: [**X**] 1 [ ] 2 [ ] 3 _____ to _____ tons/year
8. Emission Factor: **0.1 lb/ton dry feed** Reference: **BACT**
9. Emissions Method Code: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [**X**] 5
10. Calculation of Emissions: **See Appendix I.**
11. Pollutant Potential/Estimated Emissions Comment: **The 13.0 pounds per hour emission rate is calculated by multiplying 130 tons per hour by 0.1 lb/ton.**

Allowable Emissions (Pollutant identified on front of page)

A.

1. Basis for Allowable Emissions Code: **Rule**
2. Future Effective Date of Allowable Emissions: **NA**
3. Requested Allowable Emissions and Units: **0.1 lb/ton dry feed**
4. Equivalent Allowable Emissions: **13.0** lb/hour **53.3** tons/year
5. Method of Compliance: **EPA Method 5**
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode): **BACT determination pursuant to Rule 62-212.400, FAC.**

B.

1. Basis for Allowable Emissions Code: **NA**
2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:
4. Equivalent Allowable Emissions: lb/hr tons/year
5. Method of Compliance:
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode):

F. VISIBLE EMISSIONS INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are subject to a visible emissions limitation. The intent of this subsection of the form is to identify each activity associated with the emissions unit addressed in this section for which a separate opacity limitation would be applicable. Visible emission subtype codes for each such activity are listed in the instructions for Field 1. Most emissions units will be subject to a "subtype VE" limit only.

Visible Emissions Limitation: Visible Emissions Limitation ___1___ of __1___

1. Visible Emissions Subtype:**VE**
2. Basis for Allowable Opacity: [**X**] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: **10%** Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4. Method of Compliance:**EPA Method 9**
5. Visible Emissions Comment: **40 CFR 60, Subpart F.**

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

NA

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4. Method of Compliance:
5. Visible Emissions Comment:

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

NA

1. Visible Emissions Subtype:
2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour
4. Method of Compliance:
5. Visible Emissions Comment:

G. CONTINUOUS MONITOR INFORMATION

This subsection of the Application for Air Permit form must be completed for only those emissions units which are required by rule or permit to install and operate one or more continuous emission, opacity, flow, or other type monitors. A separate set of continuous monitor information (Fields 1-6) must be completed for each monitoring system required.

Continuous Monitoring System: Continuous Monitor _____ of _____

NA

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Continuous Monitoring System: Continuous Monitor _____ of _____

NA

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

Continuous Monitoring System: Continuous Monitor _____ of _____

NA

1. Parameter Code:
2. CMS Requirement: [ ] Rule [ ] Other
3. Monitor Information: Manufacturer: Model Number: Serial Number:
4. Installation Date (DD-MON-YYYY):
5. Performance Specification Test Date (DD-MON-YYYY):
6. Continuous Monitor Comment:

H. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

This subsection of the Application for Air Permit form must be completed for all applications, not just those undergoing prevention-of-significant-deterioration (PSD) review pursuant to Rule 62-212.400, F.A.C. The intent of this subsection is to make a preliminary determination as to whether the emissions unit addressed in this Emissions Unit Information Section consumes PSD increment. PSD increment is consumed (or expanded) as a result of emission increases (decreases) occurring after pollutant-specific baseline dates. Pollutants for which baseline dates have been established are sulfur dioxide, particulate matter, and nitrogen dioxide.

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide? **YES**

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [X] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide? **NA**

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:

PM	[X] C	[ ] E	[ ] Unknown
SO2	[ ] C	[ ] E	[ ] Unknown
NO2	[ ] C	[ ] E	[ ] Unknown

4. Baseline Emissions:

PM	lb/hour	tons/year
SO2	lb/hour	tons/year
NO2		tons/year

5. PSD Comment:

I. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

This subsection of the Application for Air Permit form provides supplemental information related to the emissions unit addressed in this Emissions Unit Information Section. Supplemental information must be submitted as an attachment to each copy of the form, in hard-copy or computer-readable form.

Supplemental Requirements for All Applications

1. Process Flow Diagram [X] Attached, Document ID: **Report** [ ] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:_____ [X] Not Applicable [ ] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID: [ ] Previously submitted, Date:_____ [X] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID:_____ [X] Not Applicable
7. Operation and Maintenance Plan [ ] Attached, Document ID:_____ [X] Not Applicable
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:_____ [X] Not Applicable
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:_____ [X] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

NA

10. Alternative Methods of Operation
[ ] Attached, Document ID:_____ [ ] Not Applicable

11. Alternative Modes of Operation (Emissions Trading)
[ ] Attached, Document ID:_____ [ ] Not Applicable

12. Enhanced Monitoring Plan
[ ] Attached, Document ID:_____ [ ] Not Applicable

13. Identification of Additional Applicable Requirements
[ ] Attached, Document ID:_____ [ ] Not Applicable

14. Acid Rain Application (Hard-copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID:_____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID:_____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID:_____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID:_____

[ ] Not Applicable

REPORT IN SUPPORT OF A PREVENTION OF SIGNIFICANT DETERIORATION REVIEW

PREPARED FOR:

SOUTHDOWN, INC., BROOKSVILLE PLANT
HERNANDO COUNTY, FLORIDA

FEBRUARY 1996

PREPARED BY:

KOOGLER & ASSOCIATES
4014 N.W. 13TH STREET
GAINESVILLE, FLORIDA 32609
(904) 377-5822

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

LIST OF FIGURES

LIST OF TABLES

1.0 SYNOPSIS OF APPLICATION

1.1 APPLICANT

Southdown, Inc., Brooksville Plant
Post Office Box 6
Brooksville, FL 34605

1.2 FACILITY LOCATION

Southdown, Inc. (Southdown) owns and operates a portland cement manufacturing facility approximately nine miles northwest of Brooksville, off US Highway 98 in Hernando County, Florida. The UTM coordinates of the Southdown facility are Zone 17, 356.0 km East and 3169.2 km North.

1.3 PROJECT DESCRIPTION

Southdown requests amendments to four permits and requests that the impacts be reviewed simultaneously for Prevention of Significant Deterioration (PSD) review purposes. The four permits are:

Emission Unit	Permit No.
Kiln No. 1	AC27-258571
Kiln No. 2	AC27-258572
Clinker Cooler No. 1	AC27-258569
Clinker Cooler No. 2	AC27-258570

This amendment proposes a particulate matter (PM) emission limit for each cement kiln based on 0.2 lb/ton kiln feed, i.e. 26.0 lbs/hr; and, an emission limit based on 0.1 lb/ton kiln feed for each clinker cooler, i.e. 13.0 lbs/hr. The amendment also proposes a carbon monoxide (CO) emission limit for each kiln based on 1.307 lb/ton kiln feed, i.e. 169.9 lbs/hr.

In addition it is proposed that the volatile organic compound (VOC) emission limit for Kiln No. 2 be based on 0.1 lb/ton kiln feed, i.e. 13.0 lbs/hr. There is no VOC emission limit on Kiln 1 and none is proposed in this application. These proposed changes are summarized in Table 1-1. No other permit changes are requested.

TABLE 1-1

CURRENT AND PROPOSED HOURLY EMISSION RATES

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

EMISSION UNIT	POLLUTANT	ALLOWABLE EMISSION RATE, lbs/hr CURRENT	PROPOSED	lb/hr NET based on allowable
No. 1 Cement Kiln	PM/PM10	39.0	26.0	−13
	CO	57.7	169.9	+112.2
No. 2 Cement Kiln	PM/PM10	13.5	26.0	+12.5
	CO	64.0	169.9	+105.6
	VOC	7.4	13.0	+ 5.6
No. 1 Clinker Cooler	PM/PM10	7.13	13.0	+5.87
No. 2 Clinker Cooler	PM/PM10	5.0	13.0	+8.00

Kiln № 1 was not subject to PSD

2.0 FACILITY DESCRIPTION

Southdown owns and operates the Brooksville portland cement manufacturing facility located off US Highway 98 in Hernando County, Florida (See Figures 2-1, 2-2 and 2-3). The UTM coordinates of the facility are Zone 17, 356.0 km East and 3169.2 km North. At the Brooksville facility, Southdown produces clinker in two preheater kilns. At the discharge end of each kiln there is a clinker cooler. The clinker is mixed with approximately 6 percent gypsum and ground into finished product. The No. 1 kiln is currently permitted under AC27-258571, while No. 2 kiln is permitted under A027-258572. The No. 1 clinker cooler is currently permitted under AC27-258569, while No. 2 clinker cooler is permitted under A027-258570.

Both kilns are permitted for a maximum 1-hour kiln preheater feed rate of 165 tons per hour and a corresponding kiln feed rate of 148 tons per hour; and, a 30-day average kiln preheater feed rate of 145 tons per hour and a corresponding kiln feed rate of 130 tons per hour. The maximum heat input rate to each kiln is 300 MMBTU per hour. Each kiln utilizes a baghouse to control the emissions of particulate matter. There are no add-on controls for any of the other pollutants emitted from the cement kilns.

Both clinker coolers are permitted for a maximum 1-hour throughput rate of 90 tons per hour; and, a 30-day average throughput rate of 84 tons per hour. Each clinker cooler utilizes a baghouse to control the emissions of particulate matter. A process flow diagram is presented in Figure 2-4.

FIGURE 2-1 : AREA LOCATION MAP

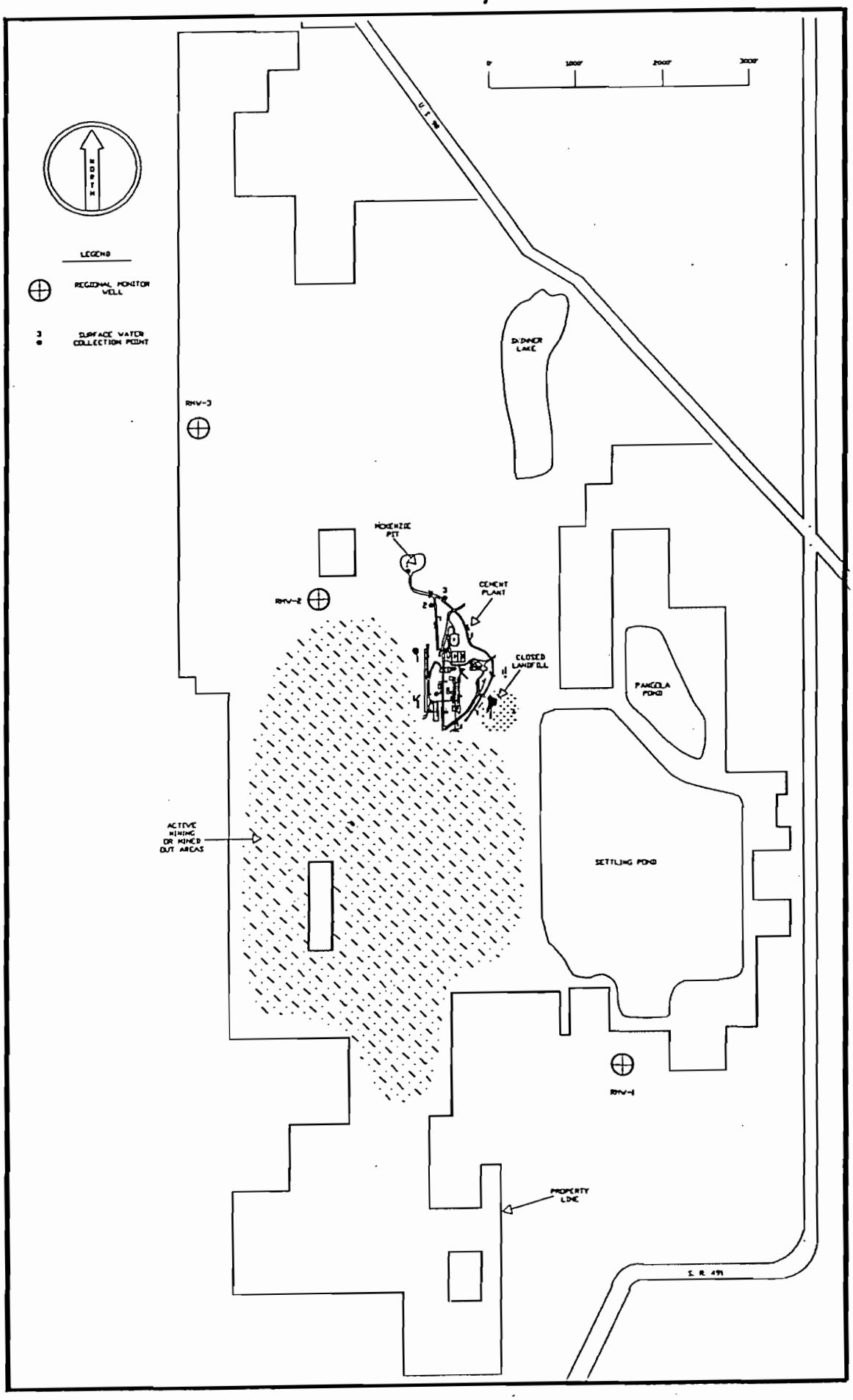


FIGURE 2-2

SITE LOCATION MAP

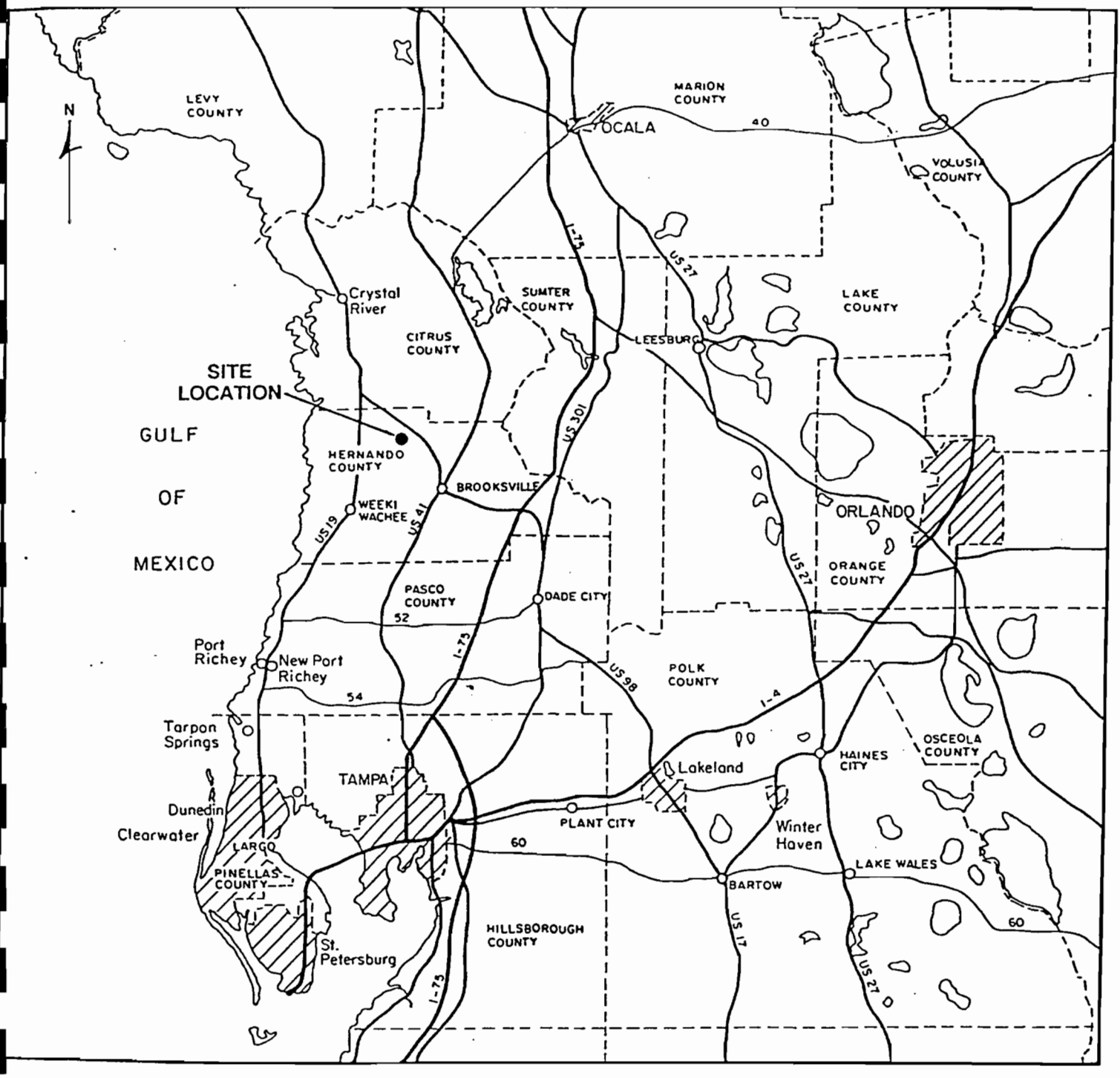


FIGURE 2-3 : PLOT PLAN

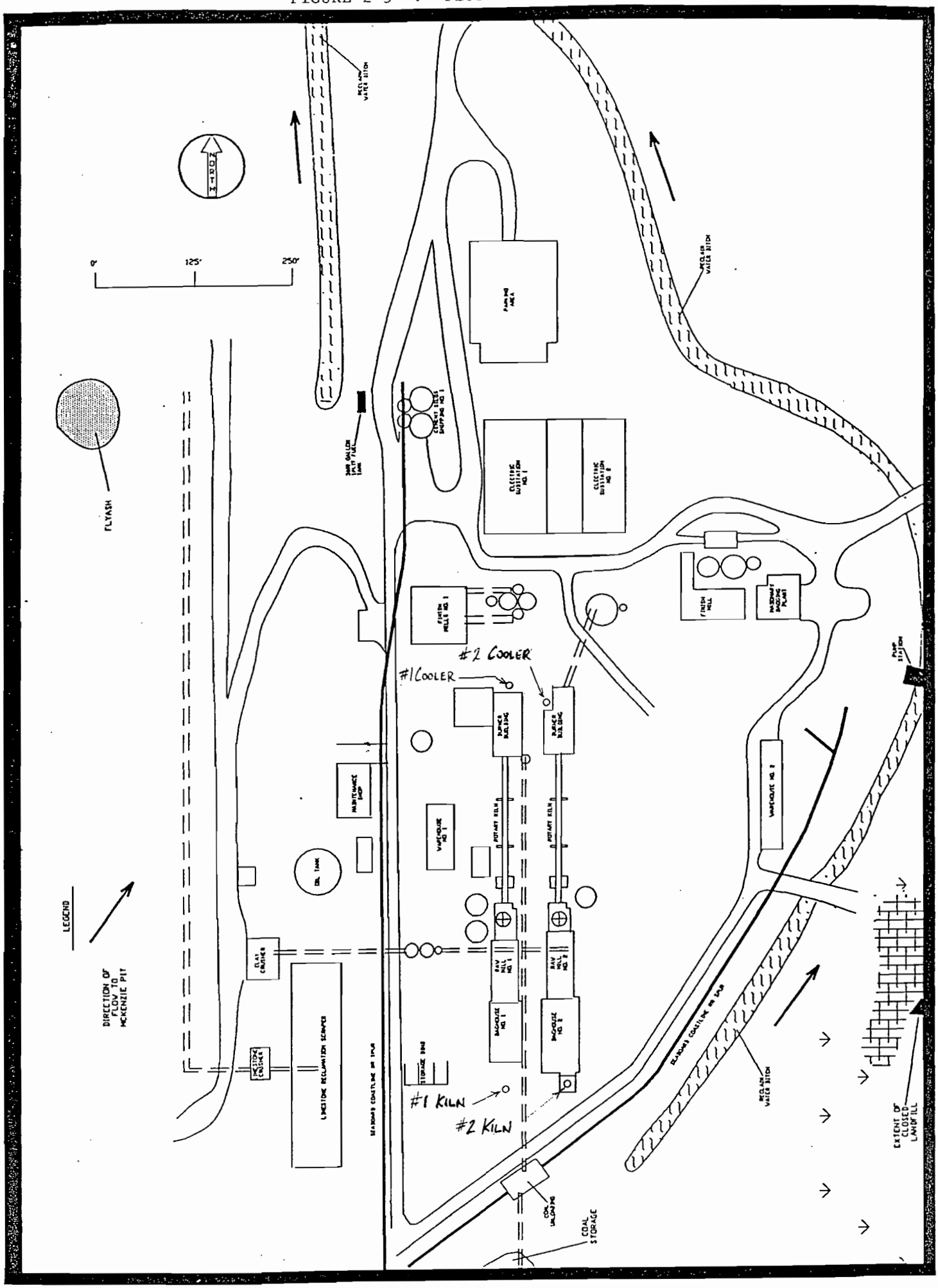
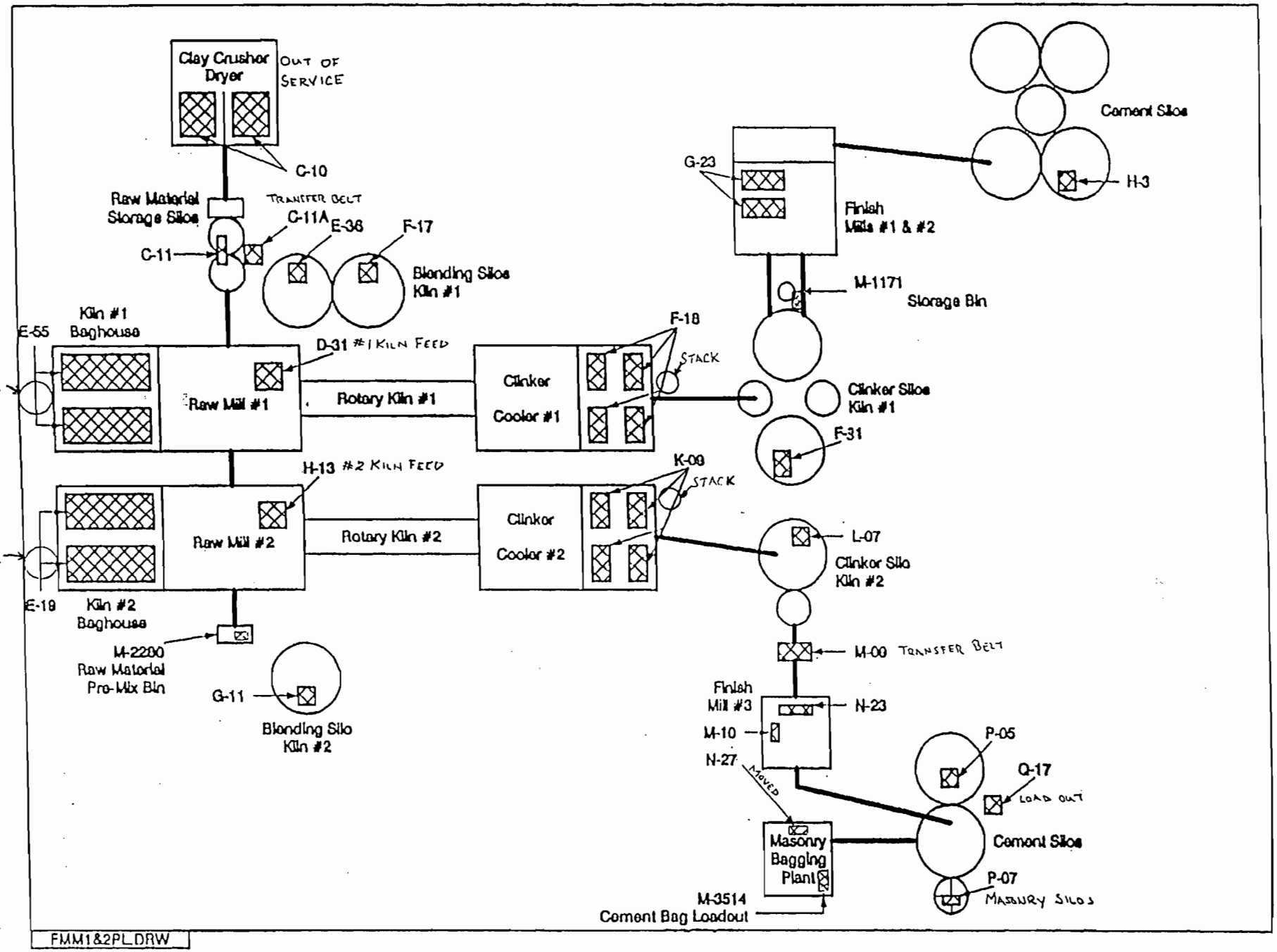


FIGURE 2 PROCESS FLOW DIAGRAM



3.0 PROPOSED PROJECT

3.1 PROJECT DESCRIPTION

Southdown proposes to increase the permitted emission rates of PM/PM10, CO and VOCs, presented in Table 3-1, in order to allow for the fluctuations in emission rates during normal operation.

There will be no change in the method of operation or annual operating hours of the two kilns. Also, no changes are requested in the emission rates of other air pollutants presently regulated for the two kilns.

The proposed project will result in a significant net increase (in accordance with Table 212.400-2 of Chapter 62-212, Florida Administrative Code, FAC) in the emission rate of PM/PM10 and CO (see Table 3-2). As those proposed emission rate increases will be significant, a Prevention of Significant Deterioration (PSD) review is required.

1990

- Permit AC 27-185898
  900-907

  Applications to amend Kiln 2
  Auxiliary Source Air Permits

  Plot Plan presented by Cobes & Tesselaar

- 1989

  AC 27-17374
  PSD-FL-124A
  Kiln N2 2
  "To allow this Kiln to operate at maximum efficiency, with slightly higher clinker production rates
  no. diagram
  Conditions on this permit supersedes S.C of AC 27-138850

- 1990
  Request to burn FIOLITE in Kiln No 1
  Kiln No 1

3.2 RULE REVIEW

The following are the state and federal air regulatory requirements that apply to new or modified sources subject to a Prevention of Significant Deterioration (PSD) review.

In accordance with EPA and State of Florida PSD review requirements, all major new or modified sources of air pollutants regulated under the Clean Air Act (CAA) are subject to preconstruction review. Florida's State Implementation Plan (SIP), approved by the EPA, authorizes the Florida Department of Environmental Protection (FDEP) to manage the air pollution program in Florida.

The PSD review determines whether or not significant air quality deterioration will result from a new or modified facility. Federal PSD regulations are contained in 40CFR52.21, Prevention of Significant Deterioration of Air Quality. The state of Florida has adopted PSD regulations which are essentially identical to the federal regulations and are contained in Chapter 62-212 of the Florida Administration Code (FAC). All new major facilities and major modifications to existing facilities are subject to control technology review, source impact analysis, air quality analysis and additional impact analyses for each pollutant subject to a PSD review. A facility must also comply with the Good Engineering Practice (GEP) stack height rule.

A major facility is defined in the PSD rules as any one of the 28 specific source categories (see Table 3-3) which has the potential to emit 100 tons

1992 AC27-21252

- Kiln No 2. PSD 188.
  Increase from 162.3 to 250.0 lb/hr
  previously PSD-FL-[illegible]

I.

- ~~1992~~

- 1987 AC27-138850
  Kiln no 2.
  Kiln in operation since August 15, 1983
  under permit A027-65207.
  Request to increase
  Emission limit for SO_2 and NO_x

- 1980
  AC29-30444-46-47-49-50-51-53
  54-55

per year (tpy) or more, or any other stationary facility which has the potential to emit 250 tpy or more, of any pollutant regulated under the CAA. A major modification is defined in the PSD rules as a change at an existing major facility which increases the actual emissions by greater than significant amounts (see Table 3-4).

3.2.1 Ambient Air Quality Standards

The EPA and the state of Florida have developed/adopted ambient air quality standards, AAQS (see Table 3-5). Primary AAQS protect the public health while the secondary AAQS protect the public welfare from adverse effects of air pollution. Areas of the country have been designated as attainment or nonattainment for specific pollutants. Areas not meeting the AAQS for a given pollutant are designated as nonattainment areas for that pollutant. Any new source or expansion of existing sources in or near these nonattainment areas are usually subject to more stringent air permitting requirements. Projects proposed in attainment areas are subject to air permit requirements which would ensure continued attainment status.

3.2.2 PSD Increments

In promulgating the 1977 CAA Amendments, Congress quantified concentration increases above an air quality baseline concentration level for sulfur dioxide and particulate matter which would constitute significant deterioration. The size of the allowable increment depends on the classification of the area in which the source would be located or have an impact. Class I areas include specific national parks, wilderness areas

and memorial parks. Class II areas are all areas not designated as Class I areas and Class III areas are industrial areas in which greater deterioration than Class II areas would be allowed. There are no designated Class III areas in Florida.

In 1988, EPA promulgated PSD regulations for nitrogen oxides and PSD increments for nitrogen dioxide concentrations. FDEP adopted the nitrogen dioxide increments in July 1990 (see Table 3-6 for PSD increments).

3.2.3 Control Technology Evaluation

The PSD control technology review requires that all applicable federal and state emission limiting standards be met and that Best Available Control Technology (BACT) be applied to the source. The BACT requirements are applicable to all regulated pollutants subject to a PSD review.

BACT is defined in Rule 62-212.410, FAC, as an emission limitation, including a visible emission standard, based on the ~~maximum degree~~ of reduction of each pollutant emitted which the Department, on a case-by-case basis, taking into account energy, environmental, and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of such pollutant. If the Department determines that technological or economic limitations on the application of measurement methodology to a particular ~~part of a source~~ or facility would make the imposition of an emission standard infeasible, a design,

equipment, work practice, operational standard or combination thereof, may be prescribed instead, to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice or operation. Each BACT determination shall include applicable test methods or shall provide for determining compliance with the standard(s) by means which achieve equivalent results.

The reason for evaluating the BACT is to minimize as much as possible the consumption of PSD increments and to allow future growth without significantly degrading air quality. The BACT review also analyzes if the most current control systems are incorporated in the design of a proposed facility. The BACT, as a minimum, has to comply with the applicable New Source Performance Standard for the source. The BACT analysis requires the evaluation of the available air pollution control methods including a cost-benefit analysis of the alternatives. The cost-benefit analysis includes consideration of materials, energy, and economic penalties associated with the control systems, as well as environmental benefits derived from the alternatives.

EPA recently determined that the bottom-up approach (starting at NSPS and working up to BACT) was not providing the level of BACT originally intended. As a result, in December 1987, EPA strongly suggested changes in the implementation of the PSD program including the "top-down" approach to BACT. The top-down approach requires a technology evaluation to start with the most stringent control alternative, often Lowest Achievable

Emission Rate (LAER), and justify its rejection or acceptance as BACT. Rejection of control alternatives may be based on technical or economical infeasibility, physical differences, locational differences, and environmental or energy impact differences when comparing a proposed project with a project previously subject to that BACT.

3.2.4 Air Quality Monitoring

An application for a PSD permit requires an analysis of ambient air quality in the area affected by the proposed facility or major modification. For a new major facility, the affected pollutants are those that the facility would potentially emit in significant amounts. For a major modification, the pollutants are those for which the net emissions increase exceeds the significant emission rate.

Ambient air monitoring for a period of up to one year, but no less than four months, is required. Existing ambient air data for a location in the vicinity of the proposed project is acceptable if the data meet FDEP quality assurance requirements. If not, additional data would need to be gathered. There are guidelines available for designing a PSD air monitoring network in EPA's "Ambient Monitoring Guidelines for Prevention of Significant Deterioration."

FDEP may exempt a proposed major stationary facility or major modification from the monitoring requirements for a particular pollutant if the emissions increase of the pollutant from the facility or modification would cause air quality impacts below the de minimis levels (Table 3-4).

3.2.5 Ambient Impact Analysis

A source impact analysis is required for a proposed major source subject to PSD for each pollutant for which the increase in emissions exceeds the significant emission rate. Specific atmospheric dispersion models are required in performing the impact analysis. The analysis should demonstrate the project's compliance with AAQS and allowable PSD increments. The impact analysis for criteria pollutants may be limited to only the new or modified source if the net increase in impacts due to the new or modified source is below significant impact levels.

Typically, a five-year period is used for the evaluation of the highest, second-highest short-term concentrations for comparison to AAQS or PSD increments. The term "highest, second-highest" refers to the highest of the second-highest concentrations at all receptors. The second-highest concentration is considered because short-term AAQS specify that the standard should not be exceeded at any location more than once a year. If less than five years of meteorological data are used in the modeling analysis, the highest concentration at each receptor is normally used.

3.2.6 Additional Impact Analysis

The PSD rules also require analyses of the impairment to visibility and the impact on soils and vegetation that would occur as a result of the project. A visibility impairment analysis must be conducted for PSD Class I areas. Impacts due to commercial, residential, industrial, and other growth associated with the source must be addressed.

3.2.7 Good Engineering Practice Stack Height

In accordance with Rule 62-210.550, FAC, the degree of emission limitation required for control of any pollutant is not to be affected by a stack height that exceeds GEP, or any other dispersion technique. GEP stack height is defined as the highest of:

1. 65 meters (m), or
2. A height established by applying the formula:

   $Hg = H + 1.5\ L$

   where:

   Hg - GEP stack height,

   H - Height of the structure or nearby structure, and

   L - Lesser dimension, height or projected width of nearby structure(s)
3. A height demonstrated by a model or field study.

The GEP stack height regulations require that the stack height used in modeling for determining compliance with AAQS and PSD increments not exceed the GEP stack height. The actual stack height may be higher or lower.

3.3 RULE APPLICABILITY

The proposed increase in the allowable emissions from the Southdown facility is classified as a major modification to a major facility subject to both state and federal regulations as set forth in Chapter 62-212, FAC. The facility is located in an area classified as attainment for each of the regulated air pollutants. The proposed project will therefore be subject to PSD review requirements in accordance with Rule 62-212.400, FAC. This will include a determination of Best Available Control Technology, an air quality review, Good Engineering Practice stack height analysis and an evaluation of impacts on soils, vegetation and visibility.

TABLE 3-1

CHANGES IN ANNUAL EMISSION RATES

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

allowable / actual

EMISSION UNIT	POLLUTANT	ALLOWABLE EMISSION RATES			
		CURRENT		PROPOSED	
		lb/hr	tpy	lb/hr	tpy
No. 1 Cement Kiln	PM/PM10	39.0	170.8	26.0	113.9
	CO	57.7	234.4	169.9	742.8
No. 2 Cement Kiln	PM/PM10	13.5	55.4	26.0	106.6
	CO	64.0	262.4	169.9	696.6
	VOC	7.4	30.34	13.0	53.3
No. 1 Clinker Cooler	PM/PM10	7.13	28.14	13.0	56.9
No. 2 Clinker Cooler	PM/PM10	5.0	20.5	13.0	53.3

Kiln No1 170.80
Cooler No1 28.14
198.94

113.9
56.9
170.8

198.94 -
170.80
28.14

55.4
26.59
75.95

TABLE 3-2

NET EMISSION INCREASES(1)

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

	NET EMISSIONS INCREASE (TPY)		
	PM/PM10	CO	VOCs
Current Limit	274.84	496.8	30.34
Proposed Limit	330.7	1439.4	53.3
Contemporaneous	0	99.9	0
Net Change	55.9	1042.5	23.0
Significant Increase (2)	25/15	100	40
PSD Review	YES	YES	NO

(1) See Appendix for emission calculations.
(2) Presented in Table 212.400-2, FAC.

TABLE 3-3

MAJOR FACILITY CATEGORIES

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

Fossil fuel fired steam electric plants of more than 250 MMBTU/hr heat input
Coal cleaning plants (with thermal dryers)
Kraft pulp mills
Portland cement plants
Primary zinc smelters
Iron and steel mill plants
Primary aluminum ore reduction plants
Primary copper smelters
Municipal incinerators capable of charging more than 250 tons of refuse per day
Hydrofluoric acid plants
Sulfuric acid plants
Nitric acid plants
Petroleum refineries
Lime plants
Phosphate rock processing plants
Coke oven batteries
Sulfur recovery plants
Carbon black plants (furnace process)
Primary lead smelters
Fuel conversion plants
Sintering plants
Secondary metal production plants
Chemical process plants
Fossil fuel boilers (or combinations thereof) totaling more than 250 million BTU/hr heat input
Petroleum storage and transfer units with total storage capacity exceeding 300,000 barrels
Taconite ore processing plants
Glass fiber processing plants
Charcoal production plants

TABLE 3-4

REGULATED AIR POLLUTANTS - SIGNIFICANT EMISSION RATES

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

Pollutant	Significant Emission Rate tons/yr	De minimis Ambient Impacts μg/m3
CO	100	575 (8-hour)
NOx	40	14 (NO2, Annual)
SO2	40	13 (24-hour)
Ozone	40 (VOC)	-
PM (TSP)	25	10 (24-hour)
PM10	15	10 (24-hour)
TRS (including H2S)	10	0.2 (1-hour)
H2SO4 mist	7	-
Fluorides	3	0.25 (24-hour)
Vinyl Chloride	1	15 (24-hour)
	pounds/yr	
Lead	1200	0.1 (Quarterly avg)
Mercury	200	0.25 (24-hour)
Asbestos	14	-
Beryllium	0.8	0.001 (24-hour)

TABLE 3-5

AMBIENT AIR QUALITY STANDARDS

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

Pollutant	FDEP (State)		USEPA (National)			
			Primary		Secondary	
	µg/m3	PPM	µg/m3	PPM	µg/m3	PPM
SO_2, 3-hour	1,300	0.5	-	-	1300	0.5
24-hour	260	0.1	365	0.14	-	-
Annual	60	0.02	80	0.03	-	-
PM10, 24-hour	150	-	150	-	150	-
Annual	50	-	50	-	50	-
CO, 1-hour	40,000	35	40,000	35	-	-
8-hour	10,000	9	10,000	9	-	-
Ozone, 1-hour	235	0.12	235	0.12	235	0.12
NO_2, Annual	100	0.05	100	-	100	-
Lead, Quarterly	1.5	-	1.5	-	1.5	-

TABLE 3-6

PSD INCREMENTS

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

Pollutant	Allowable PSD Increments (State/National) Class I μg/m3	Class II μg/m3	Class III μg/m3
TSP, Annual	5	19	37
24-hour	10	37	75
SO2, Annual	2	20	40
24-hour	5	91	182
3-hour	25	512	700
NO2, Annual	2.5	25	50

4.0 BEST AVAILABLE CONTROL TECHNOLOGY

Best Available Control Technology (BACT) is required to control air pollutants emitted from newly constructed major sources or from modification to the major emitting facilities if the modification results in significant increase in the emission rate of regulated pollutants (see Table 3-4 for significant emission levels). The emission rate increases of PM and CO proposed by Southdown represents a significant increase. A BACT analysis is therefore required for PM and CO.

4.1 EMISSION STANDARDS FOR PORTLAND CEMENT PLANTS

Federal New Source Performance Standards (NSPS) have been promulgated for portland cement plants. These standards became effective on August 17, 1971, are codified in 40CFR60, Subpart F, and require particulate matter emissions from a cement kiln to be limited to no more than 0.30 pound per ton of feed. The visible emissions from the kiln are limited to no more than 20 percent opacity. Particulate emissions from a clinker cooler are limited to no more than 0.10 pound per ton feed. The visible emissions from the cooler are limited to less than 10 percent opacity. The NSPS do not address the emissions of other criteria pollutants from portland cement manufacturing.

EPA revised/amended the New Source Performance Standards for portland cement plants in 1989. At that time, no changes to the emission standard were deemed necessary or justified.

The emission standards in Rule 62-296, FAC applicable to new portland cement plants, are identical to those contained in 40CFR60, Subpart F and also address only particulate matter and visible emissions.

4.2 PREVIOUS BACT DETERMINATIONS

A review of the EPA BACT/LAER Clearinghouse identified a number of BACT determinations for portland cement plants. These BACT determinations addressed not only particulate matter, but also other criteria pollutants emitted from portland cement manufacturing facilities. The emission limits for PM/PM10 and CO from cement kilns have been evaluated by regulatory agencies in several states. The most recent BACT determinations in this category were proposed by FDEP for Florida Rock Industries and Florida Crushed Stone.

4.2.1 PREVIOUS BACT DETERMINATIONS FOR PM/PM10

A review of the EPA BACT/LAER Clearinghouse identified a number of BACT determinations for PM/PM10 emissions from portland cement plants. These determinations indicate the use of either a baghouse or an electrostatic precipitator (ESP) for kilns and clinker coolers. The most recent BACT determination, for Florida Crushed Stone, reflects an emission limit 0.2 and 0.1 lb/ton dry feed respectively for the kiln and clinker cooler.

4.2.2 PREVIOUS BACT DETERMINATIONS FOR CO

A review of the EPA BACT/LAER Clearinghouse identified a number of BACT determinations for CO emissions from cement kilns. These determinations indicate the use of good operation practices and emission limitations

ranging from 1.307 to 2.7 lb/ton dry feed. The most recent determination, for Florida Crushed Stone, reflects an emission limit of 1.307 lb/ton dry feed.

4.3 PARTICULATE MATTER CONTROL TECHNOLOGY

Particulate emissions from kilns and clinker coolers are generated from material processing. Some of the factors which affect the emissions include method of material movement, convective patterns and the air flow system. The most common types of control equipment utilized for these emission units are baghouses and ESPs. Southdown proposes the continued use of the existing baghouses for PM control.

4.4 CARBON MONOXIDE CONTROL TECHNOLOGY

Carbon monoxide is formed as an intermediate product of the chemical reaction between carbonaceous fuels and oxygen. When an insufficient quantity of oxygen is provided, CO is formed as a product of the combustion process. CO may originate in high-temperature regions of the combustion zone, where chemical equilibrium dictates that dissociation of CO_2 into CO should occur. The effects of fuel-air ratio, degree of mixing, and temperature may lead to significant CO formation in the hot combustion zone. The calcining of limestone in the pyroprocess liberates large amounts of CO_2, which is available for dissociation into CO. In cement plants there appears to be an inverse relationship between NOx and CO, i.e. NOx increases as CO decreases. Therefore, trying to control CO to a low level may cause NOx levels to increase. At the Brooksville facility, the operators have been trained to operate the kilns at low NOx levels.

Emphasizing low CO levels may lead to higher NOx emissions. Carbon monoxide, unlike other major gaseous pollutants, does not lend itself to exhaust gas removal techniques. No add-on controls for CO have been demonstrated for cement plants. Process control, process design, and combustion unit design have been determined to represent BACT for cement kilns. In line with recent FDEP determinations, Southdown proposes to use combustion control as BACT for the kilns.

4.5 BACT CONCLUSION

Based upon the above analysis, the use of baghouses to control PM/PM10 emissions from the kilns and clinker coolers; and, the use of proper operation practices to control CO emissions from the kilns, represents BACT. Reasonable numerical emission limits, proposed for the kilns and clinker cooler, are presented in Table 3-1.

5.0 AIR QUALITY REVIEW

The air quality review required of a PSD construction permit application potentially requires both air quality modeling and air quality monitoring. The air quality monitoring is required when the impact of air pollutant emission increases and decreases associated with a proposed project exceed the de minimis impact levels pursuant to Table 212.400-3, FAC or in cases where an applicant wishes to define existing ambient air quality by monitoring rather than by air quality modeling. The air quality modeling is required to provide assurance that the emissions from the proposed project, together with the emissions of all other air pollutants in the project area, will not cause or contribute to a violation of any ambient air quality standard.

5.1 AIR QUALITY MODELING

The ambient air quality impacts resulting from the requested increase in emissions of PM/PM10 and CO were evaluated using air dispersion modeling with the EPA approved ISC-ST model, Version 95250 (ISC3).

The PM/PM10 and CO emissions modeled to determine the ambient air impacts reflect the net increase in emissions from the proposed project (see Table 5-1). The modeling included discrete receptors along the property boundary and receptors located on a polar grid, on radials 10 degrees apart from 10-360 degrees and downwind distances ranging from 2500 meters to 20 kilometers (see Figure 5-1). Receptors were also located 14 kilometers from the facility representing the nearest Class I area

(Chassahowitzka National Wildlife Refuge) boundary.

Five years of Tampa meteorological data were used in the modeling for the period 1987 to 1991.

5.2 MODELING RESULTS

The results of the ISC3 significant impact analyses (SIA) modeling, presented in Table 5-2, demonstrate that the predicted impacts of CO emission increases associated with the proposed project are less than the corresponding significant impact levels and less than the de minimis impact levels. The predicted PM/PM10 impacts, however, are greater than the corresponding significant impact level. The maximum predicted impacts from the proposed project at the Class I area were significant only for the 24-hour period. Consequently, PSD increments and ambient air quality standards analyses were required only for PM/PM10.

Based on information provided by FDEP, emission inventories were prepared to include PM/PM10 emission sources upto 120 kilometers from the proposed project. Significant sources were identified for the ambient air quality standards analysis and Class II area PSD increment analysis using the "20xD" rule (see Table 5-3). The emission inventories associated with Class I area, Class II area and ambient standards analyses are presented in Tables 5-4, 5-5 and 5-6. The results of the detailed modeling indicated that the proposed project will not cause or contribute to any exceedance of the ambient air quality standards (see Tables 5-7, 5-8, and 5-9).

TABLE 5-1

AIR QUALITY MODELING PARAMETERS

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

Source	Emission Rate PM/PM10 (g/s)	Emission Rate CO (g/s)	Stack Parameters Ht (m)	Stack Parameters Dia (m)	Stack Parameters Vel (mps)	Stack Parameters Temp (°K)
No. 1 Kiln (1)	- 4.91	- 7.27	45.7	3.96	10.37	413.6
No. 1 Kiln (2)	3.28	21.41	45.7	3.96	10.37	413.6
No. 2 Kiln (1)	- 1.70	- 8.06	32.0	4.27	9.9	394.0
No. 2 Kiln (2)	3.28	21.41	32.0	4.27	9.9	394.0
No. 1 Cooler (1)	- 0.90	NA	23.5	2.29	12.7	394.0
No. 1 Cooler (2)	1.64	NA	23.5	2.29	12.7	394.0
No. 2 Cooler (1)	- 0.63	NA	27.4	2.96	7.6	394.0
No. 2 Cooler (2)	1.64	NA	27.4	2.96	7.6	394.0

NOTE:

(1) Current allowable emission rates.
(2) Proposed allowable emission rates.
(3) Building wake effects were addressed in the modeling using the EPA approved BPIP downwash program.

TABLE 5-2

SUMMARY OF SIGNIFICANT IMPACT ANALYSIS

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

MET YEAR	MAX. PREDICTED AMBIENT AIR IMPACTS (ug/m3)					
	PM/PM10				CO	
	Class I Area		Class II Area			
	24-hr	Annual	24-hr	Annual	1-hr	8-hr
1987	0.78	0.052	9.36	1.07	211.78	145.66
1988	0.607	0.038	10.41	1.19	173.73	126.30
1989	0.772	0.032	10.59	1.00	212.16	135.12
1990	0.753	0.069	7.65	1.18	194.46	124.24
1991	1.023	0.057	11.17	1.28	187.73	105.37
SIG. IMPACT LEVEL (Rule 62-212.200, FAC)	Class I		Class II		Class II	
	0.27	0.08	5	1	2000	500
DE MINIMIS LEVEL (Table 212.400-3, FAC)			10	NA	NA	575

NOTE: The above impacts represent the highest-high impacts resulting from the net increase in emissions shown in Table 5-1.

TABLE 5-3
LIST OF PM/PM10 SOURCES -20XD

Facility	KM UTM East	KM North	Emissions Ton/Yr	Distance (km)	20*D	Model ?
APAC-Florida, Inc.	347.1	3027.3	280.4	142.9	2844	NO
Agrico Chemical Co Pierce	403.7	3079.0	841.5	102.6	2041	NO
Agrico Chemical Co South Pierce	407.5	3071.5	1097.6	111.0	2208	NO
ALCOA ALUMINA AND CHEMICALS,	416.8	3116.0	9.0	81.1	1614	NO
ALCOMA PACKING CO	451.6	3085.5	151.7	127.4	2535	NO
AMERICAN PROPERTIES CO	461.4	3133.6	1.2	111.3	2215	NO
ASPHALT PAVERS, INC.	359.3	3162.4	43.4	8.1	161	NO
Auburndale Cogeneration	420.8	3103.3	46.0	92.8	1846	NO
Brannen Prestress Co.	353.7	3016.5	1252.3	153.4	3053	NO
BROOKSVILLE REGIONAL HOSPITAL	363.2	3159.0	2.5	13.0	258	NO
CITRUS SERVICE, INC.	364.2	3158.3	57.0	14.1	280	NO
C F Industries Bonnie Mine Rd	408.4	3082.4	690.8	101.9	2028	NO
C & M PRODUCTS CO	405.5	3079.1	162.2	103.3	2056	NO
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	1251.4	62.6	1245	YES
COUCH CONST CO	340.7	3119.5	51.7	52.7	1049	NO
COUCH CONSTRUCTION COMPANY	390.3	3129.4	44.8	52.9	1054	NO
COUCH CONSTRUCTION COMPANY	359.8	3164.9	44.8	6.2	123	NO
COUCH, INC.	360.0	3162.0	20.6	8.8	175	NO
Cargill Fertilizer (Gardinier)	362.9	3082.2	883.4	88.0	1750	NO
Conserv Inc.	398.7	3084.2	594.8	95.7	1904	NO
Consolidated Minerals Plant City	393.8	3096.3	749.1	82.6	1645	NO
DAVID J JOSEPH CO	364.0	3092.9	111.3	77.4	1540	NO
E. R. CARPENTER COMPANY	397.0	3131.5	54.8	56.0	1115	NO
EARL MASSEY	440.4	3103.4	206.8	107.3	2135	NO
E.R. JAHNA INDUSTRIES, INC.	386.7	3155.8	217.8	33.6	669	NO
Estech	411.5	3074.2	311.5	110.5	2200	NO
Estech-Duette Phosphate Mine	388.9	3047.2	751.1	127.0	2527	NO
FL DEPT OF CORRECTIONS	382.2	3166.1	283.2	26.3	523	NO
FLORIDA CRUSHED STONE & CPL & CLI	360.0	3162.5	697.7	8.3	166	YES
FLA MINING & MATERIALS	356.2	3169.9	446.4	0.0	0	YES
FPC Bayboro	338.8	3071.3	283.2	100.1	1992	NO
FLORIDA POWER	446.3	3126.0	412.0	100.2	1994	NO
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	10927.7	40.9	815	YES
FPC-Bartow	342.4	3082.6	2529.3	88.4	1759	YES
Farmland Industries Green Bay Plant	409.5	3080.1	1488.2	104.4	2078	NO
Florida Power & Light - MANATEE	367.2	3054.1	7578.5	116.3	2315	YES
Gold Bond Building Products CA	347.3	3082.7	335.0	87.7	1744	NO
Golden Triangle Asphalt	333.8	3086.1	43.0	86.7	1726	NO
Hardee Power Station Ft. Green Springs	404.8	3057.3	500.2	122.6	2441	NO
HCA BAYONET POINT	333.4	3141.0	0.0	36.8	733	NO
HCA OAKHILL HOSPITAL	352.6	3157.3	2.8	13.1	261	NO
HOLLY HILL FRUIT PRODUCTS	441.0	3115.4	187.9	100.8	2006	NO
IMC Ft. Lonesome	389.6	3067.9	679.0	107.3	2136	NO
IMC Fertilizer Kingsford	398.2	3075.7	422.6	103.1	2052	NO
IMC Fertilizer New Wales	396.7	3079.4	1429.1	99.1	1973	NO

TABLE 5-3
LIST OF PM/PM10 SOURCES -20XD
(CONCLUDED)

Facility	KM UTM East	KM North	Emissions Ton/Yr	Distance (km)	20*D	Model ?
IMC Fertilizer Noralyn Mine	414.7	3080.3	1691.5	107.0	2129	NO
IMC/Uranium Recovery C F Industries	408.4	3082.8	1213.0	101.5	2021	NO
Imperial Phosphates Ltd.	404.8	3069.5	162.2	111.5	2220	NO
Johnson Controls Battery Group, Inc.	359.9	3102.5	211.8	67.5	1343	NO
LaFarge Corp.	357.7	3090.6	1209.8	79.3	1578	NO
Lakeland City Power McIntosh Power Station	409.2	3106.1	2368.4	82.9	1651	YES
LYKES PASCO, INC.	383.5	3139.2	917.0	41.1	818	YES
Mobil Mining & Minerals SR 676	398.4	3085.3	991.5	94.5	1881	NO
Mobil-Electrophos Division	405.6	3079.4	961.5	103.1	2052	NO
National Portland Cement Co. of FL	346.4	3058.4	213.9	111.9	2227	NO
N-VIRO SOIL SOUTH, INC.	360.0	3162.5	1.3	8.3	166	NO
OMAN CONSTRUCTION CO	359.7	3164.0	25.7	6.9	137	NO
ORLANDO UTILITIES COMMISSION	483.5	3150.6	919.6	128.8	2562	NO
OVERSTREET PAVING CO	355.9	3143.7	49.1	26.2	521	NO
PAKHOED DRY BULK TERMINALS	360.8	3087.3	14.2	82.7	1646	NO
PASCO COGEN LIMITED	385.1	3139.0	27.0	42.3	841	NO
PASCO COUNTY (OWNER)	347.0	3139.0	59.5	32.2	642	NO
Pinellas Co. Resource Recovery Facility	335.2	3084.1	328.7	88.3	1758	NO
R.E. PURCELL CONST. CO.	340.6	3119.2	87.1	53.0	1056	NO
Ridge Cogeneration	416.7	3100.4	414.3	92.1	1834	NO
Royster Company	406.8	3085.1	67.1	98.7	1965	NO
Seminole Fertilizer (W R Grace)	409.9	3087.0	1510.9	98.8	1966	NO
SCI FUNERAL SERVICES	459.5	3129.5	5.5	110.9	2207	NO
STANDARD SAND & SILICA CO	441.5	3118.2	390.1	99.7	1985	NO
STAUFFER MANAGEMENT COMPANY	325.6	3116.7	578.4	61.4	1221	NO
Sulfuric Acid Trading Company	349.0	3081.5	13.9	88.7	1765	NO
SUNSHINE MATERIALS INC.	365.5	3163.2	27.7	11.5	228	NO
Surfacing Products of America	347.5	3037.6	153.1	132.6	2638	NO
TECO Big Bend	361.7	3075.5	7773.5	94.6	1882	YES
TECO Gannon	360.0	3087.5	5859.7	82.5	1642	YES
TECO Hooker's Point	358.0	3091.0	1232.8	78.9	1571	NO
TECO Polk	402.5	3067.4	438.3	112.5	2238	NO
Tropicana Products, Inc.	346.8	3040.9	904.4	129.3	2574	NO
US Agri-Chemicals Hwy 60	413.2	3086.3	443.7	101.2	2014	NO
US Agri-Chemicals Hwy 630	416.0	3069.0	542.8	117.3	2334	NO

TABLE 5-4
PM-10 CLASS I AREA
SOURCE INVENTORY

Facility	km UTM East	km North	Modeling Designation	PM (g/s)	Height m	Temp. °K	Velocity (m/s)	Dia. m
Agrico Chemical Co South Pierce	407.5	3071.5	AGSP2	4.002	3.0	344.1	20.69	0.55
Agrico Chemical Co South Pierce	407.5	3071.5	AGSP3	0.230	19.8	300.2	88.45	0.49
Agrico Chemical Co South Pierce	407.5	3071.5	AGSP4	4.318	18.3	323.0	9.70	0.30
Agrico Chemical Co South Pierce	407.5	3071.5	AGSP5	5.067	24.4	295.2	7.23	3.35
Agrico Chemical Co South Pierce	407.5	3071.5	AGSP6	5.067	24.4	296.9	7.80	3.35
Agrico Chemical Co South Pierce	407.5	3071.5	AGSP7	0.259	19.8	310.2	5.48	0.49
Agrico Chemical Co South Pierce	407.5	3071.5	AGSP8	0.547	26.8	307.4	9.24	0.91
Agrico Chemical Co South Pierce	407.5	3071.5	AGSP9	4.117	30.5	306.3	6.87	1.22
Agrico Chemical Co South Pierce	407.5	3071.5	AGSP10	3.023	38.1	327.4	14.55	3.05
Agrico Chemical Co South Pierce	407.5	3071.5	AGSP11	0.432	38.1	319.1	15.84	1.07
Agrico Chemical Co South Pierce	407.5	3071.5	AGSP12	0.029	16.2	298.0	1.72	0.46
Agrico Chemical Co South Pierce	407.5	3071.5	AGSP13	0.029	20.7	298.0	2.87	0.46
Agrico Chemical Co South Pierce	407.5	3071.5	AGSP14	0.029	29.3	298.0	1.15	0.40
ALCOA ALUMINA AND CHEMICALS	416.8	3116.0	ALCA1	0.039	25.0	299.9	9.10	0.24
ALCOA ALUMINA AND CHEMICALS	416.8	3116.0	ALCA2	0.078	22.9	299.9	7.92	0.21
ALCOA ALUMINA AND CHEMICALS	416.8	3116.0	ALCA3	0.013	16.8	299.9	7.92	0.21
ALCOA ALUMINA AND CHEMICALS	416.8	3116.0	ALCA4	0.130	16.8	299.9	36.38	0.24
ASPHALT PAVERS, INC.	361.4	3168.4	ASPV1	0.706	8.5	366.5	16.98	1.22
ASPHALT PAVERS, INC.	359.3	3162.4	ASPV2	0.542	12.2	339.9	22.23	1.22
Auburndale Cogeneration	420.8	3103.3	AUBCO	1.323	48.8	411.0	14.30	5.49
BROOKSVIULLE REGIONAL HOSPITAL	363.2	3159.0	BRHOSP	0.071	6.4	1088.8	16.99	0.40
CITRUS SERVICE, INC.	364.2	3158.3	CIRSVS	1.638	18.3	338.8	8.28	0.76
C F Industries Bonnie Mine Rd	408.4	3082.4	CFBM1	5.405	36.6	333.0	17.17	2.29
C F Industries Bonnie Mine Rd	408.4	3082.4	CFBM2	5.090	42.7	298.0	22.77	0.76
C F Industries Bonnie Mine Rd	408.4	3082.4	CFBM3	5.090	41.1	298.0	7.92	1.52
C F Industries Bonnie Mine Rd	408.4	3082.4	CFBM4	1.756	19.8	298.0	15.36	1.22
C F Industries Bonnie Mine Rd	408.4	3082.4	CFBM5	1.207	16.8	298.0	11.82	1.37
C F Industries Bonnie Mine Rd	408.4	3082.4	CFBM6	0.063	16.6	298.0	7.19	0.46
C F Industries Bonnie Mine Rd	408.4	3082.4	CFBM7	0.063	16.6	298.0	7.19	0.46
C F Industries Bonnie Mine Rd	408.4	3082.4	CFBM8	0.592	26.5	298.0	8.63	0.46
C F Industries Bonnie Mine Rd	408.4	3082.4	CFBM9	0.592	26.5	298.0	8.63	0.46
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT1	0.030	7.6	561.0	17.74	1.07
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT2	0.747	33.5	316.5	19.68	1.52
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT3	1.260	33.5	316.5	19.68	1.52
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT4	1.197	60.7	352.6	16.40	2.44
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT5	1.197	60.7	337.6	9.70	2.44
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT6	3.910	36.3	314.3	13.64	1.22
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT7	4.115	28.6	326.5	7.93	3.05
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT8	4.480	54.9	331.5	13.31	2.80
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT9	4.114	54.9	313.8	8.18	2.80
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT10	4.725	35.1	299.9	11.01	2.80
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT11	0.630	27.4	298.2	19.02	0.52
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT12	4.114	54.9	324.9	9.78	2.80
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT13	1.928	54.9	333.2	13.37	2.80
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT14	0.630	10.1	298.8	5.94	1.01
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT15	0.025	2.4	373.2	1.63	0.27
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT16	0.013	3.7	373.2	1.65	0.09
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT17	0.068	3.7	373.2	1.65	0.09
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT18	0.126	30.5	294.3	7.64	0.76

TABLE 5-4
PM-10 CLASS I AREA
SOURCE INVENTORY
(CONTINUED)

Facility	km UTM East	km North	Modeling Designation	PM (g/s)	Height m	Temp. °K	Velocity (m/s)	Dia. m
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT19	2.667	25.9	298.2	11.64	0.15
C & M PRODUCTS CO	405.5	3079.1	CM1	4.662	9.1	366.5	16.17	0.61
COUCH CONST CO	340.7	3119.5	CUHCN1	1.487	10.7	422.1	26.77	1.28
COUCH CONSTRUCTION COMPANY	390.3	3129.4	CUHCN2	1.288	6.1	422.1	26.68	1.22
COUCH CONSTRUCTION COMPANY	359.8	3164.9	CUHCN3	1.288	6.1	422.1	21.00	1.42
COUCH, INC.	360.0	3162.0	CUHCN4	0.591	9.8	422.1	21.00	1.22
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL1	1.036	20.7	314.7	11.09	1.07
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL2	0.662	19.8	303.0	11.74	1.22
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL3	1.267	20.1	333.0	16.17	0.61
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL4	2.246	22.6	305.2	7.84	1.22
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL5	1.036	20.7	319.1	1.16	1.07
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL6	0.662	19.8	301.9	14.43	1.22
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL7	3.858	16.8	323.6	19.93	1.31
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL8	0.979	9.8	308.6	8.04	0.40
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL9	1.209	6.1	488.6	15.89	1.22
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL10	2.534	40.5	315.2	15.38	2.13
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL11	0.086	6.1	298.6	10.44	0.46
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL12	0.086	6.1	298.6	16.31	0.37
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL13	0.547	9.1	298.6	13.20	1.07
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL14	0.173	18.3	588.6	6.94	2.53
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL15	0.605	12.2	298.0	11.21	0.46
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL16	0.403	15.2	303.6	12.42	0.76
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL17	0.029	12.2	321.9	9.94	0.52
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL18	0.633	27.4	333.6	17.32	1.07
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL19	0.144	26.5	331.9	8.18	0.37
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL20	2.879	16.5	320.2	19.69	1.31
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL21	0.720	27.4	334.1	21.96	1.01
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL22	0.720	27.4	334.1	19.58	1.01
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL23	0.086	13.7	298.6	16.31	0.37
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL24	0.086	9.1	298.6	16.31	0.37
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL25	0.144	22.9	298.6	12.42	0.58
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL26	2.447	38.4	328.6	11.32	2.44
Cargill Fertilizer (Gardinier)	362.9	3082.2	CRGL27	0.118	11.6	298.6	17.75	0.82
Conserv Inc.	398.7	3084.2	CNRV1	4.920	12.8	310.8	10.60	1.22
Conserv Inc.	398.7	3084.2	CNRV2	1.180	15.8	321.9	20.18	0.76
Conserv Inc.	398.7	3084.2	CNRV3	1.180	24.4	327.4	23.81	1.07
Conserv Inc.	398.7	3084.2	CNRV4	4.434	24.7	327.4	3.77	2.29
Conserv Inc.	398.7	3084.2	CNRV5	0.288	8.2	533.0	13.74	0.61
Conserv Inc.	398.7	3084.2	CNRV6	0.432	11.9	533.0	8.91	0.98
Conserv Inc.	398.7	3084.2	CNRV7	0.633	54.6	338.6	14.37	0.18
Conserv Inc.	398.7	3084.2	CNRV8	0.202	55.5	310.8	2.97	0.43
Conserv Inc.	398.7	3084.2	CNRV9	1.382	63.1	333.0	51.22	0.27
Conserv Inc.	398.7	3084.2	CNRV10	0.633	63.1	330.2	21.12	0.43
Conserv Inc.	398.7	3084.2	CNRV11	1.180	21.9	360.8	31.08	0.98
Conserv Inc.	398.7	3084.2	CNRV12	0.633	63.1	330.2	21.12	0.43
Consolidated Minerals Plant City	393.8	3096.3	CNSDM2	0.202	13.7	349.7	14.17	0.55
Consolidated Minerals Plant City	393.8	3096.3	CNSDM3	0.202	16.5	298.0	19.96	0.55
Consolidated Minerals Plant City	393.8	3096.3	CNSDM4	4.405	24.4	308.0	79.21	1.37
Consolidated Minerals Plant City	393.8	3096.3	CNSDM5	0.115	16.5	298.0	19.14	0.43
Consolidated Minerals Plant City	393.8	3096.3	CNSDM6	1.756	46.3	295.2	11.16	1.77
Consolidated Minerals Plant City	393.8	3096.3	CNSDM7	0.662	9.8	295.8	10.76	0.46

TABLE 5-4
PM-10 CLASS I AREA
SOURCE INVENTORY
(CONTINUED)

Facility	km UTM East	km North	Modeling Designation	PM (g/s)	Height m	Temp. °K	Velocity (m/s)	Dia. m
Consolidated Minerals Plant City	393.8	3096.3	CNSDM8	1.641	46.3	300.2	9.61	1.77
Consolidated Minerals Plant City	393.8	3096.3	CNSDM9	1.756	24.4	319.1	6.20	1.68
Consolidated Minerals Plant City	393.8	3096.3	CNSDM10	1.900	45.7	313.0	18.34	1.77
Consolidated Minerals Plant City	393.8	3096.3	CNSDM11	0.173	32.6	298.0	33.69	0.37
Consolidated Minerals Plant City	393.8	3096.3	CNSDM12	0.259	24.7	315.2	9.05	0.82
Consolidated Minerals Plant City	393.8	3096.3	CNSDM13	1.670	30.5	338.0	11.98	1.37
Consolidated Minerals Plant City	393.8	3096.3	CNSDM14	0.029	15.2	294.1	20.70	0.15
Consolidated Minerals Plant City	393.8	3096.3	CNSDM15	0.058	3.0	338.6	18.19	0.24
Consolidated Minerals Plant City	393.8	3096.3	CNSDM18	0.029	21.3	298.0	12.58	0.18
Consolidated Minerals Plant City	393.8	3096.3	CNSDM19	0.144	20.4	298.0	11.50	0.46
Consolidated Minerals Plant City	393.8	3096.3	CNSDM20	0.259	18.9	298.0	24.95	0.55
Consolidated Minerals Plant City	393.8	3096.3	CNSDM21	0.086	21.3	298.0	31.89	0.37
Consolidated Minerals Plant City	393.8	3096.3	CNSDM22	0.202	17.4	298.0	28.75	0.46
Consolidated Minerals Plant City	393.8	3096.3	CNSDM23	0.892	10.4	327.4	19.16	0.82
Consolidated Minerals Plant City	393.8	3096.3	CNSDM24	0.086	14.0	298.0	17.97	0.18
Consolidated Minerals Plant City	393.8	3096.3	CNSDM25	0.864	30.5	319.1	0.01	0.91
Consolidated Minerals Plant City	393.8	3096.3	CNSDM26	0.058	29.6	298.0	13.58	0.30
Consolidated Minerals Plant City	393.8	3096.3	CNSDM27	0.115	15.8	298.0	19.14	0.43
DAVID J JOSEPH CO	364.0	3092.9	DJOS1	1.440	19.8	322.1	13.73	1.37
DAVID J JOSEPH CO	364.0	3092.9	DJOS2	0.145	10.7	316.5	8.08	0.61
DAVID J JOSEPH CO	364.0	3092.9	DJOS3	1.614	13.7	298.2	26.30	1.07
E. R. CARPENTER COMPANY	397.0	3131.5	ERCRP	1.575	12.8	298.2	9.47	0.98
EARL MASSEY	439.4	3101.8	EMSSY1	2.456	9.1	336.0	1.80	1.83
EARL MASSEY	440.4	3103.4	EMSSY2	3.490	15.2	298.2	4.62	0.21
E.R. JAHNA INDUSTRIES, INC.	386.7	3155.8	ERJNH1	1.701	7.6	327.6	14.32	0.18
E.R. JAHNA INDUSTRIES, INC.	386.7	3155.8	ERJNH2	4.561	4.9	294.3	28.70	0.40
Estech	411.5	3074.2	ESHTC1	1.267	11.0	311.9	7.83	0.34
Estech	411.5	3074.2	ESHTC2	0.950	11.0	315.8	11.11	0.34
Estech	411.5	3074.2	ESHTC3	1.267	14.6	311.9	11.43	0.34
Estech	411.5	3074.2	ESHTC4	1.583	18.9	338.6	11.58	2.04
Estech	411.5	3074.2	ESHTC5	3.887	18.3	334.1	6.24	3.05
FL DEPT OF CORRECTIONS	382.2	3166.1	FDOC1	0.060	9.1	477.6	4.85	0.61
FLORIDA CRUSHED STONE	360.0	3162.5	FCS1	14.180	94.5	389.3	0.00	4.88
FLORIDA CRUSHED STONE	360.0	3162.5	FCS2	0.100	30.5	314.0	12.90	0.61
FLORIDA CRUSHED STONE	360.0	3162.5	FCS3	0.080	38.1	314.0	11.00	0.61
FLORIDA CRUSHED STONE	360.0	3162.5	FCS4	0.080	38.1	314.0	6.79	0.61
FLORIDA CRUSHED STONE	360.0	3162.5	FCS5	0.030	21.3	355.0	12.90	0.30
FLORIDA CRUSHED STONE	360.0	3162.5	FCS6	0.420	73.2	355.4	13.72	1.07
FLORIDA CRUSHED STONE	360.0	3162.5	FCS7	0.101	15.2	338.8	10.35	0.76
FLORIDA CRUSHED STONE	360.0	3162.5	FCS8	0.076	41.1	366.5	14.37	0.46
FLORIDA CRUSHED STONE	360.0	3162.5	FCS9	0.126	61.0	355.4	21.27	0.46
FLORIDA CRUSHED STONE	360.0	3162.5	FCS10	0.050	8.8	366.5	9.70	0.61
FLORIDA CRUSHED STONE	360.0	3162.5	FCS11	0.151	15.2	311.0	9.31	0.76
FLORIDA CRUSHED STONE	360.0	3162.5	FCS12	0.643	21.3	372.1	10.35	1.52
FLORIDA CRUSHED STONE	360.0	3162.5	FCS13	0.050	15.2	344.3	9.20	0.46
FLORIDA CRUSHED STONE	360.0	3162.5	FCS14	0.086	61.0	355.4	15.24	0.46
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL1	0.139	7.6	294.3	16.98	0.61
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL2	0.178	61.0	355.4	31.62	0.46
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL3	0.049	9.1	338.8	4.85	0.61
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL4	0.307	45.7	311.0	30.72	0.61

TABLE 5-4
PM-10 CLASS I AREA
SOURCE INVENTORY
(CONTINUED)

Facility	km UTM East	km North	Modeling Designation	PM (g/s)	Height m	Temp. °K	Velocity (m/s)	Dia. m
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL5	0.102	30.5	322.1	6.52	0.76
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL6	0.028	4.6	298.2	4.95	0.46
CHEMICAL LIME INC	359.4	3162.3	CLI1	0.472	15.2	319.3	0.50	3.05
CHEMICAL LIME INC	359.4	3162.3	CLI2	1.575	6.1	339.9	5.48	0.91
CHEMICAL LIME INC	359.4	3162.3	CLI3	0.980	9.1	394.3	18.48	1.07
CHEMICAL LIME INC	359.4	3162.3	CLI4	0.630	18.9	295.4	11.42	0.46
CHEMICAL LIME INC	359.4	3162.3	CLI5	0.227	7.6	294.3	3.67	0.40
FLA MINING & MATERIALS	356.2	3169.9	KILN2	3.280	32.0	394.0	9.90	4.27
FLA MINING & MATERIALS	356.2	3169.9	CLCOOL2	1.640	23.5	394.0	7.60	2.29
FLA MINING & MATERIALS	356.2	3169.9	GX11	0.248	67.1	366.5	18.97	0.85
FLA MINING & MATERIALS	356.2	3169.9	HX13	0.065	22.9	327.6	19.80	0.43
FLA MINING & MATERIALS	356.2	3169.9	LX07	0.092	44.2	358.2	21.47	0.49
FLA MINING & MATERIALS	356.2	3169.9	MX09	0.032	6.1	338.7	19.40	0.30
FLA MINING & MATERIALS	356.2	3169.9	MX10	0.092	22.9	333.2	21.47	0.49
FLA MINING & MATERIALS	356.2	3169.9	MX2280	0.108	25.9	293.2	17.92	0.58
FLA MINING & MATERIALS	356.2	3169.9	MX3514	0.108	7.6	293.2	17.92	0.58
FLA MINING & MATERIALS	356.2	3169.9	MX3515	0.092	15.2	293.2	21.47	0.49
FLA MINING & MATERIALS	356.2	3169.9	NX23	0.497	18.3	293.2	22.70	1.10
FLA MINING & MATERIALS	356.2	3169.9	PX05	0.124	64.0	335.9	18.59	0.61
FLA MINING & MATERIALS	356.2	3169.9	PX07	0.059	64.0	338.7	21.05	0.40
FLA MINING & MATERIALS	356.2	3169.9	QX17	0.059	21.3	338.7	13.90	0.49
FPC Bayboro C4	338.8	3071.3	FPCBY	8.140	12.2	755.4	6.54	6.98
FLORIDA POWER	446.3	3126.0	INTR1	1.890	15.2	834.9	0.05	4.21
FLORIDA POWER	446.3	3126.0	INTR2	1.890	15.2	834.9	0.05	4.21
FLORIDA POWER	446.3	3126.0	INTR3	1.890	15.2	834.9	0.05	4.21
FLORIDA POWER	446.3	3126.0	INTR4	1.890	15.2	699.9	0.06	3.96
FLORIDA POWER	446.3	3126.0	INTR5	2.142	15.2	896.0	0.03	7.04
FLORIDA POWER	446.3	3126.0	INTR6	2.142	15.2	896.0	0.03	7.04
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV3	81.580	182.9	412.6	20.16	7.77
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV4	82.638	182.9	412.6	20.16	7.77
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV5	0.443	2.4	338.8	36.96	0.21
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV6	0.038	10.7	338.8	0.48	0.58
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV7	0.074	28.3	338.8	15.24	0.46
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV8	26.988	16.2	312.1	116.67	2.74
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV9	1.642	23.8	299.9	0.00	0.21
FPC-Bartow TO9	342.4	3082.6	FPCBR5	0.010	7.6	298.1	0.04	0.27
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB1	3.224	39.3	327.4	7.47	2.29
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB2	2.937	56.4	338.0	5.17	1.52
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB3	3.800	39.3	319.1	10.66	2.13
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB4	3.800	39.9	298.0	9.92	2.44
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB5	0.058	12.2	366.3	0.03	0.61
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB6	0.086	12.2	366.3	0.03	0.61
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB7	6.622	35.1	349.7	22.72	0.67
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB8	3.397	39.3	327.4	6.84	2.29
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB9	3.224	39.6	311.9	5.66	1.22
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB10	0.662	30.5	349.7	8.70	2.29
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB11	0.662	30.5	351.9	9.74	2.29
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB12	0.086	12.2	366.3	0.03	0.61
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB13	0.086	12.2	366.3	2.67	0.61
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB14	3.311	50.3	298.0	8.86	0.70

TABLE 5-4
PM-10 CLASS I AREA
SOURCE INVENTORY
(CONTINUED)

Facility	km UTM East	km North	Modeling Designation	PM (g/s)	Height m	Temp. °K	Velocity (m/s)	Dia. m
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB15	3.426	26.8	349.7	19.09	0.73
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB16	2.937	39.3	326.9	12.41	2.29
Farmland Industries Green Bay Plant	409.5	3080.1	FRMGB17	4.462	27.4	305.2	5.48	0.91
Gold Bond Building Products CA	347.3	3082.7	GBBP	9.630	7.3	325.9	3.59	0.37
Golden Triangle Asphalt 01	333.8	3086.1	GTA	1.235	12.2	410.9	20.74	1.22
HCA BAYONET POINT	333.4	3141.0	HCABP	0.001	10.7	1144.3	1.26	0.24
HCA OAKHILL HOSPITAL	352.6	3157.3	HCAOK	0.079	9.1	588.8	4.31	0.46
HOLLY HILL FRUIT PRODUCTS	441.0	3115.4	HLYHL1	0.066	11.6	505.4	2.16	0.91
HOLLY HILL FRUIT PRODUCTS	441.0	3115.4	HLYHL2	0.152	8.5	505.4	2.47	0.85
HOLLY HILL FRUIT PRODUCTS	441.0	3115.4	HLYHL3	3.603	18.0	344.3	18.97	0.85
HOLLY HILL FRUIT PRODUCTS	441.0	3115.4	HLYHL4	0.081	10.7	505.4	11.48	0.40
HOLLY HILL FRUIT PRODUCTS	441.0	3115.4	HLYHL5	1.499	1.8	298.2	13.20	0.21
IMC Ft. Lonesome	389.6	3067.9	IMCFL1	6.766	22.9	314.7	17.33	0.85
IMC Ft. Lonesome	389.6	3067.9	IMCFL2	3.167	38.1	339.1	15.16	2.44
IMC Ft. Lonesome	389.6	3067.9	IMCFL3	3.138	38.1	339.1	16.80	2.44
IMC Ft. Lonesome	389.6	3067.9	IMCFL4	6.450	45.7	316.3	8.43	0.82
IMC Fertilizer Kingsford	398.2	3075.7	IMCKG1	3.253	21.3	346.9	14.52	2.13
IMC Fertilizer Kingsford	398.2	3075.7	IMCKG2	0.144	17.7	310.8	15.23	0.58
IMC Fertilizer Kingsford	398.2	3075.7	IMCKG3	4.462	32.3	308.0	20.70	0.76
IMC Fertilizer Kingsford	398.2	3075.7	IMCKG4	3.512	18.3	316.3	19.66	0.76
IMC Fertilizer Kingsford	398.2	3075.7	IMCKG5	0.777	10.7	296.9	10.35	0.76
IMC Fertilizer New Wales	396.5	3079.0	IMCNW1	1.929	40.5	333.0	21.43	1.22
IMC Fertilizer New Wales	396.5	3079.2	IMCNW4	3.628	40.5	315.2	18.87	1.83
IMC Fertilizer New Wales	396.5	3079.3	IMCNW5	2.534	40.5	313.6	1.01	0.91
IMC Fertilizer New Wales	396.8	3079.4	IMCNW6	4.635	52.4	321.9	13.14	2.44
IMC Fertilizer New Wales	396.7	3079.4	IMCNW7	0.432	34.1	313.6	10.35	0.30
IMC Fertilizer New Wales	396.7	3079.4	IMCNW8	2.130	21.6	299.7	10.35	0.30
IMC Fertilizer New Wales	396.7	3079.4	IMCNW9	0.432	19.8	352.4	14.37	0.46
IMC Fertilizer New Wales	396.7	3079.4	IMCNW10	0.432	32.6	313.6	20.96	0.55
IMC Fertilizer New Wales	396.7	3079.4	IMCNW11	0.115	30.5	299.7	54.62	0.46
IMC Fertilizer New Wales	396.7	3079.4	IMCNW12	1.785	52.1	316.3	17.97	1.83
IMC Fertilizer New Wales	396.7	3079.4	IMCNW13	0.605	12.2	315.2	20.12	0.91
IMC Fertilizer New Wales	396.7	3079.4	IMCNW14	0.432	31.7	313.6	21.48	0.49
IMC Fertilizer New Wales	396.7	3079.4	IMCNW15	3.340	52.4	313.6	15.97	1.37
IMC Fertilizer New Wales	396.7	3079.4	IMCNW16	0.432	26.5	438.6	86.24	0.46
IMC Fertilizer New Wales	396.7	3079.4	IMCNW17	0.432	13.7	313.6	9.70	0.30
IMC Fertilizer New Wales	396.7	3079.4	IMCNW18	0.432	18.3	313.6	9.70	0.30
IMC Fertilizer New Wales	396.7	3079.4	IMCNW19	1.785	52.1	316.3	17.97	1.83
IMC Fertilizer New Wales	396.7	3079.4	IMCNW20	0.432	17.4	352.4	22.96	0.40
IMC Fertilizer New Wales	396.7	3079.4	IMCNW21	0.432	5.2	380.2	38.27	0.40
IMC Fertilizer New Wales	396.7	3079.4	IMCNW22	0.432	26.5	438.6	86.24	0.46
IMC Fertilizer New Wales	396.7	3079.4	IMCNW23	0.777	51.8	316.3	1.97	1.52
IMC Fertilizer New Wales	396.7	3079.4	IMCNW24	0.432	34.1	313.6	10.35	0.30
IMC Fertilizer New Wales	396.7	3079.4	IMCNW25	0.662	7.6	333.0	10.49	1.31
IMC Fertilizer New Wales	396.7	3079.4	IMCNW26	0.432	32.0	313.6	42.69	0.30
IMC Fertilizer New Wales	396.7	3079.4	IMCNW27	0.202	5.5	313.6	9.70	0.30
IMC Fertilizer New Wales	396.7	3079.4	IMCNW28	0.432	35.7	313.6	38.81	0.30
IMC Fertilizer New Wales	396.7	3079.4	IMCNW29	0.806	12.2	299.7	9.39	0.27
IMC Fertilizer New Wales	396.7	3079.4	IMCNW30	0.432	18.3	313.6	16.17	0.30
IMC Fertilizer New Wales	396.7	3079.4	IMCNW31	0.058	30.5	311.9	12.58	0.55
IMC Fertilizer New Wales	396.7	3079.4	IMCNW32	0.576	28.7	352.4	10.78	1.83

TABLE 5-4
PM-10 CLASS I AREA
SOURCE INVENTORY
(CONTINUED)

Facility	km UTM East	km North	Modeling Designation	PM (g/s)	Height m	Temp. °K	Velocity (m/s)	Dia. m
IMC Fertilizer New Wales	396.7	3079.4	IMCNW33	0.173	33.5	316.3	13.86	0.43
IMC Fertilizer New Wales	396.7	3079.4	IMCNW34	0.202	26.2	299.7	16.50	0.21
IMC Fertilizer New Wales	396.7	3079.4	IMCNW35	0.345	32.6	338.6	15.84	1.07
IMC Fertilizer New Wales	396.7	3079.4	IMCNW36	0.461	19.8	313.6	51.75	0.30
IMC Fertilizer New Wales	396.7	3079.4	IMCNW37	0.432	36.0	313.6	10.35	0.30
IMC Fertilizer Noralyn Mine	414.7	3080.3	IMCNY1	1.900	8.2	302.4	16.17	0.61
IMC Fertilizer Noralyn Mine	414.7	3080.3	IMCNY2	0.345	8.2	296.9	4.85	0.61
IMC Fertilizer Noralyn Mine	414.7	3080.3	IMCNY3	3.224	7.6	296.9	11.50	0.46
IMC Fertilizer Noralyn Mine	414.7	3080.3	IMCNY4	4.981	7.3	316.3	8.09	0.61
IMC Fertilizer Noralyn Mine	414.7	3080.3	IMCNY5	1.900	13.1	303.0	18.11	0.61
IMC Fertilizer Noralyn Mine	414.7	3080.3	IMCNY6	4.347	41.1	288.6	16.75	0.85
IMC Fertilizer Noralyn Mine	414.7	3080.3	IMCNY7	5.211	11.6	333.0	7.17	0.58
IMC Fertilizer Noralyn Mine	414.7	3080.3	IMCNY8	1.267	16.5	319.1	19.40	0.30
IMC Fertilizer Noralyn Mine	414.7	3080.3	IMCNY11	3.829	11.6	333.0	7.17	0.58
IMC Fertilizer Noralyn Mine	414.7	3080.3	IMCNY12	3.829	11.6	333.0	7.17	0.58
IMC Fertilizer Noralyn Mine	414.7	3080.3	IMCNY13	1.900	8.2	302.4	16.17	0.61
IMC Fertilizer Noralyn Mine	414.7	3080.3	IMCNY14	4.405	45.7	310.8	15.84	1.07
IMC Fertilizer Noralyn Mine	414.7	3080.3	IMCNY15	2.390	7.3	316.3	8.09	0.61
Imperial Phosphates Ltd.	404.8	3069.5	IMPHS1	0.115	27.4	494.1	7.28	0.61
Imperial Phosphates Ltd.	404.8	3069.5	IMPHS2	2.274	27.4	333.0	19.78	1.40
Imperial Phosphates Ltd.	404.8	3069.5	IMPHS3	2.274	27.4	333.0	20.65	1.52
Johnson Controls Battery Group, Inc. C	359.9	3102.5	JHNSN	6.090	8.2	310.9	14.24	0.37
LaFarge Corp.	357.7	3090.6	LFRG1	0.489	9.1	298.0	16.84	0.73
LaFarge Corp.	357.7	3090.6	LFRG2	0.202	10.4	298.0	32.61	0.34
LaFarge Corp.	357.7	3090.6	LFRG3	0.144	37.5	298.0	25.87	0.30
LaFarge Corp.	357.7	3090.6	LFRG4	0.403	17.4	298.0	17.37	0.67
LaFarge Corp.	357.7	3090.6	LFRG5	0.259	21.9	298.0	80.85	0.24
LaFarge Corp.	357.7	3090.6	LFRG6	0.317	1.5	310.8	17.92	0.58
LaFarge Corp.	357.7	3090.6	LFRG7	0.259	14.9	298.0	10.69	0.67
LaFarge Corp.	357.7	3090.6	LFRG8	0.259	14.9	298.0	10.69	0.67
LaFarge Corp.	357.7	3090.6	LFRG9	0.489	9.1	298.0	16.84	0.73
LaFarge Corp.	357.7	3090.6	LFRG10	11.977	44.5	494.7	40.43	2.44
LaFarge Corp.	357.7	3090.6	LFRG11	0.345	31.1	298.0	19.71	0.58
LaFarge Corp.	357.7	3090.6	LFRG12	5.672	30.8	401.9	6.09	3.81
LaFarge Corp.	357.7	3090.6	LFRG13	0.144	29.0	298.0	11.50	0.46
LaFarge Corp.	357.7	3090.6	LFRG14	0.259	10.1	364.1	16.84	0.73
LaFarge Corp.	357.7	3090.6	LFRG15	0.374	35.1	310.8	21.50	0.58
LaFarge Corp.	357.7	3090.6	LFRG16	0.202	44.8	298.0	13.43	0.52
LaFarge Corp.	357.7	3090.6	LFRG17	0.173	27.4	298.0	32.34	0.30
LaFarge Corp.	357.7	3090.6	LFRG18	0.202	44.8	298.0	13.43	0.52
LaFarge Corp.	357.7	3090.6	LFRG19	0.144	29.9	298.0	12.13	0.49
LaFarge Corp.	357.7	3090.6	LFRG20	0.576	6.1	310.8	24.06	0.67
LaFarge Corp.	357.7	3090.6	LFRG21	0.144	29.9	298.0	12.13	0.49
LaFarge Corp.	357.7	3090.6	LFRG22	0.403	17.4	298.0	17.37	0.67
LaFarge Corp.	357.7	3090.6	LFRG23	0.202	25.3	298.0	24.49	0.40
LaFarge Corp.	357.7	3090.6	LFRG24	0.374	14.9	298.0	19.40	0.61
LaFarge Corp.	357.7	3090.6	LFRG25	0.403	30.5	298.0	12.42	0.76
LaFarge Corp.	357.7	3090.6	LFRG26	0.374	10.1	364.1	16.84	0.73
LaFarge Corp.	357.7	3090.6	LFRG27	0.144	52.1	298.0	25.66	0.34
LaFarge Corp.	357.7	3090.6	LFRG28	0.202	25.3	355.2	19.02	1.04
LaFarge Corp.	357.7	3090.6	LFRG29	0.202	17.4	342.4	17.37	0.67
LaFarge Corp.	357.7	3090.6	LFRG30	0.259	25.3	355.2	19.02	1.04

TABLE 5-4
PM-10 CLASS I AREA
SOURCE INVENTORY
(CONTINUED)

Facility	km UTM East	km North	Modeling Designation	PM (g/s)	Height m	Temp. °K	Velocity (m/s)	Dia. m
LaFarge Corp.	357.7	3090.6	LFRG31	1.094	25.3	298.0	19.02	1.04
LaFarge Corp.	357.7	3090.6	LFRG32	0.259	17.4	342.4	17.37	0.67
LaFarge Corp.	357.7	3090.6	LFRG33	0.173	14.3	298.0	19.14	0.40
LaFarge Corp.	357.7	3090.6	LFRG34	0.202	10.1	364.1	16.84	0.73
LaFarge Corp.	357.7	3090.6	LFRG35	0.633	25.3	298.0	24.45	0.70
LaFarge Corp.	357.7	3090.6	LFRG36	0.374	22.3	298.0	23.29	0.58
LaFarge Corp.	357.7	3090.6	LFRG37	0.288	53.0	298.0	28.75	0.46
LaFarge Corp.	357.7	3090.6	LFRG38	0.403	27.4	298.0	26.73	0.34
LaFarge Corp.	357.7	3090.6	LFRG39	2.534	53.0	298.0	23.00	0.46
LaFarge Corp.	357.7	3090.6	LFRG40	1.094	25.3	298.0	19.02	1.04
LaFarge Corp.	357.7	3090.6	LFRG41	0.173	18.3	298.0	34.15	0.30
LaFarge Corp.	357.7	3090.6	LFRG42	1.094	25.3	298.0	19.02	1.04
LaFarge Corp.	357.7	3090.6	LFRG43	0.202	44.8	298.0	13.43	0.52
LaFarge Corp.	357.7	3090.6	LFRG44	0.489	4.9	298.0	16.84	0.73
LaFarge Corp.	357.7	3090.6	LFRG45	0.173	18.3	298.0	34.15	0.30
Lakeland City Power McIntosh Power Station	409.2	3106.1	LLMC5	0.115	6.1	652.4	23.54	0.79
Lakeland City Power McIntosh Power Station	409.2	3106.1	LLMC6	40.820	76.2	349.7	32.85	4.88
LYKES PASCO, INC.	383.5	3139.2	LYK1	3.941	22.9	327.6	33.71	0.79
LYKES PASCO, INC.	383.5	3139.2	LYK2	4.007	9.1	372.1	25.00	0.27
LYKES PASCO, INC.	383.5	3139.2	LYK3	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK4	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK5	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK6	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK7	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK8	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK9	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK10	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK11	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK12	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK13	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK14	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK15	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK16	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK17	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK18	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK19	0.246	16.5	505.4	14.37	0.46
LYKES PASCO, INC.	383.5	3139.2	LYK20	2.112	19.8	338.8	5.05	1.22
LYKES PASCO, INC.	383.5	3139.2	LYK21	2.112	19.8	338.8	5.05	1.22
LYKES PASCO, INC.	383.5	3139.2	LYK22	2.112	19.8	338.8	5.05	1.22
LYKES PASCO, INC.	383.5	3139.2	LYK23	2.112	19.8	338.8	5.05	1.22
LYKES PASCO, INC.	383.5	3139.2	LYK24	0.176	16.5	377.6	4.45	0.61
LYKES PASCO, INC.	383.5	3139.2	LYK25	0.188	16.5	505.4	28.99	0.40
LYKES PASCO, INC.	383.5	3139.2	LYK26	0.064	16.5	338.8	8.62	0.46
Mobil Mining & Minerals SR 676	398.2	3085.0	MMM1	3.109	25.9	338.6	16.10	2.29
Mobil Mining & Minerals SR 676	398.4	3085.1	MMM2	0.144	4.6	312.4	16.50	0.43
Mobil Mining & Minerals SR 676	398.3	3085.1	MMM3	6.996	25.9	296.9	19.40	1.52
Mobil Mining & Minerals SR 676	398.4	3085.2	MMM6	1.555	24.4	326.9	11.68	0.49
Mobil Mining & Minerals SR 676	398.4	3085.2	MMM7	1.123	30.5	338.6	19.02	1.10
Mobil Mining & Minerals SR 676	398.4	3085.2	MMM8	1.411	24.4	326.9	11.68	0.49
Mobil Mining & Minerals SR 676	398.4	3085.3	MMM9	1.382	12.2	344.1	11.83	1.07

TABLE 5-4
PM-10 CLASS I AREA
SOURCE INVENTORY
(CONTINUED)

Facility	km UTM East	km North	Modeling Designation	PM (g/s)	Height m	Temp. °K	Velocity (m/s)	Dia. m
Mobil Mining & Minerals SR 676	398.4	3085.3	MMM10	0.058	24.1	349.7	14.64	0.24
Mobil Mining & Minerals SR 676	398.4	3085.3	MMM11	0.720	4.0	521.9	2.12	0.76
Mobil Mining & Minerals SR 676	398.4	3085.3	MMM12	1.958	25.9	299.7	14.54	1.68
National Portland Cement Co. of FL	346.4	3058.4	NATPRT	6.150	27.4	338.7	77.62	0.30
N-VIRO SOIL SOUTH, INC.	360.0	3162.5	NVRSS	0.038	17.4	311.0	8.08	0.24
OMAN CONSTRUCTION CO	359.7	3164.0	OMAN	0.740	7.6	347.1	11.14	1.22
OVERSTREET PAVING CO	355.9	3143.7	OVR	1.411	9.1	408.2	15.10	1.34
PAKHOED DRY BULK TERMINALS	360.8	3087.3	PAKHD1	0.197	9.1	298.8	39.45	0.30
PAKHOED DRY BULK TERMINALS	360.8	3087.3	PAKHD2	0.083	4.9	298.8	13.90	0.34
PAKHOED DRY BULK TERMINALS	360.8	3087.3	PAKHD3	0.130	14.3	298.8	8.95	0.52
PASCO COGEN LIMITED	385.1	3139.0	PSCOG1	0.388	83.8	427.6	14.13	1.46
PASCO COGEN LIMITED	385.1	3139.0	PSCOG2	0.388	83.8	421.5	14.13	1.46
PASCO COUNTY (OWNER)	347.0	3139.0	PSCO1	0.567	83.8	394.3	15.54	3.05
PASCO COUNTY (OWNER)	347.0	3139.0	PSCO2	0.567	83.8	394.3	15.54	3.05
PASCO COUNTY (OWNER)	347.0	3139.0	PSCO3	0.567	83.8	394.3	62.18	1.52
PASCO COUNTY (OWNER)	347.0	3139.0	PSCO4	0.011	13.4	295.4	16.82	0.15
Pinellas Co. Resource Recovery Facility 03	335.2	3084.1	PNRRF	9.450	49.1	505.4	26.82	2.74
R.E. PURCELL CONST. CO.	340.6	3119.2	PURC	2.505	12.2	338.8	71.86	0.91
Ridge Cogeneration	416.7	3100.4	RIDGE	11.910	99.1	350.0	14.54	3.05
Royster Company	406.8	3085.1	ROYST	1.929	22.6	308.0	3.80	1.07
Seminole Fertilizer (W R Grace)	409.8	3086.0	SEM1	-3.771	15.2	333.0	17.29	2.04
Seminole Fertilizer (W R Grace)	409.8	3086.0	SEM2	3.771	15.2	333.0	17.29	2.04
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM3	0.115	10.7	305.2	9.98	0.55
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM4	3.224	24.4	294.1	8.38	0.76
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM5	0.432	16.2	301.9	4.19	0.67
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM6	0.058	9.4	366.3	0.03	0.61
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM7	5.000	30.5	324.7	13.40	2.04
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM8	0.058	10.4	366.3	0.12	0.30
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM9	0.633	30.5	294.1	13.20	2.13
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM10	0.058	7.9	366.3	0.12	0.30
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM11	0.259	12.8	307.4	9.41	1.16
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM12	0.058	7.9	366.3	0.12	0.30
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM13	0.058	6.1	366.3	17.46	0.30
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM14	1.267	15.2	294.1	8.02	0.34
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM15	0.576	20.7	294.1	2.46	0.52
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM16	1.382	24.4	299.7	17.90	0.52
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM17	0.115	10.7	305.2	9.98	0.55
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM18	1.929	16.8	294.1	17.42	1.07
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM19	0.029	24.4	327.4	0.00	3.51
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM20	0.432	30.5	300.2	9.70	0.61
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM21	0.461	30.5	324.7	9.70	0.61
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM22	0.633	27.4	296.9	11.37	0.98
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM23	3.167	24.4	313.6	16.63	2.01
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM24	0.806	16.2	299.7	7.68	0.67
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM25	0.576	16.2	294.1	20.21	0.12
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM26	3.771	30.2	330.2	16.21	2.29
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM27	0.115	10.7	305.2	9.98	0.55
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM28	0.086	18.0	317.4	9.70	0.61
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM29	0.086	30.5	298.0	15.52	1.52
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM30	1.929	16.8	298.0	17.42	1.07
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM31	1.382	22.6	305.2	9.98	0.55

TABLE 5-4
PM-10 CLASS I AREA
SOURCE INVENTORY
(CONCLUDED)

Facility	km UTM East	km North	Modeling Designation	PM (g/s)	Height m	Temp. °K	Velocity (m/s)	Dia. m
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM32	0.749	21.3	299.7	21.27	1.28
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM33	0.576	14.0	298.0	15.16	0.24
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM34	1.929	16.8	294.1	17.42	1.07
Seminole Fertilizer (W R Grace)	409.8	3086.7	SEM35	0.518	14.0	296.9	8.09	0.61
Seminole Fertilizer (W R Grace)	409.9	3087.0	SEM36	-3.340	61.0	346.9	28.46	1.52
Seminole Fertilizer (W R Grace)	409.9	3087.0	SEM38	1.353	61.0	341.3	24.58	1.52
Seminole Fertilizer (W R Grace)	409.9	3087.0	SEM39	1.727	45.7	304.1	9.32	2.04
Seminole Fertilizer (W R Grace)	409.9	3087.0	SEM40	1.296	61.0	346.9	28.46	1.52
STANDARD SAND & SILICA CO	441.5	3118.2	STNSAN1	2.323	9.1	380.4	24.13	0.43
STANDARD SAND & SILICA CO	441.5	3118.2	STNSAN2	2.323	9.1	351.0	26.55	0.43
STANDARD SAND & SILICA CO	441.5	3118.2	STNSAN3	3.327	25.9	377.6	26.93	0.49
STANDARD SAND & SILICA CO	441.5	3118.2	STNSAN4	0.927	25.9	314.9	8.85	1.22
STANDARD SAND & SILICA CO	441.5	3118.2	STNSAN5	2.312	19.8	297.1	27.95	0.27
STAUFFER MANAGEMENT COMPANY	325.6	3116.7	STAUF1	1.754	19.8	299.9	58.21	0.30
STAUFFER MANAGEMENT COMPANY	325.6	3116.7	STAUF2	0.604	24.4	322.1	21.08	0.18
STAUFFER MANAGEMENT COMPANY	325.6	3116.7	STAUF3	3.622	48.8	352.6	9.90	1.22
STAUFFER MANAGEMENT COMPANY	325.6	3116.7	STAUF4	0.949	3.0	299.9	92.49	0.30
STAUFFER MANAGEMENT COMPANY	325.6	3116.7	STAUF5	1.121	4.6	316.5	56.27	0.30
STAUFFER MANAGEMENT COMPANY	325.6	3116.7	STAUF6	0.891	18.6	298.2	9.70	0.30
STAUFFER MANAGEMENT COMPANY	325.6	3116.7	STAUF7	0.183	12.2	508.2	9.55	0.61
STAUFFER MANAGEMENT COMPANY	325.6	3116.7	STAUF8	3.852	9.1	324.9	2.64	0.64
STAUFFER MANAGEMENT COMPANY	325.6	3116.7	STAUF9	3.651	9.1	305.4	24.25	0.61
Sulfuric Acid Trading Company 3	349.0	3081.5	SATC	0.400	7.6	480.4	4.56	0.52
SUNSHINE MATERIALS INC.	365.5	3163.2	SNSH1	0.527	18.3	298.8	4.62	0.21
SUNSHINE MATERIALS INC.	365.5	3163.2	SNSH2	0.271	18.3	298.8	4.62	0.21
TECO Big Bend	361.9	3075.0	TCOBB1	0.029	42.4	333.0	18.19	0.49
TECO Big Bend	361.9	3075.0	TCOBB2	2.102	34.4	394.1	123.77	0.27
TECO Big Bend	361.9	3075.0	TCOBB3	0.662	31.1	394.1	16.04	0.76
TECO Big Bend	361.9	3075.0	TCOBB4	0.058	54.6	298.6	21.04	0.52
TECO Big Bend	361.9	3075.0	TCOBB5	0.058	54.6	298.6	21.04	0.52
TECO Big Bend	361.9	3075.0	TCOBB6	0.058	54.6	298.6	21.04	0.52
TECO Big Bend	361.9	3075.0	TCOBB7	54.615	149.4	341.9	18.21	7.32
TECO Big Bend	361.7	3075.5	TCOBB13	4.175	22.9	770.8	18.74	4.27
TECO Gannon	360.0	3087.5	TCOGN1	0.029	53.3	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	TCOGN2	0.029	53.3	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	TCOGN3	0.144	32.6	449.7	30.37	0.30
TECO Gannon	360.0	3087.5	TCOGN4	0.374	31.7	449.7	18.27	0.61
TECO Gannon	360.0	3087.5	TCOGN5	0.029	53.0	298.6	24.26	0.37
TECO Gannon	360.0	3087.5	TCOGN6	0.029	53.3	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	TCOGN7	0.029	54.0	298.6	15.52	0.61
TECO Gannon	360.0	3087.5	TCOGN8	0.029	53.3	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	TCOGN14	0.029	21.9	449.7	10.96	0.21
TECO Polk KBA	402.5	3067.4	TCOPP1	2.020	6.1	533.0	13.10	0.90
TECO Polk KBB	402.5	3067.4	TCOPP2	7.430	45.7	400.0	16.79	5.80
TECO Polk KBC	402.5	3067.4	TCOPP3	3.150	60.7	1033.0	9.14	1.07
US Agri-Chemicals Hwy 60	413.2	3086.3	USAC1	2.850	22.6	299.7	48.51	0.61
US Agri-Chemicals Hwy 60	413.2	3086.3	USAC2	5.038	19.2	308.6	9.31	1.52
US Agri-Chemicals Hwy 60	413.2	3086.3	USAC3	4.866	39.9	327.4	11.09	2.13

TABLE 5-5
PM-10 CLASS II AREA
SOURCE INVENTORY

Facility	km UTM East	km North	Modeling Designation	PM (g/s)	Height m	Temp. °K	Velocity (m/s)	Dia. m
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT1	0.030	7.6	561.0	17.74	1.07
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT2	0.747	33.5	316.5	19.68	1.52
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT3	1.260	33.5	316.5	19.68	1.52
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT4	1.197	60.7	352.6	16.40	2.44
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT5	1.197	60.7	337.6	9.70	2.44
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT6	3.910	36.3	314.3	13.64	1.22
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT7	4.115	28.6	326.5	7.93	3.05
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT8	4.480	54.9	331.5	13.31	2.80
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT9	4.114	54.9	313.8	8.18	2.80
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT10	4.725	35.1	299.9	11.01	2.80
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT11	0.630	27.4	298.2	19.02	0.52
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT12	4.114	54.9	324.9	9.78	2.80
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT13	1.928	54.9	333.2	13.37	2.80
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT14	0.630	10.1	298.8	5.94	1.01
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT15	0.025	2.4	373.2	1.63	0.27
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT16	0.013	3.7	373.2	1.65	0.09
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT17	0.068	3.7	373.2	1.65	0.09
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT18	0.126	30.5	294.3	7.64	0.76
CF INDUSTRIES, INC., PLANT CITY	388.0	3116.0	CFPLT19	2.667	25.9	298.2	11.64	0.15
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS1	14.180	94.5	389.3	0.00	4.88
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS2	0.100	30.5	314.0	12.90	0.61
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS3	0.080	38.1	314.0	11.00	0.61
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS4	0.080	38.1	314.0	6.79	0.61
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS5	0.030	21.3	355.0	12.90	0.30
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS6	0.420	73.2	355.4	13.72	1.07
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS7	0.101	15.2	338.8	10.35	0.76
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS8	0.076	41.1	366.5	14.37	0.46
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS9	0.126	61.0	355.4	21.27	0.46
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS10	0.050	8.8	366.5	9.70	0.61
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS11	0.151	15.2	311.0	9.31	0.76
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS12	0.643	21.3	372.1	10.35	1.52
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS13	0.050	15.2	344.3	9.20	0.46
FLORIDA CRUSHED STONE POWER	360.0	3162.5	FCS14	0.086	61.0	355.4	15.24	0.46
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL1	0.139	7.6	294.3	16.98	0.61
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL2	0.178	61.0	355.4	31.62	0.46
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL3	0.049	9.1	338.8	4.85	0.61
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL4	0.307	45.7	311.0	30.72	0.61
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL5	0.102	30.5	322.1	6.52	0.76
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL6	0.028	4.6	298.2	4.95	0.46
CHEMICAL LIME INC	359.4	3162.3	CLI1	0.472	15.2	319.3	0.50	3.05
CHEMICAL LIME INC	359.4	3162.3	CLI2	1.575	6.1	339.9	5.48	0.91
CHEMICAL LIME INC	359.4	3162.3	CLI3	0.980	9.1	394.3	18.48	1.07
CHEMICAL LIME INC	359.4	3162.3	CLI4	0.630	18.9	295.4	11.42	0.46
CHEMICAL LIME INC	359.4	3162.3	CLI5	0.227	7.6	294.3	3.67	0.40
FLA MINING & MATERIALS	356.2	3169.9	KILN2	3.280	32.0	394.0	9.90	4.27
FLA MINING & MATERIALS	356.2	3169.9	CLCOOL2	1.640	23.5	394.0	7.60	2.29
FLA MINING & MATERIALS	356.2	3169.9	GX11	0.248	67.1	366.5	18.97	0.85
FLA MINING & MATERIALS	356.2	3169.9	HX13	0.065	22.9	327.6	19.80	0.43

TABLE 5-5
PM-10 CLASS II AREA SOURCE INVENTORY
(CONTINUED)

Facility	km UTM East	km North	Modeling Designation	PM (g/s)	Height m	Temp. °K	Velocity (m/s)	Dia. m
FLA MINING & MATERIALS	356.2	3169.9	LX07	0.092	44.2	358.2	21.47	0.49
FLA MINING & MATERIALS	356.2	3169.9	MX09	0.032	6.1	338.7	19.40	0.30
FLA MINING & MATERIALS	356.2	3169.9	MX10	0.092	22.9	333.2	21.47	0.49
FLA MINING & MATERIALS	356.2	3169.9	MX2280	0.108	25.9	293.2	17.92	0.58
FLA MINING & MATERIALS	356.2	3169.9	MX3514	0.108	7.6	293.2	17.92	0.58
FLA MINING & MATERIALS	356.2	3169.9	MX3515	0.092	15.2	293.2	21.47	0.49
FLA MINING & MATERIALS	356.2	3169.9	NX23	0.497	18.3	293.2	22.70	1.10
FLA MINING & MATERIALS	356.2	3169.9	PX05	0.124	64.0	335.9	18.59	0.61
FLA MINING & MATERIALS	356.2	3169.9	PX07	0.059	64.0	338.7	21.05	0.40
FLA MINING & MATERIALS	356.2	3169.9	QX17	0.059	21.3	338.7	13.90	0.49
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV3	81.580	182.9	412.6	20.16	7.77
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV4	82.638	182.9	412.6	20.16	7.77
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV5	0.443	2.4	338.8	36.96	0.21
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV6	0.038	10.7	338.8	0.48	0.58
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV7	0.074	28.3	338.8	15.24	0.46
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV8	26.988	16.2	312.1	116.67	2.74
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV9	1.642	23.8	299.9	0.00	0.21
FPC-Bartow TO9	342.4	3082.6	FPCBR5	0.010	7.6	298.1	0.04	0.27
Lakeland City Power McIntosh Power Station	409.2	3106.1	LLMC5	0.115	6.1	652.4	23.54	0.79
Lakeland City Power McIntosh Power Station	409.2	3106.1	LLMC6	40.820	76.2	349.7	32.85	4.88
LYKES PASCO, INC.	383.5	3139.2	LYK1	3.941	22.9	327.6	33.71	0.79
LYKES PASCO, INC.	383.5	3139.2	LYK2	4.007	9.1	372.1	25.00	0.27
LYKES PASCO, INC.	383.5	3139.2	LYK3	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK4	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK5	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK6	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK7	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK8	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK9	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK10	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK11	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK12	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK13	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK14	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK15	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK16	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK17	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK18	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK19	0.246	16.5	505.4	14.37	0.46
LYKES PASCO, INC.	383.5	3139.2	LYK20	2.112	19.8	338.8	5.05	1.22
LYKES PASCO, INC.	383.5	3139.2	LYK21	2.112	19.8	338.8	5.05	1.22
LYKES PASCO, INC.	383.5	3139.2	LYK22	2.112	19.8	338.8	5.05	1.22
LYKES PASCO, INC.	383.5	3139.2	LYK23	2.112	19.8	338.8	5.05	1.22
LYKES PASCO, INC.	383.5	3139.2	LYK24	0.176	16.5	377.6	4.45	0.61
LYKES PASCO, INC.	383.5	3139.2	LYK25	0.188	16.5	505.4	28.99	0.40
LYKES PASCO, INC.	383.5	3139.2	LYK26	0.064	16.5	338.8	8.62	0.46
TECO Big Bend	361.9	3075.0	TCOBB1	0.029	42.4	333.0	18.19	0.49
TECO Big Bend	361.9	3075.0	TCOBB2	2.102	34.4	394.1	123.77	0.27

TABLE 5-5
PM-10 CLASS II AREA SOURCE INVENTORY
(CONCLUDED)

Facility	km UTM East	km North	Modeling Designation	PM (g/s)	Height m	Temp. °K	Velocity (m/s)	Dia. m
TECO Big Bend	361.9	3075.0	TCOBB3	0.662	31.1	394.1	16.04	0.76
TECO Big Bend	361.9	3075.0	TCOBB4	0.058	54.6	298.6	21.04	0.52
TECO Big Bend	361.9	3075.0	TCOBB5	0.058	54.6	298.6	21.04	0.52
TECO Big Bend	361.9	3075.0	TCOBB6	0.058	54.6	298.6	21.04	0.52
TECO Big Bend	361.9	3075.0	TCOBB7	54.615	149.4	341.9	18.21	7.32
TECO Big Bend	361.7	3075.5	TCOBB13	4.175	22.9	770.8	18.74	4.27
TECO Gannon	360.0	3087.5	TCOGN1	0.029	53.3	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	TCOGN2	0.029	53.3	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	TCOGN3	0.144	32.6	449.7	30.37	0.30
TECO Gannon	360.0	3087.5	TCOGN4	0.374	31.7	449.7	18.27	0.61
TECO Gannon	360.0	3087.5	TCOGN5	0.029	53.0	298.6	24.26	0.37
TECO Gannon	360.0	3087.5	TCOGN6	0.029	53.3	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	TCOGN7	0.029	54.0	298.6	15.52	0.61
TECO Gannon	360.0	3087.5	TCOGN8	0.029	53.3	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	TCOGN14	0.029	21.9	449.7	10.96	0.21

TABLE 5-6
PM-10 FAAQS INVENTORY

Facility	KM East	UTM KM North	Modeling Designation	PM (g/s)	Height m	Temp °K	Velocity (m/s)	Dia. m
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT1	0.030	7.6	561.0	17.74	1.07
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT2	0.747	33.5	316.5	19.68	1.52
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT3	1.260	33.5	316.5	19.68	1.52
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT4	1.197	60.7	352.6	16.40	2.44
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT5	1.197	60.7	337.6	9.70	2.44
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT6	3.910	36.3	314.3	13.64	1.22
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT7	4.115	28.6	326.5	7.93	3.05
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT8	4.480	54.9	331.5	13.31	2.80
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT9	4.114	54.9	313.8	8.18	2.80
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT10	4.725	35.1	299.9	11.01	2.80
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT11	0.630	27.4	298.2	19.02	0.52
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT12	4.114	54.9	324.9	9.78	2.80
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT13	1.928	54.9	333.2	13.37	2.80
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT14	0.630	10.1	298.8	5.94	1.01
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT15	0.025	2.4	373.2	1.63	0.27
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT16	0.013	3.7	373.2	1.65	0.09
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT17	0.068	3.7	373.2	1.65	0.09
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT18	0.126	30.5	294.3	7.64	0.76
CF INDUSTRIES, INC. PLANT CITY	388.0	3116.0	CFPLT19	2.667	25.9	298.2	11.64	0.15
FLORIDA CRUSHED STONE	360.0	3162.5	FCS1	14.180	94.5	389.3	0.00	4.88
FLORIDA CRUSHED STONE	360.0	3162.5	FCS2	0.100	30.5	314.0	12.90	0.61
FLORIDA CRUSHED STONE	360.0	3162.5	FCS3	0.080	38.1	314.0	11.00	0.61
FLORIDA CRUSHED STONE	360.0	3162.5	FCS4	0.080	38.1	314.0	6.79	0.61
FLORIDA CRUSHED STONE	360.0	3162.5	FCS5	0.030	21.3	355.0	12.90	0.30
FLORIDA CRUSHED STONE	360.0	3162.5	FCS6	0.420	73.2	355.4	13.72	1.07
FLORIDA CRUSHED STONE	360.0	3162.5	FCS7	0.101	15.2	338.8	10.35	0.76
FLORIDA CRUSHED STONE	360.0	3162.5	FCS8	0.076	41.1	366.5	14.37	0.46
FLORIDA CRUSHED STONE	360.0	3162.5	FCS9	0.126	61.0	355.4	21.27	0.46
FLORIDA CRUSHED STONE	360.0	3162.5	FCS10	0.050	8.8	366.5	9.70	0.61
FLORIDA CRUSHED STONE	360.0	3162.5	FCS11	0.151	15.2	311.0	9.31	0.76
FLORIDA CRUSHED STONE	360.0	3162.5	FCS12	0.643	21.3	372.1	10.35	1.52
FLORIDA CRUSHED STONE	360.0	3162.5	FCS13	0.050	15.2	344.3	9.20	0.46
FLORIDA CRUSHED STONE	360.0	3162.5	FCS14	0.086	61.0	355.4	15.24	0.46
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL1	0.139	7.6	294.3	16.98	0.61
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL2	0.178	61.0	355.4	31.62	0.46
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL3	0.049	9.1	338.8	4.85	0.61
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL4	0.307	45.7	311.0	30.72	0.61
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL5	0.102	30.5	322.1	6.52	0.76
CENTRAL POWER & LIME, INC	360.0	3162.5	CPL6	0.028	4.6	298.2	4.95	0.46
CHEMICAL LIME INC	359.4	3162.3	CLI1	0.472	15.2	319.3	0.50	3.05
CHEMICAL LIME INC	359.4	3162.3	CLI2	1.575	6.1	339.9	5.48	0.91
CHEMICAL LIME INC	359.4	3162.3	CLI3	0.980	9.1	394.3	18.48	1.07
CHEMICAL LIME INC	359.4	3162.3	CLI4	0.630	18.9	295.4	11.42	0.46
CHEMICAL LIME INC	359.4	3162.3	CLI5	0.227	7.6	294.3	3.67	0.40
FLA MINING & MATERIALS	356.2	3169.9	KILN1	3.280	45.7	413.6	10.37	3.96
FLA MINING & MATERIALS	356.2	3169.9	KILN2	3.280	32.0	394.0	9.90	4.27
FLA MINING & MATERIALS	356.2	3169.9	CLCOOL1	1.640	23.5	394.0	12.70	2.29
FLA MINING & MATERIALS	356.2	3169.9	CLCOOL2	1.640	23.5	394.0	7.60	2.29
FLA MINING & MATERIALS	356.2	3169.9	CX11	0.162	3.0	293.2	20.04	0.67

TABLE 5-6
PM-10 FAAQS INVENTORY
(CONTINUED)

Facility	KM East	UTM KM North	Modeling Designation	PM (g/s)	Height m	Temp °K	Velocity (m/s)	Dia. m
FLA MINING & MATERIALS	356.2	3169.9	CX11A	0.108	3.0	293.2	53.45	0.34
FLA MINING & MATERIALS	356.2	3169.9	DX31	0.108	22.9	327.6	22.38	0.52
FLA MINING & MATERIALS	356.2	3169.9	EX36	0.162	65.5	366.5	13.31	0.82
FLA MINING & MATERIALS	356.2	3169.9	FX17	0.065	65.5	366.5	19.80	0.43
FLA MINING & MATERIALS	356.2	3169.9	FX31	0.216	45.7	366.5	17.74	0.82
FLA MINING & MATERIALS	356.2	3169.9	GX11	0.248	67.1	366.5	18.97	0.85
FLA MINING & MATERIALS	356.2	3169.9	GX23	0.162	19.8	366.5	14.35	0.79
FLA MINING & MATERIALS	356.2	3169.9	GX23B	0.162	21.3	366.5	14.35	0.79
FLA MINING & MATERIALS	356.2	3169.9	HX03	0.162	42.7	338.7	20.04	0.67
FLA MINING & MATERIALS	356.2	3169.9	HX13	0.065	22.9	327.6	19.80	0.43
FLA MINING & MATERIALS	356.2	3169.9	LX07	0.092	44.2	358.2	21.47	0.49
FLA MINING & MATERIALS	356.2	3169.9	MX09	0.032	6.1	338.7	19.40	0.30
FLA MINING & MATERIALS	356.2	3169.9	MX10	0.092	22.9	333.2	21.47	0.49
FLA MINING & MATERIALS	356.2	3169.9	MX1171	0.108	7.6	338.7	11.23	0.73
FLA MINING & MATERIALS	356.2	3169.9	MX2280	0.108	25.9	293.2	17.92	0.58
FLA MINING & MATERIALS	356.2	3169.9	MX3514	0.108	7.6	293.2	17.92	0.58
FLA MINING & MATERIALS	356.2	3169.9	MX3515	0.092	15.2	293.2	21.47	0.49
FLA MINING & MATERIALS	356.2	3169.9	NX23	0.497	18.3	293.2	22.70	1.10
FLA MINING & MATERIALS	356.2	3169.9	PX05	0.124	64.0	335.9	18.59	0.61
FLA MINING & MATERIALS	356.2	3169.9	PX07	0.059	64.0	338.7	21.05	0.40
FLA MINING & MATERIALS	356.2	3169.9	QX17	0.059	21.3	338.7	13.90	0.49
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV1	60.325	152.1	451.0	43.96	4.57
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV2	60.413	153.3	444.3	43.57	4.88
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV3	81.580	182.9	412.6	20.16	7.77
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV4	82.638	182.9	412.6	20.16	7.77
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV5	0.443	2.4	338.8	36.96	0.21
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV6	0.038	10.7	338.8	0.48	0.58
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV7	0.074	28.3	338.8	15.24	0.46
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV8	26.988	16.2	312.1	116.67	2.74
FLORIDA POWER CRYSTAL RIVER	334.3	3204.5	CYRV9	1.642	23.8	299.9	0.00	0.21
FPC-Bartow TC2	342.4	3082.6	FPCBR1	31.960	91.4	424.8	31.09	2.74
FPC-Bartow TD4	342.4	3082.6	FPCBR2	12.800	13.7	772.0	22.25	5.27
FPC-Bartow TO3	342.4	3082.6	FPCBR3	27.900	91.4	408.2	34.44	3.35
FPC-Bartow TO4	342.4	3082.6	FPCBR4	0.040	9.1	541.5	5.18	0.91
FPC-Bartow TO9	342.4	3082.6	FPCBR5	0.010	7.6	298.1	0.04	0.27
Florida Power & Light - MANATEE	367.2	3054.1	FPL1	108.930	152.1	425.8	23.98	7.92
Florida Power & Light - MANATEE	367.2	3054.1	FPL2	108.930	152.1	425.8	23.61	7.99
Lakeland City Power McIntosh Power Station	409.2	3106.1	LLMC1	0.576	11.0	791.3	0.39	2.80
Lakeland City Power McIntosh Power Station	409.2	3106.1	LLMC2	14.049	47.5	402.4	21.29	3.17
Lakeland City Power McIntosh Power Station	409.2	3106.1	LLMC3	0.115	6.1	652.4	23.54	0.79
Lakeland City Power McIntosh Power Station	409.2	3106.1	LLMC4	12.408	45.7	419.1	23.96	2.74
Lakeland City Power McIntosh Power Station	409.2	3106.1	LLMC5	0.115	6.1	652.4	23.54	0.79
Lakeland City Power McIntosh Power Station	409.2	3106.1	LLMC6	40.820	76.2	349.7	32.85	4.88
LYKES PASCO, INC.	383.5	3139.2	LYK1	3.941	22.9	327.6	33.71	0.79
LYKES PASCO, INC.	383.5	3139.2	LYK2	4.007	9.1	372.1	25.00	0.27
LYKES PASCO, INC.	383.5	3139.2	LYK3	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK4	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK5	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK6	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK7	0.581	12.2	347.1	1.45	0.76

TABLE 5-6
PM-10 FAAQS INVENTORY
(CONCLUDED)

Facility	KM UTM East	KM North	Modeling Designation	PM (g/s)	Height m	Temp °K	Velocity (m/s)	Dia. m
LYKES PASCO, INC.	383.5	3139.2	LYK8	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK9	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK10	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK11	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK12	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK13	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK14	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK15	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK16	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK17	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK18	0.581	12.2	347.1	1.45	0.76
LYKES PASCO, INC.	383.5	3139.2	LYK19	0.246	16.5	505.4	14.37	0.46
LYKES PASCO, INC.	383.5	3139.2	LYK20	2.112	19.8	338.8	5.05	1.22
LYKES PASCO, INC.	383.5	3139.2	LYK21	2.112	19.8	338.8	5.05	1.22
LYKES PASCO, INC.	383.5	3139.2	LYK22	2.112	19.8	338.8	5.05	1.22
LYKES PASCO, INC.	383.5	3139.2	LYK23	2.112	19.8	338.8	5.05	1.22
LYKES PASCO, INC.	383.5	3139.2	LYK24	0.176	16.5	377.6	4.45	0.61
LYKES PASCO, INC.	383.5	3139.2	LYK25	0.188	16.5	505.4	28.99	0.40
LYKES PASCO, INC.	383.5	3139.2	LYK26	0.064	16.5	338.8	8.62	0.46
TECO Big Bend	361.9	3075.0	TCOBB1	0.029	42.4	333.0	18.19	0.49
TECO Big Bend	361.9	3075.0	TCOBB2	2.102	34.4	394.1	123.77	0.27
TECO Big Bend	361.9	3075.0	TCOBB3	0.662	31.1	394.1	16.04	0.76
TECO Big Bend	361.9	3075.0	TCOBB4	0.058	54.6	298.6	21.04	0.52
TECO Big Bend	361.9	3075.0	TCOBB5	0.058	54.6	298.6	21.04	0.52
TECO Big Bend	361.9	3075.0	TCOBB6	0.058	54.6	298.6	21.04	0.52
TECO Big Bend	361.9	3075.0	TCOBB7	54.615	149.4	341.9	18.21	7.32
TECO Big Bend	362.0	3075.0	TCOBB8	51.966	149.4	410.2	14.47	7.32
TECO Big Bend	361.9	3075.0	TCOBB9	50.440	149.4	404.7	13.02	7.32
TECO Big Bend	361.9	3075.0	TCOBB10	50.958	149.4	404.7	13.74	7.32
TECO Big Bend	361.9	3075.0	TCOBB11	4.175	10.7	816.3	15.17	4.57
TECO Big Bend	361.7	3075.2	TCOBB12	4.175	22.9	770.8	18.74	4.27
TECO Big Bend	361.7	3075.5	TCOBB13	4.175	22.9	770.8	18.74	4.27
TECO Gannon	360.0	3087.5	TCOGN1	0.029	53.3	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	TCOGN2	0.029	53.3	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	TCOGN3	0.144	32.6	449.7	30.37	0.30
TECO Gannon	360.0	3087.5	TCOGN4	0.374	31.7	449.7	18.27	0.61
TECO Gannon	360.0	3087.5	TCOGN5	0.029	53.0	298.6	24.26	0.37
TECO Gannon	360.0	3087.5	TCOGN6	0.029	53.3	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	TCOGN7	0.029	54.0	298.6	15.52	0.61
TECO Gannon	360.0	3087.5	TCOGN8	0.029	53.3	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	TCOGN9	20.182	93.3	419.7	38.64	3.23
TECO Gannon	360.0	3087.5	TCOGN10	23.694	93.3	426.9	22.97	3.05
TECO Gannon	360.0	3087.5	TCOGN11	15.892	93.3	415.8	28.90	3.05
TECO Gannon	360.0	3087.5	TCOGN12	15.892	93.3	420.8	30.85	3.05
TECO Gannon	360.0	3087.5	TCOGN13	15.403	10.7	816.3	136.61	1.52
TECO Gannon	360.0	3087.5	TCOGN14	0.029	21.9	449.7	10.96	0.21
TECO Gannon	360.0	3087.5	TCOGN15	28.761	93.3	423.6	23.18	4.45
TECO Gannon	360.0	3087.5	TCOGN16	47.906	93.3	433.0	24.74	5.36

Table 5-7
Summary of Class I Area Analysis Results

SOUTHDOWN , INC - BROOKSVILLE CEMENT
PM-10 MODELING RESULTS
ISCST3 - PSD CLASS I
24-HOUR AVERAGING PERIOD
PSD Class 1 INCREMENT ANALYSIS

YEAR	Day (yymmdd)	X (m)	Y (m)	High-Second-High Inventory Impact (ug/m ^ 3)	Southdown Contribution (ug/m ^ 3)	Is the Southdown Contribution Significant?
1987	870414	-12680	8155	7.943	0.116	No
1988	880101	-15320	2815	6.767	0.040	No
1989	890709	-12680	8155	7.056	0.014	No
1990	900124	-13520	5980	8.243	0.021	No
1991	910714	-14020	4915	8.105	0.000	No
				PSD Class 1 Significance =	0.27	

Note: For the year 1990 the maximum predicted impact for the project alone is 0.19 ug/m ^ 3 when the predicted impact, excluding the highest-high, for all the sources in the Class 1 inventory exceeds 8 ug/m ^ 3. In the Year 1991, there are no other predicted impacts, excluding the highest-high, that exceeds 8 ug/m ^ 3 for all the sources in the Class 1 inventory.

Table 5-8
Summary of Class II Area Analysis Results
SOUTHDOWN , INC - BROOKSVILLE CEMENT
PM-10 MODELING RESULTS
ISCST3 - PSD CLASS II
ANNUAL AND 24-HOUR AVERAGING PERIOD

PSD Class 2 INCREMENT ANALYSIS

YEAR	ANNUAL Period High Impact (ug/m ^ 3)	24-HOUR Period High-Second High Impact (ug/m ^ 3)
1987	3.25	19.67
1988	3.61	20.70
1989	3.78	23.98
1990	3.55	17.03
1991	3.68	18.71
Maximum	3.78	23.98
Class 2 Increment	17	30
Within Increment ?	Yes	Yes

Table 5-9
SOUTHDOWN , INC - BROOKSVILLE CEMENT
PM-10 MODELING RESULTS
ISCST3 - FAAQS
ANNUAL AND 24-HOUR AVERAGING PERIOD

FAAQS ANALYSIS		
YEAR	ANNUAL Period High Impact (ug/m ^ 3)	24-HOUR Period High-Second High Impact (ug/m ^ 3)
1987	5.63	34.33
1988	6.14	34.91
1989	5.96	40.60
1990	6.12	29.15
1991	6.40	32.71
Maximum	6.40	40.60
Background (1)	35	105
Impact + Background	41	146
FAAQS	50	150
Within FAAQS ?	Yes	Yes

Note: (1) Background PM concentrations from Hernando County monitor number 1740-004
For 1991 24-hour second high = 105 ug/m ^ 3
For 1991 Annual high = 35 ug/m ^ 3

FIGURE 5-1
RECEPTOR LOCATIONS - ALL

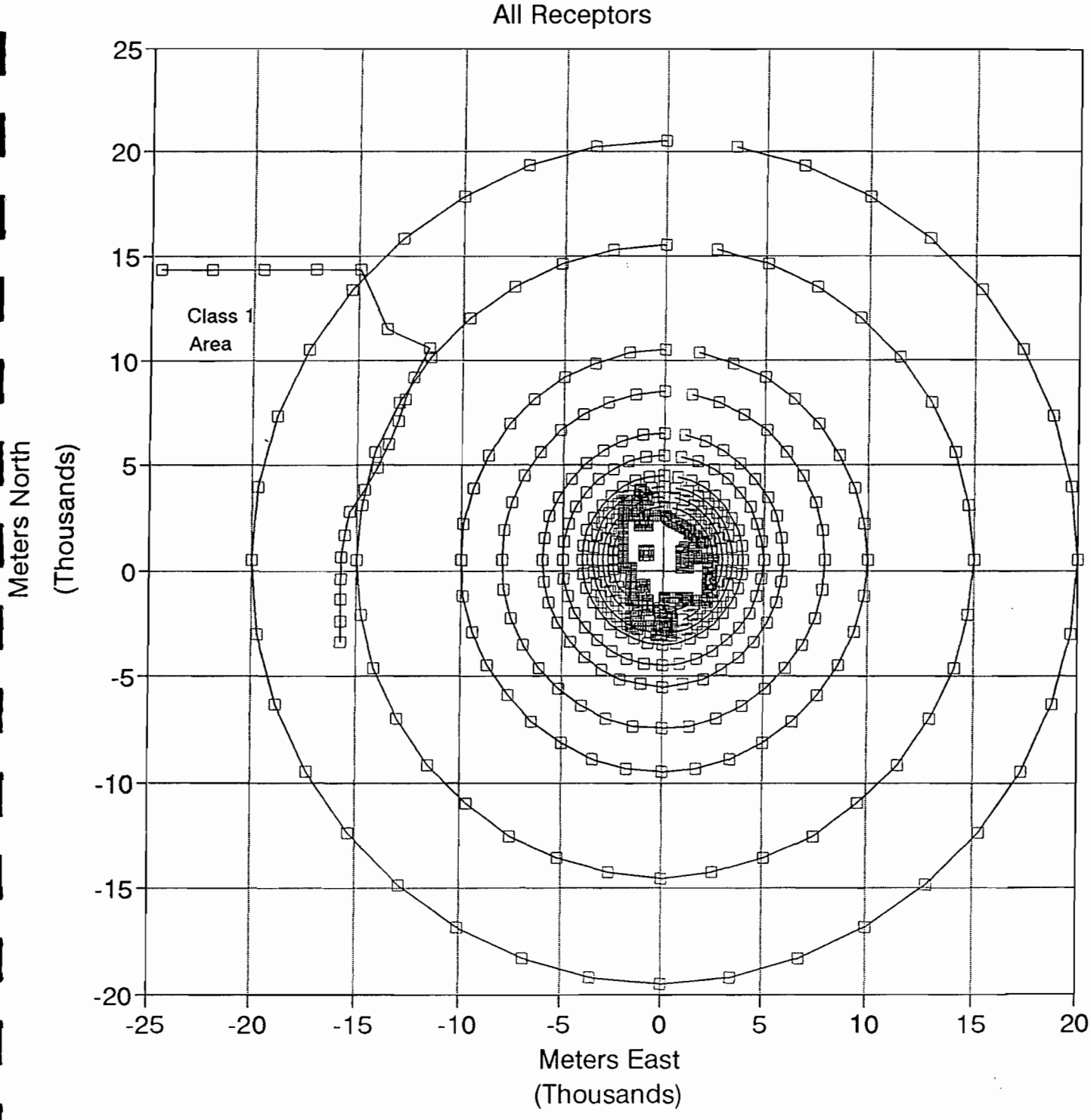
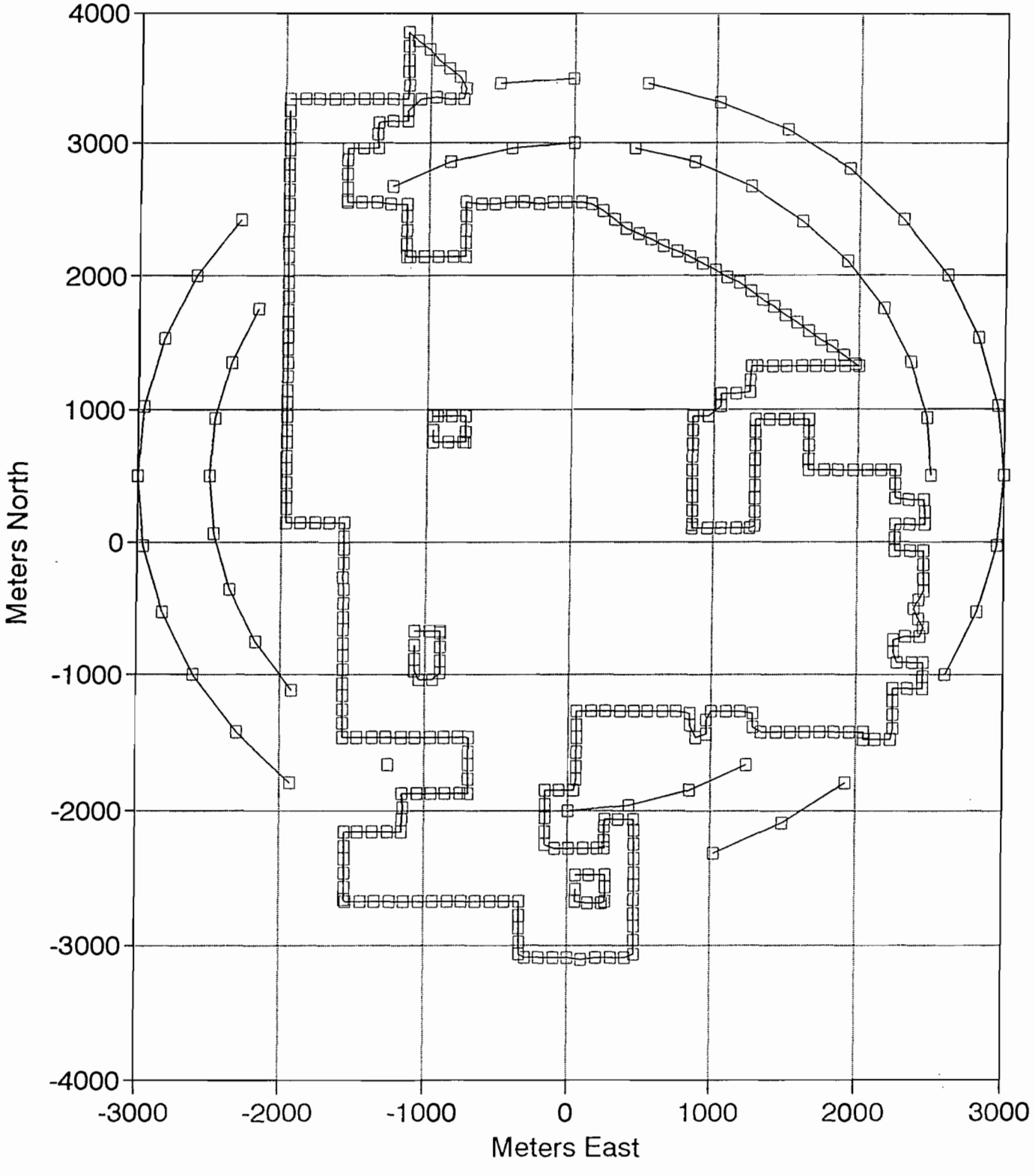


FIGURE 5-2
RECEPTOR LOCATIONS - CLOSE-IN



6.0 GOOD ENGINEERING PRACTICE STACK HEIGHT

The criteria for good engineering practice stack height in Rule 62-210.550, FAC states that the height of a stack should not exceed the greater of 65 meters (213) feet or the height of nearby structures plus the lesser of 1.5 times the height or cross-wind width of the nearby structure. This stack height policy is designed to prevent achieving ambient air quality goals solely through the use of excessive stack heights and air dispersion.

The stacks associated with the kilns and clinker coolers are less than 213 feet in height above-grade. This satisfies the Good Engineering Practice (GEP) stack height criteria.

It should be noted that building wake effects were addressed in the modeling using the EPA approved BPIP program.

7.0 IMPACTS ON SOILS, VEGETATION AND VISIBILITY

7.1 IMPACT ON SOILS AND VEGETATION

The U. S. Environmental Protection Agency was directed by Congress to develop primary and secondary ambient air quality standards. The primary standards were to protect human health and the secondary standards were to:

> "... protect the public welfare from any known or anticipated adverse effects of a pollutant."

The public welfare was to include soils, vegetation and visibility.

As a basis for promulgating the air quality standards, EPA undertook studies related to the effects of all major air pollutants and published criteria documents summarizing the results of the studies. The studies included in the criteria documents were related to both acute and chronic effects of air pollutants. Based on the results of these studies, the criteria documents recommended air pollutant concentration limits for various periods of time that would protect against both chronic and acute effects of air pollutants with a reasonable margin of safety.

The air quality modeling that has been conducted as a requirement for the PSD application demonstrates that the levels of PM/PM10 and CO expected as a result of the proposed project will be below the corresponding ambient standards. As a result, it is reasonable to conclude that there will be no adverse effect to the soils or vegetation of the area.

7.2 GROWTH RELATED IMPACTS

The proposed modification will require no increase in traffic or personnel to operate the plant. Therefore, no additional growth impacts are expected as a result of the proposed project.

7.3 VISIBILITY IMPACTS

The proposed increases in PM/PM10 and CO emissions were evaluated for visibility impacts using the EPA approved VISCREEN model. The modeling results, summarized in Table 7-1, indicate that the proposed project is not expected to have an adverse impact on visibility.

An analysis for determining the regional haze impacts was conducted using the guidance provided by the National Park Service. The results of the analysis, presented in Table 7-2, indicates that the proposed project's contribution to the regional haze is expected to be insignificant.

Table 7-1

Visual Effects Screening Analysis for
Source: Southdown, Inc.
Class I Area: Chassahowitzka N.W.R.

*** Level-1 Screening ***

Input Emissions for

Particulates	2.00	G	/S
NOx (as NO2)	.00	G	/S
Primary NO2	.00	G	/S
Soot	.00	G	/S
Primary SO4	.00	G	/S

**** Default Particle Characteristics Assumed

Transport Scenario Specifications:

Background Ozone:	.04 ppm
Background Visual Range:	65.00 km
Source-Observer Distance:	100.00 km
Min. Source-Class I Distance:	15.00 km
Max. Source-Class I Distance:	26.00 km
Plume-Source-Observer Angle:	11.25 degrees
Stability:	6
Wind Speed:	1.00 m/s

R E S U L T S

Asterisks (*) indicate plume impacts that exceed screening criteria

Maximum Visual Impacts INSIDE Class I Area
Screening Criteria ARE NOT Exceeded

					Delta E		Contrast	
Backgrnd	Theta	Azi	Distance	Alpha	Crit	Plume	Crit	Plume
SKY	10.	4.	26.0	165.	2.00	.061	.05	.001
SKY	140.	4.	26.0	165.	2.00	.011	.05	-.000
TERRAIN	10.	4.	26.0	165.	2.00	.036	.05	.000
TERRAIN	140.	4.	26.0	165.	2.00	.011	.05	.000

Maximum Visual Impacts OUTSIDE Class I Area
Screening Criteria ARE NOT Exceeded

					Delta E		Contrast	
Backgrnd	Theta	Azi	Distance	Alpha	Crit	Plume	Crit	Plume
SKY	10.	20.	65.9	149.	2.00	.111	.05	.001
SKY	140.	20.	65.9	149.	2.00	.019	.05	-.001
TERRAIN	10.	50.	87.4	119.	2.00	.060	.05	.001
TERRAIN	140.	50.	87.4	119.	2.00	.013	.05	.000

Table 7-2

Regional Haze Analysis For Brooksville Cement - Southdown Inc.

CLASS I CHASSAHOWITZKA N.W.R.

(1) SO2 (µg/m^3)	(2) Background Visibility (km)	(3) Ambient b(ext)a	(4) Acid Mist Impact H2SO4 (µg/m^3)	(5) SO4 (µg/m^3)	(6) (NH4)SO2 (µg/m^3)	(7) Transport Time (hrs)	(8) Conversion
0.0000	65	0.0602	0.00000	0.0000	0.0000	1.0	0%

(9) AT 0% (NH4)SO2 CONVERSION (µg/m^3)	(10) Relative Humidity FACTOR @ 83%	(11) PM-10 (µg/m^3)	(12) Source b(ext)s (NH4)SO2	(13) Source b(ext)s PM10	(14) Total Source b(ext)s	(15) Deciview	Is Deciview Greater than 1
0.0000	4.2	1.0229	0.00000	0.00307	**0.00307**	0.50	NO

(1) Maximum 24-hour SO2 Impact at Class I Receptor (none).
(2) Measured Background Visibility Range as recomended by FWS
(3) Ambient b(ext)a = 3.912/Background Visibility
(4) Acid Mist Impact = 0.15/4 * SO2 Impact * 96/98 (none).
(5) SO4 = SO2 Impact * 1.5
(6) 100 % (NH4)SO2 Impact = 1.375 * (SO4 + Acid Mist)
(7) Transport Time (hours) = Maximum Distance / Average daily wind speed. Not Calculated
(8) Conversion = Transport Time * 0.03 (% / hour). Not calculated.
(9) (NH4)SO2 Conversion = % Conversion * (NH4)SO2)
(10) Relative Humidity Factor From Meteorology and Figure B-1 IWAQM
(11) Maximum 24-hour PM10 Impact at Class I Receptor. From table 5-7
(12) Source b(ext)s (NH4)SO4 = 0.003 * Relative Humidity Factor * (NH4)SO4
(13) Source b(ext)s PM10 = 0.003 * Relative Humidity Factor (1) * PM10
(14) Total Source b(ext)s = b(ext)s (NH4)SO4 + b(ext)s PM10
(15) Deciview = 10 * LN [1 + (Total b(ext)s / b(ext)a)]

8.0 CONCLUSION

It can be concluded from the information in this report that the proposed increase in the allowable emission rate of PM/PM10, CO and VOCs from the Southdown facility, as described in this report, will not cause or contribute to an exceedance of any air quality standard, PSD increment, or any other provision of Chapter 62, FAC.

APPENDIX I

EMISSION CALCULATIONS

PERMITTED EMISSION RATES

PM/PM10, No. 1 kiln = 39.0 lb/hr, 170.8 tpy + 28.14

PM/PM10, No. 2 kiln = 13.5 lb/hr, 55.4 tpy + 20.5 → 274.84

PM/PM10, No. 1 cooler = 7.13 lb/hr, 28.14 tpy

PM/PM10, No. 2 cooler = 5.0 lb/hr, 20.5 tpy

CO, No. 1 kiln = 57.7 lbs/hr, 234.4 tpy

CO, No. 2 kiln = 64.0 lbs/hr, 262.4 tpy → 496.8

VOC, No. 1 kiln = NO LIMIT

VOC, No. 2 kiln = 7.4 lbs/hr, 30.34 tpy → 30.34

PROPOSED EMISSION RATES

PM/PM10, No. 1 kiln = 0.2 lb/ton dry feed x 148 tph feed
= 29.6 lb/hr, 1-hr max.

= 0.2 lb/ton dry feed x 130 tph feed
= 26.0 lb/hr, 30-day avg.
x 8760 hrs/yr x ton/2000 lbs
= 113.9 tpy + 56.9

170.8 tpy

PM/PM10, No. 2 kiln = 0.2 lb/ton dry feed x 148 tph feed
= 29.6 lb/hr, 1-hr max.

= 0.2 lb/ton dry feed x 130 tph feed
= 26.0 lb/hr, 30-day avg.
x 8200 hrs/yr x ton/2000 lbs
= 106.6 tpy + 53.3

159.9 tpy

330.7

PM/PM10, No. 1 cooler = 0.1 lb/ton dry feed x 148 tph feed
= 14.8 lb/hr, 1-hr max.

= 0.1 lb/ton dry feed x 130 tph feed
= 13.0 lb/hr, 30-day avg.
x 8760 hrs/yr x ton/2000 lbs
= 56.9 tpy

PM/PM10, No. 2 cooler	=	0.1 lb/ton dry feed x 148 tph feed
	=	14.8 lb/hr, 1-hr max.
	=	0.1 lb/ton dry feed x 130 tph feed
	=	13.0 lb/hr, 30-day avg. x 8200 hrs/yr x ton/2000 lbs
	=	53.3 tpy
CO, No. 1 kiln	=	1.307 lb/ton dry feed x 148 tph feed
	=	193.4 lb/hr, 1-hr max.
	=	1.307 lb/ton dry feed x 130 tph feed
	=	169.9 lb/hr, 30-day avg. x 8760 hrs/yr x ton/2000 lbs
	=	742.8 tpy
CO, No. 2 kiln	=	1.307 lb/ton dry feed x 148 tph feed
	=	193.4 lb/hr, 1-hr max.
	=	1.307 lb/ton dry feed x 130 tph feed
	=	169.9 lb/hr, 30-day avg. x 8200 hrs/yr x ton/2000 lbs
	=	696.6 tpy
VOC, No. 1 kiln	=	NO LIMIT
VOC, No. 2 kiln	=	0.1 lb/ton dry feed x 148 tph feed
	=	14.8 lb/hr, 1-hr max.
	=	0.1 lb/ton dry feed x 130 tph feed
	=	13.0 lb/hr, 30-day avg. x 8200 hrs/yr x ton/2000 lbs
	=	53.3 tpy

1439.4

53.3

NET EMISSIONS INCREASES

Net Emissions = Proposed - Actual + Contemporaneous

In this case, the actual emission rates are assumed to be equal to the permitted emission rates as they approach the allowable emission limits.

Net Increase, PM/PM10 = (113.9 + 106.6 + 56.9 + 53.3)
- (170.8 + 55.4 + 28.14 + 20.5)
= 55.9 tpy

Net Increase, CO = (742.8 + 696.6) - (234.4 + 262.4)
+ 99.9 (contemporaneous)
= 1042.5 tpy

For the purposes of this analysis only, it is assumed that the VOC emission rates for the two kilns are similar.

Net Increase, VOC = (56.9 + 53.3) - (56.9 + 30.34)
= 23.0 tpy

APPENDIX II

MODELING OUTPUT ON DISK

APPENDIX III

CURRENT PERMITS

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official:
   Don Kelly, Plant Manager

2. Owner/Authorized Representative or Responsible Official Mailing Address:

   Organization/Firm: **Southdown, Inc.** Brooksville Plant
   Street Address: **US Highway 98, NW of Brooksville**
   City: **Brooksville** State: **Florida** Zip Code: **34605**

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

4. Owner/Authorized Representative or Responsible Official Statement:

   I, the undersigned, am the owner or authorized representative of the facility (non-Title V source) addressed in this Application for Air Permit or the responsible official, as defined in Chapter 62-213, F.A.C., of the Title V source addressed in this application, whichever is applicable. 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. Further, I agree to operate and maintain the air pollutant emissions units and air pollution control equipment described in this application 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. If the purpose of this application is to obtain an air operation permit or operation permit revision for one or more emissions units which have undergone construction or modification, I 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. 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 any permitted emissions unit.*

Don Kelly
Signature

February 19, 1996
Date

* Attach letter of authorization if not currently on file.

Florida Department of
Environmental Protection

Memorandum

KIM

TO: Howard Rhodes

THRU: Clair Fancy

FROM: Al Linero 6/17

DATE: June ~~20~~ 17, 1997

SUBJECT: Southdown Inc., 0530010-003-AC and PSD-FI-233
Modification of Existing Construction Permit
Final Permit

Attached is the construction permit modification for this facility. The new permit will replace four current construction permits for Cement Plants No. 1 and No. 2, which were originally permitted in 1973 and 1980, respectively. Each plant includes a coal/ liquid fuel/ gas-fired, dry process cement kiln with a preheater and clinker cooler. Air pollution control is achieved by fabric filters (baghouses) for PM/PM_{10} from the kilns and coolers; absorption of sulfur compounds and metals into the product; and combustion controls for CO, volatile organic compounds (VOC), and nitrogen oxides (NO_x).

The permit allows an increase in preheater feed rate for each kiln from 145 to 150 tons per year on a 30 day rolling average. The permit will account for increases in the permitted emissions of PM/PM_{10} from Coolers No. 1 and No. 2 and Kiln No. 2; decrease of permitted emissions of PM/PM_{10} from Kiln No. 1; establishment of or increase in permitted emission limits of CO and VOC from both kilns; and will set a permit limit for NO_x from Kiln No. 1.

I recommend your approval and signature.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit

Mr. Don Kelly, Plant Manager
Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006

DEP File No. 0530010-003-AC
PSD-FL-233

Enclosed is the final Permit Number 0530010-003 AC and PSD-FL-233. This permit revises permitted emission limits for two kilns and coolers at the Brooksville facility located on Highway 98, Northwest of Brooksville in Hernando County, Florida. This permit is issued pursuant to Section 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 14 (fourteen) days from the date this Notice is filed with the Clerk of the Department.

The Notice of Appeal must be filed within 14 (fourteen) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PERMIT (including the FINAL permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 6-26-97 to the person(s) listed:

Mr. Don Kelly, Southdown, Inc. *
Mr. Brian Beals, EPA
Mr. John Bunyak, NPS
Mr. John Koogler, P.E.
Mr. Amargit Gill, Southdown, Inc.
Mr. Bill Thomas, SWD
Mr. Tom Ellison, SWD
Ms. Dawn Shaw, HCPD

Clerk Stamp

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

Kuni Tober (Clerk) 6-27-97 (Date)

FINAL DETERMINATION

SOUTHDOWN, INC.
PORTLAND CEMENT FACILITY
PERMIT 0530010-003-AC (PSD-FL-233)
Hernando County

An Intent to Issue an air construction permit modification for Southdown Inc. located on Highway 98 Northwest of Brooksville, Hernando County, Florida was distributed on May 6, 1997. The Notice of Intent to Issue was published in the Hernando Today, Pasco and Citrus County sections of The Tampa Tribune on May 15, 1997.

During the Public Notice period, comments were submitted by Mr. Jennings, Department Director, Hernando County, Planning Department, Mr. Amarjit S. Gill, P.E., Director, Air Permitting, Southdown. Inc., and Dr. John Koogler, of Koogler and Associates. Mr. Gill and Dr. Koogler had several comments regarding the Technical Evaluation and Preliminary Determination, BACT determination and the Draft Permit.

The Bureau has considered Mr. Jennings, Dr. Koogler and Mr. Gill's comments and has addressed them as follows:

KOOGLER & ASSOCIATES LETTER DATED MAY 16, 1997

Technical Evaluation and Preliminary Determination

Dr. Koogler identified some editorial inconsistency on the numbering of the emission units and submitted certain refinements to the modifications listed on page 3 of the Technical Evaluation and Preliminary Determination.

The comments submitted regarding the Technical Evaluation and Preliminary Determination will be part of the Department's Southdown files. The Department agrees with Dr. Koogler's comments.

Table 2-1 And Table 2-3 Compliance Requirements

Dr. Koogler, on behalf of Southdown, is requesting the requirement for the one-week monitoring for carbon monoxide be deleted from both Kiln 1 and Kiln 2, since the permits specify that the duration of each of the determinations (test runs) is to be one-hour (short term).

The Department concurs with Dr. Koogler rationale. Originally, during previous conversations between the Department and Southdown, it was Southdown's intention to conduct tests based on long term compliance averaging time. Subsequently, Southdown decided to demonstrate compliance based on a short term as required by the regulations.

The frequency of testing and the duration of the tests for these emission units is as specified in Tables 2-1 and 2-2 Compliance Requirements.

BOARD OF COUNTY COMMISSIONERS-HERNANDO COUNTY PLANNING DEPARTMENT Letter dated May 20, 1997:

Mr. Jennings requested that additional language be added to the permit to assure that the used oil/grease to be burned meets the non-hazardous criteria of the County's Air Toxics and Hazardous Waste Fuel Burning Facility Moratorium.

Southdown agreed with the request and the Department has incorporated it as a permit condition. The additional language is added to Specific Condition B5.(h).

Southdown is allowed to burn on site generated non-hazardous waste (as defined by Rule 62-730.030, F.A.C., or 40 CFR Part 261) used oil and grease in the kilns (less than 5,000 gallons per year).

The constituents and properties of the on-spec used oil shall comply with the following allowable concentration levels, as stipulated and defined in 40 CFR 279 (July 1, 1996 version), which is adopted by reference in Chapter 62-710 Florida Administrative Code (F.A.C.):

Constituent/Property	Allowable Concentration
Cadmium	2 ppm maximum
Arsenic	5 ppm maximum
Chromium *	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	1000 ppm maximum
Flash Point	140 ° F minimum
Polychlorinated	Less than 2 ppm
Byphenyls (PCBs)	

* Based on the analysis of the samples, the Department considers the used oil/grease to be classified as an off-specification used oil for chromium. However, studies show that the low volatility of the metals, including chromium, and its extensive bonding in the clinker results in insignificant emissions for these elements. Southdown has provided assurances that emissions of these pollutants, including chromium, will not result in exceedances of air quality or ambient guidelines developed to protect human health and welfare.

CONCLUSION:

The final action of the Department will be to issue the permit with the changes as noted above.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR RESOURCES MANAGEMENT
BUREAU OF AIR REGULATION
TELEPHONE (904) 488-1344
FAX (904) 922-6979
Mail Station # 5505

AIR CONSTRUCTION PERMIT

(Revision of AC 27-258569,-258570,-258571, and-258572)

SOUTHDOWN, INC

PORTLAND CEMENT PLANT

Facility ID No. 0530010
Brooksville, Florida
Hernando County
Florida

Permit No. 0530010-003-AC and PSD-FL-233
Kiln and Cooler No. 1 and No. 2

June 20, 1997

SOUTHDOWN, INC.
PORTLAND CEMENT PLANT
Brooksville, Florida
PSD-FL-233 and 0530010-001-AC
Facility ID No. 0530010

Table of Contents

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

PERMITTEE:

Southdown, Inc.,
Brooksville Plant
Post Office Box 6
Brooksville, Florida 34605-0006

FID No.:	**0530010**
PSD No.:	**PSD-FL-233**
Permit No.:	**0530010-003-AC**
SIC No.:	**3241**
Expires:	**June 30, 1998**

Authorized Representative:
Don Kelly, Plant Manager

LOCATED AT:

Southdown, Inc., Brooksville Plant, Hernando County
Project: Portland Cement Manufacturing
Kilns 1 & 2 and Clinker Coolers 1 & 2

UTM: Zone 17 ; 356.0 km E ; 3169.9 km N
Directions: *Located on Highway 98, NW of Brooksville, Hernando County*

STATEMENT OF BASIS:

This draft construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached appendices and tables made a part of this permit:

Table 1-1 and 1-2	Air Pollutants Standards and Terms
Table 2-1 and 2-2	Compliance Requirements
Appendix BD-1	BACT Determination
Appendix GC-1	Construction Permit General Conditions

Howard L. Rhodes, Director
Division of Air Resources
Management

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

FACILITY DESCRIPTION:

This facility consists of two identical portland cement manufacturing plants and associated equipment. These plants are identified as Cement Plant No. 1 and Cement Plant No. 2.

EMISSION UNITS

These permits address the following emission units:

EMISSIONS UNIT NO.	EMISSIONS UNIT DESCRIPTION
003	Kiln No. 1
004	Cooler No. 1
014	Kiln No. 2
015	Cooler No. 2

REGULATORY CLASSIFICATION

This industry is listed in Table 62-212.400-1 of Chapter 62-212, F.A.C., "Major Facility Categories." Therefore, stack and fugitive emissions of over 100 tons per year of carbon monoxide, volatile organic compounds, sulfur dioxide, nitrogen oxides, or particulate matter characterize the installation as a major facility subject to the requirements of Rule 62-204.800, F.A.C., which incorporates 40 CFR Subpart F, the New Source Performance Standards (NSPS) for Portland Cement Plants. This facility is a Title V source.

PERMIT SCHEDULE:

06/15/97 End of Public Comment period
05/15/97 Publication of Notice in The Tampa Tribune
05/06/97 Issued Intent to Issue Permit
04/03/97 Application deemed complete

RELEVANT DOCUMENTS:

The documents listed below are the basis of the permit. The documents listed below are specifically related to this permitting action. These documents are on file with the Department.

1. Application received February 22, 1996. Addendum received February 21, 1997.
2. Department's letters dated March 8, March 21, July 10, July 25, September 23, October 31, 1996 and January 5, 1997.
3. Southdown Inc. letters dated April 1, June 17, July 22, August 26, October 2, (netting calculations) October 14, November 5, November 11, 1996, January 30, January 31 and February 24, 1997.
4. National Park Service's letter dated April 11, 1996.
5. Hernando County Planning Department's letter dated March 8, 1996, and May 20, 1997.
6. Koogler & Associates' letter dated June, October 15, November 7, 1996, April 1, and May 16, 1997.
7. Issued Intent to Issue Permit on October 25, 1996. Public Notice published in Tampa Tribune November 12, 1996.
8. Appendix PH. Southdown permitting history.

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

1.0 ADMINISTRATIVE

1.1 Regulating Agencies: All documents related to applications for permits to operate, reports, tests, minor modifications and notifications shall be submitted to the Florida Department of Environmental Protection (FDEP) Southwest District Air Section located at 3804 Coconut Drive, Tampa, Florida 33619-8218, and phone number (813)744-6100. All applications for permits to construct or modify an emission unit(s) subject to the Prevention of Significant Deterioration requirements should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP) located at 2600 Blairstone Road, Tallahassee, Florida 32399-2400 and phone number (904)488-1344.

1.2 General Conditions: The owner and operator is subject to and shall be aware of and operate under the attached General Permit Conditions G.1 through G.15 listed in *Appendix GC* of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. **[Rule 62-4.160, F.A.C.]**

1.3 Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapter of the Florida Administrative Code.

1.4 Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C., when appropriate and follow the application procedures in Chapter 62-4, F.A.C. **[Rule 62-210.900, F.A.C.]**

1.5 Expiration: This air construction permit shall expire on June 30, 1998. **[Rule 62-210.300(1), F.A.C.]** The permittee may, for good cause, request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit. However, the permittee shall promptly notify the Southwest District office of any delays in completion of the project which would affect the startup day by more than 90 days. **[Rule 62-4.090, F.A.C]**

1.6 Application for Title V Permit: This air construction permit revises specific permit conditions to reflect the current applicable requirements, BACT and new permit emission limits. Stack testing of emissions that are required by this permit shall be performed to determine compliance with all new applicable permitted limits. A revision of the Title V operating permit application pursuant to Chapter 62-213, F.A.C., shall be submitted to the DEP District office in Tampa. **[Chapter 62-213, F.A.C.]**

1.7 Applicable Regulations: Unless otherwise indicated, the construction and operation of these emission units shall be in accordance with the capacities and specifications stated in the application. Southdown, Inc., is subject to all applicable provisions of Chapter 403, F.S. and Florida Administrative Code Chapters 62-4, 62-103, 62-204, 62-210, 62-212, 62-213, 62-296, 62-297, and the Code of Federal Regulations Section 40, Part 60. Specifically, this facility is subject to the New Source Performance Standards (NSPS) for Portland Cement Plants identified by the Code of Federal Regulations Section 40, Part 60, Subpart F, and incorporated by reference in the Florida Administrative Code regulation 62-204.800. Issuance of this

permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. **[Rule 62-210.300, F.A.C.]**

2.0 EMISSION LIMITING STANDARDS

2.1 General Visible Emissions Standard: **[Rule 62-296-320 (4)(b). F.A.C.]** Unless otherwise specified by rule or permit, no person shall cause, let, permit, suffer or allow to be discharged into the atmosphere any air pollutants from new or existing emissions units, the opacity of which is equal to:

- Visible emissions from PM fugitive sources shall not exceed 10% opacity.

2.2 Unconfined Emissions of Particulate Matter **[Rule 62-296.320(4)(c), F.A.C.]**

(a) The owner or operators shall not cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any source whatsoever, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrially related activities such as loading, unloading, storing or handling, without taking reasonable precautions to prevent such emission.

(b) Reasonable precautions shall include the following:

- All permanent haul roads shall be paved.
- Temporary haul road shall be watered or treated with chemical dust suppressants at regular intervals.
- Dry materials (moisture content ≤ 14%) shall be stored below grade, in silos, or in enclosed structures.
- Coal stored at or above natural grade shall be compacted, turned and/or watered as necessary to maintain a minimum 8% moisture content in the surface layer, and shall be aligned with the predominant wind direction to minimize wind erosion.
- Abandoned haul road and other disturbed areas shall be revegetated within 60 days of the date that active service of the roads ends.
- All cement products shall be transferred to transport trucks with a sealed pneumatic conveying system that is either a closed system or exhausted through a bag filter.

NOTE: Facilities that cause frequent, valid complaints may be required by the Southwest District office in Tampa to take these or other reasonable precautions. In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

2.3 General Pollutant Emission Limiting Standards: **[Rule 62-296.320 (1), F.A.C.]**

(a) The owner or operator shall not store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems.

(b) No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

NOTE: An objectionable odor is defined as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [F.A.C. 62-210.200(198)]

3.0 OPERATION AND MAINTENANCE

3.1 Changes/Modifications: The owner or operator shall submit to the Department of Environmental Protection, Bureau of Air Regulation and/or the Southwest District office in Tampa, for review and obtain approval for any changes in, or modifications to: the method of operation; process or pollution control equipment; increase in hours of operation; equipment capacities; or any change which would result in an increase in potential/actual emissions. Depending on the size and scope of the modification, it may be necessary to submit an application for, and obtain an air construction permit prior to making the desired change. FDEP will provide a clear point of entry for Hernando County and any other substantially affected parties to challenge any of FDEP's proposed determinations in this regard. *Routine maintenance of equipment would not constitute a modification of this permit.* **[Rule 62-4.030, 62-210.300 and 62-4.070(3), F.A.C.]**

3.2 Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by hazard of fire, wind or by other cause, the owner or operator shall notify the Southwest District office in Tampa as soon as possible, but at least within (1) working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; the steps being taken to correct the problem and prevent future recurrence; and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit and the regulations. **[Rule 62-4.130, F.A.C.]**

3.3 Circumvention: The owner or operator shall not circumvent any air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. **[Rules 62-210.650, F.A.C.]**

3.4 Excess Emissions Requirements **[Rule 62-210.700, F.A.C.]**

(a) Excess emissions resulting from start-up, shutdown or malfunction of these emissions units shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24 hour period unless specifically authorized by the Southwest District office for longer duration. **[Rule 62-210.700(1), F.A.C.]**

(b) Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during start-up, shutdown, or malfunction shall be prohibited. **[Rule 62-210.700(4), F.A.C.]**

(c) In case of excess emissions resulting from malfunctions, the owner or operator shall notify the Air Control Section of the Southwest District office within one (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the problem; and the corrective actions being taken to prevent recurrence. **[Rule 62-210.700(6), F.A.C.]**

4.0 Monitoring of Operations

4.1 Determination of Process Variables:

(a) The permittee shall install, operate, and maintain equipment and/or instruments necessary to determine process variables, such as process weight input or heat input, when such data is needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards. **[Rule 62-297.310 (5), F.A.C.]**

(b) Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. **[Rule 62-297.310(5), F.A.C]**

5.0 TEST REQUIREMENTS

5.1 Test Performance: Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after initial startup up and annually thereafter, (except for VOC), the owner or operator shall simultaneously conduct performance test(s) for PM/PM_{10}, NO_x, SO_2 , CO, VE and VOC (initial) pursuant to 40 CFR 60.8, Performance Tests, Rule 62-296.310 F.A.C., 40 CFR 60, Appendix A and 40 CFR 51, Appendix M. **[Rule 62-204.800, F.A.C and Rule 62-297.310, F.A.C.]**

5.2 Test Procedures and Test Reports shall meet all applicable requirements of the Florida Administrative Code Chapter 62-297. **[Rule 62-297.310, F.A.C.]**

5.3 Test Notification: The owner or operator shall notify the Southwest District office in Tampa in writing at least (30) days [initial] and (15) days [annual] prior to conducting each scheduled compliance test. The notification shall include the test date, the expected test time, the facility contact person for the test, and the person or company conducting the test. The (30) or (15) day notification requirement may be waived at the discretion of the Department. Likewise, if circumstances prevent testing during the test window specified for the emission unit, the owner or operator may request an alternate test date before the expiration of this window. **[Rule 62-297.310 and 40 CFR 60.8, F.A.C.]**

5.4 Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in Rule 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. or in a permit issued pursuant to those rules is being violated, it may require the owner or operator of the facility to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions units and to provide a report on the results of said tests to the Southwest District office in Tampa. **[Rule 62-297.310, F.A.C.]**

5.5 Stack Testing Facilities: The owner or operator shall install stack testing facilities in accordance with **Rule 62-297.310, F.A.C.**

5.6 Exceptions and Approval of Alternate Procedures and Requirements: An Alternate Sampling Procedure (ASP) may be requested from the Bureau of Monitoring and Mobile Sources of the Florida Department of Environmental Protection in accordance with the procedures specified in **Rule 62-297.620, F.A.C.**

6.0 REPORTS AND RECORDS

6.1 Duration: All reports and records required by this permit shall be kept for at least (5) years from the date the information was recorded. **[62-4.160(14)(b), F.A.C.]**

6.2 Emission Compliance Stack Test Reports:

(a) A *test report* indicating the results of the required compliance tests shall be filed with the Southwest District office in Tampa as soon as practical, but no later than 45 days after the last sampling run is completed. **[Rule 62-297.310, F.A.C.]**

(b) The *test report* shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in **Rule 62-297.310 (8), F.A.C.**

6.3 Excess Emissions Report: If excess emissions occur, the owner or operator shall notify the Air Section of the Southwest District office within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Pursuant to the New Source Performance Standards, excess emissions shall also be reported in accordance with 40 CFR 60.7. **[Rules 62-4.130 and 62-210.700(6), F.A.C.]**

6.4 Annual Operating Report for Air Pollutant Emitting Facility: Before March 1st of each year, the owner or operator shall submit to the Department this required report [DEP Form No. 62-210.900(5)], which summarizes operations for the previous calendar year. **[Rule 62-210.370(3), F.A.C.]**

7.0 OTHER REQUIREMENTS

7.1 Waste Disposal: The owner or operator shall treat, store, and dispose of all liquid, solid, and hazardous wastes in accordance with all applicable Federal, State, and Local regulations. This air pollution permit does not preclude the permittee from securing any other types of required permits, licenses, or certifications.

7.2 Used Oil and Grease: Used oil and grease burned at this facility (Kiln Nos. 1 and 2) shall not be a hazardous waste as defined by 40 CFR Part 261.3 or Rule 62-730.030, F.A.C. It shall not include fuels or blended fuels consisting in whole or in part of hazardous waste or which include mixture of any solid waste generated from the treatment, storage, or disposal of hazardous waste. These fuels shall be burned in compliance with Section 403.769(3), Florida Statutes.

7.3 Other Regulations: The owner or operator shall comply with applicable provisions of Rule 62-710, Used oil Management and 40 CFR Parts 279, Standards for the Management of Used Oil.

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION A. NSPS COMMON CONDITIONS: 40 CFR 60 SUBPART A, GENERAL PROVISIONS

This permit addresses the following emission units.

EMISSIONS UNIT NO.	EMISSIONS UNIT DESCRIPTION
003	Unit No. 1 - Kiln No. 1
014	Unit No. 2 - Kiln No. 2
004	Unit No. 3 - Cooler No. 1
015	Unit No. 4 - Cooler No. 2

These emission units shall comply with all applicable requirements of 40 CFR 60, General Provisions, Subpart A.

A.1. [40 CFR 60.7, Notification and record keeping]
A.2. [40 CFR 60.8, Performance tests]
A.3. [40 CFR 60.11, Compliance with standards and maintenance requirements]
A.4. [40 CFR 60.12, Circumvention]
A.5. [40 CFR 60.13, Monitoring requirements]
A.6. [40 CFR 60.19, General notification and reporting requirements]

These emission units shall comply with all applicable provisions of the 40 CFR 60 New Source Performance Standards for Portland Cement Plants, Subpart F, 40 CFR 60, Appendix A, and 40 CFR 51, Appendix M.

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION B. SPECIFIC CONDITIONS:

The following Specific Conditions apply to the following emission units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
003	Kiln No. 1
004	Cooler No. 1

EMISSION LIMITATIONS

B1. The emissions from these emission units shall not exceed the allowable emission rates listed in Table 1-1 Air Pollutant Standards and Terms (attached). **[Rule 62-210.200(198) and 62-212.400, F.A.C.]**

B2. In order to minimize excess emissions during startup/shutdown/malfunction these emission units shall adhere to best operational practices. **[Rule 62-210.700, F.A.C. and 40 CFR 60.7]**

OPERATIONAL LIMITATIONS

B3. These emission units are allowed to operate continuously (8760 hours/year). **[Rule 62-210.233, F.A.C. Definitions-Potential to emit (PTE)]**

B4. OPERATING RATES:

- Kiln preheater feed rate -- 165 tons/hour (one-hour maximum)
- Kiln preheater feed rate -- 150 tons/hour (30-day average)

[AC 27-186923, AC 27-258571 and Dr. John Koogler's letter of November 22, 1994]
[Rule 62-210.233 F.A.C., (PTE)]

TIRE BURNING:

(a) The No. 1 cement kiln's maximum utilization/firing rate of WTDF shall not exceed 20 percent of the total Btu heat input, or 2.14 tons per hour [Construction Permit No. AC 27-240349].

(b) WTDF may be introduced into the No. 1 cement kiln only at a point at the base of the preheater (i.e., exit of gases from the kiln) [Construction Permit No. AC27-240349].

(c) WTDF firing in the No. 1 cement kiln shall not commence or be conducted unless the cement kiln has reached an operating temperature of at least 1,400 degree Fahrenheit for one hour. The operating gas temperature shall be measured at the cement kiln exit [Construction Permit No. AC27-240349].

(d) In the No. 1 cement kiln, continuous whole tire-derived fuel (WTDF) utilization/firing shall be allowed (i.e., 8760 hrs/yr operation) [Construction Permit AC27-240349].

B5. The No. 1 cement kiln fuel heat input rate shall not exceed 300 MMBtu/hr, which is approximately:

(a) 24,000 pounds per hour of coal with a heating value of 12,500 Btu/lb,

(b) 2,116 gallons/hour of No. 2 fuel oil with a heating value of 141, 300 Btu/gal,

(c) 2,060 gallons/hour of No. 4 fuel oil with a heating value of 145,600 Btu/gal,

(d) 2,016 gallons/hour of No. 5 fuel oil with a heating value of 148,800 Btu/gal,

(e) 1,982 gallons/hour of No. 6 fuel oil with a heating value of 151,300 Btu/gal,

(f) 292,683 cubic feet/hour of natural gas with a heating value of 1,025 Btu per cubic foot,

(g) 2.14 tons per hour of whole tire-derived fuel (WTDF),

(h) Southdown is allowed to burn on site generated non-hazardous waste used oil (as defined by Rule 62-730.030, F.A.C., or 40 CFR Part 261) and grease in the kilns (less than 5,000 gallons per year).

The constituents and properties of the on-spec used oil shall comply with the following allowable concentration levels, as stipulated and defined in 40 CFR 279 (July 1, 1996 version), which is adopted by reference in **Chapter 62-710 Florida Administrative Code (F.A.C.)**:

Constituent/Property	Allowable Concentration
Cadmium	2 ppm maximum
Arsenic	5 ppm maximum
Chromium *	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	1000 ppm maximum
Flash Point	140° F minimum
Polychlorinated Byphenyls (PCBs)	Less than 2 ppm

* Based on the analysis of the samples, the Department considers the used oil/grease to be classified as an off-specification used oil for chromium. However, studies show that the low volatility of the metals, including chromium, and its extensive bonding in the clinker results in insignificant emissions for this

element. Southdown has provided assurances that emissions of this pollutant will not result in exceedances of air quality or ambient guidelines developed to protect human health and welfare.

Use of fuels other than those listed above is prohibited. [Construction Permit No. AC27-186923 and AC27-212252 and Supplemental information received by DEP March 31, 1995]

B6. Any other operating parameters (including control equipment operating parameters) established during compliance testing and/or inspection that will confirm the proper operation of each emission unit shall be included in the operating permit. **[Rule 62-297.310, F.A.C. and 62-4.070, F.A.C.]**

MONITORING OF OPERATIONS

B7. The owner or operator shall record the daily production and preheater-kiln system feed rate. **[Rule 62-204.800, F.A.C., 40 CFR 60.63(a)]**

B8. The owner or operator shall install, calibrate, maintain, and operate in accordance with 40 CFR 60.13 a *continuous opacity monitoring system* to measure the opacity of emissions from the cement kiln and clinker cooler control device stacks. **[Rule 62-204.800, F.A.C., 40 CFR 60.63(b)]**

B9. The opacity monitoring device shall meet the applicable requirements of **Chapter 62-204, F.A.C., 40 CFR 60.11** and **40 CFR 60.13**, including certification of the device in accordance with **40 CFR 60, Appendix B**, Performance Specifications and **40 CFR 60.7(a)(5)** Notification Requirements.

TEST METHODS AND PROCEDURES

B10. These emission units shall be tested in accordance with the applicable EPA/reference method, testing time frequency, and minimum compliance test duration. Table 2-1. Compliance Requirements (attached) lists the EPA Methods. No other test method shall be used unless approval from the Department has been received in writing. These emission units shall comply with applicable requirements of Rule 62-297.310, F.A.C., General Test Requirements and 40 CFR 60.8 Performance Tests. **[Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, 62-297.620 F.A.C, and 40 CFR 60 Appendix A, and 40 CFR 60.8, Subpart A]**

B11. Compliance with the particulate matter standard contained in Table 1-1 Air Pollutant Standards and Terms (attached) shall be determined using EPA Method 5. The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E = (c_s \times Q_{sd})/(P \times K)$$

where:

E	=	emission rate of particulate matter, kg/metric ton (lb/ton) of kiln feed,
c_s	=	concentration of particulate matter, g/dscm (g/dscf),
Q_{sd}	=	volumetric flow rate of effluent gas, dscm/hr (dscf/hr),

P = total kiln feed (dry basis) rate, metric ton/hr (ton/hr),
K = conversion factor, 1000 g/kg (453.6 g/lb)

The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30.0 dscf) for the kiln and at least 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler. **[Rules 62-204.800 and 62-297.401, F.A.C. 40 CFR 60.64(b)(1) - (3)]**

B12. Suitable methods shall be used to determine the kiln feed rate (P), except fuels, for each run. Material balance over the production system shall be used to confirm the feed rate. **[40 CFR 60.64(3)]**

B13. The visible emissions test shall be conducted by a certified observer and be a minimum of 180 minutes in duration. The test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. **[40 CFR 60.11 and Rule 62-297.310 (7), F.A.C.]**

B14. Testing of emissions shall be conducted with the source operating at permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, each emission unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. The initial compliance test results shall be submitted to the DEP Southwest District office with the application for an operating permit. **[Rule 62-4.070 (3), 62-297.310, 62-4.055, 62-4.22, and Chapter 62-213, F.A.C.]**

B15. Operating procedures shall include good combustion practices and proper training of all operators and supervisors. The good combustion practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. **[Rule 62-4.070(3), F.A.C.]**

RECORDKEEPING AND REPORTING REQUIREMENTS

B16. The owner or operator shall submit reports of excess emissions based upon data from the continuous opacity monitoring system. Periods of excess emissions that shall be reported are defined as all 6 minute periods during which the average opacity exceeds that allowed in **40 CFR 60.62(a)(2) and 40 CFR 60.62 (b)(2)**. The content of these reports must comply with the requirements in **40 CFR 60.7(d)**. Such reports shall be submitted quarterly pursuant to **40 CFR 60.7 (c)**. **[Rule 62-204.800, F.A.C.; 40 CFR 60.63(d), 60.65(a) and 40 CFR 60.7]**

B17. Daily sampling and recording of the baghouse dust for the No. 1 kiln is required. The concentration of thallium in the baghouse dust shall not exceed 1.5%. Compliance shall be demonstrated using the "Thallium Concentration Monitoring and Analysis Procedure" as described in Mr. Bob Roger's letter to Dr. John Koogler, dated January 12, 1994 [Attachment #9 of Construction Permit No. AC27-240349].

B18. The following fuel records shall be maintained for a minimum of five (5) years and made available upon request:

1. Coal

   (a) the coal usage rate in tons/day;
   (b) the average sulfur content and heating value (Btu/lb) of each coal shipment based upon analysis of a sample representative of the shipment (trainload).

2. Liquid Fuels

   (a) The fuel type (number) and usage rate in gal/day;
   (b) Records of the sulfur content and heating value (Btu/gal) of each oil shipment based upon analysis of a sample representative of the shipment.

3. Natural Gas

   (a) The fuel usage rate in cubic feet per day;
   (b) The average heating value (Btu/Ft^3) provided by the gas supplier.

4. Tires

   (a) The utilization/firing rate of WTDF shall be quantified (weighed) continuously and recorded hourly;
   (b) The quantities of all deliveries of WTDF shall be documented and kept on record/file.

B19. Two copies of the results of the emission tests for the pollutants listed in Condition 1 for these emission units shall be submitted within forty-five days of the last sampling run to the Department's Southwest District office. Reports shall be in a format consistent with and shall include the information in accordance with **Rule 62-297.310 (8), F.A.C. [Rule 62-210.370(3) and Rule 62-.297.310(8), F.A.C.]**

Daily Operation and Maintenance (O&M) Log:

B20. This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to the various specific conditions of this permit. Operators shall keep a daily O&M log to include, at a minimum, the following information:

   (a) The data collected from in-stack monitoring instruments,

   (b) The records on daily feed rates and clinker production rate,

   (c) The amount and type of fuel burned per affected unit,

   (d) Calibration logs for all instruments,

(e) Maintenance/repair logs for any work performed on equipment or instrument which is subject to this permit, and,

(f) Fuel analysis data.

All measurements, records, and other data required to be maintained by Southdown, shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. This data shall be made available to the Department upon request. The Department's Southwest District office shall be notified in writing at least 15 days prior to the testing (auditing) of any instrument required to be operated by this facility to allow witnessing by authorized personnel. **[Rule 62-4.070(3), F.A.C.]**

OTHER RULE REQUIREMENTS

B21. If there is a change in the method of operation, etc., pursuant to Florida Administrative Code (F.A.C.) **Rule 62-210.200,** Definitions - Modification, the permittee shall submit an application along with the appropriate processing fee to the Department's Bureau of Air Regulation. Any physical modifications to the WTDF feed mechanism utilized during the test burn of WTDF/coal that result in an increased feed rate, a change in the location where WTDF is introduced into the kiln, or the introduction of WTDF into the kiln through the use of a mechanism other than a double air lock feed system, may require a modification of the permit. If the WTDF feed mechanism is to be physically modified in this manner, a description of such modification shall be submitted to FDEP and HCBCC 90 days prior to actual modification. FDEP and HCBCC shall review this information and, prior to any modification, determine whether further stack testing is required in order to determine if such modifications will result in an increase in actual emissions, whether a permit modification is necessary, and/or what the terms of any modified permit shall be.

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION C. SPECIFIC CONDITIONS

The following Specific Conditions apply to the following emission units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
014	Kiln No. 2
015	Cooler No. 2

EMISSION LIMITATIONS

C1. The emissions from these emission units shall not exceed the allowable emission rates listed in Table 1-2 Air Pollutant Standards and Terms (attached). **[Rule 62-210.200(198) and 62-212.400, F.A.C.]**

C2. In order to minimize excess emissions during startup/shutdown/malfunction this emission units shall adhere to best operational practices. **[Rule 62-210.700, F.A.C. and 40 CFR 60.7]**

OPERATIONAL LIMITATIONS

C3. Cement Kiln No. 2 is allowed to operate continuously 8760 hours/year. **[Rule 62-210.233, F.A.C., Definitions, Potential to Emit (PTE)]**

C4. *Process operating rates*:

- Kiln preheater feed rate -- 165 tons/hour (one hour maximum)
- Kiln preheater feed rate -- 150 tons/hour (30-day average)

[AC 27-186923, AC 27-258572 and Dr. John Koogler's letter of November 22, 1994]. **[Rule 62-210.233, F.A.C., (PTE)]**

C5. The No. 2 cement kiln fuel heat input rate shall not exceed 300 MMBtu/hr, which is approximately:

(a) 24,000 pounds per hour of coal with a heating value of 12,500 Btu/lb,

(b) 2,116 gallons/hour of No. 2 fuel oil with a heating value of 141, 300 Btu/gal,

(c) 2,060 gallons/hour of No. 4 fuel oil with a heating value of 145,600 Btu/gal,

(d) 2,016 gallons/hour of No. 5 fuel oil with a heating value of 148,800 Btu/gal,

(e) 1,982 gallons/hour of No. 6 fuel oil with a heating value of 151,300 Btu/gal,

(f) 292,683 cubic feet/hour of natural gas with a heating value of 1,025 Btu per cubic foot,

(h) Southdown is allowed to burn on site generated, non-hazardous waste used oil (as defined by Rule 62-730.030, F.A.C., or 40 CFR Part 261) and grease and rags in the kilns (less than 5,000 gallons per year.

The constituents and properties of the on-spec used oil shall comply with the following allowable concentration levels, as stipulated and defined in 40 CFR 279 (July 1, 1996 version), which is adopted by reference in **Chapter 62-710 Florida Administrative Code (F.A.C.)**:

Constituent/Property	Allowable Concentration
Cadmium	2 ppm maximum
Arsenic	5 ppm maximum
Chromium *	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	1000 ppm maximum
Flash Point	140 ° F minimum
Polychlorinated Byphenyls (PCBs)	Less than 2 ppm

* Based on the analysis of the samples, the Department considers the used oil/grease to be classified as an off-specification used oil for chromium. However, studies show that the low volatility of the metals, including chromium, and its extensive bonding in the clinker results in insignificant emissions for this element. Southdown has provided assurances that emissions of this pollutant will not result in exceedances of air quality or ambient guidelines developed to protect human health and welfare.

Use of fuels other than those listed above is prohibited. [Construction Permit No. AC27-186923 and AC27-212252 and Supplemental information received by DEP March 31, 1995]

C6. Any other operating parameters (including control equipment operating parameters) established during compliance testing and/or inspection that will confirm the proper operation of each emission unit shall be included in the operating permit. **[Rule 62-297.310, F.A.C. and 62-4.070, F.A.C.]**

MONITORING OF OPERATIONS

C7. The owner or operator shall record the daily production and preheater-kiln system feed rates. **[Rule 62-204.800, F.A.C., 40 CFR 60.63(a)]**

C8. The owner or operator shall install, calibrate, maintain, and operate in accordance with **40 CFR 60.13** a *continuous opacity monitoring system* to measure the opacity of emissions from the cement kiln and clinker cooler control device stack. **[Rule 62-204.800, F.A.C., 40 CFR 60.63(b)]**

C9. The opacity monitoring device shall meet the applicable requirements of **Chapter 62-204, F.A.C., 40 CFR 60.11** and **40 CFR 60.13**, including certification of the device in accordance with **40 CFR 60, Appendix B**, Performance Specifications and **40 CFR 60.7(a)(5)** Notification Requirements.

TEST METHODS AND PROCEDURES

C10. These emission units shall be tested in accordance with the applicable EPA/reference method, testing time frequency, and minimum compliance test duration. Table 2-2. Compliance Requirements (attached) list the EPA Methods. No other test method shall be used unless approval from the Department has been received in writing. These emission units shall comply with all applicable requirements of Rule 62-297.310, F.A.C., General Test Requirements. **[Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, F.A.C, and 40 CFR 60, Appendix A and 40 CFR 60.8, Subpart A]**

C11. Compliance with the particulate matter standard contained in Table 1-2 Air Pollutant Standards and Terms (attached) shall be determined using EPA Method 5. The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E = (c_s \times Q_{sd})/(P \times K)$$

where:

E	=	emission rate of particulate matter, kg/metric ton (lb/ton) of kiln feed,
c_s	=	concentration of particulate matter, g/dscm (g/dscf),
Q_{sd}	=	volumetric flow rate of effluent gas, dscm/hr (dscf/hr),
P	=	total kiln feed (dry basis) rate, metric ton/hr (ton/hr),
K	=	conversion factor, 1000 g/kg (453.6 g/lb)

The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30.0 dscf) for the kiln and at least 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler. **[Rules 62-204.800 and 62-297.401, F.A.C. 40 CFR 60.64(b)(1) - (3)]**

C12. Suitable methods shall be used to determine the *kiln feed rate (P),* except fuels, for each run. Material balance over the production system shall be used to confirm the feed rate. **[40 CFR 60.64(3)]**

C13. The visible emissions test shall be conducted by a certified observer and be a minimum of 180 minutes in duration. The test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. **[40 CFR 60.11. and Rule 62-297.310 (7), F.A.C.]**

C14. Testing of emissions shall be conducted with the source operating at permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, each emission unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. The initial compliance test results shall be submitted to the DEP Southwest District office with the application for an operating permit. **[Rule 62-4.070 (3), 62-297.310, 62-213, 62-4.055, 62-4.22, F.A.C.]**

C15. Operating procedures shall include good combustion practices and proper training of all operators and supervisors. The good combustion practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. **[Rule 62-4.070(3), F.A.C.]**

RECORDKEEPING AND REPORTING REQUIREMENTS

C16. The owner or operator shall submit reports of excess emissions based upon data from the continuous opacity monitoring system. Periods of excess emissions that shall be reported are defined as all 6 minute periods during which the average opacity exceeds that allowed in the **BACT Determination** (10% opacity for the Kiln and Cooler). The content of these reports must comply with the requirements in **40 CFR 60.7(d)**. Such reports shall be submitted quarterly pursuant to **40 CFR 60.7 (c). [Rule 62-204.800, F.A.C.; 40 CFR 60.63(d), 60.65(a) and 40 CFR 60.7]**

C17. The following Kiln No. 2 fuel records shall be maintained and made available upon request:

1. Coal

   (a) the coal usage rate in tons/day;
   (b) the average sulfur content and heating value (Btu/lb) of each coal shipment based upon analysis of a sample representative of the shipment (trainload).

2. Liquid Fuels

   (a) The fuel type (number) and usage rate in gal/day;
   (b) Records of the sulfur content and heating value (Btu/gal) of each oil shipment based upon analysis of a sample representative of the shipment.

3. Natural Gas

   (a) The fuel usage rate in cubic feet per day;
   (b) The average heating value (Btu/Ft^3) provided by the gas supplier.
   [Rule 62-4.070(3), F.A.C.]

C18. Two copies of the results of the emission tests for the pollutants listed in Condition 1 for these emission units shall be submitted within forty-five days of the last sampling run to the Department's Southwest District office. Reports shall be in a format consistent with and shall include the information in accordance with **Rule 62-297.310 (8), F.A.C. [Rule 62-210.370 (3) and Rule 62-.297.310(8), F.A.C.]**

Daily Operation and Maintenance (O&M) Log:

C19. This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to the various specific conditions of this permit. Operators shall keep a daily O&M log to include, at a minimum, the following information:

(a) The data collected from in-stack monitoring instruments,

(b) The records on daily feed rates and clinker production rate,

(c) The amount and type of fuel burned per affected unit,

(d) Calibration logs for all instruments,

(e) Maintenance/repair logs for any work performed on equipment or instrument which is subject to this permit, and,

(f) Fuel analysis data.

All measurements, records, and other data required to be maintained by Southdown, shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. This data shall be made available to the Department upon request. The Department's Southwest District office shall be notified in writing at least 15 days prior to the testing (auditing) of any instrument required to be operated by this facility to allow witnessing by authorized personnel. **[Rule 62-4.070(3), F.A.C.]**

SECTION IV. PERMITTING HISTORY AND RELEVANT DOCUMENTS

Permitting History

A detailed Permitting History of the emission units modified in this permit are found in Appendix PH on file with the Department..

December 18, 1973	Permit AC 27-2251 to construct Kiln No. 1 and Associated Equipment.
July 25, 1980	Permits AC 27-30444, 30446, 30447, 30449, 30450, 30451, 30453, 30454 and 30455 to construct Kiln No. 2 and Associated Equipment.
March 1981	PSD-FL-063 issued by EPA - Permit to Construct Kiln No. 2 and Associated Equipment.
November 3, 1987	Modification of Kiln No. 2: Increase NOx limits from 195.3 lbs/hr to 250 lbs/hr and SO_2 limits from 3 lbs/hr to 12 lbs/hr. Permit No. AC 27-138850 and PSD-FL-124.
July 20, 1990	Modifications of Kiln No. 2 to burn Flolite oil, increase operating rates and operate kiln without operating the raw mill, PSD-FL-124A. Modification to burn tires in Kiln No. 1. This request was granted. Currently (1996) this facility is not burning tires.
July 25, 1990	AC 27-173474, NO_x emissions were reduced from 250 lbs/hr to 162.3 lbs/hr.
January 25, 1991	Modification of Kiln No. 2 Auxiliary Sources to coincide with recent changes in operation of No. 2 Kiln, AC 27-185898, 27-185900 through -185907.
March 8, 1991	Permit Issued to burn Flolite at Kiln No. 1 AC 27-186923. Allow testing while burning TDF. Conditions of permit remain unchanged.
February 24, 1992	Request to burn waste classified as hazardous waste was withdrawn. This request was filed with the U.S. EPA, Region IV.
January 26, 1993	Modification to allow an increase in cement Kiln No. 2. NO_x emissions from 162.3 lbs/hr to 250 lbs/hr, 30 days rolling average. This increase was to reflect previous BACT limit (PSD-FL-124). Permit allows use of Flolite. New permits, PSD-FL-188 and AC 27-212252, were issued.
April 15, 1994	Permit issued to allow the use of TDF to provide 20% of heat input. AC27-240349, Kiln No. 1.

SECTION IV. PERMITTING HISTORY AND RELEVANT DOCUMENTS

August 13, 1995	Permits issued at the Southwest District office (AC-27-258569, AC27-258570, AC27-258571, AC27-258572) to allow the burning of natural gas, fuel oils Nos. 2 , 4, 5 and 6. Deletes use of flolite in Kilns No. 1 and No. 2.
February 22, 1996	Request to modify cement Kiln No. 1, Cooler No 1 and Kiln No. 2, and Cooler No. 2. The request was to increase emissions of CO, VOC and to increase/decrease TSP (Kiln No. 1). A detailed project description was listed in the Technical Evaluation and Preliminary Determination. Permit Nos. PSD-FL-233 and 0530010-001-AC. This draft permit was public noticed but was never issued.
February 21, 1997	Request to increase 4 percent in the kiln preheater feed rates form 145 to 150 TPH, rolling 30- production day average for each kiln. A PSD review will be conducted for PM/PM_{10}, NO_x, CO and VOC emissions for both kilns.

NOTE: This permit revises and supersedes air construction permits numbers AC27-258589, 258570, 258571, and 258572.

APPENDIX GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

(a) Have access to and copy and records that must be kept under the conditions of the permit;
(b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
(c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

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

G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

(a) A description of and cause of non-compliance; and
(b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

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

G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extend it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.

G.13 This permit also constitutes:

(a) Determination of Best Available Control Technology *( )*
(b) Determination of Prevention of Significant Deterioration *( )*; and
(c) Compliance with New Source Performance Standards *( )*.

G.14 The permittee shall comply with the following:

(a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

(b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

(c) Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The person responsible for performing the sampling or measurements;
3. The dates analyses were performed;
4. The person responsible for performing the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

SOUTHDOWN, INC.
PORTLAND CEMENT FACILITY
PERMIT 0530010-003-AC (PSD-FL-233)
Hernando County

The applicant, Southdown Inc. (SI), owns a portland cement manufacturing facility in Brooksville. It consists of two kilns with a dry process preheater design and two clinker coolers along with raw mill, finish mill, cement and clinker handling equipment, coal handling equipment, silos, and air pollution control equipment. A process description was included in the Technical Evaluation and Preliminary Determination issued on May 6, 1997.

Each kiln/cooler is permitted to feed 165 tons per hour (TPH) of raw material to the preheater, 148 TPH to the kiln, and produce 90 TPH from the cooler on a 1-hr basis. Each is also permitted to feed 145 TPH to the preheater, 130 TPH to the kiln, and produce 84 TPH from the cooler on a 30-day basis.

A single, large, fabric filter system (baghouse) is already in use to capture particulate matter from each kiln and cooler. Baghouses are also used to limit particulate emissions from other process emission points. All the emission units controlled by baghouses are listed in a Best Available Control Technology (BACT) determination performed for Cement Plant 2 in 1980. Kiln No. 2 has three (3) additional BACT determinations on file with the Department (1980, 1988 and 1993). No previous BACT determinations have been performed on Kiln No. 1.

Southdown requested to revise the allowable emissions limits for their kilns and coolers due to an increase in the process rate to the kiln preheater from 145 to 150 TPH (30-day basis). Specifically, it was requested to increase emissions limits for particulate matter (PM/PM_{10}), carbon monoxide (CO), nitrogen oxides (NO_x), visible emissions (VE) and volatile organic compounds (VOC) from Kiln No. 2; decrease PM/PM_{10} (allowable emissions) and increase NO_x, VOC and CO emission limits for Kiln No. 1; and increase the PM/PM_{10} limits for Coolers Nos. 1 and 2.

The project and rule applicability are described in the previously issued Technical Evaluation and Preliminary Determination. A Best Available Control Technology (BACT) determination pursuant to Prevention of Significant Deterioration (PSD) is required for each pollutant exceeding the significant emission rates in Table 62-212.400-2, F.A.C., "Regulated Air Pollutants Significant Emissions Rates." The increase in actual emissions will subject Kilns Nos. 1 and 2 to PSD review for particulate matter, nitrogen oxides, volatile organic compounds and carbon monoxide, and Coolers Nos. 1 and 2 to PSD review for particulate matter.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Following is the BACT determination proposed by the applicant. These are on the basis of feed to the kiln.

BACT DETERMINATION REQUESTED BY THE APPLICANT - KILN FEED BASIS:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM_{10}) (kilns)	0.2 lb./ton of dry kiln feed
Particulate Matter (PM/PM_{10})(coolers)	0.1 lb/ton of dry kiln feed
Nitrogen Oxides (NO_x)	2.11 lbs/ton of dry kiln feed
Carbon Monoxide (kilns)	1.30 lb/ton dry kiln feed
Volatile Organic Compounds (Kiln No. 2)	0.1 lb/ton dry kiln feed
Visible Emissions (Kiln No. 2)	20 percent

The above limits are expressed in terms of pollutant emitted per ton of material reaching the kiln. Following a review of past permits, the exact process, requirements of the applicable NSPS for cement plants, and discussions with Southdown, the Department will limit only raw material fed to the kiln preheater. This is the most accurate and reliable measure of kiln operating rate in a preheater or precalciner kiln, particularly when there are no bypass streams and when little or no cement kiln dust is wasted. All limits will be expressed in terms of pounds of pollutant per ton of material fed to the kiln preheater ($kiln_{ph}$). Where appropriate, equivalent factors in terms of pounds of pollutant per ton of clinker produced will also be given for reference and comparison with industry or EPA reporting conventions. The above table is therefore adjusted as follows:

BACT DETERMINATION REQUESTED BY THE APPLICANT - PREHEATER BASIS:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM_{10}) (kilns)	0.18 lb./ton of dry $kiln_{ph}$ feed
Particulate Matter (PM/PM_{10})(coolers)	0.09 lb/ton of dry $kiln_{ph}$ feed
Nitrogen Oxides (NO_x)	1.9 lb/ton of dry $kiln_{ph}$ feed
Carbon Monoxide (kilns)	1.2 lb/ton dry $kiln_{ph}$ feed
Volatile Organic Compounds (Kiln No. 2)	0.09 lb/ton dry $kiln_{ph}$ feed
Visible Emissions (Kiln No. 2)	20 percent

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

DATE OF RECEIPT OF A BACT APPLICATION:

February 21, 1997

REVIEW GROUP MEMBERS:

Teresa Heron, and A. A. Linero of the New Source Review Section.

BACT DETERMINATION PROCEDURE:

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

(a) Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determination of any other state.

(d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from this facility can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as follows:

o Particulate matter from kilns and coolers (PM/PM_{10}, and VE). This is controlled generally by add-on particulate collection equipment such as baghouses or electrostatic precipitators.

- Products of combustion and incomplete combustion (e.g., SO_2, NO_x, CO, VOC). Control is largely achieved by good combustion practices and reactions with clinker and raw materials.

- Emissions from materials handling, conveyance, and storage (primarily PM). Controlled generally by fabric filters and reasonable precautions.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM, SO_2, H_2SO_4, fluorides, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

BACT ANALYSIS

Particulate Matter (PM/PM_{10})

Particulate Matter is generated by the various physical and chemical processes at a cement manufacturing plant. Sources of particulate matter at cement plants include (1) quarrying and crushing, (2) raw material storage, (3) grinding and blending, 4) clinker production, 5) finish grinding, and 6) packaging and loading. Additional sources of PM are raw material storage piles, conveyers, storage silos, and unloading facilities.

The largest emission source of PM within cement plants is the pyroprocessing system that includes the kiln and clinker cooler exhaust stacks (in this case, common kiln/cooler stack). Emissions from kilns are affected by several factors, including differences in convective patterns, material movement patterns, burner locations and orientations, heat transfer mechanisms, and the type of clinker cooler that supplies secondary air to the kiln for combustion. Typically, dust from the pollution control equipment servicing the kiln and cooler is collected and recycled into the kiln and thus incorporated into the clinker. Southdown has stated that the great majority of the cement kiln dust (CKD) captured in the baghouse is returned to the pyroprocessing system as raw material.

Common control devices for stack gases include settling chambers, inertial separators, impingement separators, wet scrubbers, fabric filters, and electrostatic precipitators. Fabric filters (baghouses) and electrostatic precipitator (ESPs) are often considered equivalent for particulate control. Both types of devices can achieve removal efficiencies of over 99 percent. ESPs and baghouses are used extensively as control devices at cement plants. ESPs are generally specified for kiln and clinker cooler exhaust gases because of their ability to operate effectively at varying temperatures. Baghouses are also used at many facilities for particulate control from kilns and coolers. Both types of control equipment provide for the

recovery/recycling of collected dust back into the process stream. Baghouses are also used to control particulate emissions from most other material processing operations at cement plants.

Common controls to limit particulate emissions from fugitive sources (such as roadways, stockpiles, and material processing and conveying equipment) include wet suppression, sweeping, application of surfactants, paving of roads and covering of stockpiles to reduce wind erosion. Wet suppression of fugitive particulate emissions is considered as BACT for most material handling operations and unpaved roads. Dust from stockpiles can be minimized by relatively high material moisture content with additional water spraying as necessary.

A review of the BACT Clearinghouse shows that baghouses and ESPs are widely used to control particulate matter from process emission units at cement plants. They are commonly accepted as BACT. At this facility, particulate matter sources are controlled by baghouses.

Southdown has proposed to increase the process rate (145 to 150 TPH) for both kilns, therefore changing the allowable emission rates for particulate matter (PM/PM_{10}) from Kilns Nos. 1 and 2 and Clinker Coolers Nos. 1 and 2 to allow for the fluctuations in emission rates during normal operating conditions. The permitted PM/PM_{10} limits would be increased for Kiln No. 2 from 13.5 pounds per hour (lb/hr) to 27.0 lb/hr, while PM/PM_{10} emissions for Kiln No. 1 are proposed to be decreased from 39.0 lb/hr (allowable emissions) to 27.0 lb/hr. The proposed limit for the two clinker coolers would be increased from 7.13 lb/hr (Kiln No. 1) and 5.0 lb/hr (Kiln No. 2) to 13.6 lb/hr. The proposed kiln particulate emission limits are equivalent to 0.18 pounds per ton of dry feed to each kiln preheater (lb/ton $feed_{ph}$). This is a standard lower than the New Source Performance Standard NSPS limit of 0.3 pounds per ton of dry feed (kiln). For the coolers the proposed limits are equivalent to 0.09 lb/ton $feed_{ph}$ which is approximately equal to the applicable NSPS limit.

Southdown also requested to increase VE (which is largely linked to particulate emissions) from 10 percent for Kiln No. 2 to 20 percent.

PRODUCTS OF COMBUSTION AND INCOMPLETE COMBUSTION

Nitrogen Oxides

Emissions of NO_x from dry process cement plants with a preheater include the kiln, and any fuel-fired support operation. NO_x is generated during fuel combustion by oxidation of chemically bound nitrogen in the fuel (fuel NO_x) and by thermal fixation of nitrogen in the combustion air (thermal NO_x). As flame temperature increases, the amount of thermally generated NO_x increases. Fuel type affects the quantity and type of NO_x generated. Generally, natural gas is low in nitrogen. However it causes higher flame temperatures and generates more thermal NO_x than oil or coal, which have higher fuel nitrogen content, but exhibit lower flame temperatures.

NO_x emissions represent a significant portion of the total emissions generated by this project, and shall be minimized using BACT.

The emissions of NO_x can potentially be reduced at Portland cement plants by two methods:

1. Minimizing the quantity of NO_x generated during combustion (combustion modifications).

2. Reducing the quantity of NO_x in the flue gas stream (flue gas controls).

In establishing BACT for cement kilns, the Department reviewed the EPA BACT/LAER Clearinghouse and a paper presented at the Air and Waste Management Association (AWMA) International Specialty Conference on Waste Combustion in Boilers and Industrial Furnaces. The paper, "Reduction of NO_x Emissions from Cement Kiln/Calciner through the Use of the NOxOUT Process," which was written by representatives of Nalco and Ash Grove Cement, suggests that SNCR is a viable control method. A level as low as 1.0 lb/ton of clinker was reached based on demonstration tests conducted at the Ash Grove cement plant in Seattle, Washington. However the process has not been demonstrated on a long term basis. Recently a proposed cement plant (Great Star Cement, Clark County, Nevada) was permitted with the urea-based SNCR/NOxOUT process as BACT. The process relies on the reaction between ammonia and NO_x to yield molecular nitrogen. The delivery system consists of urea injectors in one of the preheater sections. The objective was to achieve 50% reduction of NO_x emissions. At that level there should be no ammonia slip while meeting a BACT limit of 3.1 lb/ton clinker.

A review of the EPA BACT/LAER Clearinghouse (BACT Clearinghouse) information indicates that NO_x emissions at most facilities are minimized by process control and good combustion practices.

The applicant stated that NO_x emissions at this facility will be controlled through "proper combustion practices" such as burner design with primary combustion air control. The applicant has proposed for each kiln with a preheater design a NO_x emission rate of 285 lb/hr and 1.9 lb/ton kiln_{PH} feed (3.17 lb/ton clinker at a production rate of 90 TPH, 30-day average).

A review of the NO_x emission rate summary indicates that the applicant's proposal is among the lowest BACT determinations made to date for plants utilizing dry processes. The dry process with a preheater/precalciner is considered to be the most energy-efficient process. Dry process preheater designs, such as the one employed by Southdown, are also energy efficient. Therefore it is expected that the lower fuel use will result in relatively low NO_x, as well as documented reductions from tire burning is another reason to a expect low emission rate from the both preheater design kilns.

Following is a comparison between previous BACT determinations for NO_x documented in the BACT Clearinghouse and Southdown's proposal.

Previous BACT Determinations

BASIS	Least Stringent	Most Stringent	Proposed (Applicant)
	Year 1978	Year 1981	Year 1996
lb/ton clinker	11.13	0.85	3.17

It is important to note that the facility which was given the 0.85 lb/ton clinker NO_x limit has not been able to meet it since construction. A dry process plant with a preheater/precalciner received a NO_x limit of 1.11 lb/ton clinker but was never built. Another dry process plant with a preheater/precalciner received a BACT determination of 2.09 lb NO_x/ton clinker. However, it appears that since that time a less stringent standard was applied. One dry process preheater/precalciner kiln in California received a NO_x BACT determination of 2.5 lb/ton clinker. The Department made a BACT Determination of 2.8 lb/ton clinker in 1997 (Florida Crushed Stone) and in 1995 for the proposed Florida Rock Industries Cement Plant in Newberry, Florida. The main reason that the lb/ton clinker emission rate was higher than the one for the California plant was that Florida limestone is wetter and requires more heat input to dry. A claim by the kiln manufacturer that differences in volatility between Eastern and Western coal should be reflected in an even higher emission limit for the Florida kiln was rejected by the Department.

Based on the long history of past permitting actions of Kiln No. 1 since its permit was issued in 1973 (no allowable emission limit for any pollutant other than PM), and the few stack records data on file with the Department, the Department has determined that the BACT limit for dry process preheater kilns should not exceed 1.83 lb/ton kiln $_{PH}$ feed (275 lb/hr at 150 TPH preheater feed rate) or 3.05 lb/ton clinker at a production rate of 90 TPH, 30-days average.

Introduction of tires in the material feed end of the kiln (Kiln No. 1) will reduce the thermal load on the burner end and possibly result in lower NO_x emissions [refer to files on stack tests performed in 1993 while burning 80% coal and 20% WTDF (191 lb/hr on a two days average), 1994 (159 lb/hr), and 1995 (152 lb/hr)]. The newer Kiln No. 2 has a BACT emission limit for NO_x of 1.72 lb/ton kiln $_{PH}$ feed which is equivalent to 2.86 lb/ton clinker. The kiln has been able to consistently meet this value.

Carbon Monoxide

Carbon monoxide (CO) is a pollutant formed by the incomplete combustion (oxidation) of carbon containing compounds in the cement kiln fuel and during the transformation of cement raw materials to cement clinker. When insufficient oxygen is provided, more CO and less CO_2 are formed than under excess air conditions. Substantial quantities of CO and CO_2 are also generated through calcining of limestone and other calcareous material. This calcining process thermally decomposes $CaCO_3$ to CaO and CO_2. The calcining of limestone in the cement manufacturing process liberates large amounts of CO_2, which is available for dissociation into CO.

Flyash, a constituent of the raw feed mix, contains unburnt carbon which can vary in concentration depending on the source of the flyash. As the raw feeds travels down the preheater tower, most of the carbon present in the flyash is burned off. However, some of it is emitted as carbon monoxide. This contributes to fluctuations in carbon monoxide emissions.

The generation of CO and NO_x is inversely related to that of NO_x and is linked to the oxygen level that is present in the kiln system. As the oxygen level increases, the formation of NO_x increases and the formation of CO decreases. Conversely, when the oxygen level decreases, the formation of NO_x decreases and the formation of CO increases. Southdown will meet CO and NO_x emission levels by controlling excess oxygen in the kiln to a level between one and one-half to three percent excess oxygen. A continuous CO process monitor will assist in the control of the CO content in the kiln.

Emissions of CO can potentially be reduced at portland cement plants through utilization of proper combustion practices to maximize the oxidation of CO to CO_2 and reducing the quantity of CO in the flue gas stream (flue gas control). The high temperatures and control of excess air and fuel, typically results in simultaneous optimization for CO and NO_x. The applicant proposes proper combustion practices as BACT to control emissions of CO from this plant. A review of the BACT Clearinghouse reveals that for cement plants, BACT for CO is proper combustion practices.

The applicant proposes a CO limit of 1.2 lb/ton of $feed_{ph}$ and good combustion practice as BACT for CO for each Kiln. This represents an emission increases for Kiln No. 1 from 57.7 lb/hr to 180 lb/hr and for Kiln No. 2 from 64.0 to 180 lb/hr respectively. This increase is proposed in order to allow for more representativeness on a year-round basis compared with what is achievable during an annual test. It also accounts for fluctuations due to normal process oscillations and varying characteristics of raw materials and fuels.

Volatile Organic Compounds

VOC is also a pollutant formed due to incomplete combustion of fuel and organic material in the feed material to the kiln system. Limestone contains very low levels of VOCs. An additional source of VOC is oil from mill scale that is sometimes used as a raw material for its iron.

Southdown will reduce the VOC emissions by controlling the temperatures in the kiln system. In the kiln, the feed material will reach about 2700 degrees Fahrenheit. The temperature of the gases in the kiln will reach between 3700 to 3800 degrees Fahrenheit. At these high temperatures, virtually all VOCs will be consumed or destroyed regardless of their source (limestone, mill scale, coal, fuel oil, etc.). Clinker production requires certain temperatures, residence time, and turbulence within the kiln. These factors are sufficient to ensure the destruction of almost all VOCs at cement plants.

Emissions of VOC can also be controlled by add-on control devices, by the mechanisms of adsorption, absorption, or incineration (afterburning). Incineration processes include flame incineration, thermal incineration, and catalytic incineration. No add-on controls for VOC have been demonstrated for cement plants.

A review of the BACT Clearinghouse reveals that for cement plants, BACT for VOCs is proper combustion practices.

For VOC, the applicant has estimated 13.6 lb/hr (an increase of approximately 9.1 lb/hr) for both kilns. The applicant is utilizing good combustion practices for both kilns to reduce VOCs emissions.

BACT DETERMINATION RATIONALE:

The existing BACT VE limit of 10 percent for Kiln No. 2 is more stringent than the NSPS for Portland Cement Plant, 40 CFR 60, Subpart F for Kiln No. 2. It is also consistent with various recent BACT determinations made throughout Florida. There is no good basis for considering the higher VE limit proposed by Southdown than the one already established. Although Kiln No. 1 has a VE limit of 20 percent, the kilns are operated similarly and will have identical PM limits. The efforts to maintain the lower Opacity limit at Kiln No. 2 will probably result in fairly low opacity from Kiln No. 1.

BACT for PM (0.2 lb/ton kiln feed) from Kilns No. 1 and No. 2 proposed by Southdown is more stringent than the NSPS for Portland Cement Plants, 40 CFR 60, Subpart F. The basis is the BACT determinations made by the Department for Florida Rock Industries and Florida Crushed Stone and the original BACT determination for Southdown (then FM&M). The Department accepts the applicant's proposed limit (as corrected to 0.18 lb/ton $kiln_{ph}$ feed) for both Kiln Nos. 1 and 2.

BACT for PM (0.1 lb/ton $kiln_{ph}$) feed from Coolers Nos. 1 and 2 proposed by Southdown is equal to that given in the NSPS for Portland Cement Plants. Southdown was unable to achieve lower limits set in the past as a result of permit conditions they agreed to comply with in order to avoid PSD/BACT. The basis is also the BACT determinations made by the Department for Florida Rock Industries and Florida Crushed Stone. The Department accepts the applicant's proposed limit (corrected to 0.09 lb/ton $kiln_{ph}$ feed) for both Coolers Nos. 1 and 2 with the understanding that it is being met at all times rather than just during annual emission tests.

BACT for CO was proposed by Southdown to be 1.2 lb/ton $kiln_{ph}$ feed (2.0 lb/ton clinker at a clinker production rate of 90 TPH) for both Kilns. This value will provide sufficient flexibility to minimize NO_x and SO_2 emissions. The value is within the Department's recent BACT determination to Florida Crushed Stone (FCS) with a CO limit of 2.0 lb/ton clinker. However the Department encourages Southdown to continue to be judicious in selecting sources of coal ash. Some of the local power companies are trying to recover the unburned carbon in the coal ash by reburning it, taking advantage of the heat content, and producing a more salable coal ash for customers such as the cement industry. If Southdown revises its specifications and accepts poor quality flyash, it can be counter-productive for this pollution prevention effort affecting both industries.

A BACT determination was required for VOC for both Kilns. The Department accepts the limit requested by Southdown which will result in annual emissions above the PSD threshold. It will allow Southdown sufficient flexibility in control for all combustion products.

No BACT determination was requested or required for metals such as mercury, beryllium, lead arsenic, fluorides and sulfuric acid mist (PSD pollutants). Original emission estimates submitted for previous applications provided assurance that emissions of these pollutants are less than the PSD significant threshold values.

No new BACT determination was requested for SO_2. The actual BACT emission level of 15 lb SO_2/hr is being met. This is equal to 0.10 lb SO_2/ton $kiln_{ph}$ feed. For comparison with industry conventions, this value is equal to 0.16 lb SO_2/ton clinker at a production rate of 90 TPH. Kiln No. 1 also meets the same SO_2 limit as Kiln No. 2.

A new BACT- NO_x emission limit of 1.83 lb/ton kiln $_{PH}$ feed or 275 lb/hr (3.05 lb/NO_x/ton clinker at a production rate of 90 TPH, 30-day average) will be set for Kiln No. 1. BACT for Kiln No. 2 will remain at 1.72 lb NOx/ton kiln $_{ph}$ feed or 258 lb/hr at a 150 TPH process rate (2.86 lb/ton clinker at a production rate of 90 TPH, 30-days average).

BACT DETERMINATION BY DEP:

Based on the information provided by the applicant and the information searches conducted by the Department, the BACT emission levels are established as follows:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM_{10}) (kilns)	0.18 lb./ton $kiln_{ph}$ feed
Particulate Matter (PM/PM_{10})(coolers)	0.09 lb/ton $kiln_{ph}$ feed
Carbon Monoxide (kilns)	1.2 lb/ton $kiln_{ph}$ feed
Nitrogen Oxides (Kiln No. 1)	1.83 lb/ton $kiln_{ph}$ feed
Nitrogen Oxides (Kiln No. 2)	1.72 lb/ton $kiln_{ph}$ feed
Volatile Organic Compounds (kilns)	0.09 lb/ton $kiln_{ph}$ feed
Visible Emissions (Kiln No. 2)	10 percent (no change)

COMPLIANCE

Compliance with the particulate emission limitations shall be in accordance with the EPA Reference Method 5 as contained in Appendix A, 40 CFR 60, and set forth in Subsection 60.64 of the NSPS for Portland Cement Plants, 40 CFR 60.

Continuous opacity monitors (kilns and coolers) shall meet the requirements of the 40 CFR 60.63, NSPS Subpart F for Portland Cement Plants. Compliance with the opacity standard for the Kilns and Clinker Coolers No. 1 and No. 2 shall be demonstrated by EPA reference Method 9.

Compliance with the CO limitations shall be demonstrated initially and annually by using EPA Reference Method 10 as contained in Appendix A, 40 CFR 60.

Pursuant to Rules 62-4.070(3), 62-212.400(6), and 62-297.520, F.A.C., the kiln/cooler exhaust stack system shall also be equipped with continuous monitors process monitors to record CO and/or O_2 to indicate proper maintenance, operation, and to optimize combustion for pollution control.

Compliance with the NO_x limitation shall be demonstrated initially and annually by using EPA Reference Method 7E as contained in Appendix A, 40 CFR 60.

Compliance with the VOC limitations shall be demonstrated (on a one time basis) by three one hour stack tests using Method 25 or 25A as contained in Appendix A, 40 CFR 60.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

BACT/LAER/RACT CLEARINGHOUSE DATABASE COMPARISON

The following table is to be used for reference and comparison with portland cement facilities listed in the BACT/LAER/RACT Clearinghouse database:

POLLUTANT	lb/ton clinker	lb/ton $kiln_{ph}$ feed *	lb/ton kiln feed**	lb/MM BTU
PM/PM_{10} (kiln)	0.31	0.18	0.2	0.08
SO_2 (kiln)	0.16	0.10	0.12	0.05
NO_x (Kiln No. 1)	3.05	1.83	2.03	0.91
NO_x (Kiln No. 2)	2.87	1.72	1.91	0.86
CO (kiln)	2.00	1.2	1.33	0.57
VOC (kiln)	0.15	0.09	0.1	0.04
PM/PM_{10} (Cooler)	0.15	0.09	0.1	0.04

Based on the following process rates:
Preheater feed rate ($kiln_{ph}$ feed rate) : 165 TPH (one-hour maximum)
Preheater feed rate ($kiln_{ph}$ feed rate) *: 150 TPH (30-day average)
Kiln feed rate **: 135 TPH (30-day average)
Clinker production : 90 TPH (30-day average)
Heat Input : 300 MMBTU/hr

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Teresa Heron, Review Engineer
A. A. Linero, Administrator, New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

Date: 6/23/97

Approved By:

Howard L. Rhodes, Director
Division of Air Resources Management

Date: 6/25/97

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "*Return Receipt Requested*" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Don Kelley, Plant Mgr
Southdown, Inc
P O Box 6
Brooksville, Fl
34605-0006

4a. Article Number
P 265 659 235

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
7-2-97

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X Audrey Maddux

PS Form [illegible] Return Receipt

Thank you for using Return Receipt Service.

P 265 659 235

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Don Kelley	
Street & Number Southdown	
Post Office, State, & ZIP Code Brooksville Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 6-26-97	

053001D-003-AC
PSD-FL-233

PS Form **3800**, April 1995

Southdown
Brooksville Cement Plant

May 21, 1997

Certified Mail - Return Receipt Requested

Ms. Teresa Heron
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT
Draft Permit No.: 0530010-001-AC (PSD-FL-233)

Dear Ms. Heron:

The Florida Department of Environmental Protection's (FDEP) notice of its intent to issue an air construction permit modifications to Southdown, Inc., for a revision of the emission limits applicable to its portland cement facility has been published in the Hernando, Pasco, and Citrus County sections of The Tampa Tribune. The notice of intent was published on November 12, 1996. This fulfills the FDEP's requirement to publish the "Notice of Intent to Issue" within the thirty day time period.

A copy of this Notice and affidavit are attached.

If further action is required in regards to issuance of this permit, please do not hesitate to contact me at (352) 796-7241.

Sincerely,

Don B. Kelly

Don B. Kelly
Plant Manager

Attachments

DBK\dab

cc: T. Heron, BAR
SWD
HCPD
EPA
NPS
Koogler & Assoc.

16301 Ponce De Leon Boulevard • Brooksville, Florida 34614
(800) 727-6261 • (352) 796-7241 • Fax: (352) 754-9836

THE TAMPA TRIBUNE
Published Daily
Tampa, Hillsborough County, Florida

State of Florida }
County of Hillsborough } ss.

Before the undersigned authority personally appeared J. Rosenthal, who on oath says that she is Classified Billing Manager of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a

LEGAL NOTICE PASCO

in the matter of

PUBLIC NOTICE OF INTENT

was published in said newspaper in the issues of

MAY 15, 1997

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, this advertisement for publication in the said newspaper.

J Rosenthal

Sworn to and subscribed before me, this 19 day

of MAY, A.D. 1997

Personally Known ____ or Product Identification ____

Type of Identification Produced ____

(SEAL)

Susie Lee Slaton

NOTARY PUBLIC ★ STATE OF FLORIDA
OFFICIAL NOTARY SEAL
SUSIE LEE SLATON
COMMISSION NUMBER
CC639424
MY COMMISSION EXP.
APRIL 16, 2001

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DRAFT Permit No.: 0530010-003-AC, (PSD-FL-233)
Southdown Brooksville Cement Manufacturing Facility
Hernando County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification to Southdown, Inc., for an increase in process rates applicable to its portland cement facility located on Highway 98, Northwest of Brooksville, Hernando County. A Best Available Control Technology (BACT) determination was required for particulate matter (PM/PM_{10}), nitrogen oxides (NO_X) carbon monoxide (CO) and volatile organic compounds (VOC) pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are Southdown, Inc. Post Office Box 6, Brooksville, Florida 34605-0006.

The new permit will replace four current construction permits for Cement Plants No. 1 and No. 2 which were originally permitted in 1973 and 1980, respectively. Each plant includes a coal/liquid fuel/gas-fired, dry process cement kiln with a preheater and clinker cooler. Air pollution control is achieved by fabric filters (baghouses) for PM/PM_{10} from the kilns and coolers; absorption of sulfur compounds and metals into the product; and combustion controls for CO, volatile organic compounds (VOC), and nitrogen oxides (NO_X).

Emissions will increase as a result of an increase in process feed rates to each kiln. The presently permitted process rates of 145 tons per hour (TPH as preheater feed on a 30 day average) will be increased to 150 TPH. The permit will account for increases in the permitted emissions of PM/PM_{10} from Coolers No. 1 and No. 2 and Kiln No. 2; decrease of permitted emissions of PM/PM_{10} from Kiln No. 1; establishment of or increase in permitted emission limits of CO and VOC from both kilns; and will set a BACT permit limit for NOx from Kiln No. 1.

Total emissions, including increases, of pollutants subject to PSD review shall not exceed the following limits:

Pollutant	Maximum Emissions Tons Per Year (TPY)
CO	1,576
PM/PM_{10}	356
VOC	120
NO_X	2,448

The maximum emission rate of sulfur dioxide, which is not subject to PSD review by this action, will be TPY. An air quality impact analysis was conducted. Emissions from the facility will consume PSD increment but will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. NO_X emissions from the project have an insignificant PSD Class II impact. The maximum predicted PSD Class II PM_{10} increments consumed by all sources in the area, including this project, will be as follows:

PSD Class II Increment Consumed (ug/m^3)	Allowable Increment (ug/m^3)	Percent Increment Consumed
PM_{10}		
24-hour 24.9	30	83
Annual 3.8	17	22

The project has an insignificant impact on the Chassahowitzka PSD Class I area for the PM10 annual averaging time. The maximum predicted PSD Class I PM_{10} increment consumed by the project for the 24 hour averaging time is 1.03 ug/m^3 or 13% of the available 24 hour increment of 8 ug/m^3. The maximum predicted PSD Class I NO_2 increment consumed by the project is 0.9 ug/m^3 or 36% of the available increment of 2.5 ug/m^3.

The Department will issue the FINAL Permit in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue FINAL Permit with the conditions of the DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. or a party requests mediation as an alternative remedy under Section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9370, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or withing fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) a statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

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

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) the name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) a statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the request has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signature of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitation imposed by Section 120.569 and 120.57 F.S. for requesting an holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing process under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 904/488-1344
Fax: 904/922-6979

Department of Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619
Telephone: 813/744-6100
Fax: 813/744-6458

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information.

May 15, 1997

HERNANDO TODAY

Published Daily

BROOKSVILLE, HERNANDO, FLORIDA

STATE OF FLORIDA

COUNTY OF HERNANDO:

Before the undersigned authority personally appeared Sally Parmerter, who on oath says that she is Legal Ad Coordinator of the Hernando Today/Hernando Sunday, a daily newspaper published at Brooksville in Hernando County, Florida: that the attached copy of the advertisement, being a Public Notice in the matter of Intent to Issue Air Construction Permit, Draft Permit No.: 0530010-003-AC (PSD-FL-233) in the N/A Court, was published in said newspaper in the issues of May 15, 1997.

Affiant further says that the said Hernando Today/Hernando Sunday is a newspaper published at Brooksville, in said Hernando County, Florida, and that the said newspaper has heretofore been continuously published in said Hernando County, Florida, each week and has been entered as second class mail matter at the post office in Brooksville, in said Hernando County, Florida, for a period of 1 year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Sally Parmerter

(Signature of Affiant)

Sworn to and subscribed before me this 19th day of May, 1997.

Kathleen R. Schiefelbein

(Signature of notary public)

Kathleen R. Schiefelbein

(Name of Notary typed, printed or stamped)

Personally Known ✓ or

Produced Identification _____

Type of Identification Produced

Legals | Legals | Legals

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DRAFT Permit No.: 0530010-003-AC, (PSD-FL-233)
Southdown Brooksville Cement Manufacturing Facility
Hernando County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification to Southdown, Inc., for an increase in process rates applicable to its portland cement facility located on Highway 98, Northwest of Brooksville, Hernando County. A Best Available Control Technology (BACT) determination was required for particulate matter (PM/PM_{10}), nitrogen oxides (NO_X) carbon monoxide (CO) and volatile organic compounds (VOC) pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are Southdown, Inc. Post Office Box 6, Brooksville, Florida 34605-0006.

The new permit will replace four current construction permits for Cement Plants No. 1 and No. 2 which were originally permitted in 1973 and 1980, respectively. Each plant includes a coal/liquid fuel/gas-fired, dry process cement kiln with a preheater and clinker cooler. Air pollution control is achieved by fabric filters (baghouses) for PM/PM_{10} from the kilns and coolers; absorption of sulfur compounds and metals into the product; and combustion controls for CO, volatile organic compounds (VOC), and nitrogen oxides (NO_X).

Emissions will increase as a result of an increase in process feed rates to each kiln. The presently permitted process rates of 145 tons per hour (TPH as preheater feed on a 30 day average) will be increased to 150 TPH. The permit will account for increases in the permitted emissions of PM/PM_{10} from Coolers No. 1 and No. 2 and Kiln No. 2; decrease of permitted emissions of PM/PM_{10} from Kiln No. 1; establishment of or increase in permitted emission limits of CO and VOC from both kilns; and will set a BACT permit limit for NOx from Kiln No. 1.

Total emissions, including increases, of pollutants subject to PSD review shall not exceed the following limits:

Pollutant	Maximum Emissions Tons Per Year (TPY)
CO	1,576
PM/PM_{10}	356
VOC	120
NO_X	2,448

The maximum emission rate of sulfur dioxide, which is not subject to PSD review by this action, will be TPY. An air quality impact analysis was conducted. Emissions from the facility will consume PSD increment but will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. NO_X emissions from the project have an insignificant PSD Class II impact. The maximum predicted PSD Class II PM_{10} increments consumed by all sources in the area, including this project, will be as follows:

PSD Class II Increment Consumed (ug/m^3)		Allowable Increment (ug/m^3)	Percent Increment Consumed
PM_{10}			
24-hour	24.9	30	83
Annual	3.8	17	22

The project has an insignificant impact on the Chassahowitzka PSD Class I area for the PM10 annual averaging time. The maximum predicted PSD Class I PM_{10} increment consumed by the project for the 24 hour averaging time is 1.03 ug/m^3 or 13% of the available 24 hour increment of 8 ug/m^3. The maximum predicted PSD Class I NO_2 increment consumed by the project is 0.9 ug/m^3 or 36% of the available increment of 2.5 ug/m^3.

The Department will issue the FINAL Permit in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days form the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue FINAL Permit with the conditions of the DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. or a party requests mediation as an alternative remedy under Section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9370, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or withing fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

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MY COMMISSION EXPIRES

PN Southdown 0530010-003-AC
PSD-FL-233

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) a statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

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

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) the name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) a statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the request has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signature of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitation imposed by Section 120.569 and 120.57 F.S. for requesting an holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing process under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 904/488-1344
Fax: 904/922-6979

Department of Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619
Telephone: 813/744-6100
Fax: 813/744-6458

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information.

May 15, 1997

DEPARTMENT OF ENVIRONMENTAL PROTECTION
NEW SOURCE REVIEW SECTION
BUREAU OF AIR REGULATION
Telephone (904) 488-1344
Fax (904) 922-6979
Mail Station # 5505

TECHNICAL EVALUATION

AND

PRELIMINARY DETERMINATION

Southdown, Inc.,
Brooksville, Hernando County, Florida

Air Construction Permit Number 0530010-003-AC (PSD-FL-233)
(Supersedes AC 27-258569, 258570, 258571, and 258572)
Kilns 1 and 2, Coolers 1 and 2

May 6, 1997

1. APPLICATION INFORMATION

1.1 Applicant Name and Address

Southdown, Inc.
U.S. Highway 98
Brooksville, Florida 34605

Authorized Representative:
Mr. Don Kelly, Plant Manager

1.2 Reviewing and Process Schedule

02-21-92: Date of Receipt of Application Addendum
02-24-97: Southdown's letter requesting burning of "oil-dry" grease and rags in kilns
04-01-97: Koogler & Associates' letter requesting burning of on-site generated, non-hazardous used oil/grease.

2. FACILITY INFORMATION

2.1 Facility Location

Southdown, Inc.
Portland Cement Manufacturing Facility
UTM: Zone 17; 356 and 3169
Directions: Highway 98, Northwest of Brooksville in, Hernando County.

2.2 Standard Industrial Classification Code

Major Group Number	32	*Clay, Glass and Concrete Products*
Group Number	324	*Cement, Hydraulic*
Industry Number	*3241*	*Cement, Hydraulic*

2.3 Facility Category

This facility includes two existing cement plants consisting of two cement kilns and two clinker coolers along with ancillary equipment. Air pollutant emissions are over 100 tons per year (TPY) of particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC). This is a Major Facility per Rule 62-210.200(171), F.A.C. and a Major (Title V) Source of Air Pollution per Rule 62-210.200(173). This industry is listed in Table 62-212.400-1, F.A.C., Major Facility Categories.

3. PROJECT DESCRIPTION

3.1 This project involves the following emissions units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
001	Unit No. 1 - Kiln No. 1
002	Unit No. 2 - Kiln No. 2
003	Unit No. 3 - Cooler No. 1
004	Unit No. 4 - Cooler No. 2

The proposed modification consists of about a 4 percent increase in the kiln preheater feed rates from 145 to 150 tons per hour (tph), rolling 30 production-day average for each kiln. The design maximum feed rate, stated in the current permit as 165 tph, remains unchanged.

The following changes will be performed:

1. Modify preheater exit gas cyclones to increase efficiency, which will reduce heat loss and lower the pressure drop.

2. Replace kiln ID fan with a higher efficiency in order to increase air flow without increasing the drive motor horsepower.

3. Add two modules to the existing Kiln No. 1 baghouse to allow a lower air-to-cloth ratio when a module is isolated for maintenance.

4. Improve the clinker cooler efficiency by upgrading fans and adding static gates.

5. Increase kiln preheater feed capacity to ensure 150 tph on a continuous basis, with a maximum design hourly rate of 165 tph.

6. Add drying drum to the No. 1 Raw Mill and increase the mill fan capacity to recuperate the waste heat from the preheater gas.

The above changes will increase the overall thermal efficiency of the process. Thus the maximum heat input will not exceed the existing limit of 300 MMBtu/hr. Each kiln and cooler utilizes a baghouse to control the emissions of particulate matter. There are no add-on controls for any of the other pollutants emitted from the cement kilns.

In addition, Southdown has also requested to allow both kilns the burning of on-site generated, non-hazardous oil and grease (5,000 gallons). The spent lubricants can consist of oil or grease dripping collected and containerized, oily rags and/or oily absorbent that has been used in the cleanup of a small on-site spill. The used oil/grease or oily rags and oily absorbent material will be containerized

(typically in sealed one-gallon containers) and introduced into either of the kiln systems at the base of the preheater (in a location similar to where whole tires are introduced in kiln No. 1). Southdown has indicated that they have been burning on-site generated, non-hazardous oil and grease for a number of years and that it is a common practice in the cement industry.

The proposed permit revisions will, however, result in significant net emission increases for PM/PM_{10} (Kilns 1 and 2 and Coolers 1 and 2) NOx, VOC and for CO (Kilns 1 and 2) when comparing past actual with future potential emissions.

Background Information

Kiln and Cooler 1 were originally permitted in 1973, while Kiln and Cooler 2 were originally permitted in 1980. Kilns 1 and 2 are currently permitted under permits AC 27-258571 and AC27-258572, respectively. Coolers 1 and 2 are permitted under AC 27-258569 and AC27-258570, respectively.

Both kilns are presently permitted for a maximum 1-hour kiln preheater feed rate of 165 tons per hour (TPH), a corresponding kiln feed rate of 148 TPH, a 30-day average kiln preheater feed rate of 150 TPH and a corresponding kiln feed rate of 135 TPH. The maximum heat input rate to each kiln is 300 MMBtu per hour. Each kiln utilizes a baghouse to control the emissions of particulate matter. There are no add-on controls for any of the other pollutants emitted from the cement kilns. Raw material properties, chemical reactions in the kiln, absorption into the clinker, and combustion controls minimize emissions of NO_x, SO_2, CO, and VOC.

Both coolers are permitted for a maximum 1-hour throughput rate of 96 TPH and, a 30-day average throughput rate of 90 TPH. Each clinker cooler utilizes a baghouse to control the emissions of particulate matter.

The applicant has requested removal of clinker production limits and that emission limits be based on feed to the kiln preheater (k_{ph}) instead of feed to the kiln.

4. PROCESS DESCRIPTION

4.1 General Information

Portland cement is a fine powder, usually gray in color, that consists of a mixture of dicalcium silicate, tricalcium silicate, tricalcium aluminate, and tricalcium aluminoferrite, and miscellaneous minerals to which one or more forms of calcium sulfate have been added. About 95% of the cement production in the U.S. is portland cement. Masonry cement, also produced at the portland cement plant, represents the balance of the domestic cement production.

There are several variations in cement manufacturing including the wet, dry, dry preheater and dry

precalciner processes. The precalciner process also includes a preheater. These processes are essentially identical relative to the manufacture of cement from raw materials. However, the type of process does affect the equipment design, method of operation, and fuel consumption. Because of its lower fuel requirements, most new portland cement plants use the dry precalciner process.

The choice of fuel is based on economics. The most commonly used kiln fuels are coal, natural gas, and oil. Supplementary fuels such as petroleum coke, tires, used oil and various kinds of wastes are burned at many plants. Fuel combustion differs between the wet, dry, dry preheater and dry precalciner processes. In the first three, all fuel combustion typically occurs in the kiln. In the latter, some fuel combustion occurs in a separate calcining vessel located between the preheater and kiln. In any of the processes, it is possible to introduce additional fuels such as tires directly into the kiln. Southdown uses the dry preheater process, a version of which is depicted in simplified form in figure 1 (from a portland cement association publication).

The production of portland cement is a four-step process: (1) raw materials acquisition and handling (2) kiln feed preparation for pyroprocessing, (3) pyroprocessing, and (4) finished cement grinding. The chemical reactions and physical processes that constitute the transformation are quite complex. The heart of the portland cement manufacturing process is the pyroprocessing system which includes the rotary kiln and suspension preheater/precalciner (when present). Several complex chemical reactions necessary to produce portland cement minerals take place in the pyroprocessing system.

Pyroprocessing (preheater process) may be conveniently divided into five stages, depending on location and temperature of the materials in the system.

1. Uncombined water evaporates from raw materials as material temperature increases to 100°C (212°F) in the upper preheater or raw materials roller mill.

2. As the material temperature increases from 100°C to approximately 430°C (800°F) in the preheater, combined water is liberated from argillaceous compounds.

3. Between 430°C and 900°C (1650°F), partial calcination occurs in the lower preheater and is completed within the kiln. Carbon dioxide is liberated from the carbonates and calcium oxide (lime) is formed.

4. Following calcination, sintering of the oxides occurs in the burning zone of the rotary kiln at temperatures up to 1510°C (2750°F). Lime, silica, and iron and aluminum compounds react to form calcium silicates, aluminates, ferrites and aluminoferrites. Alkali sulfates and chlorides evaporate.

5. Following sintering, clinker nodules are produced as the temperature of the material decreases from 1510°C to 1370°C (2500°F).

The raw materials enter the pyroprocessing system in the uppermost preheater cyclones. They exit the preheater and enter the kiln at the elevated end. The rotation of the kiln causes the solid materials

to be slowly transported downward from the front end. Fuel is supplied at the lower or discharge end of the kiln. The hot, gaseous combustion products move countercurrent to the materials flow, thereby transferring heat to solids in the kiln and preheater.

The product of the rotary kiln is known as clinker which enters a vessel where it is cooled by air. Hot air from the clinker cooler is recovered and returned to the pyroprocessing system as combustion air. The cooled clinker is mixed with a form of calcium sulfate, usually gypsum, and ground in ball or tube mills in the finish mill department to produce portland cement.

Portland cement is shipped from the packhouse or shipping department in bulk or in paper bags by truck or rail.

A process flow diagram for this facility is presented in Figure 2.

5. RULE APPLICABILITY

The proposed project is subject to preconstruction review under the applicable provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). This facility is located in Hernando County, an area designated as attainment for all criteria pollutants in accordance with Rule 62-204.360, F.A.C.

The proposed project, increasing PM/PM_{10} actual emissions from Kilns 1 and 2 and Cooler 1 and 2 CO, NOx and VOC emissions from Kilns 1 and 2, is subject to review under Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD), because the emission increases for both pollutants exceed the significant emission rates given in Table 62-212.400-2, F.A.C. This review consists of a determination of Best Available Control Technology (BACT) and, unless otherwise exempted, an analysis of the air quality impact of the proposed project's impacts on soils, vegetation and visibility along with air quality impacts resulting from associated commercial, residential and industrial growth.

The emission units affected by this modification shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations) and, specifically, the following chapters and rules:

- Chapter 62-4 Permits
- Rule 62-204.220 Ambient Air Quality Protection
- Rule 62-204.240 Ambient Air Quality Standards
- Rule 62-204.260 Prevention of Significant Deterioration Increments
- Rule 62-204.360 Designation of Prevention of Significant Deterioration Areas
- Rule 62-204.800 Federal Regulations Adopted by Reference
- Rule 62-210.300 Permits Required
- Rule 62-210.350 Public Notice and Comments

- Rule 62-210.370 Reports
- Rule 62-210.550 Stack Height Policy
- Rule 62-210.650 Circumvention
- Rule 62-210.700 Excess Emissions
- Rule 62-210.900 Forms and Instructions
- Rule 62-212.300 General Preconstruction Review Requirements
- Rule 62-212.400 Prevention of Significant Deterioration
- Rule 62-296.320 General Pollutant Emission Limiting Standards
- Rule 62-297.310 General Test Requirements
- Rule 62-297.400 EPA Methods Adopted by Reference
- Rule 62-297.401 EPA Test Procedures
- Rule 62-297.520 EPA Performance Specifications

Cement Plants 1 and 2 are subject to all applicable requirements of 40 CFR 60, NSPS for Portland Cement Plants, Subpart F.

These emission units shall comply with all applicable requirements of 40 CFR 60, General Provisions, Subpart A.

6. SOURCE IMPACT ANALYSIS

6.1 Emission Limitations

This facility emits the following PSD regulated pollutants: particulate matter, sulfur dioxide, nitrogen oxides, volatile organic compounds, carbon monoxide, sulfuric acid mist, fluorides, beryllium, mercury and lead. Cement Plant No. 2 has already gone through various PSD reviews [PSD-FL-063, PSD-FL-124, PSD-FL-124(A) and PSD-FL-188].

The new permit (0530010-003 AC - Section III. B) will address the increases in actual PM/PM_{10} emissions from both Kiln and Cooler 1, establish a CO limit for Kiln 1 under all operating conditions, and establish for the first time NO_x and VOC emission limitations and include all other applicable conditions for Kiln and Cooler 1 from existing permits. The Department's proposed permitted emission and compliance requirements for Kiln and Cooler No. 1 are summarized in Tables 1-1, Air Pollutant Emission Standards and Terms, and Table 2-1, Compliance Requirements.

Permit 0530010-003 AC, Section III. C, will address the increases of actual PM/PM_{10}, emissions from Kiln and Cooler 2, the increases in emissions of NO_x, CO and VOC from Kiln 2, and include all other conditions for Kiln and Cooler 2 from existing permits. The Department's proposed permitted emissions and compliance requirements for Kiln and Cooler 2 are summarized in Tables 1-2, Air Pollutant Emission Standards and Terms, and Table 2-2, Compliance Requirements.

6.2 Emission Summary

CEMENT KILN No. 1 and COOLER No. 1 [1]

Pollutants	Current Allowable		Current Actual		New Proposed Allowable		Net Increase ton/yr	PSD Significant Level ton/yr
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
(kiln) PM/PM10	39	171	17.8 [4]	70.6 [4]	27	118.3	47.7	25/15
(cooler) PM/PM10	7.1	28.1	6.17 [4]	24.5 [4]	13.6	59.6	32.4	25/15
SO2	15	65.7	NA	NA	15	65.7	NA	40
NO_x	NA [6]	NA [6]	155.2 [5]	616[5]	285	1248.3	632.3	40
CO	57.7 [3]	234 [3]	53.6 [5]	212.9 [5]	180	788.4	575.5	100
VOC	NA	NA	4.4 [5]	17.5 [5]	13.6	59.6	42.10	40
Opacity (cooler)	10%				10%			
Opacity (kiln)	20%				20%			

CEMENT KILN No. 2 AND COOLER No. 2 [2]

Pollutants	Current Allowable		Current Actual [4]		New Proposed Allowable		Net Increase ton/yr	PSD Significant Level ton/yr
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
(kiln) PM/PM10	13.5	55.4	6.77	25.9	27	118.3	92.46	25/15
(cooler) PM/PM10	5.0	20.5	4.44	17.0	13.6	59.6	42.6	25/15
SO2	15	65.70	NA	NA	15	65.7	NA	40
NO_x	250	1025	159.05	606.7	258	1130	523.3	40
CO	64	262	53	203	180	788.4	585.4	100
VOC	7.4	30.3	4.47	17.1	13.6	59.6	42.5	40
Opacity (cooler)	10%				10%			
Opacity (kiln)	10%				10%			

Footnotes:

[1] These units were originally permitted in 1973. Permit No. AC27- 2251.
[2] These units were originally permitted by EPA in 1980 (PSD-Fl-063).
[3] CO emission limits of 57.7 lbs/hr and 234.4 tons/yr were established while burning tires (20% WTDF) and coal.
[4] Kiln and Cooler No. 1 operated 8001 hours in 1994 and 7875 hours in 1995.
Kiln and Cooler No. 2 operated 7478 hours in 1994 and 7780 hours in 1995.
[5] Based on actual stack test conducted in 1994 and 1995 while burning tires (20% WTDF) and coal. Assuming actual hours of operation as reported to the District in 1994 and 1995.
[6] There are no allowable limits for NO_x from this kiln.

In the original submittal (1996), Southdown requested the Department to consider current allowable emissions for the baseline calculations instead of actual emissions because in some cases the actual emissions are greater and cannot be used to perform the calculations. However, the Department used actual emissions from the last two years (1994 and 1995) of operation. Actual emissions are based on the Department's records kept at the Southwest District Office in Tampa.

Enforcement Note: *The District has been negotiating a consent agreement with Southdown as a result of a number of excess opacity and stack test emissions violations.*

6.3 Control Technology Review

The Department and the U.S. EPA have made several previous BACT determinations (1980, 1988, 1993) for this cement manufacturing facility, specifically Cement Plant No. 2. Cement Plant 2 was built in accordance with a PSD/BACT review conducted in 1980. BACT reviews conducted since that time have been related to corrections of very stringent initial limits as well as to allow burning of different fuels. Because of these operational changes, BACT limits were developed and revised for Cement Plant 2. The actual controls have been use of fabric filters (baghouses) for particulate control and process optimization for control of CO, SO_2 NO_x, and VOC.

Southdown has curtailed a number of the operational changes which resulted in the PSD/BACT reviews conducted since the construction of Cement Plant 2. They plan to use the same technology that they always have used, but want to insure that the emissions limits are consistent with that technology and with the requirements of the Major Source (Title V) Program to insure that the facility continuously operate in compliance with applicable conditions.

The current revision for Cement Plant No. 2 (Kiln and Cooler No. 2) will consider a revision of the BACT emission limits for PM/PM_{10}, and CO. In addition a new BACT limit will be set for VOC emissions. The rationale for this change is explained in the BACT determination, a copy of which is attached to this document.

Cement Plant No. 1 was built prior to existence of the PSD program. This modification will increase the process rate along with an increase in pollutant emissions. New emission limits for PM/PM_{10},

NO_x, CO and VOC will be set for Kiln 1 and PM/PM_{10} for Cooler 1. These emissions limits will be based on PSD/BACT requirements for these pollutants.

6.3.1 Nitrogen Oxides (NO_x)

Nitrogen oxides will be limited to an emission factor of 1.83 lb NOx/ton kiln $_{ph}$ feed (275 lb/hr) for Kiln 1. The limit from Kiln 2 will remain at 1.72 lb NO_x/ton kiln $_{ph}$ feed (258 lb/hr). These limits are attained through process and combustion control.

6.3.2 Sulfur dioxide (SO_2)

Sulfur dioxide emissions from each kiln will remain limited to 15 lb/hr (0.10 lb SO_2/ton kiln $_{ph}$ feed). These represent the lowest known rates from any kiln in the country. SO_2 emissions are minimized by maintaining proper ratios of sulfur and alkali in the pyroprocessing environment and intimate contact between raw materials and exhaust gases. Ultimately the sulfur oxides are incorporated into the clinker lattice structure, thus minimizing the amount emitted to the atmosphere. A small measure of SO_2 removal is theoretically possible in the baghouse although insufficient moisture is present to allow this mechanism to be significant.

6.3.3 Particulate Matter (PM/PM_{10})

Particulate emissions will be limited to 27 lb/hr from each kiln and 13.6 lb/hr from each cooler. These equate to 0.18 lb/ton kiln $_{ph}$ feed and 0.09 lb/ton kiln $_{ph}$ feed from the kiln and cooler respectively. These values are among the lowest at any cement plant in the country. The exhaust gases from both kilns and coolers are controlled by fabric filters (baghouses). When properly maintained, baghouses routinely achieve a particulate control efficiency greater than 99.9 percent.

6.3.4 Carbon Monoxide and Volatile Organic Compounds (CO and VOC)

Emissions from each kiln of carbon monoxide and volatile organic compounds will be limited to 180 lb CO/hr and 13.6 lb VOC/hr. These values correspond to emission factors of 1.2 lb CO/ton kiln $_{ph}$ feed and 0.09 lb VOC/ton kiln $_{ph}$ feed. These limits will be accomplished by combustion control.

6.3.5 *Metal Emissions*

Most trace metals in the kiln systems behave in a manner similar to the main elements, i.e. Ca, Si, Al, Fe and Mg. As such, most of the trace metals are bound in the clinker and in the dusts discharged from the kiln system. Studies show that more than 99.9 % of the total main and trace elements inputs are bound in the solids of the kiln system.

Analyses of the on site generated, non-hazardous used oil/grease, burned as these kilns, meets the on-specification used oil limits for arsenic, cadmium, lead and total halogens but exceed the on-specification used oil limit for chromium. However, studies show that the low volatility of the

metals, including chromium, and its extensive bonding in the clinker results in insignificant emissions for these elements.

Southdown has provided assurances that emissions of these pollutants will not result in exceedances of air quality standards or ambient guidelines developed to protect human health and welfare. PSD pollutants: Mercury (Hg), Beryllium (Be), lead (Pb), and arsenic (As) are under the PSD threshold level and are not subject to PSD review.

6.4 Air Quality Analysis

6.4.1 Introduction

The proposed project will increase emissions of four pollutants at levels in excess of PSD significant amounts: PM/PM_{10}, CO, NO_x, and VOC. The air quality impact analyses required by the PSD regulations for these pollutants include:

* An analysis of existing air quality for PM_{10}, CO, NO_x, and VOC;
* A significant impact analysis for PM_{10}, CO and NO_x;
* A PSD increment analysis for PM_{10} and NO_x;
* An Ambient Air Quality Standards (AAQS) analysis for PM_{10}, and
* An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The significant impact, PSD increment, and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the required analyses follows.

NO_x, CO and VOC will be set for Kiln 1 and PM/PM_{10} for Cooler 1. These emissions limits will be based on PSD/BACT requirements for these pollutants.

6.3.1 Nitrogen Oxides (NO_x)

Nitrogen oxides will be limited to an emission factor of 1.83 lb NOx/ton kiln $_{ph}$ feed (275 lb/hr) for Kiln 1. The limit from Kiln 2 will remain at 1.72 lb NO_x/ton kiln $_{ph}$ feed (258 lb/hr). These limits are attained through process and combustion control.

6.3.2 Sulfur dioxide (SO_2)

Sulfur dioxide emissions from each kiln will remain limited to 15 lb/hr (0.10 lb SO_2/ton kiln $_{ph}$ feed). These represent the lowest known rates from any kiln in the country. SO_2 emissions are minimized by maintaining proper ratios of sulfur and alkali in the pyroprocessing environment and intimate contact between raw materials and exhaust gases. Ultimately the sulfur oxides are incorporated into the clinker lattice structure, thus minimizing the amount emitted to the atmosphere. A small measure of SO_2 removal is theoretically possible in the baghouse although insufficient moisture is present to allow this mechanism to be significant.

6.3.3 Particulate Matter (PM/PM_{10})

Particulate emissions will be limited to 27 lb/hr from each kiln and 13.6 lb/hr from each cooler. These equate to 0.18 lb/ton kiln $_{ph}$ feed and 0.09 lb/ton kiln $_{ph}$ feed from the kiln and cooler respectively. These values are among the lowest at any cement plant in the country. The exhaust gases from both kilns and coolers are controlled by fabric filters (baghouses). When properly maintained, baghouses routinely achieve a particulate control efficiency greater than 99.9 percent.

6.3.4 Carbon Monoxide and Volatile Organic Compounds (CO and VOC)

Emissions from each kiln of carbon monoxide and volatile organic compounds will be limited to 180 lb CO/hr and 13.6 lb VOC/hr. These values correspond to emission factors of 1.2 lb CO/ton kiln $_{ph}$ feed and 0.09 lb VOC/ton kiln $_{ph}$ feed. These limits will be accomplished by combustion control.

6.3.5 *Metal Emissions*

Most trace metals in the kiln systems behave in a manner similar to the main elements, i.e. Ca, Si, Al, Fe and Mg. As such, most of the trace metals are bound in the clinker and in the dusts discharged from the kiln system. Studies show that more than 99.9 % of the total main and trace elements inputs are bound in the solids of the kiln system.

Analyses of the on site generated, non-hazardous used oil/grease, burned as these kilns, meets the on-specification used oil limits for arsenic, cadmium, lead and total halogens but exceed the on-specification used oil limit for chromium. However, studies show that the low volatility of the

6.4.2 Analysis of Existing Air Quality and Determination of Background Concentrations

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. This monitoring requirement may be satisfied by using previously existing representative monitoring data, if available. An exemption to the monitoring requirement may be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. In addition, if an acceptable monitoring method for the specific pollutant has not been established by EPA, monitoring may not be required.

If preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from previously existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling.

The table below shows that CO and NO_2 impacts from the project are predicted to be less than the de minimus levels; therefore, preconstruction ambient air quality monitoring is not required for these pollutants. However as shown in the table, PM_{10} impacts from the project are predicted to be greater than the de minimus level; therefore, preconstruction ambient air quality monitoring is required for PM_{10}. Previously existing representative monitoring data from a PM_{10} monitor in the vicinity of the facility were used to fulfill the PM_{10} monitoring requirement and to establish a PM_{10} background concentration for use in the AAQS analysis. Background concentrations established for PM_{10} are 105 and 35 ug/m^3 for the 24-hour and annual averaging times, respectively. The net emissions increase of VOC is compared to a de minimus monitoring emission rate in tons per year instead of a concentration level. For this project, the net emissions increase of VOC is less than the de minimus emissions rate of 100 tons per year; thus, preconstruction ambient air quality monitoring for VOC is not required.

Maximum Project Air Quality Impacts for Comparison to the De Minimus Ambient Levels.

Pollutant	Avg. Time	Max Predicted Impact (ug/m^3)	Impact Greater Than De Minimus?	De Minimus Level(ug/m^3)
PM_{10}	24-hour	12.1	YES	10
CO	8-hour	142	NO	575
NO_2	Annual	0.64	NO	14
VOC	Annual	50.4 TPY	NO	100 TPY*

*No significant air quality de minimus concentration level for O_3 has been established. Instead de minimus level is based on net emissions increase of VOC.

6.4.3 Models and Meteorological Data Used in Significant Impact, PSD Increment and AAQS Analyses

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project and other existing major facilities. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options in each modeling scenario. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfy the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) stations at Tampa International Airport, Florida (surface data) and Ruskin, Florida (upper air data). The 5-year period of meteorological data was from 1987 through 1991. These NWS stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

Since five years of data were used in ISCST3, the highest-second-high (HSH) short-term predicted concentrations were compared with the appropriate AAQS or PSD increments. For the annual averages, the highest predicted yearly average was compared with the standards. For determining the project's significant impact area in the vicinity of the facility and if there are significant impacts from the project on any PSD Class I area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

6.4.4 Significant Impact Analysis

Initially, the applicant conducted modeling using only the proposed project's emissions. Receptors were placed within 20 km of the facility, which is located in a PSD Class II area, and the Chassahowitzka National Wilderness Area (CNWA) which is a PSD Class I area located approximately 14 km to the west of the project at its closest point. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compared maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project were predicted in the vicinity of the facility or in the CNWA. The tables below show the results of this modeling. The radius of significant impact, if any, for each pollutant and applicable pollutant averaging time is also shown in the tables below.

Maximum Project Air Quality Impacts for Comparison to the PSD Class II Significant Impact Levels in the Vicinity of the Facility.

Pollutant	Avg. Time	Max Predicted Impact (ug/m^3)	Significant Impact Level (ug/m^3)	Significant Impact?	Radius of Significant Impact (km)
PM_{10}	Annual	1.3	1	YES	2.5
	24-hour	12.1	5	YES	2.5
CO	8-hour	142	500	NO	0.0
	1-hour	409	2000	NO	0.0
NO_x	Annual	0.64	1	NO	0.0

Maximum Project Air Quality Impacts in the CNWA for Comparison to the PSD Class I Significant Impact Levels

Pollutant	Averaging Time	Max. Predicted Impact at Class I Area (ug/m^3)	Significant Impact?	National Park Service (NPS) Significant Impact Level (ug/m^3)
PM_{10}	Annual	0.075	NO	0.08
	24-hour	1.1	YES	0.27
NO_2	Annual	0.11	YES	0.03

As shown in the tables the maximum predicted air quality impacts due to PM_{10} emissions from the proposed project are greater than the significant impact levels in the vicinity of the facility. The maximum predicted air quality impacts due to PM_{10} and NO_x emissions are greater than the significant impact levels in the Class I area for the 24-hour and annual averaging times, respectively. Therefore, the applicant was required to do further PM_{10} modeling in the vicinity of the facility, within the applicable significant impact area, to determine the impacts of the project along with all other sources in the vicinity of the facility. The significant impact area is based upon the predicted radius of significant impact. Further modeling for Class I impacts was also required for the PM_{10} 24-hour averaging time and the NO_2 annual averaging time. Further modeling for CO impacts was not required because maximum predicted CO impacts were less than the applicable significant impact levels.

6.4.5 Receptor Networks For PSD Increment And AAQS Analyses

For the AAQS and PSD Class II analyses, receptor grids normally are based on the size of the

significant impact area for each pollutant. For predicting maximum PM_{10} concentrations in the vicinity of the facility, a discrete receptor grid comprised of 369 receptors located along the property boundary and a polar receptor grid of 53 receptors located at radial distances of 2.5 and 3.0 km were used in these analyses. For the PSD Class I analysis, a receptor gird consisting of twenty receptors along the boundary of the CNWA was used. The results of these analyses are discussed below.

6.4.6 PSD Increment Analysis

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant. The results of the PSD Class II increment analysis presented in the table below show that the maximum predicted PM_{10} impacts are less than the allowable increments.

PSD Class II Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact (ug/m^3)	Impact Greater Than Allowable Increment?	Allowable Increment (ug/m^3)
PM_{10}	Annual	3.8	NO	17
	24-hour	24.9	NO	30

The results of the PSD Class I increment analysis presented in the table below show that the maximum predicted PM_{10} impact for all sources within 120 km of the Class I area is greater than the allowable increment; however, the analysis also shows that this project's contribution to any predicted exceedance of the increment is less than the National Park Service significant impact level. The maximum predicted NO_2 impact is less than the allowable NO_2 increment.

PSD Class I Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact (ug/m^3)	Impact Greater Than Allowable Increment?	Allowable Increment (ug/m^3)	Maximum Southdown Contribution To Any Exceedance	National Park Service Significant Impact Level	Southdown Contribution Significant
PM_{10}	24-hour	8.2	YES	8	0.021	0.027	NO
NO_2	Annual	0.9	NO	2.5	N/A	N/A	N/A

6.4.7 AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modeled. The results of the AAQS analysis are summarized in the table below. As shown in this table,

emissions from the proposed facility are not expected to cause or significantly contribute to a violation of an AAQS.

Ambient Air Quality Impacts

Pollutant	Averaging Time	Major Sources Impact (ug/m^3)	Background Conc. (ug/m^3)	Total Impact (ug/m^3)	Total Impact Greater Than AAQS	Florida AAQS (ug/m^3)
PM_{10}	Annual	6	35	41	NO	50
	24-hour	42	105	147	NO	150

6.5 *Additional Impacts Analysis*

6.5.1 Impacts On Soils, Vegetation, And Wildlife

The maximum ground-level concentrations predicted to occur for PM_{10}, NO_x, VOC and CO as a result of the proposed project, including background concentrations and all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area. An air quality related values (AQRV) analysis was done by the applicant for the Class I area. No significant impacts on this area are expected.

6.5.2 Impact On Visibility

Visual Impact Screening and Analysis (VISCREEN), the EPA-approved Level I visibility computer model, was used to estimate the impact of the proposed project's stack emissions on visibility in the CNWA. The results indicate that the maximum visibility impacts do not exceed the screening criteria inside or outside this area. As a result, there is no significant impact on visibility predicted for this Class I area. In addition a regional haze analysis was done. This analysis predicted no adverse impacts upon regional haze.

6.5.3 Growth-Related Air Quality Impacts

There will be no growth-related impacts because no physical or operational modifications will occur and production will not change as a result of this permit action.

6.5.4 Air Toxics Air Quality Impacts

The maximum predicted impacts of regulated and non-regulated toxic air pollutants that are proposed to be emitted by the project are all less than the Department's draft annual Ambient Reference Concentrations (ARC).

7. CONCLUSION

Based on the foregoing technical evaluation of the application and additional information submitted by Southdown, Inc., the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations provided the Department's Best Available Control Technology Determination is implemented and certain conditions are met. The General and Specific Conditions are listed in the attached draft conditions of approval.

Permit Engineer: T. Heron
Meteorologist: C. Holladay
Reviewed and approved by A. A. Linero, P.E.

Table 1-1. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0530010

Permittee:
Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
Kiln No.1 & Cooler No.1 PSD-FL-233

Emission Unit 003 - Kiln No. 1
Emission Unit 004 - Cooler No. 1

E.U. ID#	Description	Pollutant ID	Fuel(s)	Allowable Emissions(2) lb/ton dry $kiln_{ph}$ feed *	Allowable Emissions(2) lb/hr @150 TPH	Allowable Emissions(2) lb/hr @ 165 TPH	Equivalent Emissions (3) TPY	Regulation(s)
ARMS # 003	Kiln No. 1	PM/PM_{10}	Coal/Gas/Oil/WTDF	0.18	27.0	29.7	118	Rule 62-212.400(6), F.A.C.
ARMS # 003	Kiln No. 1	SO_2 (1)	Coal/Gas/Oil/WTDF	0.10	15.0	16.5	66	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	NO_x	Coal/Gas/Oil/WTDF	1.83	275	301	1318	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	CO	Coal/Gas/Oil/WTDF	1.20	180.0	198.0	788	Rule 62-212.400(6), F.A.C.
ARMS # 003	Kiln No. 1	VOC	Coal/Gas/Oil/WTDF	0.09	13.6	14.9	60	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	Be,Pb,Hg	Coal/Gas/Oil/WTDF	(4) To Be Determined	(4)	(4)	(4)	
ARMS # 003	Kiln No. 1	20% VE	Coal/Gas/Oil/WTDF					Rule 62-204.800, F.A.C.
ARMS # 004	Cooler No. 1	10% VE						Rule 62-204.800, F.A.C.
ARMS # 004	Cooler No. 1	PM/PM_{10}		0.09	13.6	14.9	60	Rule 62-204.800, F.A.C.

ALLOWABLE OPERATING RATES

		KILN No.1	Cooler No.1	
Hours of operation per Year		8760	8760	
Kiln preheater feed rate ($kiln_{ph}$)	TPH	165		One-hour maximum
Kiln preheater feed rate ($kiln_{ph}$) *	TPH	150		(30 - day average)
Kiln Heat Input	MMBtu/hr	300		

NOTES

(1) Emissions of SO_2 will not exceed 15 lbs/hr (150 TPH) and 16.5 lbs/hr (165 TPH). Annual testing is required in lieu of fuel sulfur restrictions. [AC27-258571]
(2) Compliance units. This facility shall demonstrate compliance based on these emission standards.
(3) "Equivalent Emissions" are based on annual average emissions at the 30-day feed rate of 150 TPH. The "Equivalent Emissions" are also listed to assess applicable Title V fees and for PSD recordkeeping tracking purposes.
(4) To confirm emissions of these pollutants are under the PSD threshold levels.

Table 1-2. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0530010

Permittee:

Southdown, Inc.

Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC

Kiln No. 2 & Cooler No. 2 PSD-FL-233

Emission Unit 014 - Kiln No. 2

Emission Unit 015 - Cooler No. 2

				Allowable Emissions(2)			Equivalent Emissions (3)	
E.U. ID#	Description	Pollutant ID	Fuel(s)	lb/ton dry $kiln_{ph}$ feed *	lb/hr @150 TPH	lb/hr @ 165 TPH	TPY	Regulation(s)
ARMS # 014	Kiln No. 2	PM/PM_{10}	Coal/Gas/Oil	0.18	27.0	29.7	118	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	SO_2 (1)	Coal/Gas/Oil	0.10	15.0	16.5	66	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	NO_x	Coal/Gas/Oil	1.72	258.0	283.8	1130	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	CO	Coal/Gas/Oil	1.20	180.0	198.0	788	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	VOC	Coal/Gas/Oil	0.09	13.6	14.9	60	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	Be,Pb.Hg	Coal/Gas/Oil	(4)	(4)	(4)	(4)	Rule 62-4.070(3), F.A.C.
ARMS # 014	Kiln No. 2	10% VE	Coal/Gas/Oil					Rule 62-212.400(6), F.A.C.
ARMS # 015	Cooler No.2	10% VE						Rule 62-212.400(6), F.A.C.
ARMS # 015	Cooler No.2	PM/PM_{10}		0.09	13.6	14.9	60	Rule 62-212.400(6), F.A.C.

ALLOWABLE OPERATING RATES

		KILN No. 2	Cooler No. 2	
Hours of operation per Year		8760	8760	
Kiln preheater feed rate ($kiln_{ph}$)	TPH	165		One-hour maximum
Kiln preheater feed rate ($kiln_{ph}$) *	TPH	150		(30 - day average)
Kiln Heat Input	MMBtu/hr	300		

NOTES

(1) Emissions of SO_2 will not exceed 15 lbs/hr (150 TPH) and 16.5 lbs/hr (165 TPH). Annual testing is required in lieu of fuel sulfur restrictions. [AC27-258572]

(2) Compliance units. This facility shall demonstrate compliance based on these emission standards.

(3) "Equivalent Emissions" are based on annual average emissions at the 30-day feed rate of 150 TPH. The "Equivalent Emissions" are also listed for informational purposes and for PSD and recordkeeping tracking purposes.

(4) To confirm emissions of these pollutants are under the PSD threshold levels.

Table 2-1. Compliance Requirements.

FACILITY ID NUMBER:	0530010

Permittee:
Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
PSD-FL-233 Kiln No. 1 & Cooler No. 1

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA Reference Method	Testing Time Frequency	Min. Compliance Test Duration	Monitoring System (MS)*
ARMS # 003	Kiln No.1	PM/PM_{10} [6]	Coal/Gas/Oil/WTDF	5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 003	Kiln No.1	VE	Coal/Gas/Oil/WTDF	9	initial/annual [3]	180 min.	COMS [3]
ARMS # 003	Kiln No.1	SO_2 [5]	Coal/Gas/Oil/WTDF	6C	initial/annual [5]	3 one-hour run	
ARMS # 003	Kiln No.1	NOx	Coal/Gas/Oil/WTDF	7E	initial/annual [7]	3 one-hour run	
ARMS # 003	Kiln No.1	CO [4]	Coal/Gas/Oil/WTDF	10	initial/annual [4]	3 one-hour run	
ARMS # 003	Kiln No.1	VOC [2]	Coal/Gas/Oil/WTDF	25 or 25A	initial [2]	3 one-hour run	
ARMS # 003	Kiln No.1	Be,Pb,Hg	Coal/Gas/Oil/WTDF	29	initial [8]	3 one-hour run	
ARMS # 004	Cooler No.1	PM/PM_{10} [6]		5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 004	Cooler No.1	VE		9	initial/annual [3]	180 min.	COMS [3]

Notes:

[1] Testing of emissions shall be conducted while burning coal and WTDF (20% heat input). Kiln No. 1 is allowed to burn natural gas, waste tire derived fuel (WTDF), and fuel oils (No. 2,4,5, and 6) as auxiliary fuels and on site generated non-hazardous wastes, used oil and grease. See specific condition No. B5. Frequency of testing after initial compliance shall be determined by the DEP Southwest District Office.

[2] VOC emission shall be tested initially to comply with the condition of this permit. Thereafter, compliance will be assumed provided that the CO allowable emission rate is not exceeded.

[3] Pursuant to 40 CFR 60, Subpart F, the kiln and cooler exhaust system shall be equipped with continuous monitors to record the opacity at the stack to indicate proper maintenance and operation. Monitoring of the opacity of emissions shall be determined by COMS pursuant to 40 CFR 60.63. Notification and recordkeeping shall be in accordance with 40 CFR 60.7 and 40 CFR 60.65.

[4] Continuous process monitors for CO and/or O_2 to optimize combustion conditions for pollution control shall be part of the process.

[5] Emissions of SO_2 shall not exceed 15 lbs/hour (150 TPH) and 16.5 lbs/hr (165 TPH). Annual testing is required in lieu of fuel sulfur restrictions. (Supplemental information received by DEP March 31, 1995).

[6] Southdown has the option of using Method 5 if they stipulate that all of the PM is PM_{10}.

[7] NO_x - An initial and Annual compliance tests as required by EPA Method 7E.

[8] To confirm emissions of these pollutants are under the PSD threshold levels. Initial test.

* MS = Continuous Opacity Monitoring System (COMS) - Continuous Emission Monitoring System (CEMS)

Table 2-2. Compliance Requirements.

FACILITY ID NUMBER: 0530010

Permittee:
Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
PSD-FL-233 Kiln No. 2 & Cooler No.2

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA Reference Method	Testing Time Frequency	Min. Compliance Test Duration	Monitoring System (MS)*
ARMS # 014	Kiln No.2	PM/PM_{10} [6]	Coal / Gas / Oil	5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 014	Kiln No.2	VE	Coal / Gas / Oil	9	initial/annual [3]	180 min.	COMS [3]
ARMS # 014	Kiln No.2	SO_2 [5]	Coal / Gas / Oil	6C	initial/annual [5]	3 one-hour run	
ARMS # 014	Kiln No.2	NOx	Coal / Gas / Oil	7E	initial/annual [7]	3 one-hour run	
ARMS # 014	Kiln No.2	CO [4]	Coal / Gas / Oil	10	initial/annual [4]	3 one-hour run	
ARMS # 014	Kiln No.2	VOC [2]	Coal / Gas / Oil	25 or 25A	initial [2]	3 one-hour run	
ARMS # 014	Kiln No.2	Be,Pb,Hg	Coal / Gas / Oil	29	initial [8]	3 one-hour run	
ARMS # 015	Cooler No. 2	PM/PM_{10} [6]		5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 015	Cooler No. 2	VE		9	initial/annual [3]	180 min.	COMS [3]

Notes:

[1] Testing of emissions shall be conducted while burning coal. Kiln No. 2 is allowed to burn natural gas and fuel oils (No. 2,4,5, and 6) as auxiliary fuels and on site generated non-hazardous wastes, used oil and grease. See specific condition No. C5. Frequency of testing after initial compliance shall be determined by the DEP Southwest District Office.

[2] VOC emission shall be tested initially to comply with the condition of this permit. Thereafter, compliance will be assumed provided that the CO allowable emission rate is not exceeded.

[3] Pursuant to 40 CFR 60, Subpart F, the kiln and cooler exhaust system shall be equipped with continuous monitors to record the opacity at the stack to indicate proper maintenance and operation. Monitoring of the opacity of emissions shall be determined by COMS pursuant to 40 CFR 60.63. Notification and recordkeeping shall be in accordance with 40 CFR 60.7 and 40 CFR 60.65.

[4] Continuous process monitors for CO and/or O2 to optimize combustion conditions for pollution control shall be part of the process.

[5] Emissions of SO_2 shall not exceed 15 lbs/hour. Annual testing is required in lieu of fuel sulfur restrictions. (Supplemental information received by DEP March 31, 1995).

[6] Southdown has the option of using Method 5 if they stipulate that all of the PM is PM_{10}.

[7] NOx - Initial and Annual compliance tests as required by EPA Method 7E.

[8] To confirm emissions of these pollutants are under the PSD threshold levels. Initial test.

* MS = Continuous Opacity Monitoring System (COMS) - Continuous Emission Monitoring System (CEMS)

In the Matter of an
Application for Permit by:

Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006 /

DRAFT Permit No.:0530010-003-AC
PSD-FL-233
Brooksville Portland Cement Facility
Hernando County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of DRAFT Permit attached) for the proposed project, detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination, for the reasons stated below.

The applicant, Southdown, Inc., applied on February 21, 1997, to the Department for modification of the existing air construction permits for its Brooksville facility located at Highway 98 Northwest of Brooksville, Hernando County. The request is to revise permitted emission limits for two existing kilns and coolers to reflect an increase from 145 to 150 tons per hour in kiln preheater feed rates.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a new air construction permit is required to revise the emission limits as proposed.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT". The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 904/488-1344; Fax 904/ 922-6979) within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit pursuant to Rule 62-103.150 (6), F.A.C.

The Department will issue the FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT." Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., or a party requests mediation as an alternative remedy under Section 120.573 F.S. before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9730, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in this notice of intent.

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

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.

C.H. Fancy, P.E., Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE AIR CONSTRUCTION PERMIT (including the PUBLIC NOTICE, Technical Evaluation and Preliminary Determination, Draft BACT Determination, and the DRAFT permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 5-6-97 to the person(s) listed:

Mr. Don Kelly, Southdown, Inc. *
Brian Beals, EPA
John Bunyak, NPS
John Koogler, P.E.
Amargit Gill, Southdown, Inc.
Bill Thomas, SWD
Tom Ellison, SWD
Lizanne Garcia, HCPD

Clerk Stamp

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

Kori Taber 5-6-97
(Clerk) (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit No.: 0530010-003-AC, (PSD-FL-233)
Southdown Brooksville Cement Manufacturing Facility
Hernando County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification to Southdown, Inc., for an increase in process rates applicable to its portland cement facility located on Highway 98, Northwest of Brooksville, Hernando County. A Best Available Control Technology (BACT) determination was required for particulate matter (PM/PM_{10}), nitrogen oxides (NO_x) carbon monoxide (CO) and volatile organic compounds (VOC) pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are: Southdown, Inc. Post Office Box 6, Brooksville, Florida 34605-0006.

The new permit will replace four current construction permits for Cement Plants No. 1 and No. 2 which were originally permitted in 1973 and 1980, respectively. Each plant includes a coal/ liquid fuel/ gas-fired, dry process cement kiln with a preheater and clinker cooler. Air pollution control is achieved by fabric filters (baghouses) for PM/PM_{10} from the kilns and coolers; absorption of sulfur compounds and metals into the product; and combustion controls for CO, volatile organic compounds (VOC), and nitrogen oxides (NO_x).

Emissions will increase as a result of a increase in process feed rates to each kiln. The presently permitted process rates of 145 tons per hour (TPH as preheater feed on a 30 day average) will be increased to 150 TPH. The permit will account for increases in the permitted emissions of PM/PM_{10} from Coolers No. 1 and No. 2 and Kiln No. 2; decrease of permitted emissions of PM/PM_{10} from Kiln No. 1; establishment of or increase in permitted emission limits of CO and VOC from both kilns; and will set a BACT permit limit for NO_x from Kiln No. 1.

Total emissions, including increases, of pollutants subject to PSD review shall not exceed the following limits:

Pollutant	Maximum Emissions Tons Per Year (TPY)
CO	1,576
PM/ PM_{10}	356
VOC	120
NO_x	2,448

The maximum emission rate of sulfur dioxide, which is not subject to PSD review by this action, will be TPY. An air quality impact analysis was conducted. Emissions from the facility will consume PSD increment but will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. NO_x emissions from the project have an insignificant PSD Class II impact. The maximum predicted PSD Class II PM_{10} increments consumed by all sources in the area, including this project, will be as follows:

PSD Class II Increment Consumed ($\mu g/m^3$)		Allowable Increment ($\mu g/m^3$)	Percent Increment Consumed
PM_{10}			
24-hour	24.9	30	83
Annual	3.8	17	22

The project has an insignificant impact on the Chassahowitzka PSD Class I area for the PM_{10} annual averaging time. The maximum predicted PSD Class I PM_{10} increment consumed by the project for the 24 hour averaging time is 1.03 $\mu g/m^3$ or 13% of the available 24 hour increment of 8 $\mu g/m^3$. The maximum predicted PSD Class I NO_2 increment consumed by the project is 0.9 ug/m^3 or 36% of the available increment of 2.5 ug/m^3.

The Department will issue the FINAL Permit in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue FINAL Permit with the conditions of the DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. or a party requests mediation as an alternative remedy under Section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9370, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

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

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 904/488-1344
Fax: 904/922-6979

Department of Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619
Telephone: 813/744-6100
Fax: 813/744-6458

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information.

P.E. Certification Statement

Permittee:
Southdown, Inc.
Portland Cement Manufacturing Facility
Brooksville, Florida

Permit No.: 0530010-003 AC and PSD-Fl-233
Facility ID No.: 0530010

Project type: PSD Permit for Existing Cement Plants
Process Rate Increase (145-150 preheater kiln feed)
Kilns and Coolers No. 1 and No. 2

I HEREBY CERTIFY that the engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including but not limited to the electrical, mechanical, structural, hydrological, and geological features).

5/6/97

A.A. Linero, P.E. Date
Registration Number: 26032

Department of Environmental Protection
Bureau of Air Regulation
New Source Review Section
111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Phone (904) 488-1344
Fax (904) 922-6979

Board of County Commissioners

Hernando County

PLANNING DEPARTMENT

Government Center / Administration Building
20 North Main Street, Room 262
Brooksville, Florida 34601 - 2828

Planning - (352) 754-4057
Fax -(352) 754-4420
E-Mail: planning@co.hernando.fl.us

May 20, 1997

Ms. Teresa Heron
Bureau Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Southdown, Inc., Kilns and Coolers No. 1 & 2, Brooksville Plant, Hernando County
Permit Number 0530010-003-AC
PSD-FL-233

Dear Ms. Heron:

With respect to the DEP Draft Air Construction Permit (# 0530010-003) for Southdown Inc., Hernando County proposes additional language be added to the permit to assure that the used oil/grease to be burned meets the non-hazardous criteria of the County's Air Toxics and Hazardous Waste Fuel Burning Facility Moratorium. The proposed language is similar to that found under specific condition #8 in Florida Crushed Stone permit AC 27-274892. Per your conversation with Dawn Shaw on May 16, 1997, the following language is suggested:

The constituents and properties of the on-site generated used oil and grease shall comply with the following allowable concentration levels, as stipulated and defined in 40 CFR 266.40 (July 1, 1992 version), which is adopted by reference in Rule 62-730.181, Florida Administrative Code (F.A.C.):

Constituents/Properties	Allowable Concentration
Cadmium	2 ppm maximum
Arsenic	5 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	1000 ppm maximum

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(*Table Continued*)

Constituents/Properties	**Allowable Concentration**
Flash Point	140 °F minimum
Polychlorinated Byphenyls (PCBs)	Less than 2 ppm

If you have any questions, please contact Dawn Shaw or myself at (352)754-4057 or SUNCOM 669-4057.

Thank you for your assistance and cooperation in this matter.

Sincerely,

Lawrence Jennings
Department Director

DMS/ld

pc: Charles Hetrick, County Administrator
A.A. Linero, P.E., DEP Bureau of Air Regulation
C.H. Fancy, P.E., Chief, DEP Bureau of Air Regulation

cc: J. Heron
SWD
EPA
NPS
A. Gill, Southdown
D. Kelly, Southdown

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

KA 521-95-09

May 16, 1997

VIA FAX AND MAIL

Mr. C. H. Fancy, P.E.
Chief
Bureau of Air Regulations
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Southdown, Inc.
Hernando County, Florida
Comments on Draft Permit 0530010-003-AC
(PSD-FL-233)
Kilns 1 and 2 and Coolers 1 and 2

Dear Mr. Fancy:

We have reviewed the subject draft air construction permit issued by the Department for modifications to Kilns 1 and 2 and Coolers 1 and 2 located at Southdown's Portland cement plant in Hernando County, Florida. There are some probable changes in the Project Description as presented on page 3 of the Technical Evaluation and Preliminary Determination that we would like to bring to the Department's attention. Additionally, we will comment on the initial compliance testing requirements for carbon monoxide for both Kilns 1 and 2.

Comments on Project Description

One minor comment is that on page 3 of the Technical Evaluation and Preliminary Determination, Kilns 1 and 2 and Coolers 1 and 2 are identified as Emission Units 001, 002, 003 and 004, respectively. In the Draft Permit, Kiln 1 and Cooler 1 are identified as Emissions Units 003 and 004, respectively, and Kiln 2 and Cooler 2 are identified as Emission Units 014 and 015, respectively. This inconsistency is pointed out only for editorial purposes.

Further on page 3, there are six physical modifications listed that are associated with the production rate increase at Southdown. We would like to bring to your attention that further study by Southdown has resulted in

refinements to the modification necessary at the plant. The following comments are numbered consistent with the modifications listed on page 3 of the Technical Evaluation and Preliminary Determination.

No. 1. Southdown has evaluated the pre-heater exit gas cyclones and determined them to be reasonably efficient. As a result, Southdown does not presently plan to replace or modify the cyclones. At some future date, however, modifications may be necessary to increase the thermal efficiency and reduce pressure drop.

No. 2. Along with replacing the two kiln I.D. fans with higher efficiency fans, Southdown may find it necessary to install larger drive motors to accelerate the larger fan rotors.

No. 3. Modifications for the baghouse on Kiln 1 are currently under review by Southdown. The final modifications to the baghouse might include the addition of two to four additional modules and, in addition, the baghouse fan and/or motor may require replacement for compatibility with the modified baghouse.

No. 4. No change.

No. 5. No change.

No. 6. No change.

No. 7. In addition to the six modifications listed in the Technical Evaluation and Preliminary Determination and previously discussed with the Department, Southdown may decide to remove the raw mill air heaters.

No. 8. Another modification previously unmentioned is that the discharge ducts of both raw mills will be replaced to increase the drying capacity of the mills. This replacement is largely maintenance.

These changes and modifications to the plant do not affect the production rates or emission rates stated in the Draft Permit.

Comments on Compliance Requirements

The compliance requirements in the Draft Permit for Kiln 1 (Table 2-1) and Kiln 2 (Table 2-3) require a one-time, one-week monitoring period for carbon monoxide. At footnote (4) in both referenced tables, it is stated:

> "Continuous emission monitors shall be installed for a period of one week to show compliance with the CO limit. CEM shall meet the applicable requirements of 40 CFR 60, Appendix D and Appendix F. Thereafter, continuous process monitors for CO and/or O_2 to optimize combustion conditions for pollution control shall be part of the process."

The emission limiting standards for carbon monoxide for Kiln 1 (Table 1-1) and Kiln 2 (Table 1-2) both set an hourly emission limit for carbon monoxide and Southdown has agreed to accept these hourly limits. Early in the permitting process, there were discussions of longer averaging times for certain pollutants (e.g., a 30-day average for NOx and possibly a 7-day average for CO); however, when the emission limits appearing in the Draft Permit were finally agreed upon, Southdown accepted them as hourly averages, not to be exceeded.

Hopefully, the one-week CO monitoring requirements for Kiln 1 and Kiln 2 were carried over from these earlier discussions and can be deleted from the permit.

Nothing else in the permit makes any reference to a one week averaging period and there is no reference to a one-week averaging period in the Best Available Control Technology (BACT) determination which is part of the Technical Evaluation and Preliminary Determination. Also, no doubt that might justify a longer compliance demonstration period has ever been expressed by the Department or Southdown regarding the ability of Southdown to operate Kilns 1 and 2 in compliance with the new CO limits. From a rule basis, unless a longer averaging time for compliance demonstration is agreed to by the Department and the applicant (or unless there is a requirement for CEM), the Department's rule (62-297.310(1), FAC) requires:

> "For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct; three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured ...."

In this case, the compliance requirements in the Draft Permit specify that the duration of each of the determinations (test runs) is to be one-hour.

In our review of the Draft Permit and the permitting history of this project, the only rationale we can find for the one-week monitoring requirement for CO is the early discussions of long-term compliance averaging times for compliance. As there is nothing to support the requirement for the one-week monitoring requirement for carbon monoxide, it is requested that the one-week monitoring requirement for carbon

monoxide be deleted from both the Kiln 1 and Kiln 2 compliance requirements.

We appreciate the opportunity to provide you with these comments. If you have any questions regarding our comments, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:wa

c: Mr. A. Linero, FDEP, Tallahassee
Ms. T. Heron, FDEP, Tallahassee
Mr. A. Gill, Southdown
Mr. D. Kelly, Southdown

262954

Post-it® Fax Note 7671	Date 3/12/97	# of pages ▶ 4
To Theresa Herr	From Don Kelly	
Co./Dept.	Co. HW Mgmt -	
Phone #	Phone # 8-0300	
Fax # 922-6979	Fax #	

DEP Form # 62-710.900(1), Form Title Application for Registration Used Oil and Used Oil Filter Handlers, Effective Date June 8, 1995

I Protection
e, Florida 32399-2400

3745
2201

gistration

Used Oil and Used Oil Filter Handlers*

(*Handlers are any persons subject to the registration requirements of Rule 62-710.500 and 62-710.850.4, F.A.C. [see item 4b below])

For registration period July 1, 199__ through June 30, 199__

Please Print or Type Form

1. Business Name SOUTHDOWN, INC. - BROOKSVILLE CEMENT FEID No. 72-0296500
   DBA (Doing Business As) FLORIDA MINING & MATERIALS Telephone No. (352) 796-7241
   Mailing Address: P. O. BOX 6
   City: BROOKSVILLE State: FLORIDA Zip: 34605
   Street Address: 16301 PONCE DE LEON County: HERNANDO
   City: BROOKSVILLE State: FLORIDA Zip: 34614
   Latitude/Longitude: __ : __ : __ : __ / __ : __ : __ : __, or Section: 14 Township 21S Range 18E
   (This information may be found on property deeds or determined from a Florida DOT County Road Map)

2. Facility Owner Name: SOUTHDOWN, INC. Telephone No. (800) 999-8529
   Address: 1200 SMITH STREET, SUITE 2400
   City: HOUSTON State: TEXAS Zip: 77002

3. Name of person operating (if different than owner)
   Name: DON B. KELLY Telephone No. (352) 796-7241

4. Make $100.00 fee check payable to Florida Department of Environmental Protection

   4a. Registration Status X New ___ Renewal EPA ID No. FLD 072 543 010

   4b. Check boxes which apply to your used oil activity(ies).

   Used Oil: ☐ Transporter ☐ Transfer Facility ☐ Marketer ☐ Processor ☒ Burner of off-spec used oil

   Used Oil Filter: ☐ Transporter ☐ Transfer Facility ☐ Processor ☐ End User

5. Certification

   5a. General Certification to be signed by all Registrants:
   To the best of my knowledge and belief I certify the information provided in this application is true, accurate and correct.

DON B. KELLY	Don B. Kelly	2/28/97
Name of Authorized Person (Print or Type)	Signature of Authorized Person	Date

   5b. **Specific Certification to be Signed by all Used Oil Transporters except those exempted by 62-710.600(1)**
   I certify as a used oil transporter that the training program and financial responsibility required under Section 62-710.600, Florida Administrative Code is in place, current and being adhered to. If any modifications have been made to the originally approved training program, they are explained in the attachments to this registration form. Evidence of financial responsibility is demonstrated by the attached Used Oil Transporter Certification of Liability Insurance, DEP form 62-710.900(4).

Name of Authorized Person (Print or Type)	Signature of Authorized Person	Date

Florida Department of Environmental Protection
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DEP Form # 62-710.900(3)
Form Title Annual Report by Used Oil and Used Oil Filter Handlers
Effective Date June 8, 1995

Annual Report by Used Oil and Used Oil Filter Handlers*

(*Handlers are any persons subject to the registration requirements of Rule 62-710.500 and 62-710.850, F.A.C. [see Section A, Box 5 below])

For reporting period January 1, 1996 through December 31, 1996

Use the information recorded in your Record Keeping forms [62-710.900(2)] to complete this document.

SECTION A To be completed by all registered persons

1. Company Name: SOUTHDOWN, INC.-BROOKSVILLE CEMENT 2. Telephone No. (352) 796-7241

Mailing Address P. O. BOX 6, BROOKSVILLE, FLORIDA 34605

3. EPA ID # FLD 072 543 010

☐ Check box if changed since last registration

4. Name of person preparing report (please print) MATT STONE

Affiliation with business MAINTENANCE ENGINEER

Phone number (if different than Number 2, above) (___)_____

5. Type of operation (check as many as apply)

Used Oil : ☐ Transporter ☐ Transfer Facility ☐ Processor ☐ Marketer ☒ Burner of off-spec used oil

Used Oil Filter : ☐ Processor

SECTION B To be completed by all registered used oil handlers. Note: Filter operations complete Section C (Optional)	Automotive	Industrial	Mixed
1. Amount (in gallons) of Used Oil and Oily Waste Collected		22,636	
2. Amount (in gallons) of Used Oil and Oily Waste Marketed, Disposed of or End Used			
N - Not an end use, transferred to another facility			
O - Marketed as an on-spec used oil fuel			
F - Marketed as an off-spec used oil fuel			
I - Marketed for an industrial process		15,710	
B - Burned as off-spec used oil fuel		3,516	
D - Disposal Landfilled		3,410	
Wastewater Treatment Unit			
Incinerator			
Other			

3. Total amount (in gallons) of used oil collected (Total of boxes from Part 1 of this section) 22,636

4. Total amount (in gallons) of used oil end used (Total of boxes from Part 2 of this section) 22,636

5. End of year,on hand estimate (Difference between the amounts in boxes 3 and 4 above) 0

Department of Environmental Protection

DRAFT

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

PERMITTEE:

Southdown, Inc.,
Brooksville Plant
Post Office Box 6
Brooksville, Florida 34605-0006

Authorized Representative:
Don Kelly, Plant Manager

FID No.:	0530010
PSD No.:	PSD-FL-233
Permit No.:	0530010-001-AC
SIC No.:	3241
Expires:	October 31, 1997

LOCATED AT:

Southdown, Inc., Brooksville Plant, Hernando County
Project: Portland Cement Manufacturing
Kilns Nos. 1 & 2 and Clinker Coolers 1 & 2

UTM: Zone 17 ; 356.0 km E ; 3169.9 km N
Directions: *Located on Highway 98, NW of Brooksville, Hernando County*

STATEMENT OF BASIS:

This draft construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, 62-297. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached appendices made a part of this permit:

Table 1-1 and 1-2	Air Pollutants Standards and Terms
Table 2-1 and 2-2	Compliance Requirements
Appendix BD-1	BACT Determination
Appendix GC-1	Construction Permit General Conditions

EFFECTIVE DATE:

Howard L. Rhodes, Director
Division of Air Resources Management

PLEASE FILL OUT AND RETURN THIS CHECK LIST WITH YOUR REGISTRATION

__X__ Registration Form. Please be sure it is signed.

__X__ Registration Fee. $100.00

Training Certification:

__X__ This company is exempt from transporter certification requirements per 62.710.600(1) (a) (b) or (c). **Please circle appropriate exemption.**

_____ This company transports only used oil filters and is exempt from training and insurance requirements.

_____ This company has compiled a training manual, a copy of which is enclosed for review.

_____ This company purchased the UAUOS manual and has attached the signature pages.

Proof of Insurance:

_____ Certificate of Liability Insurance Form 62-710.900(4) signed by insurance company is enclosed. Certificate of Insurance **(ACORD) will only be accepted for renewals** when renewing with the same carrier (Rule 62-710.600(2)(d).

Permits

_____ This company is a Used Oil Processor and holds a General Permit; Number_____

*Expiration date*_____. (Attach copy of page showing number and expiration date.)

__X__ This company is burner of off-specification used oil and holds an Air Permit; Number 0530010-001-AC

Expiration date October 31, 1997. (Attach copy of page showing number and expiration date.)

Don B. Kelly
Signature

PLANT MANAGER
Title

Dated 2/28/97

February 24, 1997

Mr. A. A. Linero, P.E., Administrator
Bureau Of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Permit No. 0530010-001-AC (PSD-FL-233)
Kilns and Coolers No. 1 and No. 2

Dear Mr. Linero:

On February 21, 1997, we submitted an amended permit application for the two kilns and clinker coolers at our Brooksville Plant. I would like to take this opportunity to re-emphasize two points:

1) In my January 31, 1997 letter I stated that our Brooksville Plant has been burning our on-site generated, non-hazardous wastes, such as used oil, lubricants, "oil-dry", grease and rags in the kilns. This has been a practice at our Brooksville Plant for a number of years and was authorized in the early eighties by a letter from the FDEP. Unfortunately, we cannot locate a copy of this letter at this time. Therefore, we request that a provision be included in our permit, in Sections B5 & C5, to burn such non-hazardous wastes. We use approximately 45,000 gallons of lubricants and 30,000 lbs of grease annually at this plant. A good portion of the spent lubricants is burned in the kiln and the remainder is used for other lubricating purposes.

2) We will demonstrate compliance for CO and NO_x emissions through three 1-hour tests, as we discussed during our meeting on January 30, 1997.

If you have any questions please call me at (713) 653-8098.

Sincerely,

Amarjit Singh Gill

Amarjit Singh Gill, PE
Director, Air Permitting

Southdown, Inc. ■ 1200 SMITH STREET ■ SUITE 2400 ■ HOUSTON, TEXAS 77002 ■ (713) 650-6200

c: Don Kelly
John Koogler
Dave Repasz
Dan Heintz

Department of
Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

March 18, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Don Kelly, Plant Manager
Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006

Dear Mr. Kelly:

Re: DEP File No. 0530010-003-AC (PSD-FL-233)
Production Increase, Kilns 1 and 2
Burning of Used Oil, Lubricants, Grease, Rags in Kilns 1 and 2

The Department is in receipt of Mr. Amargit Singh Gill's letter dated February 24, 1997, which states that the Brooksville Plant has been burning on-site generated, non-hazardous wastes such as used oil, lubricants, "oil-dry" grease and rags in the kilns for a number of years. According to the applicable construction permits (AC27-258569, 258570, 258571 and 258572), there is no mention of these materials. The recently noticed draft permit (DEP File No. 0530010-001-AC) was based on the current construction permits and would have restricted fuels to the burning of coal, waste tire derived fuel (WTDF for kiln No. 1), natural gas and certain amount of fuel oils No. 2, 4, 5, and 6 **only.**

We reviewed Department files in our Tampa and Tallahassee offices and were unable to find the letter mentioned by Mr. Singh authorizing burning of such wastes. We request that you provide that letter or any other evidence that such authorization was given. Our records indicate that:

- On April 1990 Southdown filed a request to burn on-spec used oil along with WTDF and coal.

- On April 9, 1991 the Department issued a letter authorizing Southdown to conduct performance tests for different fuel scenarios which included on-spec used oil (50% coal/50% on-spec used oil fuel and 30% coal/20% TDF/50% on-spec used oil). Did Southdown conduct those tests? We do not have records that these tests were performed. A permit modification to allow burning of on-specification used oil was never issued.

- August 17, 1992, Southdown reapplied to burn WTDF only. A permit modification was issued to allow Kiln No. 1 to burn **only** WTDF in addition to coal.

We recently received copies of Southdown's annual report and registration for Used Oil and Used Oil Filter Handlers, from the Solid/Hazardous Waste Section. According to these forms, Southdown burns off-spec used oil and holds an Air Permit No. 0530010-001-AC. Since the permit was not issued, the previous permits should be referenced and the authorization to burn these materials attached.

If Southdown plans to burn these materials, they should be included in the current construction permit application. We require reasonable assurance per Rule 62-04.070, F.A.C. that burning of on-spec and off-spec used oil along with lubricants, grease, and rags will not contravene applicable air and solid/hazardous waste regulations including Rules 62-210, 62-212, 62-272, 62-275, 62-296, 62-297, and 62-710, F.A.C.

Please submit additional information such as effects on emissions, fate of pollutants, stack test results, projected toxic ambient air concentrations, used oil sample analysis, used oil quantity, heat input percentages, impacts on waste cement kiln dust generation, manner of introduction into the kilns, etc. We will resume processing the application as soon as we receive a response to this letter.

If you have any questions on this matter, please call Teresa Heron (Review Engineer) or Cleve Holladay (meteorologist) at (904) 448-1344.

Sincerely,

3/18

A. A. Linero, P.E. Administrator
New Source Review Section

AAL/th/t

cc: B. Beals, EPA
J. Bunyak, NPS
B. Thomas, SWD
L. Garcia, HCEPD
A. Gill, Southdown
J. Koogler, P.E.
J. Flint, DEP Hazardous Waste Section

P 265 659 208

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail *(See reverse)*

Sent to Don Kelly	
Street & Number In the Town, Inc	
Post Office, State, & ZIP Code Brooksville, FL	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 5-6-97	

0530010-003-AC
PSD-FL-233.
Coolers & Kilns 1+2

PS Form **3800**, April 1995

Department of
Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

May 6, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Don Kelly
Plant Manager
Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006

Re: DRAFT Permit No. 0530010-003-AC (PSD-FL-233)
Kilns and Coolers No. 1 and No. 2

Dear Mr. Kelly:

Enclosed is one copy of the Draft Air Construction Permit for the Southdown cement plants located at US Highway 98, Northwest of Brooksville, Hernando County. The Technical Evaluation and Preliminary Determination along with the Department's Intent to Issue Air Construction Permit and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" are also included.

The "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" must be published within 30 (thirty) days of receipt of this letter. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above letterhead address. If you have any other questions, please contact Teresa Heron or Mr. Linero at 904/488-1344.

Sincerely,

for C. H. Fancy, P.E., Chief,
Bureau of Air Regulation

CHF/th/h

Enclosures

In the Matter of an
Application for Permit by:

Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006 /

DRAFT Permit No.:0530010-003-AC
PSD-FL-233
Brooksville Portland Cement Facility
Hernando County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of DRAFT Permit attached) for the proposed project, detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination, for the reasons stated below.

The applicant, Southdown, Inc., applied on February 21, 1997, to the Department for modification of the existing air construction permits for its Brooksville facility located at Highway 98 Northwest of Brooksville, Hernando County. The request is to revise permitted emission limits for two existing kilns and coolers to reflect an increase from 145 to 150 tons per hour in kiln preheater feed rates.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a new air construction permit is required to revise the emission limits as proposed.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT". The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 904/488-1344; Fax 904/ 922-6979) within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit pursuant to Rule 62-103.150 (6), F.A.C.

The Department will issue the FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT." Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., or a party requests mediation as an alternative remedy under Section 120.573 F.S. before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9730, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in this notice of intent.

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

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.

A. A. Linero P.E. for

C.H. Fancy, P.E., Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE AIR CONSTRUCTION PERMIT (including the PUBLIC NOTICE, Technical Evaluation and Preliminary Determination, Draft BACT Determination, and the DRAFT permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 5-6-97 to the person(s) listed:

Mr. Don Kelly, Southdown, Inc. *
Brian Beals, EPA
John Bunyak, NPS
John Koogler, P.E.
Amargit Gill, Southdown, Inc.
Bill Thomas, SWD
Tom Ellison, SWD
Lizanne Garcia, HCPD

Clerk Stamp

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

Kogi Taber 5-6-97
(Clerk) (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit No.: 0530010-003-AC, (PSD-FL-233)
Southdown Brooksville Cement Manufacturing Facility
Hernando County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification to Southdown, Inc., for an increase in process rates applicable to its portland cement facility located on Highway 98, Northwest of Brooksville, Hernando County. A Best Available Control Technology (BACT) determination was required for particulate matter (PM/PM_{10}), nitrogen oxides (NO_x) carbon monoxide (CO) and volatile organic compounds (VOC) pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are: Southdown, Inc. Post Office Box 6, Brooksville, Florida 34605-0006.

The new permit will replace four current construction permits for Cement Plants No. 1 and No. 2 which were originally permitted in 1973 and 1980, respectively. Each plant includes a coal/ liquid fuel/ gas-fired, dry process cement kiln with a preheater and clinker cooler. Air pollution control is achieved by fabric filters (baghouses) for PM/PM_{10} from the kilns and coolers; absorption of sulfur compounds and metals into the product; and combustion controls for CO, volatile organic compounds (VOC), and nitrogen oxides (NO_x).

Emissions will increase as a result of a increase in process feed rates to each kiln. The presently permitted process rates of 145 tons per hour (TPH as preheater feed on a 30 day average) will be increased to 150 TPH. The permit will account for increases in the permitted emissions of PM/PM_{10} from Coolers No. 1 and No. 2 and Kiln No. 2; decrease of permitted emissions of PM/PM_{10} from Kiln No. 1; establishment of or increase in permitted emission limits of CO and VOC from both kilns; and will set a BACT permit limit for NO_x from Kiln No. 1.

Total emissions, including increases, of pollutants subject to PSD review shall not exceed the following limits:

Pollutant	Maximum Emissions Tons Per Year (TPY)
CO	1,576
PM/PM_{10}	356
VOC	120
NO_x	2,448

The maximum emission rate of sulfur dioxide, which is not subject to PSD review by this action, will be TPY. An air quality impact analysis was conducted. Emissions from the facility will consume PSD increment but will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. NO_x emissions from the project have an insignificant PSD Class II impact. The maximum predicted PSD Class II PM_{10} increments consumed by all sources in the area, including this project, will be as follows:

PSD Class II Increment Consumed ($\mu g/m^3$)		Allowable Increment ($\mu g/m^3$)	Percent Increment Consumed
PM_{10}			
24-hour	24.9	30	83
Annual	3.8	17	22

The project has an insignificant impact on the Chassahowitzka PSD Class I area for the PM_{10} annual averaging time. The maximum predicted PSD Class I PM_{10} increment consumed by the project for the 24 hour averaging time is 1.03 $\mu g/m^3$ or 13% of the available 24 hour increment of 8 $\mu g/m^3$. The maximum predicted PSD Class I NO_2 increment consumed by the project is 0.9 ug/m^3 or 36% of the available increment of 2.5 ug/m^3.

The Department will issue the FINAL Permit in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue FINAL Permit with the conditions of the DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. or a party requests mediation as an alternative remedy under Section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9370, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

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

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 904/488-1344
Fax: 904/922-6979

Department of Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619
Telephone: 813/744-6100
Fax: 813/744-6458

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
NEW SOURCE REVIEW SECTION
BUREAU OF AIR REGULATION
Telephone (904) 488-1344
Fax (904) 922-6979
Mail Station # 5505

TECHNICAL EVALUATION

AND

PRELIMINARY DETERMINATION

Southdown, Inc.,
Brooksville, Hernando County, Florida

Air Construction Permit Number 0530010-003-AC (PSD-FL-233)
(Supersedes AC 27-258569, 258570, 258571, and 258572)
Kilns 1 and 2, Coolers 1 and 2

May 6, 1997

1. APPLICATION INFORMATION

1.1 Applicant Name and Address

Southdown, Inc.
U.S. Highway 98
Brooksville, Florida 34605

Authorized Representative:
Mr. Don Kelly, Plant Manager

1.2 Reviewing and Process Schedule

02-21-97: Date of Receipt of Application Addendum
02-24-97: Southdown's letter requesting burning of "oil-dry" grease and rags in kilns
04-01-97: Koogler & Associates' letter requesting burning of on-site generated, non-hazardous used oil/grease.

2. FACILITY INFORMATION

2.1 Facility Location

Southdown, Inc.
Portland Cement Manufacturing Facility
UTM: Zone 17; 356 and 3169
Directions: Highway 98, Northwest of Brooksville in, Hernando County.

2.2 Standard Industrial Classification Code

Major Group Number	32	*Clay, Glass and Concrete Products*
Group Number	324	*Cement, Hydraulic*
Industry Number	*3241*	*Cement, Hydraulic*

2.3 Facility Category

This facility includes two existing cement plants consisting of two cement kilns and two clinker coolers along with ancillary equipment. Air pollutant emissions are over 100 tons per year (TPY) of particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC). This is a Major Facility per Rule 62-210.200(171), F.A.C. and a Major (Title V) Source of Air Pollution per Rule 62-210.200(173). This industry is listed in Table 62-212.400-1, F.A.C., Major Facility Categories.

3. PROJECT DESCRIPTION

3.1 This project involves the following emissions units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
001	Unit No. 1 - Kiln No. 1
002	Unit No. 2 - Kiln No. 2
003	Unit No. 3 - Cooler No. 1
004	Unit No. 4 - Cooler No. 2

The proposed modification consists of about a 4 percent increase in the kiln preheater feed rates from 145 to 150 tons per hour (tph), rolling 30 production-day average for each kiln. The design maximum feed rate, stated in the current permit as 165 tph, remains unchanged.

The following changes will be performed:

1. Modify preheater exit gas cyclones to increase efficiency, which will reduce heat loss and lower the pressure drop.

2. Replace kiln ID fan with a higher efficiency in order to increase air flow without increasing the drive motor horsepower.

3. Add two modules to the existing Kiln No. 1 baghouse to allow a lower air-to-cloth ratio when a module is isolated for maintenance.

4. Improve the clinker cooler efficiency by upgrading fans and adding static gates.

5. Increase kiln preheater feed capacity to ensure 150 tph on a continuous basis, with a maximum design hourly rate of 165 tph.

6. Add drying drum to the No. 1 Raw Mill and increase the mill fan capacity to recuperate the waste heat from the preheater gas.

The above changes will increase the overall thermal efficiency of the process. Thus the maximum heat input will not exceed the existing limit of 300 MMBtu/hr. Each kiln and cooler utilizes a baghouse to control the emissions of particulate matter. There are no add-on controls for any of the other pollutants emitted from the cement kilns.

In addition, Southdown has also requested to allow both kilns the burning of on-site generated, non-hazardous oil and grease (5,000 gallons). The spent lubricants can consist of oil or grease dripping collected and containerized, oily rags and/or oily absorbent that has been used in the cleanup of a small on-site spill. The used oil/grease or oily rags and oily absorbent material will be containerized

(typically in sealed one-gallon containers) and introduced into either of the kiln systems at the base of the preheater (in a location similar to where whole tires are introduced in kiln No. 1). Southdown has indicated that they have been burning on-site generated, non-hazardous oil and grease for a number of years and that it is a common practice in the cement industry.

The proposed permit revisions will, however, result in significant net emission increases for PM/PM_{10} (Kilns 1 and 2 and Coolers 1 and 2) NOx, VOC and for CO (Kilns 1 and 2) when comparing past actual with future potential emissions.

Background Information

Kiln and Cooler 1 were originally permitted in 1973, while Kiln and Cooler 2 were originally permitted in 1980. Kilns 1 and 2 are currently permitted under permits AC 27-258571 and AC27-258572, respectively. Coolers 1 and 2 are permitted under AC 27-258569 and AC27-258570, respectively.

Both kilns are presently permitted for a maximum 1-hour kiln preheater feed rate of 165 tons per hour (TPH), a corresponding kiln feed rate of 148 TPH, a 30-day average kiln preheater feed rate of 150 TPH and a corresponding kiln feed rate of 135 TPH. The maximum heat input rate to each kiln is 300 MMBtu per hour. Each kiln utilizes a baghouse to control the emissions of particulate matter. There are no add-on controls for any of the other pollutants emitted from the cement kilns. Raw material properties, chemical reactions in the kiln, absorption into the clinker, and combustion controls minimize emissions of NO_x, SO_2, CO, and VOC.

Both coolers are permitted for a maximum 1-hour throughput rate of 96 TPH and, a 30-day average throughput rate of 90 TPH. Each clinker cooler utilizes a baghouse to control the emissions of particulate matter.

The applicant has requested removal of clinker production limits and that emission limits be based on feed to the kiln preheater (k_{ph}) instead of feed to the kiln.

4. PROCESS DESCRIPTION

4.1 General Information

Portland cement is a fine powder, usually gray in color, that consists of a mixture of dicalcium silicate, tricalcium silicate, tricalcium aluminate, and tricalcium aluminoferrite, and miscellaneous minerals to which one or more forms of calcium sulfate have been added. About 95% of the cement production in the U.S. is portland cement. Masonry cement, also produced at the portland cement plant, represents the balance of the domestic cement production.

There are several variations in cement manufacturing including the wet, dry, dry preheater and dry

precalciner processes. The precalciner process also includes a preheater. These processes are essentially identical relative to the manufacture of cement from raw materials. However, the type of process does affect the equipment design, method of operation, and fuel consumption. Because of its lower fuel requirements, most new portland cement plants use the dry precalciner process.

The choice of fuel is based on economics. The most commonly used kiln fuels are coal, natural gas, and oil. Supplementary fuels such as petroleum coke, tires, used oil and various kinds of wastes are burned at many plants. Fuel combustion differs between the wet, dry, dry preheater and dry precalciner processes. In the first three, all fuel combustion typically occurs in the kiln. In the latter, some fuel combustion occurs in a separate calcining vessel located between the preheater and kiln. In any of the processes, it is possible to introduce additional fuels such as tires directly into the kiln. Southdown uses the dry preheater process, a version of which is depicted in simplified form in figure 1 (from a portland cement association publication).

The production of portland cement is a four-step process: (1) raw materials acquisition and handling (2) kiln feed preparation for pyroprocessing, (3) pyroprocessing, and (4) finished cement grinding. The chemical reactions and physical processes that constitute the transformation are quite complex. The heart of the portland cement manufacturing process is the pyroprocessing system which includes the rotary kiln and suspension preheater/precalciner (when present). Several complex chemical reactions necessary to produce portland cement minerals take place in the pyroprocessing system.

Pyroprocessing (preheater process) may be conveniently divided into five stages, depending on location and temperature of the materials in the system.

1. Uncombined water evaporates from raw materials as material temperature increases to 100°C (212°F) in the upper preheater or raw materials roller mill.

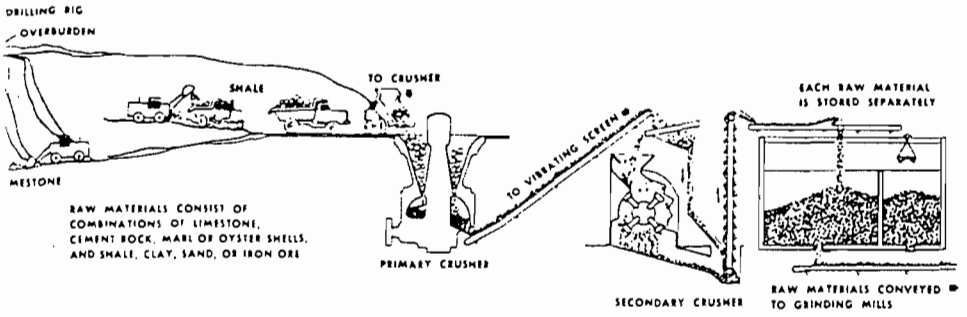
2. As the material temperature increases from 100°C to approximately 430°C (800°F) in the preheater, combined water is liberated from argillaceous compounds.

3. Between 430°C and 900°C (1650°F), partial calcination occurs in the lower preheater and is completed within the kiln. Carbon dioxide is liberated from the carbonates and calcium oxide (lime) is formed.

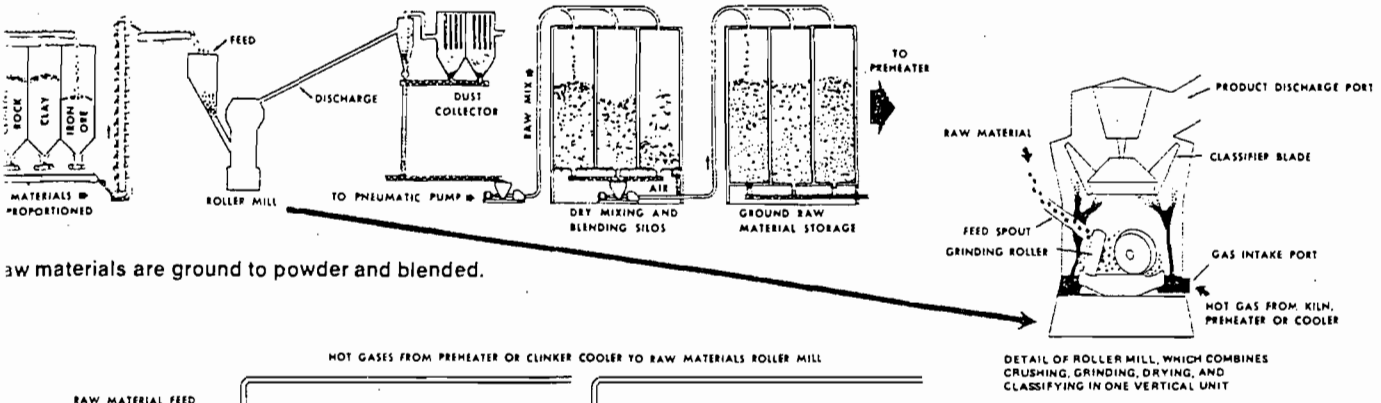
4. Following calcination, sintering of the oxides occurs in the burning zone of the rotary kiln at temperatures up to 1510°C (2750°F). Lime, silica, and iron and aluminum compounds react to form calcium silicates, aluminates, ferrites and aluminoferrites. Alkali sulfates and chlorides evaporate.

5. Following sintering, clinker nodules are produced as the temperature of the material decreases from 1510°C to 1370°C (2500°F).

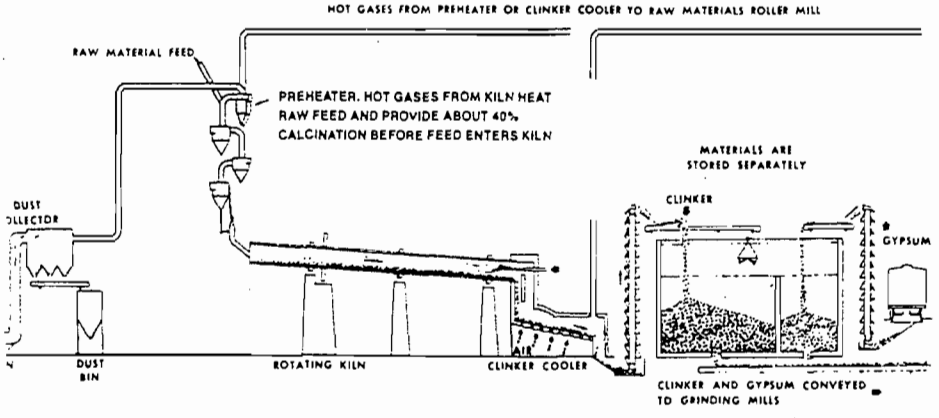
The raw materials enter the pyroprocessing system in the uppermost preheater cyclones. They exit the preheater and enter the kiln at the elevated end. The rotation of the kiln causes the solid materials



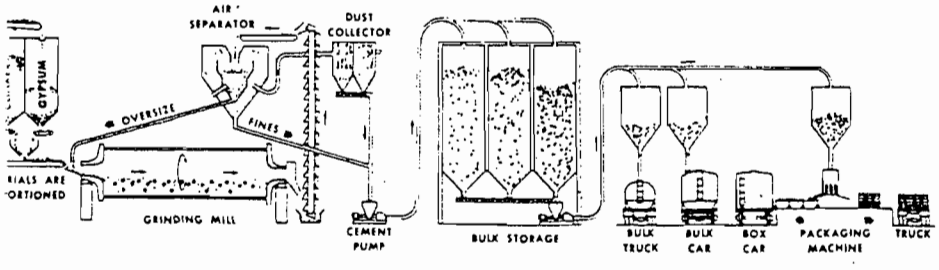
one is first reduced to 125 mm size, then to 20 mm, and stored.



aw materials are ground to powder and blended.



rning changes raw mix chemically into cement clinker. Note four-stage preheater, flash furnaces, and shorter kiln.



inker with gypsum is ground into Portland cement and shipped.

Figure 1 New technology in dry-process cement manufacturing

to be slowly transported downward from the front end. Fuel is supplied at the lower or discharge end of the kiln. The hot, gaseous combustion products move countercurrent to the materials flow, thereby transferring heat to solids in the kiln and preheater.

The product of the rotary kiln is known as clinker which enters a vessel where it is cooled by air. Hot air from the clinker cooler is recovered and returned to the pyroprocessing system as combustion air. The cooled clinker is mixed with a form of calcium sulfate, usually gypsum, and ground in ball or tube mills in the finish mill department to produce portland cement.

Portland cement is shipped from the packhouse or shipping department in bulk or in paper bags by truck or rail.

A process flow diagram for this facility is presented in Figure 2.

5. RULE APPLICABILITY

The proposed project is subject to preconstruction review under the applicable provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). This facility is located in Hernando County, an area designated as attainment for all criteria pollutants in accordance with Rule 62-204.360, F.A.C.

The proposed project, increasing PM/PM_{10} actual emissions from Kilns 1 and 2 and Cooler 1 and 2 CO, NOx and VOC emissions from Kilns 1 and 2, is subject to review under Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD), because the emission increases for both pollutants exceed the significant emission rates given in Table 62-212.400-2, F.A.C. This review consists of a determination of Best Available Control Technology (BACT) and, unless otherwise exempted, an analysis of the air quality impact of the proposed project's impacts on soils, vegetation and visibility along with air quality impacts resulting from associated commercial, residential and industrial growth.

The emission units affected by this modification shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations) and, specifically, the following chapters and rules:

- Chapter 62-4 Permits
- Rule 62-204.220 Ambient Air Quality Protection
- Rule 62-204.240 Ambient Air Quality Standards
- Rule 62-204.260 Prevention of Significant Deterioration Increments
- Rule 62-204.360 Designation of Prevention of Significant Deterioration Areas
- Rule 62-204.800 Federal Regulations Adopted by Reference
- Rule 62-210.300 Permits Required
- Rule 62-210.350 Public Notice and Comments

- Rule 62-210.370 Reports
- Rule 62-210.550 Stack Height Policy
- Rule 62-210.650 Circumvention
- Rule 62-210.700 Excess Emissions
- Rule 62-210.900 Forms and Instructions
- Rule 62-212.300 General Preconstruction Review Requirements
- Rule 62-212.400 Prevention of Significant Deterioration
- Rule 62-296.320 General Pollutant Emission Limiting Standards
- Rule 62-297.310 General Test Requirements
- Rule 62-297.400 EPA Methods Adopted by Reference
- Rule 62-297.401 EPA Test Procedures
- Rule 62-297.520 EPA Performance Specifications

Cement Plants 1 and 2 are subject to all applicable requirements of 40 CFR 60, NSPS for Portland Cement Plants, Subpart F.

These emission units shall comply with all applicable requirements of 40 CFR 60, General Provisions, Subpart A.

6. SOURCE IMPACT ANALYSIS

6.1 Emission Limitations

This facility emits the following PSD regulated pollutants: particulate matter, sulfur dioxide, nitrogen oxides, volatile organic compounds, carbon monoxide, sulfuric acid mist, fluorides, beryllium, mercury and lead. Cement Plant No. 2 has already gone through various PSD reviews [PSD-FL-063, PSD-FL-124, PSD-FL-124(A) and PSD-FL-188].

The new permit (0530010-003 AC - Section III. B) will address the increases in actual PM/PM_{10} emissions from both Kiln and Cooler 1, establish a CO limit for Kiln 1 under all operating conditions, and establish for the first time NO_x and VOC emission limitations and include all other applicable conditions for Kiln and Cooler 1 from existing permits. The Department's proposed permitted emission and compliance requirements for Kiln and Cooler No. 1 are summarized in Tables 1-1, Air Pollutant Emission Standards and Terms, and Table 2-1, Compliance Requirements.

Permit 0530010-003 AC, Section III. C, will address the increases of actual PM/PM_{10}, emissions from Kiln and Cooler 2, the increases in emissions of NO_x, CO and VOC from Kiln 2, and include all other conditions for Kiln and Cooler 2 from existing permits. The Department's proposed permitted emissions and compliance requirements for Kiln and Cooler 2 are summarized in Tables 1-2, Air Pollutant Emission Standards and Terms, and Table 2-2, Compliance Requirements.

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APPENDIX GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

(a) Have access to and copy and records that must be kept under the conditions of the permit;
(b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
(c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

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

G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

(a) A description of and cause of non-compliance; and
(b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

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

G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extend it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.

G.13 This permit also constitutes:

(a) Determination of Best Available Control Technology *( )*
(b) Determination of Prevention of Significant Deterioration *( )*; and
(c) Compliance with New Source Performance Standards *( )*.

G.14 The permittee shall comply with the following:

(a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

(b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

(c) Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The person responsible for performing the sampling or measurements;
3. The dates analyses were performed;
4. The person responsible for performing the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

SOUTHDOWN, INC.
PORTLAND CEMENT FACILITY
PERMIT 0530010-003 AC (PSD-FL-233)
Hernando County

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The applicant, Southdown Inc. (SI), owns a portland cement manufacturing facility in Brooksville. It consists of two kilns with a preheater design and two clinker coolers along with raw mill, finish mill, cement and clinker handling equipment, coal handling equipment, silos, and air pollution control equipment. A process description is included in the Technical Evaluation and Preliminary Determination.

Each kiln/cooler is permitted to process 165 tons per hour (TPH) of raw material fed to the preheater, 148 TPH to the kiln, and 90 TPH from the cooler on a 1-hr basis. Each is also permitted to process 145 TPH to the preheater, 130 TPH to the kiln, and 84 TPH from the cooler on a 30-day basis.

A single, large, fabric filter system (baghouse) is already in use to capture particulate matter from each kiln and cooler. Baghouses are also used to limit particulate emissions from other process emission points. All the emission units controlled by baghouses are listed in a Best Available Control Technology (BACT) determination performed for Cement Plant 2 in 1980. Kiln No. 2 has three (3) additional BACT determinations on file with the Department (1980, 1988 and 1993). No previous BACT determinations have been performed on Kiln No. 1.

Southdown requested to revise the allowable emissions limits for their kilns and coolers due to an increase in the process rate to the kiln preheater from 145 to 150 TPH (30-day basis). Specifically, it was requested to increase emissions limits for particulate matter (PM/PM_{10}), carbon monoxide (CO), nitrogen oxides (NO_x), visible emissions (VE) and volatile organic compounds (VOC) from Kiln No. 2; decrease PM/PM_{10} (allowable emissions) and increase NO_x, VOC and CO emission limits for Kiln 1; and increase the PM/PM_{10} limits for Coolers Nos. 1 and 2.

The project and rule applicability are described in the separate Technical Evaluation and Preliminary Determination. A Best Available Control Technology (BACT) determination pursuant to Prevention of Significant Deterioration (PSD) is required for each pollutant exceeding the significant emission rates in Table 62-212.400-2, F.A.C., "Regulated Air Pollutants Significant Emissions Rates." The increase in actual emissions will subject Kilns Nos. 1 and 2 to PSD review for particulate matter, nitrogen oxides, volatile organic compounds and carbon monoxide, and Coolers Nos. 1 and 2 to PSD review for particulate matter.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Following is the BACT determination proposed by the applicant. These are on the basis of feed to the kiln.

BACT DETERMINATION REQUESTED BY THE APPLICANT - KILN FEED BASIS:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM_{10}) (kilns)	0.2 lb./ton of dry kiln feed
Particulate Matter (PM/PM_{10})(coolers)	0.1 lb/ton of dry kiln feed
Nitrogen Oxides	2.11 lbs/ton of dry kiln feed
Carbon Monoxide (kilns)	1.30 lb/ton dry kiln feed
Volatile Organic Compounds (Kiln No. 2)	0.1 lb/ton dry kiln feed
Visible Emissions (Kiln No. 2)	20 percent

The above limits are expressed in terms of pollutant emitted per ton of material reaching the kiln. Following a review of past permits, the exact process, requirements of the applicable NSPS for cement plants, and discussions with Southdown, the Department will limit only raw material fed to the kiln preheater. This is the most accurate and reliable measure of kiln operating rate in a preheater or precalciner kiln, particularly when there are no bypass streams and when little or no cement kiln dust is wasted. All limits will be expressed in terms of pounds of pollutant per ton of material fed to the kiln preheater ($kiln_{ph}$). Where appropriate, equivalent factors in terms of pounds of pollutant per ton of clinker produced will also be given for reference and comparison with industry or EPA reporting conventions. The above table is therefore adjusted as follows:

BACT DETERMINATION REQUESTED BY THE APPLICANT - PREHEATER BASIS:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM_{10}) (kilns)	0.18 lb./ton of dry $kiln_{ph}$ feed
Particulate Matter (PM/PM_{10})(coolers)	0.09 lb/ton of dry $kiln_{ph}$ feed
Nitrogen Oxides (NOx)	1.9 lb/ton of dry $kiln_{ph}$ feed
Carbon Monoxide (kilns)	1.2 lb/ton dry $kiln_{ph}$ feed
Volatile Organic Compounds (Kiln No. 2)	0.09 lb/ton dry $kiln_{ph}$ feed
Visible Emissions (Kiln No. 2)	20 percent

DATE OF RECEIPT OF A BACT APPLICATION:

February 21, 1997

REVIEW GROUP MEMBERS:

Teresa Heron, and A. A. Linero of the New Source Review Section.

BACT DETERMINATION PROCEDURE:

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

(a) Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determination of any other state.

(d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from this facility can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as follows:

- Particulate matter from kilns and coolers (PM/PM_{10}, and VE). This is controlled generally by add-on particulate collection equipment such as baghouses or electrostatic precipitators.

- Products of combustion and incomplete combustion (e.g., SO_2, NO_x, CO, VOC). Control is largely achieved by good combustion practices and reactions with clinker and raw materials.

- Emissions from materials handling, conveyance, and storage (primarily PM). Controlled generally by fabric filters and reasonable precautions.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM, SO_2, H_2SO_4, fluorides, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

BACT ANALYSIS

Particulate Matter (PM/PM_{10})

Particulate Matter is generated by the various physical and chemical processes at a cement manufacturing plant. Sources of particulate matter at cement plants include (1) quarrying and crushing, (2) raw material storage, (3) grinding and blending, 4) clinker production, 5) finish grinding, and 6) packaging and loading. Additional sources of PM are raw material storage piles, conveyers, storage silos, and unloading facilities.

The largest emission source of PM within cement plants is the pyroprocessing system that includes the kiln and clinker cooler exhaust stacks (in this case, common kiln/cooler stack). Emissions from kilns are affected by several factors, including differences in convective patterns, material movement patterns, burner locations and insertion lengths, heat transfer mechanisms, and the type of clinker cooler that supplies secondary air to the kiln for combustion. Typically, dust from the pollution control equipment servicing the kiln and cooler is collected and recycled into the kiln and thus incorporated into the clinker. Southdown has stated that the great majority of the cement kiln dust (CKD) captured in the baghouse is returned to the pyroprocessing system as raw material.

Common control devices for stack gases include settling chambers, inertial separators, impingement separators, wet scrubbers, fabric filters, and electrostatic precipitators. Fabric filters (baghouses) and electrostatic precipitator (ESPs) are generally considered equivalent for particulate control. Both types of devices can achieve removal efficiencies of over 99 percent. ESPs and baghouses are used extensively as control devices at cement plants. ESPs are generally specified for kiln and clinker cooler exhaust gases because of their ability to operate effectively at varying temperatures. Baghouses are also used at various

facilities for particulate control from kilns and coolers. Both types of control equipment provide for the recovery/recycling of collected dust back into the process stream. Baghouses are also used to control particulate emissions from most other material processing operations at cement plants.
Common controls to limit particulate emissions from fugitive sources (such as roadways, stockpiles, and material processing and conveying equipment) include wet suppression, sweeping, application of surfactants, paving of roads and covering of stockpiles to reduce wind erosion. Wet suppression of fugitive particulate emissions is considered as BACT for most material handling operations and unpaved roads. Dust from stockpiles can be minimized by relatively high material moisture content with additional water spraying as necessary.

A review of the BACT Clearinghouse shows that baghouses and ESPs are widely used to control particulate matter from process emission units at cement plants. They are commonly accepted as BACT. At this facility, particulate matter sources are controlled by baghouses.

Southdown has proposed to increase the process rate (145 to 150 TPH) for both kilns, therefore changing the allowable emission rates for particulate matter (PM/PM_{10}) from Kilns Nos. 1 and. 2 and Clinker Coolers Nos. 1 and 2 to allow for the fluctuations in emission rates during normal operating conditions. The permitted PM/PM_{10} limits would be increased for Kiln No. 2 from 13.5 pounds per hour (lb/hr) to 27.0 lb/hr, while PM/PM_{10} emissions for Kiln No. 1 are proposed to be decreased from 39.0 lb/hr (allowable emissions) to 27.0 lb/hr. The proposed limit for the two clinker coolers would be increased from 7.13 lb/hr (Kiln No. 1) and 5.0 lb/hr (Kiln No. 2) to 13.6 lb/hr. The proposed kiln particulate emission limits are equivalent to 0.18 pounds per ton of dry feed to each kiln preheater (lb/ton $feed_{ph}$). This is a standard lower than the New Source Performance Standard NSPS limit of 0.3 pounds per ton of dry feed (kiln). For the coolers the proposed limits are equivalent to 0.09 lb/ton $feed_{ph}$ which is less than the applicable NSPS limit.

Southdown also requested to increase VE (which is largely linked to particulate emissions) from 10 percent for Kiln No. 2 to 20 percent.

PRODUCTS OF COMBUSTION AND INCOMPLETE COMBUSTION

Nitrogen Oxides

Emissions of NO_x from dry process cement plants with a preheater include the kiln, and any fuel-fired support operation. NO_x is generated during fuel combustion by oxidation of chemically bound nitrogen in the fuel (fuel NO_x) and by thermal fixation of nitrogen in the combustion air (thermal NO_x). As flame temperature increases, the amount of thermally generated NO_x increases. Fuel type affects the quantity and type of NO_x generated. Generally, natural gas is low in nitrogen. However it causes higher flame temperatures and generates more thermal NO_x than oil or coal, which have higher fuel nitrogen content, but exhibit lower flame temperatures.

NO_x emissions represent a significant portion of the total emissions generated by this project, and shall be minimized using BACT.

The emissions of NO_x can potentially be reduced at Portland cement plants by two methods:

1. Minimizing the quantity of NO_x generated during combustion (combustion modifications).

2. Reducing the quantity of NO_x in the flue gas stream (flue gas controls).

In establishing BACT for cement kilns, the Department reviewed the EPA BACT/LAER Clearinghouse and a paper presented at the Air and Waste Management Association (AWMA) International Specialty Conference on Waste Combustion in Boilers and Industrial Furnaces. The paper, "Reduction of NO_x Emissions from Cement Kiln/Calciner through the Use of the NOxOUT Process," which was written by representatives of Nalco and Ash Grove Cement, suggests that SNCR is a viable control method. A level as low as 1.0 lb/ton of clinker was reached based on demonstration tests conducted at the Ash Grove cement plant in Seattle, Washington. However the process has not been demonstrated on a long term basis. Recently a proposed cement plant (Great Star Cement, Clark County, Nevada) was permitted with the urea-based SNCR/NOxOUT process as BACT. The process relies on the reaction between ammonia and NO_x to yield molecular nitrogen. The delivery system consists of urea injectors in one of the preheater sections. The objective was to achieve 50% reduction of NO_x emissions. At that level there should be no ammonia slip while meeting a BACT limit of 3.1 lb/ton clinker.

A review of the EPA BACT/LAER Clearinghouse (BACT Clearinghouse) information indicates that NO_x emissions at most facilities are minimized by process control and good combustion practices.

The applicant stated that NO_x emissions at this facility will be controlled through "proper combustion practices" such as burner design with primary combustion air control. The applicant has proposed for each kiln with a preheater design a NO_x emission rate of 285 lb/hr and 1.9 lb/ton kiln_{PH} feed (3.17 lb/ton clinker at a production rate of 90 TPH, 30-day average).

A review of the NO_x emission rate summary indicates that the applicant's proposal is among the BACT determinations made to date for plants utilizing dry processes. The dry process with a preheater/precalciner is considered to be the most energy-efficient process. Dry process preheater designs, such as the one employed by Southdown, are also energy efficient. Therefore it is expected that the lower fuel use will result in relatively low NO_x, as well as documented reductions from tire burning, are further reasons to a expect low emission rate from the both preheater design kilns.

Although the Department has good tracking records data on Kiln No. 2 showing compliance with the BACT standard of 1.72 lb/ton kiln_{PH} feed (250 lbs/hr) for at least the last 12 years, little reliable data presently exist to confirm the NO_x emission rate from Kiln No. 1.

BACT for Kiln No. 2 will remain as set in 1988. This is 1.72 lb/ton kiln $_{PH}$ feed (250 lb/hr at 145 TPH preheater feed, 30 -day average) which is equivalent to the new BACT limit of 1.72 lb/ton kiln $_{PH}$ feed (258 lb/hr at 150 TPH preheater feed, 30-days average) or 2.86 lb/ton clinker at a production rate of 90 TPH, 30-day average. Kiln No. 2 has steadily meet this BACT standard.

This value is substantially similar to several BACT Determination made by the Department in 1995 and 1997. It is compared below with previous determinations documented by the BACT Clearinghouse.

Previous BACT Determinations

BASIS	Least Stringent	Most Stringent	Proposed
	Year 1978	Year 1981	Year 1996
lb/ton clinker	11.13	0.85	2.8

It is important to note that the facility which was given the 0.85 lb/ton clinker NO_x limit has not been able to meet it since construction. A dry process plant with a preheater/precalciner received a NO_x limit of 1.11 lb/ton clinker but was never built. Another dry process plant with a preheater/precalciner received a BACT determination of 2.09 lb NO_x/ton clinker. However, it appears that since that time a less stringent standard was applied. One dry process preheater/precalciner kiln in California received a NO_x BACT determination of 2.5 lb/ton clinker. The Department made a BACT Determination of 2.8 lb/ton clinker in 1997 (Florida Crushed Stone) and in 1995 for the proposed Florida Rock Industries Cement Plant in Newberry, Florida. The main reason that the lb/ton clinker emission rate was higher than the one for the California plant was that Florida limestone is wetter and requires more heat input to dry. A claim by the kiln manufacturer that differences in volatility between Eastern and Western coal should be reflected in an even higher emission limit for the Florida kiln was rejected by the Department.

Based on the long history of past permitting actions of Kiln No. 1 since its permit was issued in 1973 (no allowable emission limit for any pollutant other than PM), and the few stack records data on file with the Department, the Department has determined that the BACT limit for this kiln will not exceed 1.83 lb/ton kiln $_{PH}$ feed (275 lb/hr at 150 TPH preheater feed rate) or 3.05 lb/ton clinker at a production rate of 90 TPH, 30-days average. Introduction of tires in the material feed end of the kiln (Kiln No. 1) will reduce the thermal load on the burner end and possibly result in lower NO_x emissions.

The Department considers that NO_x emissions from Kiln No. 1 will be minimized as a result of burning tires [refer to files on stack tests performed in 1993 while burning 80% coal and 20% WTDF (190.73 lb/hr in a two days average) 1994 (158.73 lb/hr), and 1995 (151.59 lb/hr)].

Carbon Monoxide

Carbon monoxide (CO) is a pollutant formed by the incomplete combustion (oxidation) of carbon containing compounds in the cement kiln fuel and during the transformation of cement raw materials to cement clinker. When insufficient oxygen is provided, more CO and less CO_2 are formed than under excess air conditions. Substantial quantities of CO and CO_2 are also generated through calcining of limestone and other calcareous material. This calcining process thermally decomposes $CaCO_3$ to CaO and CO_2. The calcining of limestone in the cement manufacturing process liberates large amounts of CO_2, which is available for dissociation into CO.

Flyash, a constituent of the raw feed mix, contains unburnt carbon which can vary in concentration depending on the source of the flyash. As the raw feeds travels down the preheater tower, most of the carbon present in the flyash is burned off. However, some of it is emitted as carbon monoxide. This contributes to fluctuations in carbon monoxide emissions.

The generation of CO and NO_x is inversely related to that of NO_x and is linked to the oxygen level that is present in the kiln system. As the oxygen level increases, the formation of NO_x increases and the formation of CO decreases. Conversely, when the oxygen level decreases, the formation of NO_x decreases and the formation of CO increases. Southdown will meet CO and NO_x emission levels by controlling excess oxygen in the kiln to a level between one and one-half to three percent excess oxygen. A continuous CO process monitor will assist in the control of the CO content in the kiln.

Emissions of CO can potentially be reduced at portland cement plants through utilization of proper combustion practices to maximize the oxidation of CO to CO_2 and reducing the quantity of CO in the flue gas stream (flue gas control). The high temperatures and control of excess air and fuel, typically results in simultaneous optimization for CO and NO_x. The applicant proposes proper combustion practices as BACT to control emissions of CO from this plant. A review of the BACT Clearinghouse reveals that for cement plants, BACT for CO is proper combustion practices.

The applicant proposes a CO limit of 1.2 lb/ton of $feed_{ph}$ and good combustion practice as BACT for CO for each Kiln. This represents an emission increases for Kiln No. 1 from 57.7 lb/hr to 180 lb/hr and for Kiln No. 2 from 64.0 to 180 lb/hr respectively. This increase is proposed in order to allow for more representative on a year-round basis compared with what is achievable during an annual test. It also accounts for fluctuations due to normal process oscillations and varying characteristics of raw materials and fuels.

Volatile Organic Compounds

VOC is also a pollutant formed due to incomplete combustion of fuel and organic material in the feed material to the kiln system. Limestone contains very low levels of VOCs. An additional source of VOC is oil from mill scale which is sometimes used as a raw material for its iron.

Southdown will reduce the VOC emissions by controlling the temperatures in the kiln system. In the kiln, the feed material will reach about 2700 degrees Fahrenheit. The temperature of the gases in the kiln will reach between 3700 to 3800 degrees Fahrenheit. At these high temperatures, virtually all VOCs will be consumed or destroyed regardless of their source (limestone, mill scale, coal, fuel oil, etc.). Clinker production requires certain temperatures, residence time, and turbulence within the kiln. These factors are sufficient to ensure the destruction of almost all VOCs at cement plants.

Emissions of VOC can also be controlled by add-on control devices, by the mechanisms of adsorption, absorption, or incineration (afterburning). Incineration processes include flame incineration, thermal incineration, and catalytic incineration. No add-on controls for VOC have been demonstrated for cement plants.

A review of the BACT Clearinghouse reveals that for cement plants, BACT for VOCs is proper combustion practices.

For VOC, the applicant has estimated 13.6 lb/hr (an increase of approximately 9.1 lb/hr) for both kilns. The applicant is utilizing good combustion practices for both kilns to reduce VOCs emissions.

BACT DETERMINATION RATIONALE:

The existing BACT VE limit of 10 percent for Kiln No. 2 is more stringent than the NSPS for Portland Cement Plant, 40 CFR 60, Subpart F for Kiln No. 2. It is also consistent with various recent BACT determinations made throughout Florida. There is no good basis for considering the higher VE limit proposed by Southdown than the one already established. Although Kiln No. 1 has a VE limit of 20 percent, the kilns are operated similarly and will have identical PM limits. The efforts to maintain the lower Opacity limit at Kiln No. 2 will probably result in fairly low opacity from Kiln No. 1.

BACT for PM (0.2 lb/ton kiln feed) from Kilns No. 1 and No. 2 proposed by Southdown is more stringent than the NSPS for Portland Cement Plants, 40 CFR 60, Subpart F. The basis is the BACT determinations made by the Department for Florida Rock Industries and Florida Crushed Stone and the original BACT determination for Southdown (then FM&M). The Department accepts the applicant's proposed limit (as corrected to 0.18 lb/ton $kiln_{ph}$ feed) for both Kiln Nos. 1 and 2.

BACT for PM (0.1 lb/ton $kiln_{ph}$) feed from Coolers Nos. 1 and 2 proposed by Southdown is equal to that given in the NSPS for Portland Cement Plants. Southdown was unable to achieve lower limits set in the past as a result of permit conditions they agreed to comply with in order to avoid PSD/BACT. The basis is also the BACT determinations made by the Department for Florida Rock Industries and Florida Crushed Stone. The Department accepts the applicant's proposed limit (corrected to 0.09 lb/ton $kiln_{ph}$ feed) for both Coolers Nos. 1 and 2 with the understanding that it is being met at all times rather than just during annual emission tests.

BACT for CO was proposed by Southdown to be 1.2 lb/ton $kiln_{ph}$ feed (2.0 lb/ton clinker at a clinker production rate of 90 TPH) for both Kilns. This value will provide sufficient flexibility to minimize NO_x and SO_2 emissions. The value is within the Department's recent BACT determination to Florida Crushed Stone (FCS) with a CO limit of 2.0 lb/ton clinker. However the Department encourages Southdown to continue to be judicious in selecting sources of coal ash. Some of the local power companies are trying to recover the unburned carbon in the coal ash by reburning it, taking advantage of the heat content, and producing a more salable coal ash for customers such as the cement industry. If Southdown revises its specifications and accepts poor quality flyash, it can be counter-productive for this pollution prevention effort affecting both industries.

A BACT determination was required for VOC for both Kilns. The Department accepts the limit requested by Southdown which will result in annual emissions above the PSD threshold. It will allow Southdown sufficient flexibility in control for all combustion products.

No BACT determination was requested or required for metals such as mercury, beryllium, lead arsenic, fluorides and sulfuric acid mist (PSD pollutants). Original emission estimates submitted for previous applications provided assurance that emissions of these pollutants are less than the PSD significant threshold values.

No new BACT determination was requested for SO_2. The actual BACT emission level of 15 lb SO_2/hr is being met. This is equal to 0.10 lb SO_2/ton $kiln_{ph}$ feed. For comparison with industry conventions, this value is equal to 0.16 lb SO_2/ton clinker at a production rate of 90 TPH. Kiln No. 1 also meets the same SO_2 limit as Kiln No. 2.

A new BACT- NOx emission limit of 1.83 lb/ton $kiln_{PH}$ feed or 275 lb/hr (3.05 lb/NOx/ton clinker at a production rate of 90 TPH, 30-day average) will be set for Kiln No. 1.
BACT for Kiln No. 2 will remain at 1.72 lb NOx/ton $kiln_{ph}$ feed or 258 lb/hr at a 150 TPH process rate (2.86 lb/ton clinker at a production rate of 90 TPH, 30-days average).

BACT DETERMINATION BY DEP:

Based on the information provided by the applicant and the information searches conducted by the Department, the BACT emission levels are established as follows:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM_{10}) (kilns)	0.18 lb./ton $kiln_{ph}$ feed
Particulate Matter (PM/PM_{10})(coolers)	0.09 lb/ton $kiln_{ph}$ feed
Carbon Monoxide (kilns)	1.2 lb/ton $kiln_{ph}$ feed
Nitrogen Oxides (Kiln No. 1)	1.83 lb/ton $kiln_{ph}$ feed
Nitrogen Oxides (Kiln No. 2)	1.72 lb/ton $kiln_{ph}$ feed
Volatile Organic Compounds (kilns)	0.09 lb/ton $kiln_{ph}$ feed
Visible Emissions (Kiln No. 2)	10 percent (no change)

COMPLIANCE

Compliance with the particulate emission limitations shall be in accordance with the EPA Reference Method 5 as contained in Appendix A, 40 CFR 60, and set forth in Subsection 60.64 of the NSPS for Portland Cement Plants, 40 CFR 60.

Continuous opacity monitors (kilns and coolers) shall meet the requirements of the 40 CFR 60.63, NSPS Subpart F for Portland Cement Plants. Compliance with the opacity standard for the Kilns and Clinker Coolers No. 1 and No. 2 shall be demonstrated by EPA reference Method 9.

Compliance with the CO limitations shall be demonstrated initially and annually by using EPA Reference Method 10 as contained in Appendix A, 40 CFR 60.

Pursuant to Rules 62-4.070(3), 62-212.400(6), and 62-297.520, F.A.C., the kiln/cooler exhaust stack system shall also be equipped with continuous monitors process monitors to record CO and/or O_2 to indicate proper maintenance, operation, and to optimize combustion for pollution control.

Compliance with the NO_x limitation shall be demonstrated initially and annually by using EPA Reference Method 7E as contained in Appendix A, 40 CFR 60.

Compliance with the VOC limitations shall be demonstrated (on a one time basis) by three one hour stack tests using Method 25 or 25A as contained in Appendix A, 40 CFR 60.

BACT/LAER/RACT CLEARINGHOUSE DATABASE COMPARISON

The following table is to be used for reference and comparison with portland cement facilities listed in the BACT/LAER/RACT Clearinghouse database:

POLLUTANT	lb/ton clinker	lb/ton $kiln_{ph}$ feed *	lb/ton kiln feed**	lb/MM BTU
PM/PM_{10} (kiln)	0.31	0.18	0.2	0.08
SO_2 (kiln)	0.16	0.10	0.12	0.05
NO_x (Kiln No. 1)	3.05	1.83	2.03	0.91
NO_x (Kiln No. 2)	2.87	1.72	1.91	0.86
CO (kiln)	2.00	1.2	1.33	0.57
VOC (kiln)	0.15	0.09	0.1	0.04
PM/PM_{10} (Cooler)	0.15	0.09	0.1	0.04

Based on the following process rates:
Preheater feed rate ($kiln_{ph}$ feed rate) : 165 TPH (one-hour maximum)
Preheater feed rate ($kiln_{ph}$ feed rate) *: 150 TPH (30-day average)
Kiln feed rate **: 135 TPH (30-day average)
Clinker production : 90 TPH (30-day average)
Heat Input : 300 MMBTU/hr

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Teresa Heron, Review Engineer,
A. A. Linero, Administrator, New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

Date:

Approved By:

Howard L. Rhodes, Director
Division of Air Resources Management

Date:

DRAFT

Table 1-1. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0530010

Permittee:
Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
Kiln No.1 & Cooler No.1 PSD-FL-233

Emission Unit 003 - Kiln No. 1
Emission Unit 004 - Cooler No. 1

				Allowable Emissions(2)			Equivalent Emissions (3)	
E.U. ID#	Description	Pollutant ID	Fuel(s)	lb/ton dry $kiln_{ph}$ feed *	lb/hr @150 TPH	lb/hr @ 165 TPH	TPY	Regulation(s)
ARMS # 003	Kiln No. 1	PM/PM_{10}	Coal/Gas/Oil/WTDF	0.18	27.0	29.7	118	Rule 62-212.400(6), F.A.C.
ARMS # 003	Kiln No. 1	SO_2 (1)	Coal/Gas/Oil/WTDF	0.10	15.0	16.5	66	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	NO_x	Coal/Gas/Oil/WTDF	1.83	275	301	1318	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	CO	Coal/Gas/Oil/WTDF	1.20	180.0	198.0	788	Rule 62-212.400(6), F.A.C.
ARMS # 003	Kiln No. 1	VOC	Coal/Gas/Oil/WTDF	0.09	13.6	14.9	60	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	Be,Pb,Hg	Coal/Gas/Oil/WTDF	(4) To Be Determined	(4)	(4)	(4)	
ARMS # 003	Kiln No. 1	20% VE	Coal/Gas/Oil/WTDF					Rule 62-204.800, F.A.C.
ARMS # 004	Cooler No. 1	10% VE						Rule 62-204.800, F.A.C.
ARMS # 004	Cooler No. 1	PM/PM_{10}		0.09	13.6	14.9	60	Rule 62-204.800, F.A.C.

ALLOWABLE OPERATING RATES

		KILN No.1	Cooler No.1	
Hours of operation per Year		8760	8760	
Kiln preheater feed rate ($kiln_{ph}$)	TPH	165		One-hour maximum
Kiln preheater feed rate ($kiln_{ph}$) *	TPH	150		(30 - day average)
Kiln Heat Input	MMBtu/hr	300		

NOTES

(1) Emissions of SO_2 will not exceed 15 lbs/hr. Annual testing is required in lieu of fuel sulfur restrictions. [AC27-258571]
(2) Compliance units. This facility shall demonstrate compliance based on these emission standards.
(3) "Equivalent Emissions" are based on annual average emissions at the 30-day feed rate of 150 TPH. The "Equivalent Emissions" are also listed to assess applicable Title V fees and for PSD recordkeeping tracking purposes.
(4) To confirm emissions of these pollutants are under the PSD threshold levels.

Table 2-1. Compliance Requirements.

FACILITY ID NUMBER: 0530010

DRAFT

Permittee:
Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
PSD-FL-233 Kiln No. 1 & Cooler No. 1

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA Reference Method	Testing Time Frequency	Min. Compliance Test Duration	Monitoring System (MS)*
ARMS # 003	Kiln No.1	PM/PM_{10} [6]	Coal/Gas/Oil/WTDF	5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 003	Kiln No.1	VE	Coal/Gas/Oil/WTDF	9	initial/annual [3]	180 min.	COMS [3]
ARMS # 003	Kiln No.1	SO_2 [5]	Coal/Gas/Oil/WTDF	6C	annual [5]	3 one-hour run	
ARMS # 003	Kiln No.1	NOx	Coal/Gas/Oil/WTDF	7E	initial/annual [7]	3 one-hour run	
ARMS # 003	Kiln No.1	CO [4]	Coal/Gas/Oil/WTDF	10	initial/annual [4]	3 one-hour run	
ARMS # 003	Kiln No.1	VOC [2]	Coal/Gas/Oil/WTDF	25 or 25A	initial only	3 one-hour run	
ARMS # 003	Kiln No.1	Be,Pb,Hg	Coal/Gas/Oil/WTDF	29	initial [8]	3 one-hour run	
ARMS # 004	Cooler No.1	PM/PM_{10} [6]		5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 004	Cooler No.1	VE		9	initial/annual [3]	180 min.	COMS [3]

Notes:

[1] Testing of emissions shall be conducted while burning coal and WTDF (20% heat input). Kiln No. 1 is allowed to burn natural gas, waste tire derived fuel (WTDF), and fuel oils (No. 2,4,5, and 6) as auxiliary fuels and on site generated non-hazardous wastes, used oil and grease. See specific condition No. B5.

[2] VOC emission shall be tested initially to comply with the condition of this permit. Thereafter, compliance will be assumed provided that the CO allowable emission rate is not exceeded.

[3] Pursuant to 40 CFR 60, Subpart F, the kiln and cooler exhaust system shall be equipped with continuous monitors to record the opacity at the stack to indicate proper maintenance and operation. Monitoring of the opacity of emissions shall be determined by COMS pursuant to 40 CFR 60.63. Notification and recordkeeping shall be in accordance with 40 CFR 60.7 and 40 CFR 60.65.

[4] Continuous emissions monitors shall be installed for a period of one week to show compliance with the CO limit. CEMS shall meet the applicable requirements of 40 CFR 60 Appendix B and Appendix F. Thereafter, continuous process monitors for CO and/or O_2 to optimize combustion conditions for pollution control shall be part of the process.

[5] Emissions of SO_2 shall not exceed 15 lbs/hour. Annual testing is required in lieu of fuel sulfur restrictions. (Supplemental information received by DEP March 31, 1995).

[6] Southdown has the option of using Method 5 if they stipulate that all of the PM is PM_{10}.

[7] NO_x - An initial and Annual compliance tests as required by EPA Method 7E.

[8] To confirm emissions of these pollutants are under the PSD threshold levels. Initial test.

* MS = Continuous Opacity Monitoring System (COMS) - Continuous Emission Monitoring System (CEMS)

DRAFT

Table 2-2. Compliance Requirements.

FACILITY ID NUMBER: 0530010

Permittee:
Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
PSD-FL-233 Kiln No. 2 & Cooler No.2

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA Reference Method	Testing Time Frequency	Min. Compliance Test Duration	Monitoring System (MS)*
ARMS # 014	Kiln No.2	PM/PM_{10} [6]	Coal / Gas / Oil	5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 014	Kiln No.2	VE	Coal / Gas / Oil	9	initial/annual [3]	180 min.	COMS [3]
ARMS # 014	Kiln No.2	SO_2 [5]	Coal / Gas / Oil	6C	annual [5]	3 one-hour run	
ARMS # 014	Kiln No.2	NOx	Coal / Gas / Oil	7E	initial/annual [7]	3 one-hour run	
ARMS # 014	Kiln No.2	CO [4]	Coal / Gas / Oil	10	initial/annual [4]	3 one-hour run	
ARMS # 014	Kiln No.2	VOC [2]	Coal / Gas / Oil	25 or 25A	initial only	3 one-hour run	
ARMS # 014	Kiln No.2	Be,Pb,Hg	Coal / Gas / Oil	29	initial [8]	3 one-hour run	
ARMS # 015	Cooler No. 2	PM/PM_{10} [6]		5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 015	Cooler No. 2	VE		9	initial/annual [3]	180 min.	COMS [3]

Notes:

[1] Testing of emissions shall be conducted while burning coal. Kiln No. 2 is allowed to burn natural gas and fuel oils (No. 2,4,5, and 6) as auxiliary fuels and on site generated non-hazardous wastes, used oil and grease. See specific condition No. C5.

[2] VOC emission shall be tested initially to comply with the condition of this permit. Thereafter, compliance will be assumed provided that the CO allowable emission rate is not exceeded.

[3] Pursuant to 40 CFR 60, Subpart F, the kiln and cooler exhaust system shall be equipped with continuous monitors to record the opacity at the stack to indicate proper maintenance and operation. Monitoring of the opacity of emissions shall be determined by COMS pursuant to 40 CFR 60.63. Notification and recordkeeping shall be in accordance with 40 CFR 60.7 and 40 CFR 60.65.

[4] Continuous emissions monitors shall be installed for a period of one week to show compliance with the CO limit. CEMS shall meet the applicable requirements of 40 CFR 60 Appendix B and Appendix F. Thereafter, continuous process monitors for CO and/or O2 to optimize combustion conditions for pollution control shall be part of the process.

[5] Emissions of SO_2 shall not exceed 15 lbs/hour. Annual testing is required in lieu of fuel sulfur restrictions. (Supplemental information received by DEP March 31, 1995).

[6] Southdown has the option of using Method 5 if they stipulate that all of the PM is PM_{10}.

[7] NOx - Initial and Annual compliance tests as required by EPA Method 7E.

[8] To confirm emissions of these pollutants are under the PSD threshold levels. Initial test.

* MS = Continuous Opacity Monitoring System (COMS) - Continuous Emission Monitoring System (CEMS)

DRAFT

Table 1-2. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0530010

Permittee:

Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
Kiln No. 2 & Cooler No. 2 PSD-FL-233

Emission Unit 014 - Kiln No. 2
Emission Unit 015 - Cooler No. 2

				Allowable Emissions(2)			Equivalent Emissions (3)	
E.U. ID#	Description	Pollutant ID	Fuel(s)	lb/ton dry $kiln_{ph}$ feed *	lb/hr @150 TPH	lb/hr @ 165 TPH	TPY	Regulation(s)
ARMS # 014	Kiln No. 2	PM/PM_{10}	Coal/Gas/Oil	0.18	27.0	29.7	118	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	SO_2 (1)	Coal/Gas/Oil	0.10	15.0	16.5	66	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	NO_x	Coal/Gas/Oil	1.72	258.0	283.8	1130	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	CO	Coal/Gas/Oil	1.20	180.0	198.0	788	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	VOC	Coal/Gas/Oil	0.09	13.6	14.9	60	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	Be,Pb.Hg	Coal/Gas/Oil	(4)	(4)	(4)	(4)	Rule 62-4.070(3), F.A.C.
ARMS # 014	Kiln No. 2	10% VE	Coal/Gas/Oil					Rule 62-212.400(6), F.A.C.
ARMS # 015	Cooler No.2	10% VE						Rule 62-212.400(6), F.A.C.
ARMS # 015	Cooler No.2	PM/PM_{10}		0.09	13.6	14.9	60	Rule 62-212.400(6), F.A.C.

ALLOWABLE OPERATING RATES

		KILN No. 2	Cooler No. 2	
Hours of operation per Year		8760	8760	
Kiln preheater feed rate ($kiln_{ph}$)	TPH	165		One-hour maximum
Kiln preheater feed rate ($kiln_{ph}$)*	TPH	150		(30 - day average)
Kiln Heat Input	MMBtu/hr	300		

NOTES

(1) Emissions of SO_2 will not exceed 16 lbs/hr. Annual testing is required in lieu of fuel sulfur restrictions. [AC27-258572]
(2) Compliance units. This facility shall demonstrate compliance based on these emission standards.
(3) "Equivalent Emissions" are based on annual average emissions at the 30-day feed rate of 150 TPH. The "Equivalent Emissions" are also listed for informational purposes and for PSD and recordkeeping tracking purposes.
(4) To confirm emissions of these pollutants are under the PSD threshold levels.

SECTION IV. PERMITTING HISTORY AND RELEVANT DOCUMENTS

August 13, 1995	Permits issued at the Southwest District office (AC-27-258569, AC27-258570, AC27-258571, AC27-258572) to allow the burning of natural gas, fuel oils Nos. 2 , 4, 5 and 6. Deletes use of flolite in Kilns No. 1 and No. 2.
February 22, 1996	Request to modify cement Kiln No. 1, Cooler No 1 and Kiln No. 2, and Cooler No. 2. The request was to increase emissions of CO, VOC and to increase/decrease TSP (Kiln No. 1). A detailed project description was listed in the Technical Evaluation and Preliminary Determination. Permit Nos. PSD-FL-233 and 0530010-001-AC. This draft permit was public noticed but was never issued.
February 21, 1997	Request to increase 4 percent in the kiln preheater feed rates form 145 to 150 TPH, rolling 30- production day average for each kiln. A PSD review will be conducted for PM/PM_{10}, NO_x, CO and VOC emissions for both kilns.

NOTE: This permit revises and supersedes air construction permits numbers AC27-258589, 258570, 258571, and 258572.

SECTION IV. PERMITTING HISTORY AND RELEVANT DOCUMENTS

Permitting History

A detailed Permitting History of the emission units modified in this permit are found in Appendix PH.

December 18, 1973	Permit AC 27-2251 to construct Kiln No. 1 and Associated Equipment.
July 25, 1980	Permits AC 27-30444, 30446, 30447, 30449, 30450, 30451, 30453, 30454 and 30455 to construct Kiln No. 2 and Associated Equipment.
March 1981	PSD-FL-063 issued by EPA - Permit to Construct Kiln No. 2 and Associated Equipment.
November 3, 1987	Modification of Kiln No. 2: Increase NOx limits from 195.3 lbs/hr to 250 lbs/hr and SO_2 limits from 3 lbs/hr to 12 lbs/hr. Permit No. AC 27-138850 and PSD-FL-124.
July 20, 1990	Modifications of Kiln No. 2 to burn Flolite oil, increase operating rates and operate kiln without operating the raw mill, PSD-FL-124A. Modification to burn tires in Kiln No. 1. This request was granted. Currently (1996) this facility is not burning tires.
July 25, 1990	AC 27-173474, NO_x emissions were reduced from 250 lbs/hr to 162.3 lbs/hr.
January 25, 1991	Modification of Kiln No. 2 Auxiliary Sources to coincide with recent changes in operation of No. 2 Kiln, AC 27-185898, 27-185900 through -185907.
March 8, 1991	Permit Issued to burn Flolite at Kiln No. 1 AC 27-186923. Allow testing while burning TDF. Conditions of permit remain unchanged.
February 24, 1992	Request to burn waste classified as hazardous waste was withdrawn. This request was filed with the U.S. EPA, Region IV.
January 26, 1993	Modification to allow an increase in cement Kiln No. 2. NO_x emissions from 162.3 lbs/hr to 250 lbs/hr, 30 days rolling average. This increase was to reflect previous BACT limit (PSD-FL-124). Permit allows use of Flolite. New permits, PSD-FL-188 and AC 27-212252, were issued.
April 15, 1994	Permit issued to allow the use of TDF to provide 20% of heat input. AC27-240349, Kiln No. 1.

60.7(d). Such reports shall be submitted quarterly pursuant to **40 CFR 60.7 (c). [Rule 62-204.800, F.A.C.; 40 CFR 60.63(d), 60.65(a) and 40 CFR 60.7]**

C18. The following Kiln No. 2 fuel records shall be maintained and made available upon request:

1. Coal

   (a) the coal usage rate in tons/day;
   (b) the average sulfur content and heating value (Btu/lb) of each coal shipment based upon analysis of a sample representative of the shipment (trainload).

2. Liquid Fuels

   (a) The fuel type (number) and usage rate in gal/day;
   (b) Records of the sulfur content and heating value (Btu/gal) of each oil shipment based upon analysis of a sample representative of the shipment.

3. Natural Gas

   (a) The fuel usage rate in cubic feet per day;
   (b) The average heating value (Btu/Ft^3) provided by the gas supplier.
   [Rule 62-4.070(3), F.A.C.]

C19. Two copies of the results of the emission tests for the pollutants listed in Condition 1 for these emission units shall be submitted within forty-five days of the last sampling run to the Department's Southwest District office. Reports shall be in a format consistent with and shall include the information in accordance with **Rule 62-297.310 (8), F.A.C. [Rule 62-210.370 (3) and Rule 62-.297.310(8), F.A.C.]**

Daily Operation and Maintenance (O&M) Log:

C20 This facility shall maintain a central file containing all measurements, records , and other data that are required to be collected pursuant to the various specific conditions of this permit. Operators shall keep a daily O&M log to include, at a minimum, the following information:

(a) The data collected from in-stack monitoring instruments

(b) The records on daily feed rates and clinker production rate

(c) The amount and type of fuel burned per affected unit

(d) Calibration logs for all instruments

(e) Maintenance/repair logs for any work performed on equipment or instrument which is subject to this permit

(f) Fuel analysis data.

All measurements, records, and other data required to be maintained by Southdown, shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. This data shall be made available to the Department upon request. The Department's Southwest District office shall be notified in writing at least 15 days prior to the testing (auditing) of any instrument required to be operated by this facility to allow witnessing by authorized personnel. **[Rule 62-4.070(3), F.A.C.]**

$E = (c_s \times Q_{sd})/(P \times K)$

where:

E	=	emission rate of particulate matter, kg/metric ton (lb/ton) of kiln feed
c_s	=	concentration of particulate matter, g/dscm (g/dscf)
Q_{sd}	=	volumetric flow rate of effluent gas, dscm/hr (dscf/hr)
P	=	total kiln feed (dry basis) rate, metric ton/hr (ton/hr)
K	=	conversion factor, 1000 g/kg (453.6 g/lb)

The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30.0 dscf) for the kiln and at least 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler. **[Rules 62-204.800 and 62-297.401, F.A.C. 40 CFR 60.64(b)(1) - (3)]**

C12. Suitable methods shall be used to determine the *kiln feed rate (P)*, except fuels, for each run. Material balance over the production system shall be used to confirm the feed rate. **[40 CFR 60.64(3)]**

C13. The visible emissions test shall be conducted by a certified observer and be a minimum of 180 minutes in duration. The test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. **[40 CFR 60.11. and Rule 62-297.310 (7), F.A.C.]**

C14. Testing of emissions shall be conducted with the source operating at permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, each emission unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. The initial compliance test results shall be submitted to the DEP Southwest District office with the application for an operating permit. **[Rule 62-4.070 (3), 62-297.310, 62-213, 62-4.055, 62-4.22, F.A.C.]**

C15. Operating procedures shall include good combustion practices and proper training of all operators and supervisors. The good combustion practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. **[Rule 62-4.070(3), F.A.C.]**

RECORDKEEPING AND REPORTING REQUIREMENTS

C16. The owner or operator shall submit reports of excess emissions based upon data from the continuous opacity monitoring system. Periods of excess emissions that shall be reported are defined as all 6 minute periods during which the average opacity exceeds that allowed in the **BACT Determination** (10% opacity for the Kiln and Cooler). The content of these reports must comply with the requirements in **40 CFR**

(f) 292,683 cubic feet/hour of natural gas with a heating value of 1,025 Btu per cubic foot.

(h) Southdown is allowed to burn on site generated, non-hazardous waste (as defined by Rule 62-730.030, F.A.C., or 40 CFR Part 261) used oil and grease and rags in the kilns (less than 5,000 gallons per year..

Use of fuels other than those listed above is prohibited. [Construction Permit No. AC27-186923 and AC27-212252 and Supplemental information received by DEP March 31, 1995]

C6. Any other operating parameters (including control equipment operating parameters) established during compliance testing and/or inspection that will confirm the proper operation of each emission unit shall be included in the operating permit **[Rule 62-297.310, F.A.C. and 62-4.070, F.A.C.]**

MONITORING OF OPERATIONS

C7. The owner or operator shall record the daily production and preheater-kiln system feed rates. **[Rule 62-204.800, F.A.C., 40 CFR 60.63(a)]**

C8. The owner or operator shall install, calibrate, maintain, and operate in accordance with **40 CFR 60.13** a *continuous opacity monitoring system* to measure the opacity of emissions from the cement kiln and clinker cooler control device stack. **[Rule 62-204.800, F.A.C., 40 CFR 60.63(b)]**

C9. The opacity monitoring device shall meet the applicable requirements of **Chapter 62-204, F.A.C., 40 CFR 60.11** and **40 CFR 60.13,** including certification of the device in accordance with **40 CFR 60, Appendix B**, Performance Specifications and **40 CFR 60.7(a)(5)** Notification Requirements.

TEST METHODS AND PROCEDURES

C10. These emission units shall be tested in accordance with the applicable EPA/reference method, testing time frequency, and minimum compliance test duration. Table 2-2. Compliance Requirements (attached) list the EPA Methods. No other test method shall be used unless approval from the Department has been received in writing. These emission units shall comply with all applicable requirements of Rule 62-297.310, F.A.C., General Test Requirements.
[Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, F.A.C, and 40 CFR 60, Appendix A and 40 CFR 60.8, Subpart A]

C11. Compliance with the particulate matter standard contained in Table 1-2 Air Pollutant Standards and Terms (attached) shall be determined using EPA Method 5. The emission rate (E) of particulate matter shall be computed for each run using the following equation:

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION C. SPECIFIC CONDITIONS

The following Specific Conditions apply to the following emission units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
014	Kiln No. 2
015	Cooler No. 2

EMISSION LIMITATIONS

C1. The emissions from these emission units shall not exceed the allowable emission rates listed in Table 1-2 Air Pollutant Standards and Terms (attached). **[Rule 62-210.200(198) and 62-212.400, F.A.C.]**

C2. In order to minimize excess emissions during startup/shutdown/malfunction this emission units shall adhere to best operational practices. **[Rule 62-210.700, F.A.C. and 40 CFR 60.7]**

OPERATIONAL LIMITATIONS

C3. Cement Kiln No. 2 is allowed to operate continuously 8760 hours/year **[Rule 62-210.233, F.A.C., Definitions, Potential to Emit (PTE)].**

C4. *Process operating rates*:

- Kiln preheater feed rate -- 165 tons/hour (one hour maximum)
- Kiln preheater feed rate -- 150 tons/hour (30-day average)

[AC 27-186923, AC 27-258572 and Dr. John Koogler's letter of November 22, 1994]. **[Rule 62-210.233, F.A.C., (PTE)]**

C5. The No. 2 cement kiln fuel heat input rate shall not exceed 300 MMBtu/hr, which is approximately:

(a) 24,000 pounds per hour of coal with a heating value of 12,500 Btu/lb

(b) 2,116 gallons/hour of No. 2 fuel oil with a heating value of 141, 300 Btu/gal

(c) 2,060 gallons/hour of No. 4 fuel oil with a heating value of 145,600 Btu/gal

(d) 2,016 gallons/hour of No. 5 fuel oil with a heating value of 148,800 Btu/gal

(e) 1,982 gallons/hour of No. 6 fuel oil with a heating value of 151,300 Btu/gal

modification. FDEP and HBCCC shall review this information and, prior to any modification, determine whether further stack testing is required in order to determine if such modifications will result in an increase in actual emissions, whether a permit modification is necessary, and/or what the terms of any modified permit shall be. FDEP will provide a clear point of entry for Hernando County and any other substantially-affected parties to challenge any of FDEP's proposed determinations in this regard. [Construction Permit No. AC27-240349] Southdown, Inc., shall bear the burden to provide reasonable assurances that such modifications will not increase actual emissions.

B19. Two copies of the results of the emission tests for the pollutants listed in Condition 1 for these emission units shall be submitted within forty-five days of the last sampling run to the Department's Southwest District office. Reports shall be in a format consistent with and shall include the information in accordance with **Rule 62-297.310 (8), F.A.C. [Rule 62-210.370(3) and Rule 62-.297.310(8), F.A.C.]**

Daily Operation and Maintenance (O&M) Log:

B20. This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to the various specific conditions of this permit. Operators shall keep a daily O&M log to include, at a minimum, the following information.

(a) The data collected from in-stack monitoring instruments

(b) The records on daily feed rates and clinker production rate

(c) The amount and type of fuel burned per affected unit

(d) Calibration logs for all instruments

(e) Maintenance/repair logs for any work performed on equipment or instrument which is subject to this permit; and,

(f) Fuel analysis data.

All measurements, records, and other data required to be maintained by Southdown, shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. This data shall be made available to the Department upon request. The Department's Southwest District office shall be notified in writing at least 15 days prior to the testing (auditing) of any instrument required to be operated by this facility to allow witnessing by authorized personnel. **[Rule 62-4.070(3), F.A.C.]**

OTHER RULE REQUIREMENTS

B21. If there is a change in the method of operation, etc., pursuant to Florida Administrative Code (F.A.C.) **Rule 62-210.200,** Definitions - Modification, the permittee shall submit an application along with the appropriate processing fee to the Department's Bureau of Air Regulation. Any physical modifications to the WTDF feed mechanism utilized during the test burn of WTDF/coal that results in an increased feed rate, a change in the location where WTDF is introduced into the kiln, or the introduction of WTDF into the kiln through the use of a mechanism other than a double air lock feed system, may require a modification of the permit. If the WTDF feed mechanism is to be physically modified in this manner, a description of such modification shall be submitted to FDEP and HCBCC 90 days prior to actual

equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. **[Rule 62-4.070(3), F.A.C.]**

RECORDKEEPING AND REPORTING REQUIREMENTS

B16. The owner or operator shall submit reports of excess emissions based upon data from the continuous opacity monitoring system. Periods of excess emissions that shall be reported are defined as all 6 minute periods during which the average opacity exceeds that allowed in **40 CFR 60.62(a)(2) and 40 CFR 60.62 (b)(2)**. The content of these reports must comply with the requirements in **40 CFR 60.7(d)**. Such reports shall be submitted quarterly pursuant to **40 CFR 60.7 (c)**.
[Rule 62-204.800, F.A.C.; 40 CFR 60.63(d), 60.65(a) and 40 CFR 60.7]

B17. Daily sampling and recording of the baghouse dust for the No. 1 kiln is required. The concentration of thallium in the baghouse dust shall not exceed 1.5%. Compliance shall be demonstrated using the "Thallium Concentration Monitoring and Analysis Procedure" as described in Mr. Bob Roger's letter to Dr. John Koogler, dated January 12, 1994 [Attachment #9 of Construction Permit No. AC27-240349].

B18. The following fuel records shall be maintained for a minimum of five (5) years and made available upon request:

1. Coal

   (a) the coal usage rate in tons/day;
   (b) the average sulfur content and heating value (Btu/lb) of each coal shipment based upon analysis of a sample representative of the shipment (trainload).

2. Liquid Fuels

   (a) The fuel type (number) and usage rate in gal/day;
   (b) Records of the sulfur content and heating value (Btu/gal) of each oil shipment based upon analysis of a sample representative of the shipment.

3. Natural Gas

   (a) The fuel usage rate in cubic feet per day;
   (b) The average heating value (Btu/Ft^3) provided by the gas supplier.

4. Tires

   (a) The utilization/firing rate of WTDF shall be quantified (weighed) continuously and recorded hourly;
   (b) The quantities of all deliveries of WTDF shall be documented and kept on record/file.

EPA Methods. No other test method shall be used unless approval from the Department has been received in writing. These emission units shall comply with applicable requirements of Rule 62-297.310, F.A.C., General Test Requirements and 40 CFR 60.8 Performance Tests.
[Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, 62-297.620 F.A.C, and 40 CFR 60 Appendix A, and 40 CFR 60.8, Subpart A]

B11. Compliance with the particulate matter standard contained in Table 1-1 Air Pollutant Standards and Terms (attached) shall be determined using EPA Method 5. The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E = (c_s \times Q_{sd})/(P \times K)$

where:

E	=	emission rate of particulate matter, kg/metric ton (lb/ton) of kiln feed
c_s	=	concentration of particulate matter, g/dscm (g/dscf),
Q_{sd}	=	volumetric flow rate of effluent gas, dscm/hr (dscf/hr)
P	=	total kiln feed (dry basis) rate, metric ton/hr (ton/hr)
K	=	conversion factor, 1000 g/kg (453.6 g/lb)

The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30.0 dscf) for the kiln and at least 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler.
[Rules 62-204.800 and 62-297.401, F.A.C. 40 CFR 60.64(b)(1) - (3)]

B12. Suitable methods shall be used to determine the kiln feed rate (P), except fuels, for each run. Material balance over the production system shall be used to confirm the feed rate. **[40 CFR 60.64(3)]**

B13. The visible emissions test shall be conducted by a certified observer and be a minimum of 180 minutes in duration. The test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. **[40 CFR 60.11 and Rule 62-297.310 (7), F.A.C.]**

B14. Testing of emissions shall be conducted with the source operating at permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, each emission unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. The initial compliance test results shall be submitted to the DEP Southwest District office with the application for an operating permit. **[Rule 62-4.070 (3), 62-297.310, 62-4.055, 62-4.22, and Chapter 62-213, F.A.C.]**

B15. Operating procedures shall include good combustion practices and proper training of all operators and supervisors. The good combustion practices shall meet the guidelines and procedures as established by the

B5. The No. 1 cement kiln fuel heat input rate shall not exceed 300 MMBtu/hr, which is approximately:

(a) 24,000 pounds per hour of coal with a heating value of 12,500 Btu/lb

(b) 2,116 gallons/hour of No. 2 fuel oil with a heating value of 141, 300 Btu/gal

(c) 2,060 gallons/hour of No. 4 fuel oil with a heating value of 145,600 Btu/gal

(d) 2,016 gallons/hour of No. 5 fuel oil with a heating value of 148,800 Btu/gal

(e) 1,982 gallons/hour of No. 6 fuel oil with a heating value of 151,300 Btu/gal

(f) 292,683 cubic feet/hour of natural gas with a heating value of 1,025 Btu per cubic foot

(g) 2.14 tons per hour of whole tire-derived fuel (WTDF)

(h) Southdown is allowed to burn on site generated non-hazardous waste (as defined by Rule 62-730.030, F.A.C., or 40 CFR Part 261) used oil and grease in the kilns (less than 5,000 gallons per year).

Use of fuels other than those listed above is prohibited. [Construction Permit No. AC27-186923 and AC27-212252 and Supplemental information received by DEP March 31, 1995]

B6. Any other operating parameters (including control equipment operating parameters) established during compliance testing and/or inspection that will confirm the proper operation of each emission unit shall be included in the operating permit. **[Rule 62-297.310, F.A.C. and 62-4.070, F.A.C.]**

MONITORING OF OPERATIONS

B7. The owner or operator shall record the daily production and preheater-kiln system feed rate. **[Rule 62-204.800, F.A.C., 40 CFR 60.63(a)]**

B8. The owner or operator shall install, calibrate, maintain, and operate in accordance with 40 CFR 60.13 a *continuous opacity monitoring system* to measure the opacity of emissions from the cement kiln and clinker cooler control device stacks. **[Rule 62-204.800, F.A.C., 40 CFR 60.63(b)]**

B9. The opacity monitoring device shall meet the applicable requirements of **Chapter 62-204, F.A.C., 40 CFR 60.11** and **40 CFR 60.13,** including certification of the device in accordance with **40 CFR 60, Appendix B**, Performance Specifications and **40 CFR 60.7(a)(5)** Notification Requirements.

TEST METHODS AND PROCEDURES

B10. These emission units shall be tested in accordance with the applicable EPA/reference method, testing time frequency, and minimum compliance test duration. Table 2-1. Compliance Requirements (attached) lists the

DRAFT

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION B. SPECIFIC CONDITIONS:

The following Specific Conditions apply to the following emission units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
003	Kiln No. 1
004	Cooler No. 1

EMISSION LIMITATIONS

B1. The emissions from these emission units shall not exceed the allowable emission rates listed in Table 1-1 Air Pollutant Standards and Terms (attached). **[Rule 62-210.200(198) and 62-212.400, F.A.C.]**

B2. In order to minimize excess emissions during startup/shutdown/malfunction this emission units shall adhere to best operational practices. **[Rule 62-210.700, F.A.C. and 40 CFR 60.7]**

OPERATIONAL LIMITATIONS

B3. These emission units are allowed to operate continuously (8760 hours/year). **[Rule 62-210.233, F.A.C. Definitions-Potential to emit (PTE)]**

B4. OPERATING RATES:

- Kiln preheater feed rate -- 165 tons/hour (one-hour maximum)
- Kiln preheater feed rate -- 150 tons/hour (30-day average)

[AC 27-186923, AC 27-258571 and Dr. John Koogler's letter of November 22, 1994]
[Rule 62-210.233 F.A.C., (PTE)]

TIRE BURNING:

(a) The No. 1 cement kiln's maximum utilization/firing rate of WTDF shall not exceed 20 percent of the total Btu heat input, or 2.14 tons per hour [Construction Permit No. AC 27-240349].

(b) WTDF may be introduced into the No. 1 cement kiln only at a point at the base of the preheater (i.e., exit of gases from the kiln) [Construction Permit No. AC27-240349].

(c) WTDF firing in the No. 1 cement kiln shall not commence or be conducted unless the cement kiln has reached an operating temperature of at least 1,400 degree Fahrenheit for one hour. The operating gas temperature shall be measured at the cement kiln exit [Construction Permit No. AC27-240349].

(d) In the No. 1 cement kiln, continuous whole tire-derived fuel (WTDF) utilization/firing shall be allowed (i.e., 8760 hrs/yr operation) [Construction Permit AC27-240349].

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION A. NSPS COMMON CONDITIONS: 40 CFR 60 SUBPART A, GENERAL PROVISIONS

EMISSION UNITS

This permit addresses the following emission units.

EMISSIONS UNIT NO.	EMISSIONS UNIT DESCRIPTION
003	Unit No. 1 - Kiln No. 1
014	Unit No. 2 - Kiln No. 2
004	Unit No. 3 - Cooler No. 1
015	Unit No. 4 - Cooler No. 2

These emission units shall comply with all applicable requirements of 40 CFR 60, General Provisions, Subpart A.

A.1. [40 CFR 60.7, Notification and record keeping]
A.2. [40 CFR 60.8, Performance tests]
A.3. [40 CFR 60.11, Compliance with standards and maintenance requirements]
A.4. [40 CFR 60.12, Circumvention]
A.5. [40 CFR 60.13, Monitoring requirements]
A.6. [40 CFR 60.19, General notification and reporting requirements]

These emission units shall comply with all applicable provisions of the 40 CFR 60 New Source Performance Standards for Portland Cement Plants, Subpart F, 40 CFR 60, Appendix A, and 40 CFR 51, Appendix M.

6.3 Excess Emissions Report: If excess emissions occur, the owner or operator shall notify the Air Compliance Section of the Southwest District office within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Pursuant to the New Source Performance Standards, excess emissions shall also be reported in accordance with 40 CFR 60.7. **[Rules 62-4.130 and 62-210.700(6), F.A.C.]**

6.4 Annual Operating Report for Air Pollutant Emitting Facility: Before March 1st of each year, the owner or operator shall submit to the Department this required report [DEP Form No. 62-210.900(5)], which summarizes operations for the previous calendar year. **[Rule 62-210.370(3), F.A.C.]**

7.0 OTHER REQUIREMENTS

7.1 Waste Disposal: The owner or operator shall treat, store, and dispose of all liquid, solid, and hazardous wastes in accordance with all applicable Federal, State, and Local regulations. This air pollution permit does not preclude the permittee from securing any other types of required permits, licenses, or certifications.

7.2 Used Oil and Grease: Used oil and grease burned at this facility (Kiln 1 and 2) shall not be a hazardous waste as defined by 40 CFR Part 261.3 or Rule 62-730.030, F.A.C. It shall not include fuels or blended fuels consisting in whole or in part of hazardous waste or which include mixture of any solid waste generated from the treatment, storage, or disposal of hazardous waste. These fuels shall be burned in compliance with Section 403.769(3), Florida Statutes.

7.3 Other Regulations: The owner or operator shall comply with applicable provisions of Rule 62-710, Used oil Management and 40 CFR Parts 279, Standards for the Management of used oil.

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

5.3 Test Notification: The owner or operator shall notify the Southwest District office in Tampa in writing at least (30) days [initial] and (15) days [annual] prior to conducting each scheduled compliance test. The notification shall include the test date, the expected test time, the facility contact person for the test, and the person or company conducting the test. The (30) or (15) day notification requirement may be waived at the discretion of the Department. Likewise, if circumstances prevent testing during the test window specified for the emission unit, the owner or operator may request an alternate test date before the expiration of this window. **[Rule 62-297.310 and 40 CFR 60.8, F.A.C.]**

5.4 Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in Rule 62-204, 62-210, 62 -212, 62-296 and 62-297, F.A.C. or in a permit issued pursuant to those rules is being violated, it may require the owner or operator of the facility to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions units and to provide a report on the results of said tests to the Southwest District office in Tampa. **[Rule 62-297.310, F.A.C.]**

5.5 Stack Testing Facilities: The owner or operator shall install stack testing facilities in accordance with **Rule 62-297.310, F.A.C.**

5.6 Exceptions and Approval of Alternate Procedures and Requirements: An Alternate Sampling Procedure (ASP) may be requested from the Bureau of Air Regulation of the Florida Department of Environmental Protection in accordance with the procedures specified in **Rule 62-297.620, F.A.C.**

6.0 REPORTS AND RECORDS

6.1 Duration: All reports and records required by this permit shall be kept for at least (5) years from the date the information was recorded. **[62-4.160(14)(b), F.A.C.]**

6.2 Emission Compliance Stack Test Reports:

(a) A *test report* indicating the results of the required compliance tests shall be filed with the Southwest District office in Tampa as soon as practical, but no later than 45 days after the last sampling run is completed. **[Rule 62-297.310, F.A.C.]**

(b) The *test report* shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in **Rule 62-297.310 (8), F.A.C.**

3.4 Excess Emissions Requirements **[Rule 62-210.700, F.A.C.]**

(a) Excess emissions resulting from start-up, shutdown or malfunction of these emissions units shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24 hour period unless specifically authorized by the Southwest District office for longer duration. **[Rule 62-210.700(1), F.A.C.]**

(b) Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during start-up, shutdown, or malfunction shall be prohibited. **[Rule 62-210.700(4), F.A.C.]**

(c) In case of excess emissions resulting from malfunctions, the owner or operator shall notify the Air Pollution Control Section of the Southwest District office within one (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the problem; and the corrective actions being taken to prevent recurrence. **[Rule 62-210.700(6), F.A.C.]**

4.0 Monitoring of Operations

4.1 Determination of Process Variables:

(a) The permittee shall install, operate, and maintain equipment and/or instruments necessary to determine process variables, such as process weight input or heat input, when such data is needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards. **[Rule 62-297.310 (5), F.A.C.].**

(b) Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. **[Rule 62-297.310(5), F.A.C]**

5.0 TEST REQUIREMENTS

5.1 Test Performance: Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after initial startup up and annually thereafter, (except for VOC), the owner or operator shall conduct performance test(s) for PM/PM_{10}, NOx, SO_2 , CO, VE and VOC (initial) pursuant to 40 CFR 60.8, Performance Tests, Rule 62-296.310 F.A.C., 40 CFR 60, Appendix A and 40 CFR 51, Appendix M. **[Rule 62-204.800, F.A.C and Rule 62-297.310, F.A.C.]**

5.2 Test Procedures and Test Reports shall meet all applicable requirements of the Florida Administrative Code Chapter 62-297. **[Rule 62-297.310, F.A.C.]**

2.3 General Pollutant Emission Limiting Standards: **[Rule 62-296.320 (1), F.A.C.]**

(a) The owner or operator shall not store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems.

(b) No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

NOTE: An objectionable odor is defined as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [F.A.C. 62-210.200(198)]

3.0 OPERATION AND MAINTENANCE

3.1 Changes/Modifications: The owner or operator shall submit to the Department of Environmental Protection, Bureau of Air Regulation and/or the Southwest District office in Tampa, for review and obtain approval for any changes in, or modifications to: the method of operation; process or pollution control equipment; increase in hours of operation; equipment capacities; or any change which would result in an increase in potential/actual emissions. Depending on the size and scope of the modification, it may be necessary to submit an application for, and obtain an air construction permit prior to making the desired change. FDEP will provide a clear point of entry for Hernando County and any other substantially affected parties to challenge any of FDEP's proposed determinations in this regard. *Routine maintenance of equipment would not constitute a modification of this permit.* **[Rule 62-4.030, 62-210.300 and 62-4.070(3), F.A.C.]**

3.2 Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by hazard of fire, wind or by other cause, the owner or operator shall notify the Southwest District office in Tampa as soon as possible, but at least within (1) working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; the steps being taken to correct the problem and prevent future recurrence; and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit and the regulations. **[Rule 62-4.130, F.A.C.]**

3.3 Circumvention: The owner or operator shall not circumvent any air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. **[Rules 62-210.650, F.A.C.]**

permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. **[Rule 62-210.300, F.A.C.]**

2.0 EMISSION LIMITING STANDARDS

2.1 General Visible Emissions Standard: **[Rule 62-296-320 (4)(b). F.A.C.]** Unless otherwise specified by rule or permit, no person shall cause, let, permit, suffer or allow to be discharged into the atmosphere any air pollutants from new or existing emissions units, the opacity of which is equal to:

- Visible emissions from PM fugitive sources shall not exceed 10% opacity.

2.2 Unconfined Emissions of Particulate Matter **[Rule 62-296.320(4)(c), F.A.C.]**

(a) The owner or operators shall not cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any source whatsoever, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrially related activities such as loading, unloading, storing or handling, without taking reasonable precautions to prevent such emission.

(b) Reasonable precautions shall include the following:

- All permanent haul roads shall be paved.
- Temporary haul road shall be watered or treated with chemical dust suppressants at regular intervals.
- Dry materials (moisture content ≤ 14%) shall be stored below grade, in silos, or in enclosed structures.
- Coal stored at or above natural grade shall be compacted, turned and/or watered as necessary to maintain a minimum 8% moisture content in the surface layer, and shall be aligned with the predominant wind direction to minimize wind erosion.
- Abandoned haul road and other disturbed areas shall be revegetated within 60 days of the date that active service of the roads ends.
- All cement products shall be transferred to transport trucks with a sealed pneumatic conveying system which is either a closed system or exhausted through a bag filter.

NOTE: Facilities that cause frequent, valid complaints may be required by the Southwest District office in Tampa to take these or other reasonable precautions. In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

1.0 ADMINISTRATIVE

1.1 Regulating Agencies: All documents related to applications for permits to operate, reports, tests, minor modifications and notifications shall be submitted to the Florida Department of Environmental Protection (FDEP) Southwest District Air Resource Program Permitting Section located at 3804 Coconut Drive, Tampa, Florida 33619-8218, and phone number (813)744-6100. All applications for permits to construct or modify an emission unit(s) subject to the Prevention of Significant Deterioration requirements should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP) located at 2600 Blairstone Road, Tallahassee, Florida 32399-2400 and phone number (904)488-1344.

1.2 General Conditions: The owner and operator is subject to and shall be aware of and operate under the attached General Permit Conditions G.1 through G.15 listed in *Appendix GC* of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. **[Rule 62-4.160, F.A.C.]**

1.3 Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapter of the Florida Administrative Code.

1.4 Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C., when appropriate and follow the application procedures in Chapter 62-4, F.A.C. **[Rule 62-210.900, F.A.C.]**

1.5 Expiration: This air construction permit shall expire on June 30, 1998. **[Rule 62-210.300(1), F.A.C.]** The permittee may, for good cause, request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit. However, the permittee shall promptly notify the Southwest District office of any delays in completion of the project which would affect the startup day by more than 90 days. **[Rule 62-4.090, F.A.C].**

1.6 Application for Title V Permit: This air construction permit revises specific permit conditions to reflect the current applicable requirements, BACT and new permit emission limits. Stack testing of emissions that are required by this permit shall be performed to determine compliance with all new applicable permitted limits. A revision of the Title V operating permit application pursuant to Chapter 62-213, F.A.C., shall be submitted to the DEP District office in Tampa. **[Chapter 62-213, F.A.C.]**

1.7 Applicable Regulations: Unless otherwise indicated, the construction and operation of these emission units shall be in accordance with the capacities and specifications stated in the application. Southdown, Inc., is subject to all applicable provisions of Chapter 403, F.S. and Florida Administrative Code Chapters 62-4; 62-103; 62-204, 62-210, 62-212, 62-213, 62-296, 62-297; and the Code of Federal Regulations Section 40, Part 60. Specifically, this facility is subject to the New Source Performance Standards (NSPS) for Portland Cement Plants identified by the Code of Federal Regulations Section 40, Part 60, Subpart F, and incorporated by reference in the Florida Administrative Code regulation 62-204.800. Issuance of this

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

FACILITY DESCRIPTION:

This facility consists of two identical portland cement manufacturing plants and associated equipment. These plants are identified as Cement Plant No. 1 and Cement Plant No. 2.

EMISSION UNITS

These permits address the following emission units:

EMISSIONS UNIT NO.	EMISSIONS UNIT DESCRIPTION
003	Kiln No. 1
004	Cooler No. 1
014	Kiln No. 2
015	Cooler No. 2

REGULATORY CLASSIFICATION

This industry is listed in Table 62-212.400-1 of Chapter 62-212, F.A.C., "Major Facility Categories." Therefore, stack and fugitive emissions of over 100 tons per year of carbon monoxide, volatile organic compounds, sulfur dioxide, nitrogen oxides, or particulate matter characterize the installation as a major facility subject to the requirements of Rule 62-204.800, F.A.C., which incorporates 40 CFR Subpart F, the New Source Performance Standards (NSPS) for Portland Cement Plants. This facility is a Title V source.

PERMIT SCHEDULE:

xx/xx/xx	End of Public Comment period
xx/xx/xx	Publication of Notice in The Tampa Tribune
xx/xx/xx	Issued Intent to Issue Permit
04/03/97	Application deemed complete

Relevant Documents:

The documents listed below are the basis of the permit. The documents listed below are specifically related to this permitting action. These documents are on file with the Department.

1. Application received February 22, 1996. Addendum received February 21, 1997.
2. Department's letters dated March 8, March 21, July 10, July 25, September 23, October 31, 1996 and January 5, 1997.
3. Southdown Inc. letters dated April 1, June 17, July 22, August 26, October 2, (netting calculations) October 14, November 5, November 11, 1996, January 30, January 31 and February 24, 1997.
4. National Park Service's letter dated April 11, 1996.
5. Hernando County Planning Department's letter dated March 8, 1996.
6. Koogler & Associates' letter dated June, October 15, November 7, 1996, and April 1, 1997.
7. Issued Intent to Issue Permit on October 25, 1996. Public Notice published in Tampa Tribune November 12, 1996.
8. Appendix PH. Southdown permitting history.

Department of Environmental Protection

DRAFT

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

PERMITTEE:

Southdown, Inc.,
Brooksville Plant
Post Office Box 6
Brooksville, Florida 34605-0006

FID No.:	**0530010**
PSD No.:	**PSD-FL-233**
Permit No.:	**0530010-003-AC**
SIC No.:	**3241**
Expires:	**June 30, 1998**

Authorized Representative:
Don Kelly, Plant Manager

LOCATED AT:

Southdown, Inc., Brooksville Plant, Hernando County
Project: Portland Cement Manufacturing
Kilns Nos. 1 & 2 and Clinker Coolers 1 & 2

UTM: Zone 17 ; 356.0 km E ; 3169.9 km N
Directions: *Located on Highway 98, NW of Brooksville, Hernando County*

STATEMENT OF BASIS:

This draft construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, 62-297. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached appendices and tables made a part of this permit:

Table 1-1 and 1-2	Air Pollutants Standards and Terms
Table 2-1 and 2-2	Compliance Requirements
Appendix BD-1	BACT Determination
Appendix GC-1	Construction Permit General Conditions

EFFECTIVE DATE:

Howard L. Rhodes, Director
Division of Air Resources
Management

SOUTHDOWN, INC.
PORTLAND CEMENT PLANT
Brooksville, Florida
PSD-FL-233 and 0530010-001-AC
Facility ID No. 0530010

Table of Contents

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR RESOURCES MANAGEMENT
BUREAU OF AIR REGULATION
TELEPHONE (904) 488-1344
FAX (904) 922-6979
Mail Station # 5505

AIR CONSTRUCTION PERMIT

(Revision of AC 27-258569,-258570,-258571, and-258572)

SOUTHDOWN, INC

PORTLAND CEMENT PLANT

Facility ID No.:0530010
Brooksville, Florida
Hernando County
Florida

Permit No. 0530010-003-AC and PSD-FL-233
Kiln and Cooler No. 1 and No. 2

May XX, 1997

NO_x, CO and VOC will be set for Kiln 1 and PM/PM_{10} for Cooler 1. These emissions limits will be based on PSD/BACT requirements for these pollutants.

6.3.1 Nitrogen Oxides (NO_x)

Nitrogen oxides will be limited to an emission factor of 1.83 lb NOx/ton kiln $_{ph}$ feed (275 lb/hr) for Kiln 1. The limit from Kiln 2 will remain at 1.72 lb NO_x/ton kiln $_{ph}$ feed (258 lb/hr). These limits are attained through process and combustion control.

6.3.2 Sulfur dioxide (SO_2)

Sulfur dioxide emissions from each kiln will remain limited to 15 lb/hr (0.10 lb SO_2/ton kiln $_{ph}$ feed). These represent the lowest known rates from any kiln in the country. SO_2 emissions are minimized by maintaining proper ratios of sulfur and alkali in the pyroprocessing environment and intimate contact between raw materials and exhaust gases. Ultimately the sulfur oxides are incorporated into the clinker lattice structure, thus minimizing the amount emitted to the atmosphere. A small measure of SO_2 removal is theoretically possible in the baghouse although insufficient moisture is present to allow this mechanism to be significant.

6.3.3 Particulate Matter (PM/PM_{10})

Particulate emissions will be limited to 27 lb/hr from each kiln and 13.6 lb/hr from each cooler. These equate to 0.18 lb/ton kiln $_{ph}$ feed and 0.09 lb/ton kiln $_{ph}$ feed from the kiln and cooler respectively. These values are among the lowest at any cement plant in the country. The exhaust gases from both kilns and coolers are controlled by fabric filters (baghouses). When properly maintained, baghouses routinely achieve a particulate control efficiency greater than 99.9 percent.

6.3.4 Carbon Monoxide and Volatile Organic Compounds (CO and VOC)

Emissions from each kiln of carbon monoxide and volatile organic compounds will be limited to 180 lb CO/hr and 13.6 lb VOC/hr. These values correspond to emission factors of 1.2 lb CO/ton kiln $_{ph}$ feed and 0.09 lb VOC/ton kiln $_{ph}$ feed. These limits will be accomplished by combustion control.

6.3.5 *Metal Emissions*

Most trace metals in the kiln systems behave in a manner similar to the main elements, i.e. Ca, Si, Al, Fe and Mg. As such, most of the trace metals are bound in the clinker and in the dusts discharged from the kiln system. Studies show that more than 99.9 % of the total main and trace elements inputs are bound in the solids of the kiln system.

Analyses of the on site generated, non-hazardous used oil/grease, burned as these kilns, meets the on-specification used oil limits for arsenic, cadmium, lead and total halogens but exceed the on-specification used oil limit for chromium. However, studies show that the low volatility of the

metals, including chromium, and its extensive bonding in the clinker results in insignificant emissions for these elements.

Southdown has provided assurances that emissions of these pollutants will not result in exceedances of air quality standards or ambient guidelines developed to protect human health and welfare. PSD pollutants: Mercury (Hg), Beryllium (Be), lead (Pb), and arsenic (As) are under the PSD threshold level and are not subject to PSD review.

6.4 Air Quality Analysis

6.4.1 Introduction

The proposed project will increase emissions of four pollutants at levels in excess of PSD significant amounts: PM/PM_{10}, CO, NO_x, and VOC. The air quality impact analyses required by the PSD regulations for these pollutants include:

* An analysis of existing air quality for PM_{10}, CO, NO_x, and VOC;
* A significant impact analysis for PM_{10}, CO and NO_x;
* A PSD increment analysis for PM_{10} and NO_x;
* An Ambient Air Quality Standards (AAQS) analysis for PM_{10}, and
* An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The significant impact, PSD increment, and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the required analyses follows.

6.4.2 Analysis of Existing Air Quality and Determination of Background Concentrations

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. This monitoring requirement may be satisfied by using previously existing representative monitoring data, if available. An exemption to the monitoring requirement may be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. In addition, if an acceptable monitoring method for the specific pollutant has not been established by EPA, monitoring may not be required.

If preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from previously existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling.

The table below shows that CO and NO_2 impacts from the project are predicted to be less than the de minimus levels; therefore, preconstruction ambient air quality monitoring is not required for these pollutants. However as shown in the table, PM_{10} impacts from the project are predicted to be greater than the de minimus level; therefore, preconstruction ambient air quality monitoring is required for PM_{10}. Previously existing representative monitoring data from a PM_{10} monitor in the vicinity of the facility were used to fulfill the PM_{10} monitoring requirement and to establish a PM_{10} background concentration for use in the AAQS analysis. Background concentrations established for PM_{10} are 105 and 35 ug/m^3 for the 24-hour and annual averaging times, respectively. The net emissions increase of VOC is compared to a de minimus monitoring emission rate in tons per year instead of a concentration level. For this project, the net emissions increase of VOC is less than the de minimus emissions rate of 100 tons per year; thus, preconstruction ambient air quality monitoring for VOC is not required.

Maximum Project Air Quality Impacts for Comparison to the De Minimus Ambient Levels.

Pollutant	Avg. Time	Max Predicted Impact (ug/m^3)	Impact Greater Than De Minimus?	De Minimus Level(ug/m^3)
PM_{10}	24-hour	12.1	YES	10
CO	8-hour	142	NO	575
NO_2	Annual	0.64	NO	14
VOC	Annual	50.4 TPY	NO	100 TPY*

*No significant air quality de minimus concentration level for O_3 has been established. Instead de minimus level is based on net emissions increase of VOC.

6.4.3 Models and Meteorological Data Used in Significant Impact, PSD Increment and AAQS Analyses

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project and other existing major facilities. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options in each modeling scenario. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfy the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) stations at Tampa International Airport, Florida (surface data) and Ruskin, Florida (upper air data). The 5-year period of meteorological data was from 1987 through 1991. These NWS stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

Since five years of data were used in ISCST3, the highest-second-high (HSH) short-term predicted concentrations were compared with the appropriate AAQS or PSD increments. For the annual averages, the highest predicted yearly average was compared with the standards. For determining the project's significant impact area in the vicinity of the facility and if there are significant impacts from the project on any PSD Class I area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

6.4.4 Significant Impact Analysis

Initially, the applicant conducted modeling using only the proposed project's emissions. Receptors were placed within 20 km of the facility, which is located in a PSD Class II area, and the Chassahowitzka National Wilderness Area (CNWA) which is a PSD Class I area located approximately 14 km to the west of the project at its closest point. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compared maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project were predicted in the vicinity of the facility or in the CNWA. The tables below show the results of this modeling. The radius of significant impact, if any, for each pollutant and applicable pollutant averaging time is also shown in the tables below.

Maximum Project Air Quality Impacts for Comparison to the PSD Class II Significant Impact Levels in the Vicinity of the Facility.

Pollutant	Avg. Time	Max Predicted Impact (ug/m^3)	Significant Impact Level (ug/m^3)	Significant Impact?	Radius of Significant Impact (km)
PM_{10}	Annual	1.3	1	YES	2.5
	24-hour	12.1	5	YES	2.5
CO	8-hour	142	500	NO	0.0
	1-hour	409	2000	NO	0.0
NO_x	Annual	0.64	1	NO	0.0

Maximum Project Air Quality Impacts in the CNWA for Comparison to the PSD Class I Significant Impact Levels

Pollutant	Averaging Time	Max. Predicted Impact at Class I Area (ug/m^3)	Significant Impact?	National Park Service (NPS) Significant Impact Level (ug/m^3)
PM_{10}	Annual	0.075	NO	0.08
	24-hour	1.1	YES	0.27
NO_2	Annual	0.11	YES	0.03

As shown in the tables the maximum predicted air quality impacts due to PM_{10} emissions from the proposed project are greater than the significant impact levels in the vicinity of the facility. The maximum predicted air quality impacts due to PM_{10} and NO_x emissions are greater than the significant impact levels in the Class I area for the 24-hour and annual averaging times, respectively. Therefore, the applicant was required to do further PM_{10} modeling in the vicinity of the facility, within the applicable significant impact area, to determine the impacts of the project along with all other sources in the vicinity of the facility. The significant impact area is based upon the predicted radius of significant impact. Further modeling for Class I impacts was also required for the PM_{10} 24-hour averaging time and the NO_2 annual averaging time. Further modeling for CO impacts was not required because maximum predicted CO impacts were less than the applicable significant impact levels.

6.4.5 Receptor Networks For PSD Increment And AAQS Analyses

For the AAQS and PSD Class II analyses, receptor grids normally are based on the size of the

significant impact area for each pollutant. For predicting maximum PM_{10} concentrations in the vicinity of the facility, a discrete receptor grid comprised of 369 receptors located along the property boundary and a polar receptor grid of 53 receptors located at radial distances of 2.5 and 3.0 km were used in these analyses. For the PSD Class I analysis, a receptor gird consisting of twenty receptors along the boundary of the CNWA was used. The results of these analyses are discussed below.

6.4.6 PSD Increment Analysis

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant. The results of the PSD Class II increment analysis presented in the table below show that the maximum predicted PM_{10} impacts are less than the allowable increments.

PSD Class II Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact (ug/m^3)	Impact Greater Than Allowable Increment?	Allowable Increment (ug/m^3)
PM_{10}	Annual	3.8	NO	17
	24-hour	24.9	NO	30

The results of the PSD Class I increment analysis presented in the table below show that the maximum predicted PM_{10} impact for all sources within 120 km of the Class I area is greater than the allowable increment; however, the analysis also shows that this project's contribution to any predicted exceedance of the increment is less than the National Park Service significant impact level. The maximum predicted NO_2 impact is less than the allowable NO_2 increment.

PSD Class I Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact (ug/m^3)	Impact Greater Than Allowable Increment?	Allowable Increment (ug/m^3)	Maximum Southdown Contribution To Any Exceedance	National Park Service Significant Impact Level	Southdown Contribution Significant
PM_{10}	24-hour	8.2	YES	8	0.021	0.027	NO
NO_2	Annual	0.9	NO	2.5	N/A	N/A	N/A

6.4.7 AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modeled. The results of the AAQS analysis are summarized in the table below. As shown in this table,

emissions from the proposed facility are not expected to cause or significantly contribute to a violation of an AAQS.

Ambient Air Quality Impacts

Pollutant	Averaging Time	Major Sources Impact (ug/m^3)	Background Conc. (ug/m^3)	Total Impact (ug/m^3)	Total Impact Greater Than AAQS	Florida AAQS (ug/m^3)
PM_{10}	Annual	6	35	41	NO	50
	24-hour	42	105	147	NO	150

6.5 *Additional Impacts Analysis*

6.5.1 Impacts On Soils, Vegetation, And Wildlife

The maximum ground-level concentrations predicted to occur for PM_{10}, NO_x, VOC and CO as a result of the proposed project, including background concentrations and all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area. An air quality related values (AQRV) analysis was done by the applicant for the Class I area. No significant impacts on this area are expected.

6.5.2 Impact On Visibility

Visual Impact Screening and Analysis (VISCREEN), the EPA-approved Level I visibility computer model, was used to estimate the impact of the proposed project's stack emissions on visibility in the CNWA. The results indicate that the maximum visibility impacts do not exceed the screening criteria inside or outside this area. As a result, there is no significant impact on visibility predicted for this Class I area. In addition a regional haze analysis was done. This analysis predicted no adverse impacts upon regional haze.

6.5.3 Growth-Related Air Quality Impacts

There will be no growth-related impacts because no physical or operational modifications will occur and production will not change as a result of this permit action.

6.5.4 Air Toxics Air Quality Impacts

The maximum predicted impacts of regulated and non-regulated toxic air pollutants that are proposed to be emitted by the project are all less than the Department's draft annual Ambient Reference Concentrations (ARC).

7. CONCLUSION

Based on the foregoing technical evaluation of the application and additional information submitted by Southdown, Inc., the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations provided the Department's Best Available Control Technology Determination is implemented and certain conditions are met. The General and Specific Conditions are listed in the attached draft conditions of approval.

Permit Engineer: T. Heron
Meteorologist: C. Holladay
Reviewed and approved by A. A. Linero, P.E.

Footnotes:

1 These units were originally permitted in 1973. Permit No. AC27- 2251.
2 These units were originally permitted by EPA in 1980 (PSD-Fl-063).
3 CO emission limits of 57.7 lbs/hr and 234.4 tons/yr were established while burning tires (20% WTDF) and coal.
4 Kiln and Cooler No. 1 operated 8001 hours in 1994 and 7875 hours in 1995.
Kiln and Cooler No. 2 operated 7478 hours in 1994 and 7780 hours in 1995.
5 Based on actual stack test conducted in 1994 and 1995 while burning tires (20% WTDF) and coal. Assuming actual hours of operation as reported to the District in 1994 and 1995.
6 There are no allowable limits for NO_x from this kiln.

In the original submittal (1996), Southdown requested the Department to consider current allowable emissions for the baseline calculations instead of actual emissions because in some cases the actual emissions are greater and cannot be used to perform the calculations. However, the Department used actual emissions from the last two years (1994 and 1995) of operation. Actual emissions are based on the Department's records kept at the Southwest District Office in Tampa.

Enforcement Note: *The District has been negotiating a consent agreement with Southdown as a result of a number of excess opacity and stack test emissions violations.*

6.3 Control Technology Review

The Department and the U.S. EPA have made several previous BACT determinations (1980, 1988, 1993) for this cement manufacturing facility, specifically Cement Plant No. 2. Cement Plant 2 was built in accordance with a PSD/BACT review conducted in 1980. BACT reviews conducted since that time have been related to corrections of very stringent initial limits as well as to allow burning of different fuels. Because of these operational changes, BACT limits were developed and revised for Cement Plant 2. The actual controls have been use of fabric filters (baghouses) for particulate control and process optimization for control of CO, SO_2 NO_x, and VOC.

Southdown has curtailed a number of the operational changes which resulted in the PSD/BACT reviews conducted since the construction of Cement Plant 2. They plan to use the same technology that they always have used, but want to insure that the emissions limits are consistent with that technology and with the requirements of the Major Source (Title V) Program to insure that the facility continuously operate in compliance with applicable conditions.

The current revision for Cement Plant No. 2 (Kiln and Cooler No. 2) will consider a revision of the BACT emission limits for PM/PM_{10}, and CO. In addition a new BACT limit will be set for VOC emissions. The rationale for this change is explained in the BACT determination, a copy of which is attached to this document.

Cement Plant No. 1 was built prior to existence of the PSD program. This modification will increase the process rate along with an increase in pollutant emissions. New emission limits for PM/PM_{10},

6.2 Emission Summary

CEMENT KILN No. 1 and COOLER No. 1 [1]

Pollutants	Current Allowable		Current Actual		New Proposed Allowable		Net Increase ton/yr	PSD Significant Level ton/yr
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
(kiln) PM/PM10	39	171	17.8 [4]	70.6 [4]	27	118.3	47.7	25/15
(cooler) PM/PM10	7.1	28.1	6.17 [4]	24.5 [4]	13.6	59.6	32.4	25/15
SO2	15	65.7	NA	NA	15	65.7	NA	40
NO_x	NA [6]	NA [6]	155.2 [5]	616[5]	285	1248.3	632.3	40
CO	57.7 [3]	234 [3]	53.6 [5]	212.9 [5]	180	788.4	575.5	100
VOC	NA	NA	4.4 [5]	17.5 [5]	13.6	59.6	42.10	40
Opacity (cooler)	10%				10%			
Opacity (kiln)	20%				20%			

CEMENT KILN No. 2 AND COOLER No. 2 [2]

Pollutants	Current Allowable		Current Actual [4]		New Proposed Allowable		Net Increase ton/yr	PSD Significant Level ton/yr
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
(kiln) PM/PM10	13.5	55.4	6.77	25.9	27	118.3	92.46	25/15
(cooler) PM/PM10	5.0	20.5	4.44	17.0	13.6	59.6	42.6	25/15
SO2	15	65.70	NA	NA	15	65.7	NA	40
NO_x	250	1025	159.05	606.7	258	1130	523.3	40
CO	64	262	53	203	180	788.4	585.4	100
VOC	7.4	30.3	4.47	17.1	13.6	59.6	42.5	40
Opacity (cooler)	10%				10%			
Opacity (kiln)	10%				10%			

2/14 AL
Info from Southdown on when blower installed. Clair

Southdown Inc.

FACSIMILE TRANSMITTAL SHEET Brooksville FL.

TO: Clair Fancy.

FROM: CHARLES WALZ.

COMPANY: FL. Dept of Environ Protection.

DATE:

FAX NUMBER: 850. 922 6979.

NO. OF PAGES INCLUDING COVER:

PHONE NUMBER:

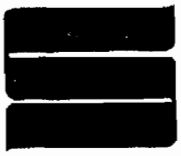
RE: February 2, 2001 Meeting Information Request

☐ **URGENT** ☐ **FOR REVIEW** ☐ **PLEASE COMMENT** ☐ **PLEASE REPLY**

Notes/Comments

OUR **FAX** NUMBER IS (352)-754-9836. IF YOU DO NOT RECEIVE ALL OF THE ABOVE PAGES OR HAVE ANY PROBLEMS WITH RECEIVING, PLEASE CALL THE NUMBER LISTED.

(800)-727-6261, (352)-796-7241



February 12, 2001

Clair Fancy
Bureau Chief Title V Program
Air Resource Program
Florida Department of Environmental Protection
2600 Blairstone Road
Tallahassee, FL 32399-2400

Re: Southdown Clarification Meeting Regarding Warning Letter #WL00-0012AS27SWD

Dear Mr. Fancy

As discussed at our meeting on February 2, 2001, attached is a copy of the work order documenting the installation of a larger 10 X 30 blower and the replacing of the motor driver belt sheave on June 30, 2000. This allows the blower to produce the new designed air capacity for the #1 Kiln Feed System.

If you have additional questions please call me at (352) 799-2011.

Sincerely,

Charles Walz

Charles Walz
Environmental Manager

Don Kelly
Tom Ellison FDEP Southwest District
Jeet Gill
Dr. Ruth Arisman
Dr.John Koogler

Work Order No. 0000000392 Close Date 7/19/00 2/12/01 7:50:26PM Page 1

C/O BLOWER SHEAVE TO SAME AS MOTOR SHEAVE

Task No.		**Request Date**	6/23/00
Tenant		**Request Time**	00:00:00
Assigned By		**Originator**	PROD
Assigned To		**Telephone No.**	
Scheduled Start Date	1/ 1/00 00:00:00	**Extension**	
Scheduled Finish Date		**WO Type**	Replace
Perform by Warranty	No	**Completion Date**	7/19/00
Priority	3.00	**Completion Time**	00:00:00
Expense Class			

Craft	Crew Size	Estimated Labor Hours
Maint	2.00	4.00

Equipment No. 0514
Equipment Description Blower, Aeropol - #1 Kiln
Serial No.
Cost Center
General Ledger No.
Department #1 KF
Location #1 Compressor Room
Sub-location 1 -
Sub-location 2 -
Sub-location 3 -
Reason for Outage _____

User-defined Field 1
User-defined Field 2
User-defined Field 3
User-defined Field 4
User-defined Field 5
Must Be Down No
Down Time
Estimated Down Time

Safety Notes

Comments

INCREASE BLOWER SPEED SAME AS MOTOR SPEED.
installed 10 x 30 blower 6/30/00

Equipment No.	Meter Name	Meter Reading
0514	METER	

Item No.	Equipment No.	Description	Qty Required	Date Used	Qty Used	Total Unit Cost
92514-0001	0514	SHEAVE 14" / QD				
92514-0007	0514	QD BUSHING 2 1/4" BORE				

List extra parts and comments here

Employee Code	Equipment No.	Work Date	First Name	Last Name	Regular Hours	Overtime Hours

Deborah A. Getzoff
Director of District Management
Southwest District
Florida Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, FL 33619

January 18, 2001

Re: Amended Warning Letter #WL00-0012AS27SWD

Dear Ms. Getzoff:

In response to the above referenced Amended Warning Letter, dated December 13, 2001, Southdown. Inc. wishes to present some background facts for your consideration.

Fact 1 - Compliance Testing Schedule

Starting in 1997, all required compliance testing was consolidated and conducted during the month of August, at a feed rate of 135 - 150 tons/hour. Test results for 1997, 1998, 1999 & 2000, for both kilns, are summarized in Attachment A.

Fact 2 - Prior Process Operating Limitations

Kiln 1 - AC27-258571 Kiln 2 - AC27-258572	Process Operating Limitations	
	30-Day Rolling Average Tons/Hour	1-Hour Maximum Tons/Hour
Kiln Preheater Feed Rate	145	165
Cement Kiln Feed Rate	130	148
Clinker Production	79.9	90

Fact 3 - New Process Operating Limitations

Kilns 1 & 2 0530010-003-AC PSD-FL-233	Process Operating Limitations	
	30-Day Rolling Average Tons/Hour	1-Hour Maximum Tons/Hour
Kiln Preheater Feed Rate	150	165
Cement Kiln Feed Rate	Not Established	Not Established
Clinker Production	Not Established	Not Established

Fact 4
Permit AC27-258571 for Kiln No. 1 and Permit AC27-258572 for Kiln No. 2 were issued by the Florida Department of Environmental Protection, Southwest District. These permits not only defined the "Process Operating Limitations" but also clarified that the compliance testing is conducted at the 30-day rolling feed rate average and not the one-hour maximum feed rate.

Permits AC27-258571 (Kiln #1)

4. The maximum material handling rates, **based upon a rolling 30 production-day average**, are as follows:

   Kiln preheater feed rate – 145 tons/hour.
   No. 1 Cement Kiln feed rate – 130 tons/hour.
   Clinker production (kiln discharge) rate – 79.6 tons/hour.

   The maximum material handling rates for any one hour of operation are as follows:

   Kiln preheater feed rate – 165 tons/hour.
   No. 1 Cement Kiln feed rate – 148 tons/hour.
   Clinker production (kiln discharge) rate – 90 tons/hour.

19. Testing of emissions must be conducted within 90-100% of the maximum hourly material input, as measured at the entrance to the No. 1 Kiln, attained within the period 30 production days prior to the test date, or 130 tons/hour, as measured at the entrance to the No. 1 Kiln, whichever is greater. ....

Permits AC27-258572 (Kiln #2)

4. The maximum material handling rates, **based upon a rolling 30 production-day average**, are as follows:

   Kiln preheater feed rate – 145 tons/hour.
   No. 1 Cement Kiln feed rate – 130 tons/hour.
   Clinker production (kiln discharge) rate – 79.6 tons/hour.

   The maximum material handling rates for any one hour of operation are as follows:

   Kiln preheater feed rate – 165 tons/hour.
   No. 1 Cement Kiln feed rate – 148 tons/hour.
   Clinker production (kiln discharge) rate – 90 tons/hour.

13. Testing of emissions must be conducted within 90-100% of the maximum hourly material input, as measured at the entrance to the No. 2 Kiln, attained within the period 30 production days prior to the test date, **or 130 tons/hour**, as measured at the entrance to the No. 2 Kiln, whichever is greater

Clearly the emphasis is on the "Operating Process Limit" based on the 30-day rolling average and not the hourly maximum of 165 tons/hour.

Based upon the above facts, the testing conducted in August of 1998, for both kilns satisfies the requirements for compliance testing specified in Specific Condition 5.1 of Permit 0530010-003-AC and PSD-FL-233.

Compliance Demonstration Under 0530010-003-AC

Permit No. 0530010-003-AC increased the kiln preheater feed rate to 150 tons per hour, **on a 30-day rolling average,** and retained the one-hour maximum of 165 tons per hour. Therefore, compliance testing must be performed at 90% to 100% of 150 tons per hour. i.e. 135 tons per hour to 150 tons per hour.

Specific Responses
Kiln #1/Clinker Cooler #1

1) **Southdown achieved the Kiln # 1 preheater permitted maximum one-hour feed rate of 165 tons per hour (TPH) by January 29, 1999 and was consequently obligated to test emissions no later than March 30, 1999. Southdown conducted compliance tests for particulate matter (PM), sulfur dioxide (SO2), oxides of nitrogen (NOx), carbon monoxide (CO) and visible emissions (VE) on August 10, 1999, approximately 133 days late, and also failed to conduct initial performance tests for mercury (Hg), beryllium (Be), lead (Pb) and volatile organic compounds (VOCs) as required by the permit.**

-Permit PSD-FL-233, Specific Condition 5.1, states the facility shall conduct performance tests within 60 days after achieving maximum production rate.
Southdown's Response

Specific Condition 5.1 states: "Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after initial startup and annually thereafter, (except for VOC), the owner or operator shall simultaneously conduct performance test(s) for PM/PM10, NOx, SO2, CO, VE and VOC (initial) pursuant to 40 CFR 60.8, Performance Tests, Rule 62-296.310 F.A.C., 40CFR60, Appendix A and 40 CFR 51, Appendix M. [Rule 62-204.800, F.A.C. and Rule 62-297.310, F.A.C.]"

As in previous permits, "the maximum production rate at which this facility will be operated is a kiln preheater feed rate of 150 tons per hour, 30-day rolling average". To achieve this, Southdown had identified several modifications for each kiln in the permit application. Each one of these modifications contributed, in part, towards achieving the long term feed average of 150 tons per hour. Any one of them could have contributed to achieving the 165 tons per hour on a short-term basis, but could not be relied upon to sustain that rate for a 30-day average. Southdown expressed its intent clearly, in the permit application, to achieve an "operating average of 150 tons per hour on a 30-day rolling average basis" Based on the clarifying language of Condition 19 of Permit AC27-258571, this would establish an operating range of 135 – 150 tons per hour, for the purpose of conducting the compliance test.

If one assumes that the 180 clock started on the expiration date of June 30, 1998 for permit 0530010-003-AC, compliance testing had to be completed December 28, 1998 or within 60 days of achieving a 30-day rolling average of 150 tons per hour 30-day rolling average defined as "the maximum production rate at which this facility will be operated".

Southdown conducted the required emission testing for Kiln No. 1 and clinker cooler No. 1 on August 26, 1998 at a feed rate of 144 tons per hour. This feed

rate is within the range of 135 and 150 tons per hour. Compliance with emission limits for PM/PM10, NOx, SO2, CO, and VOC, specified in Permit No. 0530010-003-AC, was demonstrated and so stated by Koogler & Associates in the test report. Attachment C summarizes the results of PM, SO2, Nox, CO and VOC conducted in August of 1997, 1998, 1999 and 2000. It should be noted that testing for VOC was conducted in August 1997 and 1998 and was not repeated in in 1999 and 2000, since it was not required to be measured after the initial test.

2) **Southdown completed the initial test for Hg, Be and Pb on August 31, 2000, approximately 519 days late.**

-Permit PSD-FL-233, Specific Condition 5.1, states the facility shall conduct performance tests within 60 days after achieving maximum production rate.

Southdown's Response

Specific Condition 5.1 states: "Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after initial startup and annually thereafter, (except for VOC), the owner or operator shall simultaneously conduct performance test(s) for PM/PM10, NOx, SO2, CO, VE and VOC (initial) pursuant to 40 CFR 60.8, Performance Tests, Rule 62-296.310 F.A.C., 40CFR60, Appendix A and 40 CFR 51, Appendix M. [Rule 62-204.800, F.A.C. and Rule 62-297.310, F.A.C.]"

Specific Condition 5.1 does not include the testing requirements for mercury (Hg), Beryllium (Be) and Lead (Pb) to be completed within the 60-day/180-day time line. Further, the permit does not establish any emission limits for Hg, Be and Pb against which compliance is required to be demonstrated. Therefore, it cannot be stated that the testing conducted on August 21, 2000 is late.

3) **Southdown has not yet conducted an initial VOC test.**

-Permit PSD-FL-233, Specific Condition 5.1, states the facility shall conduct performance tests within 60 days after achieving maximum production rate.

Southdown's Response

Southdown conducted VOC emission testing on August 26, 1998 and demonstrated compliance with the emission limit specified in Permit No. 0530010-003-AC. Testing for VOC is required "initially" only. Therefore, no testing for VOC was required or performed during the testing conducted in August 1999 and August 2000.

4) **Southdown submitted the test results for Hg, Be and Pb on November 6, 2000, approximately 22 days late.**

-Permit PSD-FL-233, Specific Condition B19, states the results of emissions tests shall be submitted within 45 days of the last sampling run.

Southdown's Response

Upon learning that the Laboratory performing the metals analysis was backed up and would not be able to provide a turn-around time to support the required submittal date, Koogler & Associates informed the FDEP Southwest District that the report would be delayed. Further, Koogler & Associates was given an indication that this delay would be acceptable. This situation was out of the control of Southdown, Inc.

5) **Southdown exceeded the Kiln #1 preheater maximum one-hour feed rate of 165 TPH on approximately 101 days between January 26, 1999 and October 18, 2000.**

-Permit PSD-FL-233, specific Condition B4, limits the Kiln #1 preheater feed rate to 165 TPH (one-hour maximum).

Southdown's Response

Specific Condition 4.1(b) states: "Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variables to be determined within 10% of its true value. [Rule 62-297.310(5), F.A.C.]"

While the allegation made by the Southwest District is true of the "indicated" readings, these readings are well within the +/- 10% error allowed for belt scales, weight hoppers, etc. in accordance with Rule 62-297.310(5), F.A.C. and specific condition 4.1(b). As a matter of fact, only 2 one-hour "indicated" readings are above 5% greater than the 165 tons per hour. Therefore, no penalties should be assessed since all testing conducted in 1997, 1998, 1999 & 2000 shows that the specific emission limits (lbs/ton of feed) for all the criteria pollutants were met in each case.

6) **Southdown's letter dated November 7, 2000, stated the facility completed construction on various modifications authorized by Permit PSD-FL-233 on November 11, 1998 and on the preheater feed capacity upgrade on June 28, 2000. Southdown's entitlement to complete construction modifications authorized by Permit PSD-FL-233 expired on June 30, 1998.**

-Florida Administrative Code Rule 62-4.030 states that any stationary source which will reasonably be expected to be a source of pollution shall not be operated, maintained, constructed, expanded, or modified without the appropriate and valid permits issued by the Department, unless the source is exempted by Department rule.

Southdown's Response

Specific Condition 1.5 states: "Expiration: This air construction permit shall expire on June 30, 1998. [Rule 62-210.300(1), F.A.C.] The permittee may, for good cause, request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit. However, the permittee shall promptly notify the Southwest District office of any delays in completion of the of the project which would affect the startup by more than 90 days. [Rule 62-4.090, F.A.C.]

Southdown submitted its applications for these amendments on February 22, 1996. The FDEP Tallahassee office performed a thorough and rigorous review of the application, provided the general public an opportunity to comment on the application and the "draft" permit before it issued Permit No. 0530010-003-AC and PSD-FL-233 on June 27, 1997. It was an oversight on the part of Southdown for not requesting and obtaining an extension in accordance with Specific Condition 1.5.

7) **Southdown's undated letter, received on November 17, 2000, indicates plant operators did not record maximum preheater feed rates on approximately 30 days between June 10, 1999 and July 18, 2000.**

-Permit PSD-FL-233, Specific Condition B20, states plant operators shall keep a daily log to include records on daily feed rates. This condition further states such records shall be maintained for at least five years following the date on which such data are recorded.

Southdown's Response

Specific Condition B20 states: "This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to the various specific conditions of this permit. Operators shall keep a daily O&M log to include, at a minimum, the following information:

(b) The records on daily feed rates and clinker production rate,

All measurements, records, and other data required to be maintained by Southdown, shall be retained for at least (5) years following the data on which such measurements, records or data are recorded. This data shall be made available to the Department upon request. The Department's Southwest District

office shall be notified in writing at least 15 days prior to the testing (auditing) of any instrument required to be operated by this facility to allow witnessing by authorized personnel. [Rule 62-4.070(3), F.A.C.]"

This permit condition requires the operator to keep a daily O&M log to include "daily" feed rates and not "hourly" feed rates. Hourly feed rates may be monitored and recorded but the records are not required to be kept. The daily feed rates are available and are attached to this response as Attachment A.

Specific Responses
Kiln #2/Clinker Cooler #2

1) **The Southwest District requested Southdown provide one-hour maximum preheater feed rates for Kiln #2 for the period March 31, 1998 through October 15, 2000. In its undated letter, received on November 17, 2000, Southdown provided one-hour maximum preheater feed rates for Kiln #2 for the period July 29, 1999 through October 17, 2000. Southdown further stated that prior to July 1999, the facility collected the requested data on a strip chart and that plant staff had been unable to locate the data for the period March 31, 1998 to July 28, 1999.**

-Permit PSD-FL-233, Specific Condition C19, states plant operators shall keep a daily log to include records on daily feed rates. This condition further states such records shall be maintained for at least five years following the date on which such data are recorded.

Southdown's Response

Specific Condition C19 states: "This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to the various specific conditions of this permit. Operators shall keep a daily O&M log to include, at a minimum, the following information:

(b) The records on daily feed rates and clinker production rate,

All measurements, records, and other data required to be maintained by Southdown, shall be retained for at least (5) years following the data on which such measurements, records or data are recorded. This data shall be made available to the Department upon request. The Department's Southwest District office shall be notified in writing at least 15 days prior to the testing (auditing) of any instrument required to be operated by this facility to allow witnessing by authorized personnel. [Rule 62-4.070(3), F.A.C.]"

This permit condition requires the operator to keep a daily O&M log to include "daily" feed rates and not "hourly" feed rates. Hourly feed rates may be monitored and recorded but the records are not required to be kept. The daily feed rates are available and are attached to this response as Attachment B.

2) **A review of compliance tests conducted in August and September 1998 confirmed Kiln #2 operated at a preheater feed rate of 150 TPH, or approximately 91 percent of the one-hour maximum preheater feed rate. Under Department rules and Permit PSD-FL-233, Specific Condition C14, Southdown therefore tested at permitted capacity and would not have been required to retest Kiln #2 upon achieving an actual preheater feed rate of 165 TPH. Consequently, the Southwest District accepts the August and**

September 1998 PM, VE, VOC, NO_x and SO_2 tests as the initial compliance tests required by Permit PSD-FL-233. Because of the missing records, the Southwest District can not determine when Southdown first achieved the Kiln #2 preheater permitted maximum one-hour maximum one-hour feed rate of 165 TPH. Therefore, the Southwest District will not pursue further enforcement for late testing for PM, VE, VOC, NO_x and SO_2 as alleged in Warning Letter #WL00-0012AS27SWD, dated September 22, 2000. However, Southdown did not conduct initial tests for Hg, Be, and Pb until August 30, 2000, approximately 734 days after the August 25, 1998 performance test.

-Permit PSD-FL-233, Specific Condition 5.1, states the facility shall conduct performance tests within 60 days after achieving maximum production rate.

Southdown's Response

Since Specific Condition 5.1 applies equally to kilns 1 & 2, our response is the same as that provided above for Kiln #1. Southdown conducted the required emission testing for Kiln No. 2 and clinker cooler No. 2 on August 25, 1998 at a feed rate of 150 tons per hour and demonstrated compliance with emission limits for PM/PM10, NOx, SO2, CO, and VOC, specified in Permit No. 0530010-003-AC. Attachment C summarizes the testing conducted in August of 1997, 1998, 1999 and 2000, and in each year compliance with Permit No. 0530010-003-AC has been demonstrated. VOC was not measured in 1999 and 2000, since it was not required to be measured after the initial test.

3) **Southdown submitted the test results for Hg, Be and Pb on November 6, 2000, approximately 23 days late.**

-Permit PSD-FL-233, Specific Condition B19, states the results of emissions tests shall be submitted within 45 days of the last sampling run.

RESPONSE

Upon learning that the Laboratory performing the metals analysis was backed up and would not be able to provide a turn-around time to support the required submittal date, Koogler & Associates informed the Southwest District that the report would be delayed. Further, Koogler & Associates was given an indication that this delay would be acceptable. This situation was out of the control of Southdown, Inc.

4) **Southdown exceeded the Kiln #2 preheater maximum one-hour feed rate of 165 TPH on approximately 23 days between July 29, 1999 and October 13, 2000.**

-Permit PSD-FL-233, specific Condition B4, limits the Kiln #1 preheater feed rate to 165 TPH (one-hour maximum).

Southdown's Response

Specific Condition 4.1(b) states: "Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variables to be determined within 10% of its true value. [Rule 62-297.310(5), F.A.C.]"

While the allegation made by the Southwest District is true of the "indicated" readings, these readings are well within the +/- 10% error allowed for belt scales, weight hoppers, etc. in accordance with Rule 62-297.310(5), F.A.C. and specific condition 4.1(b). As a matter of fact, only 7 one-hour "indicated" readings are above 5% greater than the 165 tons per hour. Therefore, no penalties should be assessed since all testing conducted in 1997, 1998, 1999 & 2000 shows that the specific emission limits (lbs/ton of feed) for all the criteria pollutants were met in each case.

5) **Southdown exceeded the Kiln #2 preheater maximum 30-day average feed rate of 150 TPH on approximately 47 days between August 30, 1998 and December 20, 1998.**

-Permit PSD-FL-233, Specific Condition C4, limits the Kiln #2 preheater feed rate to 150 TPH on a 30-day average basis.

RESPONSE

While the allegation made by the Southwest District appears to true of the "indicated" readings, these readings are well within the +/- 10% error allowed for belt scales, weight hoppers, etc. in accordance with Rule 62-297.310(5), F.A.C. and specific condition 4.1(b). Therefore, no penalties should be assessed since all testing conducted in 1997, 1998, 1999 & 2000 shows that the specific emission limits (lbs/ton of feed) for all the criteria pollutants were met in each case.

6) **Southdown's letter dated November 7, 2000, stated the facility completed construction which increased the preheater feed capacity on July 31, 1999. Southdown's entitlement to complete construction modifications authorized by Permit PSD-FL-233 expired on June 30, 1998.**

-Florida Administrative Code Rule 62-4.030 states that any stationary source which will reasonably be expected to be a source of pollution shall not be operated, maintained, constructed, expanded, or modified without the appropriate and valid permits issued by the Department, unless the source is exempted by Department rule.

RESPONSE

Specific Condition 1.5 states: "Expiration: This air construction permit shall expire on June 30, 1998. [Rule 62-210.300(1), F.A.C.] The permitte may, for good cause, request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit. However, the permittee shall promptly notify the Southwest District office of any delays in completion of the of the project which would affect the startup by more than 90 days. [Rule 62-4.090, F.A.C.]

It was an oversight on the part of Southdown for not requesting and obtaining an extension in accordance with Specific Condition 1.5.

On October 13, 2000, the Southwest District received VE test reports for 21 auxiliary material handling processes at the facility. The results indicated the Clinker Silos #1 and #2 operated at 87 TPH on September 1, 2000; Clinker Silo #3 operated at 87 TPH on August 30, 2000; and the Kiln #2 feed system operated at 150 TPH on September 1, 2000.

_The permits in force at the time of the tests for these processes limited their operating rates to 84 TPH, 84 TPH and 145 TPH respectively.

RESPONSE

At a Portland Cement Manufacturing facility, the kiln and clinker cooler are the heart of the manufacturing process. All conveyor belts carrying the feed to the kiln or carrying the clinker away from the kiln are auxiliary equipment to support the kiln/clinker cooler system. Southdown was told that the permits for the kilns and clinker coolers would be processed by the Florida Department of Environmental Protection (FDEP) in Tallahassee, FL. Once these permits were issued, we were to apply for permit amendments for all the auxiliary equipment to the FDEP Southwest District in Tampa, FL.

We were led to believe that these amendments could be accomplished through the TITLE V permitting program. So, Southdown amended the Operating Permit application. We later learned that that was not the proper way to handle those permit changes. Subsequently, revised permit applications were submitted to the Southwest District requesting the harmonized feed rates for clinker storage silos.

While it is true that the permits in force at the time of the tests were limited to 84 TPH, 84 TPH and 145 TPH, amendments to the appropriate permit applications had been submitted to the FDEP Southwest District during the same time period. This situation has resulted from the confusion arising from the TITLE V Operating Permit program.

Sincerely,

Amarjit Singh Gill, PE
Director, Air Permitting
Southdown, Inc.

Reaction to Southdown's Responses to
Amended Warning Letter #WL00-0012AS27SWD

Compliance Testing Process Rates

At issue is whether the requirement to test at "maximum production rate" refers to the 165 TPH one-hour maximum (SWD position) or the 150 TPH 30-day rolling average (Southdown position).

1. To demonstrate compliance with the emission limits on 30-day average basis would require 30-day tests. Permit and DEP rules clearly specify one-hour runs.
2. Intent of testing is to demonstrate that control device can control emissions under most stringent conditions, i.e., highest allowable hourly rates.
3. Under Southdown's concept, plant could operate at an hourly rate far below the maximum permitted during the three one-hour runs and still be operating at 150 TPH on a 30-day average basis.
4. For Kiln #1 and Clinker Cooler #1, Southdown states the 8/26/98 test was the initial test because the kiln operated at 144 TPH which is within 10% of the allowable 150 TPH. However, the 144 TPH is an average of three 0ne-hour runs and can not be compared to the 150 TPH 30-day average limit.

Metals Testing

Southdown correctly states that the initial testing requirement in Specific Condition 5.1 did not specify metals. From this, Southdown draws the conclusion that metals testing conducted in August 2000 can not be considered late.

1. The omission in SC 5.1 appears to be an oversight by the DEP. Nevertheless, the requirement to conduct initial metals testing is contained in Table 2-1 and 2-2.
2. K & A letter, dated 8/15/97, acknowledged need to conduct metals testing when Southdown completed modifications needed to achieve higher production rates.
3. Southdown's Title V permit included a compliance plan for the metals testing.

Late Submission of Metals Test Reports

Southdown reports that K & A was given indication that delayed test reports would be acceptable. Further, Southdown contends situation was out of its control.

1. The SWD did acknowledge K & A's notice that the reports would be late but does not have authority to extend the 45 days in which a facility must submit a test report.
2. Whether or not the situation was out of Southdown's control is not germane.

Process Rate Exceedances

Southdown contends that penalties are not warranted because the alleged rate exceedances were within the 10% accuracy tolerances allowed by DEP for devices used to measure process variables.

1. The penalty matrix takes the 10% accuracy into account because rate exceedances of 10 % or less are considered minor potential for harm.
2. The SWD also did not pursue economic benefit related to the process rate exceedances.

Missing Records

Southdown contends that the permit conditions B20 and C19 that refer to maintaining records on "daily feed rates" absolves them from the requirement to maintain hourly process rates.

1. The intent of any record keeping requirement is to demonstrate compliance with permit limits. Since the PSD permit restricts the process feed rate on two time scales, one-hour maximum and 30-day rolling average, it would logically follow that any records would have to match the same scales.
2. The permit does not limit the daily feed rate. Therefore, recording a daily feed rate serves no logical or regulatory purpose.
3. The permit language clearly refers to process feed rates *(plural)* should reasonably have concluded that they were required to record the one-hour maximum and 30-day rolling average.

	0530010-003-AC		19-Aug-97		25-Aug-98		12-Aug-99		30-Aug-00	
POLLUTANT	150		142.7 *		150		150		150	
	Lbs/Hr	Lbs/Ton Fd.	Lbs/Hr	Lbs/Ton Fd.	Lbs/Hr	Lbs/Ton Fd.	Lbs/Hr	Lbs/Ton Fd.	Lbs/Hr	Lbs/Ton Fd.
PM/PM10, KILN	27.0	0.18	8.1	0.06	10.2	0.07	3.0	0.02	4.5	0.03
PM/PM10, Cooler	13.5	0.09	8.1	0.06	2.1	0.01	6.8	0.05	5.6	0.04
SO2	15.0	0.10	2.5	0.02	0.8	0.01	0.9	0.01	0.9	0.01
NOx	258.0	1.72	187.5	1.31	217.3	1.45	159.7	1.06	221.9	1.48
CO	180.0	1.20	154.8	1.08	107.7	0.72	156.0	1.04	176.6	1.18
VOC	13.5	0.09	9.0	0.06	2.7	0.02	no test		no test	
Beryllium	TBD								0.0003	
Lead	TBD								0.00059	
Mercury	TBD								0.00003220	

* "Based on the above results, it can be concluded that during the period of testing on August 19, 1997, the No. 2 Kiln was operating in compliance with the emission limiting standards set forth in Permit 0530010-003-AC."

Department of Environmental Protection

Jeb Bush
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

David B. Struhs
Secretary

FACSIMILE TRANSMISSION SHEET

DATE 10/30/00

TO: TERESA HERON

Department DARM / NSR

Phone SC 291-9529 Fax _____

FROM: BILL PROSES

DEP Southwest District Office - Air Program
Phone: (813) 744-6100 (SunCom 512-1042) Ext. 119

OPERATOR: Ext 119

SUBJECT: THE ATTACHED TABLE IS A SUMMARY OF SOUTHDOWN'S KILNS 1 & 2 METAL TEST RESULTS FROM KOOGLER. KOOGLER SAY THE COMPLETE TEST WILL ARRIVE THIS WEEK. WE NEED TO KNOW WHAT THESE RESULTS WILL REQUIRE TO BE DONE.

THANKS, BILL P

Total Number of Pages, Including Cover Page: 2

DEP SWD AIR PROGRAM FAX NUMBERS: (813) 744-6458
(Suncom) 512-1073

Metals Emission Summary
Southdown, Inc.
Brooksville, Florida

KILN 1
8/31/00

Run	Emission Rate (lb/hr)		
	Hg	Pb	Be
1	0.00000107	0.000012	0.0175
2	0.00000111	0.000012	0.0236
3	0.00000027	0.000927	0.0011
Average	0.00000082	0.000317	0.0141

0.009373 lb/year 0.10512 lb/year 153.3 lb/year 0.0766 5 TPY
0.009724 0.10512 205.86 lb/year
0.002365 8.12052 9.636
KILN 2 AVG 0.007183 lb/year 2.77692 lb/year 123.516 lb/year
8/29 - 30/2000 0.00000 3592 TPY 0.001388 TPY 0.06176 TPY

Run	Emission Rate (lb/hr)		
	Hg	Pb	Be
1	0.00000103	0.000297	0.0009
2	0.00000019	0.000338	0.0004
3	0.00009574	0.00115	0.0005
Average	0.00003232	0.000595	0.0006

0.009028 2.60172 7.884
0.0016649 2.96088 3.504
0.838624 10.074 4.38
0.283123 lb/hr 5.2122 lb/hr 5.256 lb/hr
AVG 0.000 19156 TPY 0.0026061 TPY 0.002628

		KILN 1	KILN 2
HG			
STATE	200 lb/year	0.00718	0.2831
FED	0.1 TPY	0.0000036	0.000142
PB			
STATE	1200 lb/year	2.7769	5.2122
FED	0.6 TPY	0.001388	0.002606
Be			
STATE	———	123.516	5.256
FED	0.0004 TPY	0.06176	0.002628

Kiln 1

0.03679
0.00555

0.03124

Kiln 2

0.000134
0.000198

0.000116

Table 1-1. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0530010

Permittee:
Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
Kiln No.1 & Cooler No.1 PSD-FL-233

Emission Unit 003 - Kiln No. 1
Emission Unit 004 - Cooler No. 1

				Allowable Emissions(2)			Equivalent Emissions (3)	
E.U. ID#	Description	Pollutant ID	Fuel(s)	lb/ton dry $kiln_{ph}$ feed *	lb/hr @150 TPH	lb/hr @ 165 TPH	TPY	Regulation(s)
ARMS # 003	Kiln No. 1	PM/PM_{10}	Coal/Gas/Oil/WTDF	0.18	27.0	29.7	118	Rule 62-212.400(6), F.A.C.
ARMS # 003	Kiln No. 1	SO_2 (1]	Coal/Gas/Oil/WTDF	0.10	15.0	16.5	66	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	NO_x	Coal/Gas/Oil/WTDF	1.83	275	301	1318	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	CO	Coal/Gas/Oil/WTDF	1.20	180.0	198.0	788	Rule 62-212.400(6), F.A.C.
ARMS # 003	Kiln No. 1	VOC	Coal/Gas/Oil/WTDF	0.09	13.6	14.9	60	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	Be,Pb,Hg	Coal/Gas/Oil/WTDF	(4) To Be Determined	(4)	(4)	(4)	
ARMS # 003	Kiln No. 1	20% VE	Coal/Gas/Oil/WTDF					Rule 62-204.800, F.A.C.
ARMS # 004	Cooler No. 1	10% VE						Rule 62-204.800, F.A.C.
ARMS # 004	Cooler No. 1	PM/PM_{10}		0.09	13.6	14.9	60	Rule 62-204.800, F.A.C.

ALLOWABLE OPERATING RATES

		KILN No.1	Cooler No.1	
Hours of operation per Year		8760	8760	
Kiln preheater feed rate ($kiln_{ph}$)	TPH	165		One-hour maximum
Kiln preheater feed rate ($kiln_{ph}$) *	TPH	150		(30 - day average)
Kiln Heat Input	MMBtu/hr	300		

NOTES

(1) Emissions of SO_2 will not exceed 15 lbs/hr (150 TPH) and 16.5 lbs/hr (165 TPH). Annual testing is required in lieu of fuel sulfur restrictions. [AC27-258571]
(2) Compliance units. This facility shall demonstrate compliance based on these emission standards.
(3) "Equivalent Emissions" are based on annual average emissions at the 30-day feed rate of 150 TPH. The "Equivalent Emissions" are also listed to assess applicable Title V fees and for PSD recordkeeping tracking purposes.
(4) To confirm emissions of these pollutants are under the PSD threshold levels.

Table 1-2. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0530010

Permittee:

Southdown, Inc.

Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC

Kiln No. 2 & Cooler No. 2 PSD-FL-233

Emission Unit 014 - Kiln No. 2
Emission Unit 015 - Cooler No. 2

				Allowable Emissions(2)			Equivalent Emissions (3)	
E.U. ID#	Description	Pollutant ID	Fuel(s)	lb/ton dry $kiln_{ph}$ feed *	lb/hr @150 TPH	lb/hr @ 165 TPH	TPY	Regulation(s)
ARMS # 014	Kiln No. 2	PM/PM_{10}	Coal/Gas/Oil	0.18	27.0	29.7	118	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	SO_2 (1)	Coal/Gas/Oil	0.10	15.0	16.5	66	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	NO_x	Coal/Gas/Oil	1.72	258.0	283.8	1130	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	CO	Coal/Gas/Oil	1.20	180.0	198.0	788	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	VOC	Coal/Gas/Oil	0.09	13.6	14.9	60	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	Be,Pb.Hg	Coal/Gas/Oil	(4)	(4)	(4)	(4)	Rule 62-4.070(3), F.A.C.
ARMS # 014	Kiln No. 2	10% VE	Coal/Gas/Oil					Rule 62-212.400(6), F.A.C.
ARMS # 015	Cooler No.2	10% VE						Rule 62-212.400(6), F.A.C.
ARMS # 015	Cooler No.2	PM/PM_{10}		0.09	13.6	14.9	60	Rule 62-212.400(6), F.A.C.

ALLOWABLE OPERATING RATES

		KILN No. 2	Cooler No. 2	
Hours of operation per Year		8760	8760	
Kiln preheater feed rate ($kiln_{ph}$)	TPH	165		One-hour maximum
Kiln preheater feed rate ($kiln_{ph}$)*	TPH	150		(30 - day average)
Kiln Heat Input	MMBtu/hr	300		

NOTES

(1) Emissions of SO_2 will not exceed 15 lbs/hr (150 TPH) and 16.5 lbs/hr (165 TPH). Annual testing is required in lieu of fuel sulfur restrictions. [AC27-258572]
(2) Compliance units. This facility shall demonstrate compliance based on these emission standards.
(3) "Equivalent Emissions" are based on annual average emissions at the 30-day feed rate of 150 TPH. The "Equivalent Emissions" are also listed for informational purposes and for PSD and recordkeeping tracking purposes.
(4) To confirm emissions of these pollutants are under the PSD threshold levels.

Table 2-1. Compliance Requirements.

FACILITY ID NUMBER:	0530010

Permittee:
Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
PSD-FL-233 Kiln No. 1 & Cooler No. 1

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA Reference Method	Testing Time Frequency	Min. Compliance Test Duration	Monitoring System (MS)*
ARMS # 003	Kiln No.1	PM/PM_{10} [6]	Coal/Gas/Oil/WTDF	5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 003	Kiln No.1	VE	Coal/Gas/Oil/WTDF	9	initial/annual [3]	180 min.	COMS [3]
ARMS # 003	Kiln No.1	SO_2 [5]	Coal/Gas/Oil/WTDF	6C	initial/annual [5]	3 one-hour run	
ARMS # 003	Kiln No.1	NOx	Coal/Gas/Oil/WTDF	7E	initial/annual [7]	3 one-hour run	
ARMS # 003	Kiln No.1	CO [4]	Coal/Gas/Oil/WTDF	10	initial/annual [4]	3 one-hour run	
ARMS # 003	Kiln No.1	VOC [2]	Coal/Gas/Oil/WTDF	25 or 25A	initial [2]	3 one-hour run	
ARMS # 003	Kiln No.1	Be,Pb,Hg	Coal/Gas/Oil/WTDF	29	initial [8]	3 one-hour run	
ARMS # 004	Cooler No.1	PM/PM_{10} [6]		5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 004	Cooler No.1	VE		9	initial/annual [3]	180 min.	COMS [3]

Notes:

[1] Testing of emissions shall be conducted while burning coal and WTDF (20% heat input). Kiln No. 1 is allowed to burn natural gas, waste tire derived fuel (WTDF), and fuel oils (No. 2,4,5, and 6) as auxiliary fuels and on site generated non-hazardous wastes, used oil and grease. See specific condition No. B5. Frequency of testing after initial compliance shall be determined by the DEP Southwest District Office.

[2] VOC emission shall be tested initially to comply with the condition of this permit. Thereafter, compliance will be assumed provided that the CO allowable emission rate is not exceeded.

[3] Pursuant to 40 CFR 60, Subpart F, the kiln and cooler exhaust system shall be equipped with continuous monitors to record the opacity at the stack to indicate proper maintenance and operation. Monitoring of the opacity of emissions shall be determined by COMS pursuant to 40 CFR 60.63. Notification and recordkeeping shall be in accordance with 40 CFR 60.7 and 40 CFR 60.65.

[4] Continuous process monitors for CO and/or O_2 to optimize combustion conditions for pollution control shall be part of the process.

[5] Emissions of SO_2 shall not exceed 15 lbs/hour (150 TPH) and 16.5 lbs/hr (165 TPH). Annual testing is required in lieu of fuel sulfur restrictions. (Supplemental information received by DEP March 31, 1995).

[6] Southdown has the option of using Method 5 if they stipulate that all of the PM is PM_{10}.

[7] NO_x - An initial and Annual compliance tests as required by EPA Method 7E.

[8] To confirm emissions of these pollutants are under the PSD threshold levels. Initial test.

* MS = Continuous Opacity Monitoring System (COMS) - Continuous Emission Monitoring System (CEMS)

Table 2-2. Compliance Requirements.

FACILITY ID NUMBER: 0530010

Permittee:
Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
PSD-FL-233 Kiln No. 2 & Cooler No.2

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA Reference Method	Testing Time Frequency	Min. Compliance Test Duration	Monitoring System (MS)*
ARMS # 014	Kiln No.2	PM/PM_{10} [6]	Coal / Gas / Oil	5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 014	Kiln No.2	VE	Coal / Gas / Oil	9	initial/annual [3]	180 min.	COMS [3]
ARMS # 014	Kiln No.2	SO_2 [5]	Coal / Gas / Oil	6C	initial/annual [5]	3 one-hour run	
ARMS # 014	Kiln No.2	NOx	Coal / Gas / Oil	7E	initial/annual [7]	3 one-hour run	
ARMS # 014	Kiln No.2	CO [4]	Coal / Gas / Oil	10	initial/annual [4]	3 one-hour run	
ARMS # 014	Kiln No.2	VOC [2]	Coal / Gas / Oil	25 or 25A	initial [2]	3 one-hour run	
ARMS # 014	Kiln No.2	Be,Pb,Hg	Coal / Gas / Oil	29	initial [8]	3 one-hour run	
ARMS # 015	Cooler No. 2	PM/PM_{10} [6]		5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 015	Cooler No. 2	VE		9	initial/annual [3]	180 min.	COMS [3]

Notes:

[1] Testing of emissions shall be conducted while burning coal. Kiln No. 2 is allowed to burn natural gas and fuel oils (No. 2,4,5, and 6) as auxiliary fuels and on site generated non-hazardous wastes, used oil and grease. See specific condition No. C5. Frequency of testing after initial compliance shall be determined by the DEP Southwest District Office.

[2] VOC emission shall be tested initially to comply with the condition of this permit. Thereafter, compliance will be assumed provided that the CO allowable emission rate is not exceeded.

[3] Pursuant to 40 CFR 60, Subpart F, the kiln and cooler exhaust system shall be equipped with continuous monitors to record the opacity at the stack to indicate proper maintenance and operation. Monitoring of the opacity of emissions shall be determined by COMS pursuant to 40 CFR 60.63. Notification and recordkeeping shall be in accordance with 40 CFR 60.7 and 40 CFR 60.65.

[4] Continuous process monitors for CO and/or O2 to optimize combustion conditions for pollution control shall be part of the process.

[5] Emissions of SO_2 shall not exceed 15 lbs/hour. Annual testing is required in lieu of fuel sulfur restrictions. (Supplemental information received by DEP March 31, 1995).

[6] Southdown has the option of using Method 5 if they stipulate that all of the PM is PM_{10}.

[7] NOx - Initial and Annual compliance tests as required by EPA Method 7E.

[8] To confirm emissions of these pollutants are under the PSD threshold levels. Initial test.

* MS = Continuous Opacity Monitoring System (COMS) - Continuous Emission Monitoring System (CEMS)

NO_x, CO and VOC will be set for Kiln 1 and PM/PM_{10} for Cooler 1. These emissions limits will be based on PSD/BACT requirements for these pollutants.

6.3.1 Nitrogen Oxides (NO_x)

Nitrogen oxides will be limited to an emission factor of 1.83 lb NOx/ton kiln $_{ph}$ feed (275 lb/hr) for Kiln 1. The limit from Kiln 2 will remain at 1.72 lb NO_x/ton kiln $_{ph}$ feed (258 lb/hr). These limits are attained through process and combustion control.

6.3.2 Sulfur dioxide (SO_2)

Sulfur dioxide emissions from each kiln will remain limited to 15 lb/hr (0.10 lb SO_2/ton kiln $_{ph}$ feed) These represent the lowest known rates from any kiln in the country. SO_2 emissions are minimized by maintaining proper ratios of sulfur and alkali in the pyroprocessing environment and intimate contact between raw materials and exhaust gases. Ultimately the sulfur oxides are incorporated into the clinker lattice structure, thus minimizing the amount emitted to the atmosphere. A small measure of SO_2 removal is theoretically possible in the baghouse although insufficient moisture is present to allow this mechanism to be significant.

6.3.3 Particulate Matter (PM/PM_{10})

Particulate emissions will be limited to 27 lb/hr from each kiln and 13.6 lb/hr from each cooler. These equate to 0.18 lb/ton kiln $_{ph}$ feed and 0.09 lb/ton kiln $_{ph}$ feed from the kiln and cooler respectively. These values are among the lowest at any cement plant in the country. The exhaust gases from both kilns and coolers are controlled by fabric filters (baghouses). When properly maintained, baghouses routinely achieve a particulate control efficiency greater than 99.9 percent

6.3.4 Carbon Monoxide and Volatile Organic Compounds (CO and VOC)

Emissions from each kiln of carbon monoxide and volatile organic compounds will be limited to 150 lb CO/hr and 13.6 lb VOC/hr. These values correspond to emission factors of 1.2 lb CO/ton kiln $_{ph}$ feed and 0.09 lb VOC/ton kiln $_{ph}$ feed. These limits will be accomplished by combustion control.

6.3.5 *Metal Emissions*

Most trace metals in the kiln systems behave in a manner similar to the main elements, i.e. Ca, Si, Al Fe and Mg. As such, most of the trace metals are bound in the clinker and in the dusts discharged from the kiln system. Studies show that more than 99.9 % of the total main and trace elements inputs are bound in the solids of the kiln system.

Analyses of the on site generated, non-hazardous used oil/grease, burned as these kilns, meets the on-specification used oil limits for arsenic, cadmium, lead and total halogens but exceed the on-specification used oil limit for chromium. However, studies show that the low volatility of the

metals, including chromium, and its extensive bonding in the clinker results in insignificant emissions for these elements.

Southdown has provided assurances that emissions of these pollutants will not result in exceedances of air quality standards or ambient guidelines developed to protect human health and welfare. PSD pollutants: Mercury (Hg), Beryllium (Be), lead (Pb), and arsenic (As) are under the PSD threshold level and are not subject to PSD review.

6.4 Air Quality Analysis

6.4.1 Introduction

The proposed project will increase emissions of four pollutants at levels in excess of PSD significant amounts: PM/PM_{10}, CO, NO_x, and VOC. The air quality impact analyses required by the PSD regulations for these pollutants include:

* An analysis of existing air quality for PM_{10}, CO, NO_x, and VOC;
* A significant impact analysis for PM_{10}, CO and NO_x;
* A PSD increment analysis for PM_{10} and NO_x;
* An Ambient Air Quality Standards (AAQS) analysis for PM_{10}, and
* An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The significant impact, PSD increment, and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the required analyses follows.

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Southdown has provided assurances that emissions of these pollutants will not result in exceedances of air quality standards or ambient guidelines developed to protect human health and welfare. PSD pollutants: Mercury (Hg), Beryllium (Be), lead (Pb), and arsenic (As) are under the PSD threshold level and are not subject to PSD review.

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* A significant impact analysis for PM_{10}, CO and NO_x;
* A PSD increment analysis for PM_{10} and NO_x;
* An Ambient Air Quality Standards (AAQS) analysis for PM_{10}, and
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The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The significant impact, PSD increment, and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the required analyses follows.

TABLE 212.400-2
REGULATED AIR POLLUTANTS --SIGNIFICANT EMISSION RATES

Pollutant	Significant Emission Rate (Tons Per Year)
Carbon monoxide	100
Nitrogen oxides	40
Sulfur dioxide	40
Ozone	40 VOC
Particulate matter	25
PM_{10}	15
Total reduced sulfur (including H_2S)	10
Reduced sulfur compounds (including H_2S)	10
Sulfuric acid mist	7
Fluorides	3
	(Pounds Per Year)
Lead	1200
Mercury	200
Municipal waste combustor organics (measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans)	(Megagrams per Year) 3.2×10^{-6} (Tons per Year) 3.5×10^{-6}
Municipal waste combustor metals (measured as particulate matter)	(Megagrams per Year) 14 (Tons per Year) 15
Municipal waste combustor acid gases (measured as sulfur dioxide and hydrogen chloride)	(Megagrams per Year) 36 (Tons per Year) 40
Municipal solid waste landfill emissions (measured as nonmethane organic compounds)	(Megagrams per Year) 45 (Tons per Year) 50

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

KA 521-95-09

April 1, 1997

Mr. A. A. Linero, P.E.
Administrator
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: FDEP File No. 0530010-003-AC (PSD-FL-233)
Southdown, Inc.
Burning of Used Oil/Grease in
Kilns 1 and 2

Dear Mr. Linero:

This letter is in response to your letter of March 18, 1997, to Mr. Don Kelly, Plant Manager of the Southdown Portland cement plant in Hernando County, Florida. In that letter, you addressed activities associated with the disposal of on-site generated, non-hazardous used oil and grease. You stated that Southdown's present permits and the referenced permit that will be issued in the near future for Kilns 1 and 2 do not specifically address the burning of these used lubricants in the two cement kilns. As you suggested, this letter is a request to allow the burning of a limited amount of on-site generated, non-hazardous used oil and grease in Kilns 1 and 2. It is requested that the referenced proposed air construction permit be amended to allow this activity.

As stated in Mr. Gill's letter to the Department dated February 24, 1997, the Southdown plant in Hernando County has been burning on-site generated, non-hazardous used oil and grease for a number of years. I would like to point out that this is common practice in the cement industry. Southdown anticipates that no more than 5,000 gallons a year of on-site generated, non-hazardous oil and grease will be burned in either Kiln 1 or 2. The spent lubricants can consist of oil or grease drippings collected and containerized and sealed one-gallon cans, oily rags and/or oily absorbent that has been used in the cleanup of a small on-site spill. The used oil/grease on oily rags and oily absorbent material will be containerized (typically in one-gallon containers) and introduced into either of the kiln systems at the base of the pre-heater (in a location similar to where whole tires are introduced in Kiln 1). As stated previously, the total volume of used oil-grease will not exceed 5,000 gallons per year on a liquid basis.

For your information, I have attached hereto (Attachment A) typical analyses of used gear grease (the largest single source of the on-site generated, non-hazardous used oil/grease). It will be noted that this grease meets the on-specification used oil limits for arsenic, cadmium, lead and total halogens but exceeds the on-specification used oil limit for chromium. For the purpose of this request, the used oil/grease will be classified as an off-specification used oil with an expected upper limit on chromium to be 100 ppm. The other constituents will meet the on-specification used oil limits.

The handling and disposal of up to 5,000 gallons per year of off-specification used oil/grease makes Southdown subject to the recording requirements of Rule 62-710, FAC, to several Department air rules and to 40 CFR 279 (EPA Standards for Managing Use Oil). It was suggested by Department personnel that 40 CFR 279 would be the applicable regulation dealing with the combustion of off-specification used oil as the Department has no specific rules or guidance for this activity.

Specifically, Rule 40 CFR 279, Subpart G includes the standards for burning off-specification used oil for energy recovery. In reviewing 40 CFR 279, paragraphs 279.12 and 279.16 authorize the burning of off-specification used oil for energy recovery in certain devices including industrial furnaces. Rule 40 CFR 260.10 identifies cement kilns as an industrial furnace. Rule 40 CFR 279, Subpart G, sets forth requirements for notification (279.62, Used Oil Storage; 279.64, Tracking; 279.65 and Notifications, 279.66). Additionally, 279.63 includes a rebuttable presumption for used oil if the total halogen content of the used oil exceeds 1,000 ppm. In the case of the off-specification used oil that will be burned by Southdown, the analyses in Attachment A demonstrate that the total halogen concentration of the used oil/grease is well below 1,000 ppm. Rule 40 CFR 279.60 further requires compliance with Subpart C (Standards for Used Oil Generators) and Subpart I (Standards for Disposal of Used Oil).

In summary, the federal regulations cover administrative matters, storage requirements and the documentation of the characteristics of the off-specification used oil. These are solid waste matters that Southdown will address through applicable state and federal programs. Nothing in the federal (or state) rules restrict the burning of off-specification used oil in approved industrial furnaces; which cement kilns are.

The Department's air rules, as we interpret them, require only that Southdown provide reasonable assurance that the burning of the small amount of on-site generated, non-hazardous used oil/grease does not result in the emission of regulated or non-regulated air pollutants that will exceed standards or guidelines and does not result in exceedances of air

quality standards or ambient guidelines developed to protect human health and welfare. These assurances will be provided in the following paragraphs.

The 5,000 gallons of used oil/grease that will be burned at Southdown represents less than 0.02 percent of the heat input to the two kilns. To demonstrate the impact of emissions from this small amount of used oil/grease, emission factors were developed for several metals and organic compounds expected from the combustion of used oil. For the most part, these emission factors were derived for AP-42, Section 1.11. In the case of arsenic, cadmium, and lead, the on-specification used oil limits were used and the assumption was made that all of these metal would be released to the atmosphere. In the case, of chromium, it was assumed that the used oil/grease would contain 100 ppm chromium and that all of the chromium would be released to the atmosphere. Although it has been assumed that 100 percent of the metals are released to the atmosphere, partitioning factors for metals in fuels burned in cement kilns show 99+ percent of the metals are partitioned to the clinker. The total halogen limit (as chlorine) in the used oil/grease was assumed to be 1,000 ppm.

These emission factors were converted to annual emission rates assuming that 5,000 gallons of used oil/grease would be burned each year at the Southdown facility. It was further assumed that these emissions would occur uniformly throughout the year; as used oil/grease is generated uniformly throughout the year.

Similarly, emission factors were developed for the two cement kilns assuming the combustion of conventional fuel. These emission factors were developed from AP-42, Section 11.6. As with the used oil emission factors, the cement kiln emission factors were converted to annual emission based on the production of 760,000 tons of clinker in each of the two kilns. The emission factors and annual emission rates are summarized in Attachment B.

The emissions of the various constituents referenced in the previous paragraph were modeled with the SCREEN 2 air quality model. These results are summarized in Attachment C. The results of the modeling demonstrate that the impacts of the constituents evaluated are due almost exclusively to existing emissions from the two kilns. In no case, do emissions from the proposed burning of used oil/grease contribute even one percent of the annual Air Reference Concentration of a constituent.

This analysis demonstrates that the burning of 5,000 gallons of used oil/grease will not significantly change the emissions of any constituent from the two Southdown cement kilns. As a result, Southdown respectively requests that the subject air construction permit for Kilns 1 and 2 be

amended to allow the burning of up to 5,000 gallons per year of on-site generated, non-hazardous used oil/grease. Southdown has satisfied state and federal used oil management requirements through appropriate channels. If you have any questions regarding this information or related matters, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:wa

c: Mr. Jerry Kissel, FDEP, Tampa
Mr. Don Kelly, Southdown
Mr. A. Gill, Southdown

CC: J. Huron, BAR
EPA
NPS
~~SWD~~ ✓
Hernando Co.

ATTACHMENT A

TYPICAL ANALYSES OF USED OIL/GREASE

THORNTON LABORATORIES, INC.
MARINE, ANALYTICAL AND ENVIRONMENTAL SERVICES

1145 EAST CASS STREET, TAMPA, FLORIDA 33602
P.O. BOX 2880, TAMPA, FLORIDA 33601-2880
CompQAP# 880124G, HRS# 84147, E84100, E84324

TELEPHONE (813) 223-9702
FAX (813) 223-9332

6-Sep-1996
Page 1

Report For: Brooksville Cement/Southdown
P O Box 6
Brooksville, FL 34605

Sample Identification:

Used Gear Grease Attn: Matt Stone
ID: #1 Kiln
Date requested: 8-15-96

Date Received: 20-Aug-1996

Laboratory Number: 014859

CERTIFICATE OF ANALYSIS

* A letter D indicates that none of that parameter was found at the standard detection limit. Values followed by D indicate that a different detection limit was determined for this sample.
** Below detection limit; detection limit for this sample is 10,000 ppb. This detection limit is the best that present analytical technology allows.

Method	Parameter	Result*	Standard Detection Limit-Units	Analysis Date	Analyst
ASTM D92	Flash Point, Cleveland Open Cup	370	oF	23-Aug-1996	Shirley Wynperle
Dohrmann DX-208	Total Halogens as Chloride (Cl)	240	ppm	6-Sep-1996	Hatem El Gendi
EPA	Total Polychlorinated Biphenyls (PCBs)	**		29-Aug-1996	Sabine Rutgers
EPA 7061	Arsenic (As)	0.6	ppm	29-Aug-1996	Hugh Rodrigues
EPA 7130	Cadmium (Cd)	0.2	ppm	3-Sep-1996	Hugh Rodrigues
EPA 7190	Chromium (Cr)	22	ppm	3-Sep-1996	Sandy Lundgren
EPA 7420	Lead (Pb)	8	ppm	3-Sep-1996	Hugh Rodrigues

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Randy Cigarran

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6-Sep-1996
Page 1

Report for: Brooksville Cement/Southdown
P O Box 6
Brooksville, FL 34605

Sample Identification:

Used Gear Grease Attn: Matt Stone
ID: #1 Coal Mill W/O 200
Date requested: 8-15-96

Date Received: 20-Aug-1996

Laboratory Number: 014858

CERTIFICATE OF ANALYSIS

* A letter D indicates that none of that parameter was found at the standard detection limit. Values followed by D indicate that a different detection limit was determined for this sample.
** Below detection limit; detection limit for this sample is 10,000 ppb. This detection limit is the best that present analytical technology allows.

Method	Parameter	Result*	Standard Detection Limit-Units	Analysis Date	Analyst
ASTM D92	Flash Point, Cleveland Open Cup	430	oF	23-Aug-1996	Shirley Wynperle
Dohrmann DX-208	Total Halogens as Chloride (Cl)	460	ppm	6-Sep-1996	Hatem El Gendi
EPA	Total Polychlorinated Biphenyls (PCBs)	**		29-Aug-1996	Sabine Rutgers
EPA 7061	Arsenic (As)	< 0.5	ppm	29-Aug-1996	Hugh Rodrigues
EPA 7130	Cadmium (Cd)	< 0.2	ppm	3-Sep-1996	Sandy Lundgren
EPA 7190	Chromium (Cr)	21	ppm	3-Sep-1996	Sandy Lundgren
EPA 7420	Lead (Pb)	4	ppm	3-Sep-1996	Hugh Rodrigues

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6-Sep-1996
Page 1

Report For: Brooksville Cement/Southdown
P O Box 6
Brooksville, FL 34605

Sample Identification:

Used Gear Grease Attn: Matt Stone
ID: #1 Finish Mill 1212
Date requested: 8-15-96

Date Received: 20-Aug-1996

Laboratory Number: 014855

CERTIFICATE OF ANALYSIS

* A letter D indicates that none of that parameter was found at the standard detection limit. Values followed by D indicate that a different detection limit was determined for this sample.
** Below detection limit; detection limit for this sample is 10,000 ppb. This detection limit is the best that present analytical technology allows.

Method	Parameter	Result*	Standard Detection Limit-Units	Analysis Date	Analyst
ASTM D92	Flash Point, Cleveland Open Cup	415	oF	23-Aug-1996	Sabine Rutgers
EPA	Total Polychlorinated Biphenyls (PCBs)	**		29-Aug-1996	Sabine Rutgers
Dohrmann DX-208	Total Halogens as Chloride (Cl)	< 100	ppm	6-Sep-1996	Hatem El Gendi
EPA 7061	Arsenic (As)	1.2	ppm	29-Aug-1996	Hugh Rodrigues
EPA 7130	Cadmium (Cd)	< 0.2	ppm	3-Sep-1996	Sandy Lundgren
EPA 7190	Chromium (Cr)	5.5	ppm	3-Sep-1996	Sandy Lundgren
EPA 7420	Lead (Pb)	4	ppm	3-Sep-1996	Hugh Rodrigues

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6-Sep-1996
Page 1

Report For: Brooksville Cement/Southdown
P O Box 6
Brooksville, FL 34605

Sample Identification:

Used Gear Grease Attn: Matt Stone
ID: #2 Finish Mill 936 SF
Date requested: 8-15-96

Date Received: 20-Aug-1996

Laboratory Number: 014856

CERTIFICATE OF ANALYSIS

* A letter D indicates that none of that parameter was found at the standard detection limit. Values followed by D indicate that a different detection limit was determined for this sample.
** Below detection limit; detection limit for this sample is 10,000 ppb. This detection limit is the best that present analytical technology allows.

Method	Parameter	Result*	Standard Detection Limit-Units	Analysis Date	Analyst
ASTM D92	Flash Point, Cleveland Open Cup	385	oF	23-Aug-1996	Sabine Rutgers
Dohrmann DX-208	Total Halogens as Chloride (Cl)	< 100	ppm	6-Sep-1996	Hatem El Gendi
EPA	Total Polychlorinated Biphenyls (PCBs)	**		29-Aug-1996	Sabine Rutgers
EPA 7061	Arsenic (As)	< 0.5	ppm	29-Aug-1996	Hugh Rodrigues
EPA 7130	Cadmium (Cd)	< 0.2	ppm	3-Sep-1996	Sandy Lundgren
EPA 7190	Chromium (Cr)	93	ppm	3-Sep-1996	Sandy Lundgren
EPA 7420	Lead (Pb)	5	ppm	3-Sep-1996	Hugh Rodrigues

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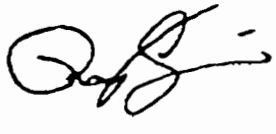

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6-Sep-1996
Page 1

Report For: Brooksville Cement/Southdown
P O Box 6
Brooksville, FL 34605

Sample Identification:

Used Gear Grease
ID: #3 Finish Mill 14R
Date requested: 8-15-96

Attn: Matt Stone

Date Received: 20-Aug-1996

Laboratory Number: 014857

CERTIFICATE OF ANALYSIS

* A letter D indicates that none of that parameter was found at the standard detection limit. Values followed by D indicate that a different detection limit was determined for this sample.
** Below detection limit; detection limit for this sample is 10,000 ppb. This detection limit is the best that present analytical technology allows.

Method	Parameter	Result*	Standard Detection Limit-Units	Analysis Date	Analyst
ASTM D92	Flash Point, Cleveland Open Cup	405	oF	23-Aug-1996	Sabine Rutgers
Dohrmann DX-20B	Total Halogens as Chloride (Cl)	< 100	ppm	6-Sep-1996	Hatem El Gendi
EPA	Total Polychlorinated Biphenyls (PCBs)	**		29-Aug-1996	Sabine Rutgers
EPA 7061	Arsenic (As)	< 0.5	ppm	29-Aug-1996	Hugh Rodrigues
EPA 7130	Cadmium (Cd)	< 0.2	ppm	3-Sep-1996	Sandy Lundgren
EPA 7190	Chromium (Cr)	42	ppm	3-Sep-1996	Sandy Lundgren
EPA 7420	Lead (Pb)	4	ppm	3-Sep-1996	Hugh Rodrigues

THORNTON LABORATORIES, INC.
Randy Cigarran

ATTACHMENT B

EMISSION FACTORS
EMISSION RATES

EMISSION FACTORS AND EMISSION RATES OF TRACE CONSTITUENTS FOR USED OIL BURNING AND CEMENT KILNS

FLORIDA MINING AND MATERIALS BROOKSVILLE, FLORIDA

Constituent	Emission Factor		Emission Rate	
	Used Oil(1) (lb/1000 gal)	Cement Kiln(2) (lb/ton clinker)	Used Oil(3) (lb/yr)	Cement Kiln(4) (lb/yr)
HCl	66C(5)	0.14	33.0000	212.800
As	4.0E-02(6)	1.3E-05	0.2000	19.760
Be	1.8E-03	6.6E-07	0.0090	1.003
Cd	1.6E-02(6)	2.2E-06	0.0800	3.344
Cr	8.0E-01(7)	1.4E-04	4.0000	212.8
Pb	55L(6,8)	7.5E-05	2.7500	114.0
Mn	6.8E-02	8.6E-04	0.3400	1307.2
Phenol	2.4E-03	1.1E-04	0.0120	167.2
Chlorobenzene	6.7E-06	1.6E-05	<0.0001	24.32
Naphthalene	1.3E-02	1.7E-03	0.0650	2584.0
Phenanthrene	1.1E-02	3.9E-04	0.0550	592.8
Phthalates	2.7E-03	1.4E-04	0.0135	212.8
Pyrene	7.0E-03	4.4E-06	0.0350	6.688
Benzo(a)anthracene/ chrysene	4.0E-03	2.0E-07	0.0200	0.304
Benzo(a)pyrene	4.0E-03	1.3E-07	0.0200	0.198

(1) Maximum emission factor from AP-42, Section 1.11 unless noted otherwise.

(2) From AP-42, Section 11.6.

(3) Based on burning 5,000 gallons per year of used oil/grease.

(4) Based on 760,000 tpy of clinker in each of two kilns.

(5) C = weight percent chlorine in fuel; 1000 ppm = 0.1 percent.

(6) Based on maximum limit in on-specification used oil (As = 5 ppm, Cd = 2 ppm and Pb = 100 ppm) and the assumption that all metal in oil/grease is released to the atmosphere. Partitioning factors for metals demonstrate that 99+ percent of the metals in fuels are partitioned to the clinker. The release assumption is therefore extremely conservative.

(7) Based on a limit of 100 ppm for chromium and the assumption that all Cr in oil/grease is released to the atmosphere. Partitioning factors for metals demonstrate that 99+ percent of the metals in fuels are partitioned to the clinker. The release assumption is therefore extremely conservative.

(8) L = weight percent lead in fuel; 100 ppm = 0.01 percent.

ATTACHMENT C

AIR QUALITY MODELING

Projected Impacts of Combusting On-Site Generated Used Oil/Grease
Florida Mining and Materials
Hernando County, Florida

Constituent	Emissions		Annual Impact (3)			Annual FL-ARC (4) (µg/m^3)	Percent of ARC Consumed			Used Oil & Kilns Within ARC ?
	Used Oil (1) (g/s)	Kilns 1 & 2 (2) (g/s)	Used Oil (µg/m^3)	Kilns (µg/m^3)	Used Oil & Kilns (µg/m^3)		Used Oil	Kilns	Used Oil & Kilns	
HCl	4.75E-04	3.0608	0.00107	6.92	6.93	7	0%	99%	99%	Yes
As	2.88E-06	2.84E-04	6.5E-06	6.4E-04	6.50E-04	2.30E-03	0%	28%	28%	Yes
Be	1.29E-07	1.44E-05	2.9E-07	3.3E-05	3.29E-05	4.20E-04	0%	8%	8%	Yes
Cd	1.15E-06	4.81E-05	2.6E-06	1.1E-04	1.11E-04	5.60E-04	0%	19%	20%	Yes
Cr	5.75E-05	3.06E-03	1.3E-04	6.9E-03	7.05E-03	1000	0%	0%	0%	Yes
Pb	3.96E-05	1.64E-03	8.9E-05	3.7E-03	3.80E-03	0.09	0%	4%	4%	Yes
Mn	4.89E-06	1.88E-02	1.1E-05	4.3E-02	4.25E-02	0.05	0%	85%	85%	Yes
Phenol	1.73E-07	2.40E-03	3.9E-07	5.4E-03	5.44E-03	30	0%	0%	0%	Yes
Chlorobenzene	1.44E-09	3.50E-04	3.3E-09	7.9E-04	7.91E-04	10	0%	0%	0%	Yes
Napthalene	9.35E-07	3.72E-02	2.1E-06	8.4E-02	8.41E-02	N/A	N/A	N/A	N/A	N/A
Phenanthrene	7.91E-07	8.53E-03	1.8E-06	1.9E-02	1.93E-02	N/A	N/A	N/A	N/A	N/A
Phthalates	1.94E-07	3.06E-03	4.4E-07	6.9E-03	6.93E-03	2000	0%	0%	0%	Yes
Pyrene	5.03E-07	9.62E-05	1.1E-06	2.2E-04	2.19E-04	N/A	N/A	N/A	N/A	N/A
Benzo(a)anthracene	2.88E-07	4.37E-06	6.5E-07	9.9E-06	1.05E-05	1.10E-03	0%	1%	1%	Yes
Benzo(a)pyrene	2.88E-07	2.85E-06	6.5E-07	6.4E-06	7.09E-06	3.00E-04	0%	2%	2%	Yes

Note:

(1) Based on the combustion on 5, 000 gal per year of used oil and grease generated on-site.

(2) Based on the production of 760, 000 tons per year of clinker in each of the two kilns.

(3) The Sceen2 Model predicted maximum 1-hour impact of 28.28 µg/m^3 is equal to an annual average impact of 2.26 µg/m^3, based on a persistance factor of 0.08 (EPA-454/R-92-024). The maximum impact is based on modeled emissions of 1.0 g/s.

(4) From the FDEP "Air Toxics Working List" Version 4 (6/95).

03/25/97
14:07:55

*** SCREEN2 MODEL RUN ***
*** VERSION DATED 95121 ***

SOUTHDOWN INC - BROOKSVILLE CEMENT Used Oil Combustion

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	1.00000
STACK HEIGHT (M)	=	32.0100
STK INSIDE DIAM (M)	=	4.2700
STK EXIT VELOCITY (M/S)	=	9.9000
STK GAS EXIT TEMP (K)	=	394.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	42.7000
MIN HORIZ BLDG DIM (M)	=	43.6300
MAX HORIZ BLDG DIM (M)	=	76.8800

BUOY. FLUX = 113.437 M**4/S**3; MOM. FLUX = 332.229 M**4/S**2.
*** FULL METEOROLOGY ***
ANEMOMETER HEIGHT IS: 10.0 METERS
****
*** SCREEN AUTOMATED DISTANCES ***
****
BRODE OPTION 2 WAS NOT EXERCISED. RESULTS ARE NOT ASSUMED TO BE CONSERVATIVE WITH RESPECT TO ISCST2 RESULTS.

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
850.	28.28	6	2.0	3.8	10000.0	57.62	29.21	45.40	SS
900.	26.88	6	2.0	3.8	10000.0	57.62	30.78	45.50	SS
1000.	24.48	6	2.0	3.8	10000.0	57.62	33.88	45.70	SS
1100.	22.49	6	2.0	3.8	10000.0	57.62	36.96	45.89	SS
1200.	20.83	6	2.0	3.8	10000.0	57.62	40.01	46.09	SS
1300.	19.41	6	2.0	3.8	10000.0	57.62	43.04	46.28	SS
1400.	18.18	6	2.0	3.8	10000.0	57.62	46.05	46.47	SS
1500.	17.12	6	2.0	3.8	10000.0	57.62	49.03	46.66	SS
1600.	16.17	6	2.0	3.8	10000.0	57.62	51.99	46.85	SS
1700.	15.34	6	2.0	3.8	10000.0	57.62	54.94	47.04	SS
1800.	14.59	6	2.0	3.8	10000.0	57.62	57.87	47.23	SS
1900.	13.92	6	2.0	3.8	10000.0	57.62	60.78	47.42	SS
2000.	13.31	6	2.0	3.8	10000.0	57.62	63.68	47.60	SS
2100.	12.76	6	2.0	3.8	10000.0	57.62	66.56	47.79	SS
2200.	12.25	6	2.0	3.8	10000.0	57.62	69.42	47.97	SS
2300.	11.79	6	2.0	3.8	10000.0	57.62	72.28	48.16	SS
2400.	11.36	6	2.0	3.8	10000.0	57.62	75.12	48.34	SS
2500.	10.96	6	2.0	3.8	10000.0	57.62	77.95	48.52	SS
2600.	10.60	6	2.0	3.8	10000.0	57.62	80.76	48.70	SS

2700.	10.26	6	2.0	3.8	10000.0	57.62	83.57	48.88	SS
2800.	9.938	6	2.0	3.8	10000.0	57.62	86.36	49.06	SS
2900.	9.641	6	2.0	3.8	10000.0	57.62	89.15	49.24	SS
3000.	9.362	6	2.0	3.8	10000.0	57.62	91.92	49.41	SS
3500.	8.255	6	1.5	2.8	10000.0	66.65	105.65	47.05	SS
4000.	7.458	6	1.5	2.8	10000.0	66.65	119.17	47.98	SS
4500.	6.821	6	1.5	2.8	10000.0	66.65	132.50	48.89	SS
5000.	6.297	6	1.5	2.8	10000.0	66.65	145.67	49.77	SS
5500.	5.856	6	1.5	2.8	10000.0	66.65	158.69	50.63	SS
6000.	5.479	6	1.5	2.8	10000.0	66.65	171.58	51.47	SS
6500.	5.153	6	1.5	2.8	10000.0	66.65	184.34	52.30	SS
7000.	4.866	6	1.5	2.8	10000.0	66.65	196.99	53.10	SS
7500.	4.612	6	1.5	2.8	10000.0	66.65	209.54	53.89	SS
8000.	4.385	6	1.5	2.8	10000.0	66.65	221.98	54.66	SS
8500.	4.105	6	1.5	2.8	10000.0	66.65	234.34	53.43	SS
9000.	3.931	6	1.5	2.8	10000.0	66.65	246.61	54.21	SS
9500.	3.771	6	1.5	2.8	10000.0	66.65	258.79	54.96	SS
10000.	3.620	6	1.5	2.8	10000.0	66.65	270.90	55.55	SS
15000.	2.708	6	1.0	1.9	10000.0	82.90	388.43	58.54	SS
20000.	2.247	6	1.0	1.9	10000.0	82.90	500.95	63.36	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 850. M:

850.	28.28	6	2.0	3.8	10000.0	57.62	29.21	45.40	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** CAVITY CALCULATION - 1 ***			*** CAVITY CALCULATION - 2 ***		
CONC (UG/M**3)	=	134.6	CONC (UG/M**3)	=	147.0
CRIT WS @10M (M/S)	=	2.39	CRIT WS @10M (M/S)	=	3.86
CRIT WS @ HS (M/S)	=	3.02	CRIT WS @ HS (M/S)	=	4.87
DILUTION WS (M/S)	=	1.51	DILUTION WS (M/S)	=	2.43
CAVITY HT (M)	=	60.80	CAVITY HT (M)	=	49.28
CAVITY LENGTH (M)	=	100.90	CAVITY LENGTH (M)	=	41.20
ALONGWIND DIM (M)	=	43.63	ALONGWIND DIM (M)	=	76.88

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)	
SIMPLE TERRAIN	28.28	850.	0.	
BUILDING CAVITY-1	134.6	101.	--	(DIST = CAVITY LENGTH)
BUILDING CAVITY-2	147.0	41.	--	(DIST = CAVITY LENGTH)

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

Department of
Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

May 6, 1997

attach figure

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Don Kelly
Plant Manager
Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006

Re: DRAFT Permit No. 0530010-003-AC (PSD-FL-233)
Kilns and Coolers No. 1 and No. 2

Dear Mr. Kelly:

Enclosed is one copy of the Draft Air Construction Permit for the Southdown cement plants located at US Highway 98, Northwest of Brooksville, Hernando County. The Technical Evaluation and Preliminary Determination along with the Department's Intent to Issue Air Construction Permit and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" are also included.

The "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" must be published within 30 (thirty) days of receipt of this letter. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above letterhead address. If you have any other questions, please contact Teresa Heron or Mr. Linero at 904/488-1344.

Sincerely,

for C. H. Fancy, P.E., Chief,
Bureau of Air Regulation

CHF/th/h

Enclosures

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Don Kelly, Plant Mgr
Southdown, Inc
PO Box 6
Brooksville, Fl
34605-0006

4a. Article Number
P 265 659 235

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
7-2-97

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X Audrey Maddux

PS Form [illegible] er 1994 [illegible] Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

P 265 659 235

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Don Kelley	
Street & Number Southdown	
Post Office, State, & ZIP Code Brooksville Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 6-26-97	

053001-003-AC
PSD-FL-233

PS Form **3800**, April 1995

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

0530010-003-AC
PSD-FL-233

KA 521-95-09

February 19, 1997

RECEIVED
FEB 21 1997
BUREAU OF
AIR REGULATION

Mr. A. A. Linero
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Addendum

Subject: Southdown, Inc.
Permit Application Modification
Kilns and Coolers No. 1 and No. 2
FDEP File No. 0530010-001-AC, PSD-FL-233

Dear Mr. Linero:

Enclosed are four (4) copies of a construction permit application addendum for the above referenced project, along with a disk containing air dispersion modeling output.

The enclosed addendum contains an updated Best Available Control Technology evaluation and an updated Air Quality Impact Analysis for FDEP review. The information is submitted in a format consistent with earlier discussions with FDEP staff. A disk containing the entire permit application in the ELSA format, to facilitate FDEP data entry, will be submitted soon under separate cover. An additional permit application processing fee, in the amount of $7500, is also enclosed in case it is required.

If you have any questions, please call me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK.par

c: Mr. Amarjit Singh Gill, Southdown

CC: EPA SWD
NPS HC EPD

ADDENDUM TO
PREVENTION OF SIGNIFICANT DETERIORATION
REVIEW

PREPARED FOR:

SOUTHDOWN, INC., BROOKSVILLE PLANT
HERNANDO COUNTY, FLORIDA

FEBRUARY 1997

PREPARED BY:

KOOGLER & ASSOCIATES
4014 N.W. 13TH STREET
GAINESVILLE, FLORIDA 32609
(352) 377-5822

TABLE OF CONTENTS

LIST OF TABLES

1.0 UPDATED PROPOSED PROJECT

This report is submitted to FDEP as an addendum to Southdown's PSD permit application currently under FDEP review (File No. 0530010-001-AC and PSD-FL-233). As discussed with FDEP staff, the information presented herein is limited to updating information previously submitted to FDEP on the proposed project to avoid redundancy. It is anticipated that this approach will simplify both the submittal and review of the updated information for the proposed modification.

1.1 PROJECT DESCRIPTION

Southdown requests a modification to four permits, currently under FDEP review for Prevention of Significant Deterioration (PSD). The four permits are:

Emission Unit	Permit No.
Kiln No. 1	AC27-258571
Kiln No. 2	AC27-258572
Clinker Cooler No. 1	AC27-258569
Clinker Cooler No. 2	AC27-258570

The proposed modification consists of about a 4 percent increase in the kiln preheater feed rates from 145 to 150 tons per hour (tph), rolling 30 production-day average for each kiln. The design maximum feed rate, stated in the current permit as 165 tph, remains unchanged. The following changes, documented by Southdown in a letter to FDEP dated January 30, 1997, will ensure that this feed rate can be maintained:

1. Modify preheater exit gas cyclones to increase efficiency, which will reduce heat loss and lower the pressure drop.

2. Replace kiln ID fan with a higher efficiency in order to increase air flow without increasing the drive motor horsepower.

3. Add two modules to the existing Kiln No. 1 baghouse to allow a lower air-to-cloth ratio when a module is isolated for maintenance.

4. Improve the clinker cooler efficiency by upgrading fans and adding static gates.

5. Increase kiln preheater feed capacity to ensure 150 tph on a continuous basis, with a maximum design hourly rate of 165 tph.

6. Add drying drum to the No. 1 Raw Mill and increase the mill fan capacity to recuperate the waste heat from the preheater gas.

The above changes will increase the overall thermal efficiency of the process. Thus the maximum heat input will not exceed the existing limit of 300 MMBtu/hr. Each kiln and cooler utilizes a baghouse to control the emissions of particulate matter. There are no add-on controls for any of the other pollutants emitted from the cement kilns.

This request also includes an increase in the operating hours for Kiln No. 2 from 8200 to 8760 hours per year. As Kiln No. 1 is already permitted for 8760 hours of operation, almost all the operation and emissions limitations will now be identical for the two kilns and coolers. As the proposed modification will result in increased thermal efficiency, no increase in fuel use is expected.

The Department's draft emissions limitations for the proposed project have been extended to the proposed modification. The resulting proposed hourly emission rates are presented in Table 1-1. The emission rates have been prorated based on the increase in feed rate. In the case of sulfur dioxide, it is anticipated that there will be no change in the hourly emission rates due to the increase in absorption from the increase in feed rate.

The changes in annual emission rates, using FDEP's methodology, are presented in Table 1-2. FDEP used a very conservative approach for establishing actual emissions for the proposed project. Although Southdown does not agree with FDEP's method of calculating the actual emissions for this project, it will be accepted in order to expedite the application review. Using actual emissions, as determined by the Department, the proposed modification will result in a significant net emissions increase for PM/PM10, NOx, CO and VOCs.

1.2 RULE REVIEW

There is no change in the rule review for the proposed project as a result of this modification.

1.3 RULE APPLICABILITY

The proposed project at the existing Southdown facility is classified as a major modification to a major facility subject to both state and federal regulations as set forth in Chapter 62-212, FAC. The facility is located in an area classified as attainment for each of the regulated air pollutants. As the estimated net emissions increase from the proposed modification are significant, as defined in Rule 62-212, FAC, the proposed project will be subject to PSD review requirements in accordance with Rule 62-212.400, FAC, for PM/PM10, NOx, CO and VOCs.

The PSD review requirements for this modification include a determination of Best Available Control Technology, an air quality review, Good Engineering Practice stack height analysis and an evaluation of impacts on soils, vegetation and visibility.

TABLE 1-1

CURRENT AND PROPOSED HOURLY EMISSION RATES

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

Pollutant		Allowable Emission Rates		
		Current (@ 145 tph)	Proposed (@ 150 tph)	
		lb/hr	lb/hr	lb/ton feed
PM/PM10:	Kiln 1	39.0	27.0	0.18
	Kiln 2	13.5	27.0	0.18
	Cooler 1	7.13	13.6	0.09
	Cooler 2	5.0	13.6	0.09
SO2:	Kiln 1	15.0	15.0	0.10
	Kiln 2	15.0	15.0	0.10
NOx:	Kiln 1	NA	285.0	1.90
	Kiln 2	250.0 (1)	285.0	1.90
CO:	Kiln 1	57.7	180.0	1.20
	Kiln 2	64.0	180.0	1.20
VOC:	Kiln 1	NA	13.6	0.09
	Kiln 2	7.4	13.6	0.09

NOTE:

(1) Based on a 30-day average.

TABLE 1-2

CHANGES IN ANNUAL EMISSION RATES

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

	NET EMISSIONS INCREASE (TPY)				
	PM/PM10	SO2	NOx	CO	VOCs
Current, Actual	137.7	116.8	2045.7	341.0	68.8
Proposed, Allowable	355.8	131.4	2496.6	1576.8	119.2
Contemporaneous	0	0	0	99.9	0
Net Change	218.1	14.6	450.9	1335.7	50.4
Sig. Increase (2)	25/15	40	40	100	40
PSD Review	YES	NO	YES	YES	YES

(1) See Appendix for emission calculations.
(2) Presented in Table 212.400-2, FAC.

2.0 BEST AVAILABLE CONTROL TECHNOLOGY

Best Available Control Technology (BACT) is required to control air pollutants emitted from newly constructed major sources or from modification to the major emitting facilities if the modification results in a significant emissions increase. The emission rate increases of PM/PM10, NOx, CO and VOCs proposed by Southdown are significant; and, less than significant for SO2. A BACT analysis is, therefore, required for PM/PM10, NOx, CO and VOCs.

2.1 PREVIOUS BACT DETERMINATIONS

A review of the EPA BACT/LAER Clearinghouse identified a number of BACT determinations for portland cement plants. These BACT determinations addressed criteria pollutants emitted from portland cement manufacturing facilities. The emission limits for NOx and VOCs from cement kilns have been evaluated by regulatory agencies in several states. Recent BACT determinations in this category include those proposed by FDEP for Florida Rock Industries and Florida Crushed Stone. The most recent BACT evaluation for PM/PM10, NOx, CO and VOC is that performed by FDEP for Southdown's proposed project. The staff analysis indicated that NOx, CO and VOCs are interrelated to the extent that FDEP had to consider emissions levels of all three pollutants simultaneously. The resulting determinations in all three recent FDEP reviews identified proper combustion and operation practices, as BACT. No add on controls have been required for these pollutants.

In lieu of providing redundant information on the merits of FDEP's recent BACT determinations for the three similar sources, those projects are simply referenced herein. The emission levels requested by Southdown are in line with the FDEP's recent evaluation on the proposed project (PSD-FL-233) and the emissions limitations imposed on Florida Rock Industries (PSD-FL-228) and Florida Crushed Stone (PSD-FL-227). We are not aware of any changes in the last two months that would alter the technical and economic aspects of FDEP's most recent BACT determination. Pertinent information from FDEP files is presented in Appendix 3.

2.2 BACT CONCLUSION

Based upon the above analysis, the use of baghouses to control PM/PM10 emissions from the kilns and clinker coolers; and, the use of proper operation practices to control NOx, CO and VOC emissions from the kilns, represents BACT. Numerical emission limits which represent BACT, proposed for the kilns and clinker cooler, are presented in Table 1-1.

3.0 AIR QUALITY REVIEW

The air quality review submitted for the proposed project, currently under FDEP review, has been updated for determining the Class I and Class II area impacts from the proposed modification. The air quality modeling is required to provide assurance that the emissions from the proposed modification, together with the emissions of all other air pollutants in the project area, will not cause or contribute to a violation of any ambient air quality standard.

3.1 AIR QUALITY MODELING

The ambient air quality impacts resulting from the requested increase in emissions of PM/PM10, NOx, CO and VOCs were evaluated using air dispersion modeling with the EPA approved ISC-ST model, Version 96113 (ISC3).

The PM/PM10, NOx, CO and VOC emissions modeled to determine the ambient air impacts reflect the net increase in emissions from the proposed modification (see Table 3-1). The modeling utilized the same Class I and Class II area receptor grid used in the modeling submitted previously (dated 2/96). Five years of Tampa meteorological data were used in the modeling for the period 1987 to 1991.

3.2 MODELING RESULTS

The results of the ISC3 significant impact analyses (SIA) modeling, presented in Table 3-2, demonstrate that the predicted impacts of NOx, CO and VOC emissions increases associated with the proposed project are less than the corresponding significant impact levels and less than the de minimis impact levels, pursuant to Rule 62-212, FAC. Therefore, additional modeling for air quality impacts in the Class II area is not required.

The maximum predicted Class I area NOx impacts, however, were greater than the proposed EPA significant impact level. Consequently, additional modeling was conducted to determine compliance with the Class I area NOx PSD increment. An inventory of the Class I area NOx PSD increment consuming sources is presented in Table 3-3. The modeling results, summarized in Table 3-4, show that the maximum predicted Class I area NOx PSD increment consumption is below the allowable Class I area NOx PSD increment.

The maximum predicted PM10 impacts are above the corresponding significant impact level, pursuant to Rule 62-212, FAC, as indicated by the previous modeling submitted to FDEP (2/96). As extensive PM10 modeling had already been conducted for the proposed project, the maximum air quality impacts predicted by the previous modeling were simply updated by adding in the predicted increase in air impacts resulting from the proposed modification. This approach, as discussed with Mr. Cleve Holladay of FDEP (on 2/17/97), provides estimates of air impacts without redundant modeling. The results of the Class I and Class II area PSD increment analyses and the ambient air standards analysis are summarized in Tables 3-5, 3-6 and 3-7, respectively.

As expected, the proposed 4 percent change in the allowable PM/PM10 emissions does not significantly alter the results previously submitted to FDEP.

The results of the detailed modeling indicate that the proposed modification will not cause or contribute to any exceedance of Florida's ambient air quality standards.

TABLE 3-1

AIR QUALITY MODELING PARAMETERS

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

Unit	Emission Rate (g/s)				Stack Parameters			
	PM/PM10	VOC	NOx	CO	Ht (m)	Dia (m)	Vel (mps)	Temp (°K)
K1 (1)	-4.91	-1.66	-34.71	- 7.27	45.7	3.96	10.37	413.6
K1 (2)	3.40	1.71	35.91	22.68	45.7	3.96	10.90	413.6
K2 (1)	-1.70	-0.93	-31.50	- 8.06	32.0	4.27	9.90	394.0
K2 (2)	3.40	1.71	35.91	22.68	32.0	4.27	10.40	394.0
C1 (1)	-0.90	NA	NA	NA	23.5	2.29	12.70	394.0
C1 (2)	1.71	NA	NA	NA	23.5	2.29	13.34	394.0
C2 (1)	-0.63	NA	NA	NA	27.4	2.96	7.60	394.0
C2 (2)	1.71	NA	NA	NA	27.4	2.96	7.98	394.0

NOTE:

(1) Current allowable emission rates; K and C reflect Kiln and Cooler.
(2) Proposed allowable emission rates.
(3) Building wake effects were addressed in the modeling using the EPA approved BPIP downwash program.

TABLE 3-2

SUMMARY OF SIGNIFICANT IMPACT ANALYSIS

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

MET YEAR	MAX. PREDICTED AMBIENT AIR IMPACTS (ug/m3) (1)					
	PM10		NOx	CO		VOCs
	24-hr	Annual	Annual	1-hr	8-hr	1-hr (2)
CLASS I AREA IMPACTS						
1987	0.056	0.005	0.08	NA	NA	NA
1988	0.057	0.004	0.06	NA	NA	NA
1989	0.041	0.003	0.05	NA	NA	NA
1990	0.062	0.006	0.11	NA	NA	NA
1991	0.079	0.005	0.09	NA	NA	NA
EPA SIG.(3)	0.3	0.2	0.1	NA	NA	NA
NPS SIG.(4)	0.27	0.08	0.03	NA	NA	NA
CLASS II AREA IMPACTS						
1987	0.53	0.01	0.43	370	142	44
1988	0.74	0.02	0.45	376	124	45
1989	0.76	0.02	0.64	367	130	44
1990	0.63	0.02	0.53	368	123	44
1991	0.93	0.01	0.53	409	104	49
EPA SIG.(3)	5	1	1	2000	500	235 (5)

NOTES:
(1) The above impacts represent the highest-high impacts resulting from the emission changes proposed in Table 1-1. For PM10 only, the model inputs reflect the emissions increase from the modification only.
(2) Impact from kiln emissions as compared with ozone standard.
(3) Significant impact levels proposed by EPA.
(4) Significant impact levels suggested by National Park Service.
(5) Florida ambient air quality standard for ozone of 235 ug/m3.

Table 3-3
Class I Area NOx Source Inventory

		Modeling Designation	UTMS East km	UTMS North km	Relative UTMS - E km	Relative UTMS - North km	X m	X m	NOx g/s	Height m	Temperature K	Velocity m/s	Diameter m
AUBURNDALE COGEN.	1	1AUB	420.8	3103.3	64.6	-66.6	64600	-66600	21.17	48.80	411.0	14.30	5.50
ENRON-SILVER SPRINGS	2	2ENR	418.8	3240.9	62.6	71	62600	71000	1.33	13.72	641.0	36.51	0.49
FARMLAND SAP #5	3	3FAR	409.5	3080.1	53.3	-89.8	53300	-89800	1.25	45.72	355.0	11.58	2.44
FLORIDA ROCK NEWBERRY	4	4FLO	346.8	3285.4	-9.4	115.5	-9400	115500	33.8	76.22	369.3	14.15	2.87
FCS-Base	5	5FCS	360.0	3162.5	3.8	-7.4	3800	-7400	-45.23	97.54	385.4	6.67	4.88
FCS-Permited	6	6FCS	360.0	3162.5	3.8	-7.4	3800	-7400	81.98	97.54	392.6	8.25	6.48
FPC DEBARY	7	7FPC	467.5	3197.2	111.3	27.3	111300	27300	137.60	15.24	819.8	56.21	4.21
FPC INT CITY/7EA	8	8FPC	446.3	3126.0	90.1	-43.9	90100	-43900	84.20	15.24	819.8	56.21	4.21
FPC INT CITY/7FA	9	9FPC	446.3	3126.0	90.1	-43.9	90100	-43900	91.80	15.24	880.8	32.07	7.04
FPC POLK	10	10FP	414.4	3073.9	58.2	-96	58200	-96000	160.40	34.40	400.0	40.50	4.10
FPL MANATEE	11	11FP	367.3	3054.1	11.1	-115.8	11100	-115800	612.40	144.80	339.8	23.70	7.99
IMC-AGRICO New Wales SAP 1,2,3	12	12IM	396.7	3079.4	40.5	-90.5	40500	-90500	5.49	61.00	350.0	15.33	2.59
IMC - AGRICO SOUTH PIERCE SAP BASELINE	13	13IM	407.5	3071.9	51.3	-98	51300	-98000	-2.93	45.73	350.0	26.40	1.60
IMC - AGRICO SOUTH PIERCE SAP #10,11	14	14IM	407.5	3071.9	51.3	-98	51300	-98000	3.98	45.73	349.8	39.05	1.55
KISSIMMEE UTILITIES	15	15KI	447.7	3127.9	91.5	-42	91500	-42000	27.72	12.20	654.0	29.10	3.00
LAKELAND UTILITIES CT LARSON	16	16LA	409.2	3108.8	53	-61.1	53000	-61100	21.04	30.48	783.0	28.22	5.79
OGDEN MARTIN SYSTEMS OF LAKE COUNTY	17	17O	413.1	3179.3	56.9	9.4	56900	9400	20.79	38.10	422.0	23.36	1.83
ORLANDO UTILITIES STANTION 2 (24-HR)	18	18OR	483.5	3150.6	127.3	-19.3	127300	-19300	91.80	167.64	324.2	23.50	5.80
PASCO CO. RRF	19	19PA	347.1	3139.2	-9.1	-30.7	-9100	-30700	40.57	83.82	394.3	15.70	3.05
LAKE CO. COGENERATION	20	20LA	434.0	3198.8	77.8	28.9	77800	28900	11.64	30.48	384.3	17.13	3.35
PASCO CO. COGEN.	21	21PA	385.6	3139.0	29.4	-30.9	29400	-30900	11.64	30.48	384.3	17.13	3.35
PANDA KATHLEEN	22	22PA	398.7	3105.5	42.5	-64.4	42500	-64400	5.42	45.73	416.0	13.86	5.34
RIDGE COGEN.	23	23RI	416.7	3100.4	60.5	-69.5	60500	-69500	8.73	99.10	350.0	14.50	3.00
STAUFFER SHUTDOWN	24	24ST	325.6	3116.7	-30.6	-53.2	-30600	-53200	0.80	49.00	293.0	3.60	1.20
SEMINOLE ELECTRIC HARDEE 3 PROPOSED	25	25SE	405.0	3057.7	48.8	-112.2	48800	-112200	32.78	22.90	851.5	32.67	7.01
TPS - HARDEE	26	26TP	404.8	3057.4	48.6	-112.5	48600	-112500	241.83	22.90	389.0	23.90	4.88
TECO POLK AUX BOILER	27	27TE	402.5	3067.4	46.3	-102.5	46300	-102500	1.00	6.10	533.0	13.10	0.90
TECO POLK IGCC	28	28TE	402.5	3067.4	46.3	-102.5	46300	-102500	23.69	45.70	400.0	16.80	5.80
TROPICANA PRODUCTS	29	29TR	346.8	3040.9	-9.4	-129	-9400	-129000	3.96	24.40	555.4	7.55	2.13
TROPICANA GAS TURBINE WITH H/R	30	30TR	346.8	3040.9	-9.4	-129	-9400	-129000	9.20	24.40	404.3	16.55	3.66
KM&M - Southdown KILN 1 Base		KILN1N	356.2	3169.9	0	0			-34.71	45.70	413.6	10.37	3.96
KM&M - Southdown KILN 1 Proposed		KILN1P	356.2	3169.9	0	0			35.91	45.70	413.6	10.90	3.96
FM&M - Southdown KILN 2 Base		KILN2N	356.2	3169.9	0	0			-31.50	32.00	394.0	9.90	4.27
FM&M - Southdown KILN 2 Proposed		KILN2P	356.2	3169.9	0	0			35.91	32.00	394.0	10.40	4.27

TABLE 3-4

SUMMARY OF CLASS I AREA NOx MODELING ANALYSIS

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

MET YEAR	MAX. PREDICTED NOx INCREMENT CONSUMPTION (ug/m3) (1) Annual
1987	0.82
1988	0.75
1989	0.83
1990	0.91
1991	0.80
CLASS I AREA PSD INCREMENT	2.5

NOTE:
(1) The above impacts represent the highest-high impacts resulting from the emission changes proposed in Table 1-1.

TABLE 3-5

SUMMARY OF CLASS I AREA PM10 PSD INCREMENT ANALYSIS

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

MET YEAR	MAXIMUM PREDICTED CLASS I AREA 24-HR PM10 IMPACTS (ug/m3) High-Second-High Total Inventory	Southdown Contribution (1)	Is Contribution Significant?
1987	7.94	0.116+0.079 = 0.195	NO
1988	6.77	0.040+0.079 = 0.119	NO
1989	7.06	0.014+0.079 = 0.093	NO
1990	8.24	0.021+0.079 = 0.100	NO
1991	8.11	0.000+0.079 = 0.079	NO
INCREMENT	8	-	
EPA SIG. LEVEL	-	0.3	
NPS SIG. LEVEL	-	0.27	

NOTE:

(1) The Southdown project's contribution (previously documented 2/96) has been updated by adding the maximum predicted Class I area impact resulting from the proposed modification (see Table 3-2), as discussed with FDEP.

TABLE 3-6

SUMMARY OF CLASS II AREA PM10 PSD INCREMENT ANALYSIS

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

MET YEAR	MAXIMUM PREDICTED CLASS II AREA PM10 IMPACTS (ug/m3) 24-hr	Annual
1987	19.67+0.928 = 20.6	3.25+0.018 = 3.3
1988	20.70+0.928 = 21.6	3.61+0.018 = 3.6
1989	23.98+0.928 = 24.9	3.78+0.018 = 3.8
1990	17.03+0.928 = 18.0	3.55+0.018 = 3.6
1991	18.71+0.928 = 19.6	3.68+0.018 = 3.7
INCREMENT	30	17

NOTE:

(1) The Class II area increment consumption analysis (previously documented 2/96) has been updated by adding the maximum predicted Class II area impact resulting from the proposed modification (see Table 3-2), as discussed with FDEP.

TABLE 3-7

SUMMARY OF CLASS II AREA FAAQS ANALYSIS

SOUTHDOWN, INC.
HERNANDO COUNTY, FLORIDA

MET YEAR	MAXIMUM PREDICTED CLASS II AREA PM10 IMPACTS (ug/m3) 24-hr	Annual
1987	34.33+0.928 = 35.3	5.63+0.018 = 5.6
1988	34.91+0.928 = 35.8	6.14+0.018 = 6.2
1989	40.60+0.928 = 41.5	5.96+0.018 = 6.0
1990	29.15+0.928 = 30.1	6.12+0.018 = 6.1
1991	32.71+0.928 = 33.6	6.40+0.018 = 6.4
Maximum	41.5	6.4
Background	105	35
Impact+Background	146.5	41.4
FAAQS	150	50

NOTE:

(1) The FAAQS analysis (previously documented 2/96) has been updated by adding the maximum predicted Class II area impact resulting from the proposed modification (see Table 3-2), as discussed with FDEP.

4.0 GOOD ENGINEERING PRACTICE STACK HEIGHT

There is no change in the kilns and clinker coolers' stack heights associated with the proposed modification. As the respective stacks are less than 213 feet in height above-grade, the Good Engineering Practice (GEP) stack height criteria is satisfied.

5.0 IMPACTS ON SOILS, VEGETATION AND VISIBILITY

5.1 IMPACT ON SOILS AND VEGETATION

The updated air quality modeling demonstrates that the levels of PM10, NOx, CO and VOCs expected as a result of the proposed modification will be below the corresponding ambient air standards. Furthermore, the maximum predicted NOx, CO and VOC impacts from the proposed modification are at or below the EPA significance levels. As a result, it is reasonable to conclude that there will be no adverse effect to the soils or vegetation of the area.

5.2 GROWTH RELATED IMPACTS

The proposed modification will require no increase in traffic or personnel to operate the plant. Therefore, no additional growth impacts are expected as a result of the proposed modification.

5.3 VISIBILITY IMPACTS

The proposed increases in PM/PM10 and NOx emissions were evaluated for visibility impacts using the EPA approved VISCREEN model. The modeling results, summarized in Table 5-1, indicate that the proposed modification is not expected to have an adverse impact on visibility.

An analysis for determining the regional haze impacts was conducted using the guidance provided by the National Park Service. The results of the analysis, presented in Table 5-2, indicates that the proposed modification's contribution to the regional haze is expected to be insignificant.

5.4 CLASS I AREA IMPACTS

The Class I area Air Quality Related Values (AQRV) analysis previously submitted to FDEP for the proposed project can be extended to the proposed modification.

The updated air quality modeling demonstrates that the levels of PM10, NOx, CO and VOCs expected as a result of the proposed modification will be below the corresponding ambient air standards. Furthermore, the maximum predicted NOx, CO and VOC impacts from the proposed modification are at or below the EPA significant impact levels. The updated modeling also indicated that the increase in Class I area PM10 impacts from a 4 percent change in allowable emissions is insignificant; and, therefore, the

previously submitted AQRV analysis for PM10 is valid. As a result, it is reasonable to conclude that the proposed modification will not result in any adverse effect to the soils, vegetation, wildlife or visibility in the Class I area.

The proposed modification will consume up to 4 percent of the allowable Class I area NO2 PSD increment and 14 percent of the allowable Class I area PM10 PSD increment.

Table 5-1

Visual Effects Screening Analysis for
Source: FM&M - Southdown, Inc.
Class I Area: Chassahowitzka N.W.R.

*** Level-1 Screening ***

Input Emissions for KILNS 1 and 2

Particulates	10.20	G	/S
NOx (as NO2)	71.82	G	/S
Primary NO2	.00	G	/S
Soot	.00	G	/S
Primary SO4	.00	G	/S

**** Default Particle Characteristics Assumed

Transport Scenario Specifications:

Background Ozone:	.04 ppm
Background Visual Range:	65.00 km
Source-Observer Distance:	100.00 km
Min. Source-Class I Distance:	15.00 km
Max. Source-Class I Distance:	26.00 km
Plume-Source-Observer Angle:	11.25 degrees
Stability: 6	
Wind Speed: 1.00 m/s	

R E S U L T S

Asterisks (*) indicate plume impacts that exceed screening criteria

Maximum Visual Impacts INSIDE Class I Area
Screening Criteria ARE NOT Exceeded

					Delta E		Contrast	
Backgrnd	Theta	Azi	Distance	Alpha	Crit	Plume	Crit	Plume
SKY	10.	4.	26.0	165.	2.00	.172	.05	.000
SKY	140.	4.	26.0	165.	2.00	.099	.05	-.003
TERRAIN	10.	4.	26.0	165.	2.00	.228	.05	.002
TERRAIN	140.	4.	26.0	165.	2.00	.075	.05	.002

Maximum Visual Impacts OUTSIDE Class I Area
Screening Criteria ARE NOT Exceeded

					Delta E		Contrast	
Backgrnd	Theta	Azi	Distance	Alpha	Crit	Plume	Crit	Plume
SKY	10.	60.	91.5	109.	2.00	1.196	.05	.001
SKY	140.	60.	91.5	109.	2.00	.443	.05	-.010
TERRAIN	10.	40.	82.4	129.	2.00	.321	.05	.005
TERRAIN	140.	40.	82.4	129.	2.00	.087	.05	.004

Table 5-2

Regional Haze Analysis For Brooksville Cement - Southdown Inc.

CLASS I CHASSAHOWITZKA N.W.R.

(1) SO2 (µg/m^3)	(2) Background Visibility (km)	(3) Ambient b(ext)a	(4) Acid Mist Impact H2SO4 (µg/m^3)	(5) SO4 (µg/m^3)	(6) (NH4)SO2 (µg/m^3)	(7) Transport Time (hrs)	(8) Conversion
0.0000	65	0.0602	0.00000	0.0000	0.0000	1.0	0%

(9) AT 0% (NH4)SO2 CONVERSION (µg/m^3)	(10) Relative Humidity FACTOR @ 83%	(11) PM-10 (µg/m^3)	(12) Source b(ext)s (NH4)SO2	(13) Source b(ext)s PM10	(14) **Total** Source b(ext)s	(15) Deciview	Is Deciview Greater than 1
0.0000	4.2	1.1020	0.00000	0.00331	**0.00331**	0.53	NO

(1) Maximum 24-hour SO2 Impact at Class I Receptor (none).
(2) Measured Background Visibility Range as recomended by FWS
(3) Ambient b(ext)a = 3.912/Background Visibility
(4) Acid Mist Impact = 0.15/4 * SO2 Impact * 96/98 (none).
(5) SO4 = SO2 Impact * 1.5
(6) 100 % (NH4)SO2 Impact = 1.375 * (SO4 + Acid Mist)
(7) Transport Time (hours) = Maximum Distance / Average daily wind speed. Not Calculated
(8) Conversion = Transport Time * 0.03 (% / hour). Not calculated.
(9) (NH4)SO2 Conversion = % Conversion * (NH4)SO2)
(10) Relative Humidity Factor From Meteorology and Figure B-1 IWAQM
(11) Maximum 24-hour PM10 Impact at Class I Receptor. From table 3-5
(12) Source b(ext)s (NH4)SO4 = 0.003 * Relative Humidity Factor * (NH4)SO4
(13) Source b(ext)s PM10 = 0.003 * Relative Humidity Factor (1) * PM10
(14) Total Source b(ext)s = b(ext)s (NH4)SO4 + b(ext)s PM10
(15) Deciview = 10 * LN [1 + (Total b(ext)s / b(ext)a)]

6.0 CONCLUSION

It can be concluded from the information in this updated report that the proposed increase in the allowable emission rate of PM/PM10, NOx, CO and VOCs from the Southdown facility, as described in this report, will not cause or contribute to an exceedance of any air quality standard, PSD increment, or any other provision of Chapter 62, FAC.

APPENDIX I

EMISSION CALCULATIONS

PERMITTED EMISSION RATES

PM/PM10, No. 1 kiln	=	39.0 lb/hr, 170.8 tpy
PM/PM10, No. 2 kiln	=	13.5 lb/hr, 55.4 tpy
PM/PM10, No. 1 cooler	=	7.13 lb/hr, 28.14 tpy
PM/PM10, No. 2 cooler	=	5.0 lb/hr, 20.5 tpy
SO2, No. 1 kiln	=	15 lb/hr, 65.7 tpy
SO2, No. 2 kiln	=	15 lbs/hr, 61.5 tpy
NOx, No. 1 kiln	=	NO LIMIT
NOx, No. 2 kiln	=	250 lbs/hr, 1025 tpy
CO, No. 1 kiln	=	57.7 lbs/hr, 234.4 tpy
CO, No. 2 kiln	=	64.0 lbs/hr, 262.4 tpy
VOC, No. 1 kiln	=	NO LIMIT
VOC, No. 2 kiln	=	7.4 lbs/hr, 30.34 tpy

ACTUAL EMISSION RATES

Although Southdown does not agree with the FDEP methodology of calculating the actual emissions for the proposed project, the FDEP numbers are used in the following calculations to expedite the application review.

PM/PM10, No. 1 Kiln	=	17.8 lb/hr, 70.4 tpy (3.95 conversion factor used by FDEP)
PM/PM10, No. 2 Kiln	=	6.77 lb/hr, 25.9 tpy (3.83 conversion factor used by FDEP)
PM/PM10, No. 1 Cooler	=	6.17 lb/hr, 24.3 tpy
PM/PM10, No. 2 Cooler	=	4.44 lb/hr, 17.1 tpy

SO2, No. 1 Kiln	=	15 lb/hr (allowable) x 3.95 FDEP factor
	=	59.3 tpy
SO2, No. 2 Kiln	=	15 lb/hr (allowable) x 3.83 FDEP factor
	=	57.5 tpy
NOx, No. 1 Kiln	=	275.5 lb/hr (FDEP TEPD) x 3.95
	=	1088.2 tpy
NOx, No. 2 Kiln	=	250 lb/hr (30-day avg. allowable) x 3.83
	=	957.5 tpy
CO, No. 1 Kiln	=	31.6 lb/hr, 138 tpy
CO, No. 2 Kiln	=	53.0 lb/hr, 203 tpy
VOC, No. 1 Kiln	=	13.1 lb/hr (FDEP TEPD) x 3.95
	=	51.7 tpy
VOC, No. 2 Kiln	=	4.5 lb/hr, 17.1 tpy

PROPOSED EMISSION RATES

PM/PM10, Each Kiln	=	27.0 lb/hr (0.18 lb/ton dry feed) x 8760 hrs/yr x ton/2000 lbs
	=	118.3 tpy
PM/PM10, Each Cooler	=	13.6 lb/hr (0.09 lb/ton dry feed) x 8760 hrs/yr x ton/2000 lbs
	=	59.6 tpy
SO2, Each Kiln	=	15 lb/hr (0.1 lb/ton dry feed) x 8760 hrs/yr x ton/2000 lbs
	=	65.7 tpy
NOx, Each Kiln	=	285 lb/hr (1.9 lb/ton dry feed) x 8760 hrs/yr x ton/2000 lbs
	=	1248.3 tpy
CO, Each Kiln	=	180 lb/hr (1.2 lb/ton dry feed) x 8760 hrs/yr x ton/2000 lbs
	=	788.4 tpy
VOC, Each Kiln	=	13.6 lb/hr (0.09 lb/ton dry feed) x 8760 hrs/yr x ton/2000 lbs
	=	59.6 tpy

NET EMISSIONS INCREASES

Net Emissions	=	Proposed - Actual + Contemporaneous
Net Increase, PM/PM10	=	(118.3 + 118.3 + 59.6 + 59.6) - (70.4 + 24.3 + 25.9 + 17.1)
	=	218.1 tpy
Net Increase, SO2	=	(65.7 + 65.7) - (59.3 + 57.5)
	=	14.6 tpy
Net Increase, NOx	=	(1248.3 + 1248.3) - (1088.2 + 957.5)
	=	450.9 tpy
Net Increase, CO	=	(788.4 + 788.4) - (138 + 203) + 99.9 (contemporaneous)
	=	1335.7 tpy
Net Increase, VOC	=	(59.6 + 59.6) - (51.7 + 17.1)
	=	50.4 tpy

APPENDIX II

MODELING OUTPUT ON DISK

THIS DISK CONTAINS PARTICULATE MATTER (PM10), CARBON MONOXIDE (CO), NITROGEN OXIDES (NOx), AND VOLATILE ORGANIC COMPOUNDS (VOC) MODELING FILES FOR THE SOUTHDOWN, INC. FACILITY IN BROOKSVILLE FLORIDA. THE FOLLOWING ARE OUTPUT FILES ARE IN SELF EXTRACTING ARCHIVE FORMAT.

THIS DISK CONTAINS ISCST3 MODELING OF SIA, AAQS, PSD CLASS 2 AND CHASSAHOWITZKA NWR PSD CLASS I AREA, AND BPIP FILES;

ASI ANALYSIS OF CHASSAHOWITZKA NWR PSD CLASS I AREA:

C1PM-ASI EXE	50,810	02-19-97	FOR PM-10
C1NX-ASI EXE	41,081	02-19-97	FOR NOx

ASI ANALYSIS OF FAAQS, AND PSD CLASS 2 AREA:

C2PM-ASI EXE	183,979	02-19-97	FOR PM-10
C2NX-ASI EXE	105,025	02-19-97	FOR NOx
C2CO-ASI EXE	265,421	02-19-97	FOR CO
C2VOCASI EXE	167,298	02-19-97	FOR VOC

INCREMENT ANALYSIS OF CHASSAHOWITZKA NWR PSD CLASS I AREA:

C1-NXINV EXE	51,876	02-19-97

AND:

BPIP-FIL EXE	45,941	02-20-96	BUILDING DOWNWASH CALCULATIONS

TO UNARCHIVE THESE FILES COPY THEM TO A HARD DISK DRIVE AND TYPE THE FILE NAME. FOR EXAMPLE TO UNARCHIVE THE PM-10 ASI CLASS 2 ISCST3 OUTPUT FILES, TYPE "C2PM-ASI" AND PRESS ENTER. THE FILES WILL AUTOMATICALLY UNARCHIVE TO THE HARD DISK DRIVE. THESE ARCHIVED FILES CONTAIN THE MODELING AND ANALYSIS FILES ASCII DESCRIBED AS FOLLOWS;

THE FOLLOWING FILES CONTAIN ISCST3 MODELING OF SIGNIFICANT IMPACT ANALYSIS (SIA) FOR FAAQS AND PSD CLASS 2 AREAS FOR PM10, NOx, VOC AND CO. THERE ARE RECEPTORS AT 100 METER INTERVALS ALONG THE PROPERTY LINE, DISCRETE POLAR RECEPTORS FROM 2500 METERS TO 3000 METERS AND POLAR RECEPTORS @ 4000 5000 6000 8000 10000 15000 20000 METERS. POLAR RECEPTORS ARE CENTERED AT X=0 Y=500 THE APPROXIMATE GEOMETRIC CENTER OF THE FACILITY. NO SIGNIFICANCE IS FOUND FOR PM-10, CO OR VOC. THE SIA MODELING FOR CLASS 1 PSD NOx INDICATES THAT INCREMENT ANALYSIS IS REQUIRED.
THE FOLLOWING SIA FILES ARE PROVIDED:

C1PM-ASI EXE	50,810	02-19-97	FOR PM-10:
C1SIAPM7 OUT	59,076	02-17-97	PM10 CLASS 1 AND FAAQS SIA FOR 1987
C1SIAPM8 OUT	59,076	02-17-97	PM10 CLASS 1 AND FAAQS SIA FOR 1988
C1SIAPM9 OUT	59,076	02-17-97	PM10 CLASS 1 AND FAAQS SIA FOR 1989
C1SIAPM0 OUT	59,076	02-17-97	PM10 CLASS 1 AND FAAQS SIA FOR 1990
C1SIAPM1 OUT	59,076	02-17-97	PM10 CLASS 1 AND FAAQS SIA FOR 1991
C1NX-ASI EXE	41,081	02-19-97	FOR NOx:
C1SIANX7 OUT	37,981	02-11-97	NOx CLASS 1 AND FAAQS SIA FOR 1987
C1SIANX8 OUT	37,981	02-11-97	NOx CLASS 1 AND FAAQS SIA FOR 1988
C1SIANX9 OUT	37,981	02-11-97	NOx CLASS 1 AND FAAQS SIA FOR 1989
C1SIANX0 OUT	37,981	02-11-97	NOx CLASS 1 AND FAAQS SIA FOR 1990
C1SIANX1 OUT	37,981	02-11-97	NOx CLASS 1 AND FAAQS SIA FOR 1991

ASI ANALYSIS OF FAAQS, AND PSD CLASS 2 AREA:

C2PM-ASI EXE	183,979	02-19-97	FOR PM-10:
C2SIAPM7 OUT	285,159	02-17-97	PM10 CLASS 2 AND FAAQS SIA FOR 1987
C2SIAPM8 OUT	285,159	02-17-97	PM10 CLASS 2 AND FAAQS SIA FOR 1988
C2SIAPM9 OUT	285,159	02-17-97	PM10 CLASS 2 AND FAAQS SIA FOR 1989

C2SIAPM0	OUT	285,159	02-17-97	PM10 CLASS 2 AND FAAQS SIA FOR 1990
C2SIAPM1	OUT	285,159	02-17-97	PM10 CLASS 2 AND FAAQS SIA FOR 1991
C2NX-ASI	EXE	105,025	02-19-97	FOR NOx:
C2SIANX7	OUT	172,284	02-11-97	NOx CLASS 2 AND FAAQS SIA FOR 1987
C2SIANX8	OUT	172,284	02-11-97	NOx CLASS 2 AND FAAQS SIA FOR 1988
C2SIANX9	OUT	172,284	02-11-97	NOx CLASS 2 AND FAAQS SIA FOR 1989
C2SIANX0	OUT	172,284	02-11-97	NOx CLASS 2 AND FAAQS SIA FOR 1990
C2SIANX1	OUT	172,284	02-11-97	NOx CLASS 2 AND FAAQS SIA FOR 1991
C2CO-ASI	EXE	265,421	02-19-97	FOR CO:
C2SIACO7	OUT	331,239	02-11-97	CO CLASS 2 AND FAAQS SIA FOR 1987
C2SIACO8	OUT	331,239	02-11-97	CO CLASS 2 AND FAAQS SIA FOR 1988
C2SIACO9	OUT	331,239	02-11-97	CO CLASS 2 AND FAAQS SIA FOR 1989
C2SIACO0	OUT	331,239	02-11-97	CO CLASS 2 AND FAAQS SIA FOR 1990
C2SIACO1	OUT	331,239	02-11-97	CO CLASS 2 AND FAAQS SIA FOR 1991
C2VOCASI	EXE	167,298	02-19-97	FOR VOC:
C2VIAVO7	OUT	225,818	02-18-97	VOC CLASS 2 AND FAAQS SIA FOR 1987
C2VIAVO8	OUT	225,818	02-18-97	VOC CLASS 2 AND FAAQS SIA FOR 1988
C2VIAVO9	OUT	225,818	02-18-97	VOC CLASS 2 AND FAAQS SIA FOR 1989
C2VIAVO0	OUT	225,818	02-18-97	VOC CLASS 2 AND FAAQS SIA FOR 1990
C2VIAVO1	OUT	225,818	02-18-97	VOC CLASS 2 AND FAAQS SIA FOR 1991

ALL CLASS 1 MODELING OF SIGNIFICANT IMPACT ANALYSIS (SIA) FOR CHASSAHOWITZKA NWR PSD CLASS 1 AREAS CONTAIN AN ADDITIONAL SEVEN RECEPTORS WERE ADDED BY INTERPOLATING BETWEEN SOME OF THE 13 RECEPTORS USED IN HISTORICAL RUNS. THIS WAS DONE TO PROVIDE A CLOSER PLACEMENT OF RECEPTORS NEARER TO THE SOURCE. THE CLASS 1 SIA FOR NOx INDICATES THAT INCREMENT ANALYSIS IS REQUIRED. THE FOLLOWING CLASS 1 PSD INCREMENT ANALYSIS FILES ARE PROVIDED;

C1-NXINV	EXE	51,876	02-19-97:	
C1NOX87	OUT	50,986	02-18-97	CLASS 1 PSD NOx MODELING FOR 1987
C1NOX88	OUT	50,986	02-18-97	CLASS 1 PSD NOx MODELING FOR 1988
C1NOX89	OUT	50,986	02-18-97	CLASS 1 PSD NOx MODELING FOR 1989
C1NOX90	OUT	50,986	02-18-97	CLASS 1 PSD NOx MODELING FOR 1990
C1NOX91	OUT	50,986	02-18-97	CLASS 1 PSD NOx MODELING FOR 1991

BUILDING INPUT PROFILE PROGRAM (BPIP) FILES ARE PROVIDED IN BPIP-FIL.EXE. THESE BUILDING DOWNWASH CALCULATIONS ARE USED IN ALL MODELING. THREE SETS OF DOWNWASH CALCULATIONS ARE MADE. THE FIRST FOR KILN1&2, CLCOOL1&2 SOURCES ANOTHER FOR B-11 THROUGH H-13 SOURCES AND A THIRD FOR L-07 THROUGH Q-17 SOURCES. BUILDING GEOMETRY IS CONSTANT FOR ALL THREE CALCULATIONS. THE FOLLOWING BPIP FILES ARE PROVIDED;

SWN-BPI	INP	2,238	01-11-96	INPUT FOR SOURCES KILN1&2, CLCOOL1&2
SDWN-BH1	INP	2,674	02-02-96	INPUT FOR SOURCES B-11 THROUGH H-13
SDWN-BH2	INP	2,674	02-02-96	INPUT FOR SOURCES L-07 THROUGH Q-17
SWN-BPI	OUT	5,836	01-11-96	OUTPUT FOR SOURCES KILN1&2 CLCOOL1&2
SDWN-BH1	OUT	12,619	02-02-96	OUTPUT FOR SOURCES B-11 THROUGH H-13
SDWN-BH2	OUT	12,619	02-02-96	OUTPUT FOR SOURCES L-07 THROUGH Q-17
SWN-BPI	SUM	118,465	01-11-96	SUMMARY FOR SOURCES KILN1&2, CLCOOL1&2
SDWN-BH1	SUM	303,743	02-02-96	SUMMARY FOR SOURCES B-11 THROUGH H-13
SDWN-BH2	SUM	306,720	02-02-96	SUMMARY FOR SOURCES L-07 THROUGH Q-17

IF THERE ARE ANY QUESTIONS OR IF I MAY PROVIDE ADDITIONAL FILES, OR ANALYSIS PLEASE CALL ME.

FEBRUARY 19, 1997

APPENDIX III

PREVIOUS BACT DETERMINATIONS

SOUTHDOWN, INC.
PORTLAND CEMENT FACILITY
PERMIT 0530010-001 AC (PSD-FL-233)
Hernando County

The applicant, Southdown Inc. (SI), owns a portland cement manufacturing facility in Brooksville. It consists of two kilns with a preheater design and two clinker coolers along with raw mill, finish mill, cement and clinker handling equipment, coal handling equipment, silos, and air pollution control equipment. A process description is included in the Technical Evaluation and Preliminary Determination.

Each kiln/cooler is permitted to process 165 tons per hour (TPH) of raw material fed to the preheater, 148 TPH to the kiln, and 90 TPH from the cooler on a 1-hr basis. Each is also permitted to process 145 TPH to the preheater, 130 TPH to the kiln, and 84 TPH from the cooler on a 30-day basis.

A single, large, fabric filter system (baghouse) is already in use to capture particulate matter from each kiln and cooler. Baghouses are also used to limit particulate emissions from other process emission points. All the emission units controlled by baghouses are listed in a Best Available Control Technology (BACT) determination performed for Cement Plant 2 in 1980. Kiln 2 has three (3) additional BACT determinations on file with the Department (1980, 1988 and 1993). No previous BACT determinations have been performed on Kiln 1.

Southdown requested to revise the allowable emissions limits for their kilns and coolers. Specifically, it was requested to increase emissions limits for particulate matter (PM/PM_{10}), carbon monoxide (CO), visible emissions (VE) and volatile organic compounds (VOC) from Kiln 2; decrease PM/PM_{10} (allowable emissions) and increase CO emission limits for Kiln 1; and increase the PM/PM_{10} limits for Coolers 1 and 2. The stated reason is to allow for fluctuations in emission rates during the normal operation.

The project and rule applicability are described in the separate Technical Evaluation and Preliminary Determination. A Best Available Control Technology (BACT) determination pursuant to Prevention of Significant Deterioration (PSD) is required for each pollutant exceeding the significant emission rates in Table 62-212.400-2, F.A.C., "Regulated Air Pollutants Significant Emissions Rates." The increase in emissions will subject Kilns 1 and 2 to PSD review for particulate matter and carbon monoxide and Coolers 1 and 2 to PSD review for particulate matter. The increase in the VOC emission limit for Kiln 2 will not trigger PSD. In this case, the determinations will be for particulate matter (PM/PM_{10}), and carbon monoxide (CO).

Following is the BACT determination proposed by the applicant. These are on the basis of feed to the kiln.

BACT DETERMINATION REQUESTED BY THE APPLICANT - KILN FEED BASIS:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM_{10}) (kilns)	0.2 lb./ton of dry kiln feed
Particulate Matter (PM/PM_{10})(coolers)	0.1 lb/ton of dry kiln feed
Carbon Monoxide (kilns)	1.30 lb/ton dry kiln feed
Volatile Organic Compounds (Kiln 2)	0.1 lb/ton dry kiln feed
Visible Emissions (Kiln 2)	20 percent

The above limits are expressed in terms of pollutant emitted per ton of material reaching the kiln. Following a review of past permits, the exact process, requirements of the applicable NSPS for cement plants, and discussions with Southdown, the Department will limit only raw material fed to the kiln preheater. This is the most accurate and reliable measure of kiln operating rate in a preheater or precalciner kiln, particularly when there are no bypass streams and when little or no cement kiln dust is wasted. All limits will be expressed in terms of pounds of pollutant per ton of material fed to the kiln preheater ($kiln_{ph}$). Where appropriate, equivalent factors in terms of pounds of pollutant per ton of clinker produced will also be given for reference and comparison with industry or EPA reporting conventions. The above table is therefore adjusted as follows:

BACT DETERMINATION REQUESTED BY THE APPLICANT - PREHEATER BASIS:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM_{10}) (kilns)	0.18 lb./ton of dry $kiln_{ph}$ feed
Particulate Matter (PM/PM_{10})(coolers)	0.09 lb/ton of dry $kiln_{ph}$ feed
Carbon Monoxide (kilns)	1.17 lb/ton dry $kiln_{ph}$ feed
Volatile Organic Compounds (Kiln 2)	0.09 lb/ton dry $kiln_{ph}$ feed
Visible Emissions (Kiln 2)	20 percent

DATE OF RECEIPT OF A BACT APPLICATION:

February 22, 1996

REVIEW GROUP MEMBERS:

Teresa Heron, and A. A. Linero of the New Source Review Section.

BACT DETERMINATION PROCEDURE:

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

(a) Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determination of any other state.

(d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from this facility can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as follows:

- Particulate matter from kilns and coolers (PM/PM_{10}, and VE). Controlled generally by add-on particulate collection equipment such as baghouses or electrostatic precipitators.

- Products of combustion and incomplete combustion (e.g., SO_2, NO_x, CO, VOC). Control is largely achieved by good combustion practices and reactions with clinker and raw materials.

o Emissions from materials handling, conveyance, and storage (primarily PM). Controlled generally by fabric filters and reasonable precautions.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM, SO_2, H_2SO_4, fluorides, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

BACT ANALYSIS

PARTICULATE MATTER (PM/PM_{10})

Particulate Matter is generated by the various physical and chemical processes at a cement manufacturing plant. Sources of particulate matter at cement plants include (1) quarrying and crushing, (2) raw material storage, (3) grinding and blending, 4) clinker production, 5) finish grinding, and 6) packaging and loading. Additional sources of PM are raw material storage piles, conveyers, storage silos, and unloading facilities.

The largest emission source of PM within cement plants is the pyroprocessing system that includes the kiln and clinker cooler exhaust stacks (in this case, common kiln/cooler stack). Emissions from kilns are affected by several factors, including differences in convective patterns, material movement patterns, burner locations and insertion lengths, heat transfer mechanisms, and the type of clinker cooler that supplies secondary air to the kiln for combustion. Typically, dust from the pollution control equipment servicing the kiln and cooler is collected and recycled into the kiln and thus incorporated into the clinker. Southdown has stated that the great majority of the cement kiln dust (CKD) captured in the baghouse is returned to the pyroprocessing system as raw material.

Common control devices for stack gases include settling chambers, inertial separators, impingement separators, wet scrubbers, fabric filters, and electrostatic precipitators. Fabric filters (baghouses) and electrostatic precipitator (ESPs) are generally considered equivalent for particulate control. Both types of devices can achieve removal efficiencies of over 99 percent. ESPs and baghouses are used extensively as control devices at cement plants. ESPs are generally specified for kiln and clinker cooler exhaust gases because of their ability to operate effectively at varying temperatures. Baghouses are also used at various facilities for particulate control from kilns and coolers. Both types of control equipment provide for the recovery/recycling of collected dust back into the process stream. Baghouses are also used to control particulate emissions from most other material processing operations at cement plants.

Common controls to limit particulate emissions from fugitive sources (such as roadways, stockpiles, and material processing and conveying equipment) include wet suppression, sweeping, application of

surfactants, paving of roads and covering of stockpiles to reduce wind erosion. Wet suppression of fugitive particulate emissions is considered as BACT for most material handling operations and unpaved roads. Dust from stockpiles can be minimized by relatively high material moisture content with additional water spraying as necessary.
A review of the BACT Clearinghouse shows that baghouses and ESPs are widely used to control particulate matter from process emission units at cement plants. They are commonly accepted as BACT. This facility, particulate matter sources are controlled by baghouses.

Southdown has proposed to change the allowable emission rates for particulate matter (PM/PM_{10}) from Kilns 1 and. 2 and Clinker Coolers 1 and 2 to allow for the fluctuations in emission rates during normal operating conditions. The permitted PM/PM_{10} limits would be increased for Kiln 2 from 13.5 pounds per hour (lb/hr) to 26.0 lb/hr, while PM/PM_{10} emissions for Kiln 1 are proposed to be decreased from 39.0 lb/hr (allowable emissions) to 26.0 lb/hr. The proposed limit for the two clinker coolers would be increased from 7.13 lb/hr (kiln 1) and 5.0 lb/hr (kiln 2) to 13.0 lb/hr. The proposed kiln particulate emission limits are equivalent to 0.18 pounds per ton of dry feed to each kiln preheater (lb/ton $feed_{ph}$). This is a standard lower than the New Source Performance Standard NSPS limit of 0.3 pounds per ton of dry feed (kiln). For the coolers the proposed limits are equivalent to 0.09 lb/ton $feed_{ph}$ which is less than the applicable NSPS limit.

Southdown also requested to increase VE (which is largely linked to particulate emissions) from 10 percent for Kiln 2 to 20 percent.

PRODUCTS OF COMBUSTION AND INCOMPLETE COMBUSTION

Carbon Monoxide and Nitrogen Oxides

Carbon monoxide (CO) is a pollutant formed by the incomplete combustion (oxidation) of carbon containing compounds in the cement kiln fuel and during the transformation of cement raw materials to cement clinker. When insufficient oxygen is provided, more CO and less CO_2 are formed than under excess air conditions. Substantial quantities of CO and CO_2 are also generated through calcining of limestone and other calcareous material. This calcining process thermally decomposes $CaCO_3$ to CaO and CO_2. The calcining of limestone in the cement manufacturing process liberates large amounts of CO_2, which is available for dissociation into CO.

Flyash, a constituent of the raw feed mix, contains unburnt carbon which can vary in concentration depending on the source of the flyash. As the raw feeds travels down the preheater tower, most of the carbon present in the flyash is burned off. However, some of it is emitted as carbon monoxide. This contributes to fluctuations in carbon monoxide emissions.

Although this specific application does not necessitate a PSD review and BACT determination for nitrogen oxides (NO_x), past changes in production rates in Kiln 1 presumably caused concurrent increases in this pollutant. Unless specific measures were taken at the time to insure NO_x emissions increases were kept at less than significant levels, such a review and determination would have been required. The Department is using the opportunity to resolve this outstanding issue by setting a non-BACT emission limit which can be reasonably assumed to be lower than emissions prior to the changes which were not subjected to appropriate review. Southdown has agreed that this limit should be no greater than 275 lb/hr (1.9 lb NO_x/ton $feed_{ph}$).

Southdown is not proposing any changes for Kiln 2 NO_x emissions. Currently, the emission level of 250 lb NO_x/hr is being met (equivalent to 1.72 lb NO_x/ton $feed_{ph}$)

The generation of CO and NO_x is inversely related to that of NO_x and is linked to the oxygen level that is present in the kiln system. As the oxygen level increases, the formation of NO_x increases and the formation of CO decreases. Conversely, when the oxygen level decreases, the formation of NO_x decreases and the formation of CO increases. Southdown will meet CO and NO_x emission levels by controlling excess oxygen in the kiln to a level between one and one-half to three percent excess oxygen. A continuous CO process monitor will assist in the control of the CO content in the kiln.

Emissions of CO can potentially be reduced at portland cement plants through utilization of proper combustion practices to maximize the oxidation of CO to CO_2 and reducing the quantity of CO in the flue gas stream (flue gas control). The high temperatures and control of excess air and fuel, typically results in simultaneous optimization for CO and NO_x. The applicant proposes proper combustion practices as BACT to control emissions of CO from this plant. A review of the BACT Clearinghouse reveals that for cement plants, BACT for CO is proper combustion practices.

The applicant proposes a CO limit of 1.17 lb/ton of $feed_{ph}$ and good combustion practice as BACT for CO for each Kiln. This represents an emission increases for Kiln 1 from 57.7 lb/hr to 169.9 lb/hr and for Kiln 2 from 64.0 to 169.9 lb/hr respectively. This increase is proposed in order to allow for more representative on a year-round basis compared with what is achievable during an annual test. It also accounts for fluctuations due to normal process oscillations and varying characteristics of raw materials and fuels.

Volatile Organic Compounds

VOC is also a pollutant formed due to incomplete combustion of fuel and organic material in the feed material to the kiln system. Limestone contains very low levels of VOCs. An additional source of VOC is oil from mill scale which is sometimes used as a raw material for its iron.

Southdown will reduce the VOC emissions by controlling the temperatures in the kiln system. In the kiln, the feed material will reach about 2700 degrees Fahrenheit. The temperature of the gases in the kiln will reach between 3700 to 3800 degrees Fahrenheit. At these high temperatures, virtually all VOCs will be

consumed or destroyed regardless of their source (limestone, mill scale, coal, fuel oil, etc.). Clinker production requires certain temperatures, residence time, and turbulence within the kiln. These factors are sufficient to ensure the destruction of almost all VOCs at cement plants.

Emissions of VOC can also be controlled by add-on control devices, by the mechanisms of adsorption, absorption, or incineration (afterburning). Incineration processes include flame incineration, thermal incineration, and catalytic incineration. No add-on controls for VOC have been demonstrated for cement plants.

A review of the BACT Clearinghouse reveals that for cement plants, BACT for VOCs is proper combustion practices. The applicant estimates low emissions of VOC such that the kilns will not be subject to BACT for this pollutant.

For VOC, the applicant has estimated 13.0 lb/hr (an increase of 8.0 lb/hr) for Kiln 2. The applicant is utilizing good combustion practices for both kilns to reduce VOCs emissions.

BACT DETERMINATION RATIONALE:

The existing BACT VE limit of 10 percent for Kiln 2 is more stringent than the NSPS for Portland Cement Plant, 40 CFR 60, Subpart F for Kiln 2. It is also consistent with various recent BACT determinations made throughout Florida. There is no good basis for considering the higher VE limit proposed by Southdown than the one already established. Although Kiln 1 has a VE limit of 20 percent, the kilns are operated similarly and will have identical PM limits. The efforts to maintain the lower Opacity limit at Kiln 2 will probably result in fairly low opacity from Kiln 1.

BACT for PM (0.2 lb/ton kiln feed) from Kilns 1 and 2 proposed by Southdown is more stringent than the NSPS for Portland Cement Plants, 40 CFR 60, Subpart F. The basis is the BACT determinations made by the Department for Florida Rock Industries and Florida Crushed Stone and the original BACT determination for Southdown (then FM&M). The Department accepts the applicant's proposed limit (as corrected to 0.18 lb/ton $kiln_{ph}$ feed) for both Kiln 1 and 2.

BACT for PM (0.1 lb/ton $kiln_{ph}$) feed from Coolers 1 and 2 proposed by Southdown is equal to that given in the NSPS for Portland Cement Plants. Southdown was unable to achieve lower limits set in the past as a result of permit conditions they agreed to comply with in order to avoid PSD/BACT. The basis is also the BACT determinations made by the Department for Florida Rock Industries and Florida Crushed Stone. The Department accepts the applicant's proposed limit (corrected to 0.09 lb/ton $kiln_{ph}$ feed) for both Cooler 1 and 2 with the understanding that it is being met at all times rather than just during annual emission tests.

During this review, the Department discovered that, miscellaneous PM sources (other than the kilns and coolers) controlled by baghouses were limited in the original permit (July 1, 1980) for Cement Plant 2 to "0" percent Opacity. These values have been changed in subsequent operating permit reviews, but the original enforceable permit was not changed. Since a 0 percent Opacity limitation is not generally feasible to achieve or demonstrate, the Department is rectifying the value in this construction permit. For each small baghouse associated with Cement Plant 2, the exhaust gases must not exhibit greater than 5 percent opacity. The Department has determined that 5 percent opacity is BACT and is attainable with a baghouse. This is consistent with recent BACT determinations.

BACT for CO was proposed by Southdown to be 1.17 lb/ton $kiln_{ph}$ feed (2.0 lb/ton clinker at a clinker production rate of 84 TPH) for both Kilns. This value will provide sufficient flexibility to minimize NO_x and SO_2 emissions. The value is with the Department's recent BACT determination to Florida Crushed Stone (FCS) with a CO limit of 2.0 lb/ton clinker. However the Department encourages Southdown to continue to be judicious in selecting sources of coal ash. Some of the local power companies are trying to recover the unburned carbon in the coal ash by reburning it, taking advantage of the heat content, and producing a more salable coal ash for customers such as the cement industry. If Southdown revises its specifications and accepts poor quality flyash, it can be counter-productive for this pollution prevention effort affecting both industries.

No BACT determination was required for VOC for either Kiln. The Department accepts the limit requested by Southdown which will result in annual emissions less than the PSD threshold. It will allow Southdown sufficient flexibility in control for all combustion products.

No BACT determination was requested or required for metals such as mercury, beryllium, lead arsenic, fluorides and sulfuric acid mist (PSD pollutants). Original emission estimates submitted for previous applications provided assurance that emissions of these pollutants are less than the PSD significant threshold values.

No new BACT determinations were requested for NO_x and SO_2. The actual BACT emission levels of 250 lb NO_x/hr and 15 lb SO_2/hr for Kiln 2 are being met. These are equal to 1.72 lb NO_x/ton $kiln_{ph}$ feed and 0.10 lb SO_2/ton $kiln_{ph}$ feed. For comparison with industry conventions, these values are equal to 2.98 lb NO_x/ton clinker and 0.18 lb SO_2/ton clinker at a production rate of 84 TPH. A new non-BACT emission limit of 275 lb NO_x/hr (equal to 1.9 lb/ton $kiln_{ph}$ feed or 3.27 lb/ton of clinker at a production rate of 84 TPH) is being set for Kiln 2. Kiln 1 also meets the same SO_2 limit as Kiln 2.

BACT DETERMINATION BY DEP:

Based on the information provided by the applicant and the information searches conducted by the Department, the BACT emission levels are established as follows:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM_{10}) (kilns)	0.18 lb./ton $kiln_{ph}$ feed
Particulate Matter (PM/PM_{10})(coolers)	0.09 lb/ton $kiln_{ph}$ feed
Carbon Monoxide (kilns)	1.17 lb/ton $kiln_{ph}$ feed
Nitrogen Oxides (Kiln 1)	1.9 lb/ton $kiln_{ph}$ feed (30 day, non-BACT)
Volatile Organic Compounds (kilns)	0.09 lb/ton $kiln_{ph}$ feed (non-BACT)
Visible Emissions (Kiln 2)	10 percent (no change)
Minor points sources with baghouses	5 percent

COMPLIANCE

Compliance with the particulate emission limitations shall be in accordance with the EPA Reference Method 5 as contained in Appendix A, 40 CFR 60, and set forth in Subsection 60.64 of the NSPS for Portland Cement Plants, 40 CFR 60.

Compliance with opacity standards (minor sources controlled by baghouses) shall be determined by conducting observations in accordance with 40 CFR 60, Appendix A, Method 9.

Continuous opacity monitors (kilns and coolers) shall meet the requirements of the 40 CFR 60, NSPS Subpart F for Portland Cement Plants. Compliance with the opacity standard for the Kilns and Clinker Coolers No. 1 and No. 2 shall be demonstrated by CEMs.

Compliance with the CO limitations shall be demonstrated by 3 one-hour tests using EPA Method 10.

Pursuant to Rules 62-4.070(3), 62-212.400(6), and 62-297.520, F.A.C., the kiln/cooler exhaust stack system shall also be equipped with continuous monitors process monitors to record CO and/or O_2 to indicate proper maintenance, operation, and to optimize combustion for pollution control.

Compliance with the new Kiln 1 NO_x limitation shall be demonstrated annually by a 30 day test using a CEM which meets the requirements of 40 CFR 60, Appendix B and Appendix F.

Compliance with the VOC limitations shall be demonstrated (on a one time basis) by three one hour stack tests using Method 25 or 25A to confirm emission rate is less than the PSD significant emission rate.

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Teresa Heron, Review Engineer,
A. A. Linero, Administrator, New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
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Recommended By:

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

Date:

Approved By:

Howard L. Rhodes, Director
Division of Air Resources Management

Date:

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATION
PORTLAND CEMENT PLANT
Florida Crushed Stone
PSD-FL-227 and AC 27-274892
Hernando County
(revised 11/9/95)

The applicant, Florida Crushed Stone Company (FCS), plans to construct an 83 ton per hour (maximum TPH as clinker) dry process portland cement kiln with a preheater design at its existing cement plant approximately 3.5 miles northwest of Brooksville, Hernando County, Florida. The project includes a single kiln and clinker cooler along with raw mill, finish mill, cement and clinker handling equipment, coal handling equipment, silos, and air pollution control equipment. The facility will produce 727,080 tons per year (maximum TPY as clinker) and approximately between 760,000 and 800,000 TPY of portland cement. A process description is included in the Technical Evaluation and Preliminary Determination.

Following is the BACT determination proposed by the applicant:

BACT Determination Requested by the Applicant:

POLLUTANT	EMISSION LIMIT
Particulate Matter (kiln)	0.3 lbs/ton of dry kiln feed
Particulate Matter (cooler)	0.1 lbs/ton of dry kiln feed
Particulate Matter (material handling, conveying, storage)	0.01 gr/dscf by baghouses
Sulfur Dioxide (kiln)	0.55 lbs/ton clinker
Sulfuric Acid Mist (kiln)	0.014 lbs SO_3/ton clinker
Nitrogen Oxides (kiln)	4.3 lbs/ton clinker
Carbon Monoxide (kiln)	1.0 lbs/ton dry kiln feed
Volatile Organic Compounds (kiln)	0.07 lbs/ton clinker
Beryllium	6.6×10^{-7} lbs/ton clinker
Lead	7.5×10^{-5} lbs/ton clinker

A single, large, fabric filter system (baghouse) will be used to capture particulate matter from the kiln and the cooler. Baghouses will also be used to limit particulate emissions from other process emission points. Table 1 is a list of the emission units to be controlled by baghouses.

Portland cement plants are among the major facilities listed in Florida Administrative Code (F.A.C.) Chapter 62-212, Prevention of Significant Deterioration (PSD), Table 212.400-1, "Major Facilities Categories." A BACT determination is required for each pollutant exceeding the significant emission rates in Table 212.400-2, "Regulated Air Pollutants Significant Emissions Rates," which in this case are particulate matter (PM), sulfur dioxide (SO_2), carbon monoxide (CO), and nitrogen oxides (NO_x).

This facility is also subject to:

- 40 CFR 60, Subpart F - Standards of Performance for Portland Cement Plants.
- 40 CFR 51, Subpart P - Protection of Visibility.

Date of Receipt of a BACT Application:

March 13, 1995

Review Group Members:

Teresa Heron, Marty Costello, and A. A. Linero of the New Source Review Section.

BACT Determination Procedure

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

(a) Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determination of any other state.

(d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from this facility can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as follows:

- Combustion Products (e.g., SO_2, NO_X, PM). Controlled generally by good combustion of clean fuels, reactions with clinker and raw materials, removal in add-on control equipment.
- Products of Incomplete Combustion (e.g., CO, VOC). Control is largely achieved by proper combustion techniques.
- Emissions from materials handling, conveyance, and storage (primarily PM). Controlled generally by fabric filters and reasonable precautions.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM, SO_2, H_2SO_4, fluorides, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

COMBUSTION PRODUCTS

Nitrogen Oxides (NOx)

Emissions of NO_X from dry process cement plants with a preheater include the kiln and any fuel-fired support operation. Oxides of nitrogen (NOx) are generated during fuel combustion by oxidation of chemically bound nitrogen in the fuel (fuel NOx) and by thermal fixation of nitrogen in the combustion air (thermal NOx). As flame temperature increases, the amount of thermally

generated NOx increases. Fuel type affects the quantity and type of NOx generated. Generally, natural gas is low in nitrogen. However it causes higher flame temperatures and generates more thermal NOx than oil or coal, which have higher fuel nitrogen content, but exhibit lower flame temperatures.

NO_X emissions represent a significant portion of the total emissions generated by this project, and must be minimized using BACT.

The emissions of NOx can potentially be reduced at Portland cement plants by two methods:

1. Minimizing the quantity of NOx generated during combustion (combustion modifications).

2. Reducing the quantity of NOx in the flue gas stream (flue gas controls).

A review of EPA BACT/LAER Clearinghouse (BACT Clearinghouse) information indicates that NO_X emissions at most facilities are minimized by process control and good combustion practices.

The applicant stated that NO_X emissions at this facility will be controlled through "proper combustion practices" such as burner design with primary combustion air control. Introduction of tires in the material feed end of the kiln will reduce the thermal load on the burner end and possibly result in lower NO_X emissions. In its original submittal, the applicant ruled out Selective Catalytic Reduction (SCR) and Selective Non-Catalytic Reduction (SNCR) as technically infeasible or cost prohibitive.

The applicant gave subsequent consideration to other possible control methods following a request by the Department for additional details justifying the selected method. The applicant rejected Low NO_X Burners, Low Nitrogen Fuel, Flue Gas Recirculation, Fuel Reburning, and Contemporaneous Reductions from the on-site power plant and cement kiln as options which are ineffective, undemonstrated, or beyond the control of the applicant.

The Department requested that the applicant provide an expanded BACT analysis using the procedures described in the EPA New source Review Workshop Manual to show, at a minimum, a technical, economic, and environmental analysis of any applicable control technology. The applicant's response was that the "top" technology was selected for all pollutants and that the technical, economic, and environmental analyses were not required.

The applicant has proposed a NOx emission rate of 359 lb/hr and 4.3 lb/ton clinker. It is compared below with previous determinations documented by the BACT Clearinghouse.

Previous BACT Determinations

BASIS	Least Stringent	Most Stringent	Proposed
	Year 1978	Year 1981	Year 1995
lb/ton clinker	11.13	0.85	4.3

It is important to note that the facility which was given the 0.85 lb/ton clinker NO_X limit has not been able to meet it since construction. A dry process plant with preheater/precalciner received a NO_X limit of 1.11 lb/ton clinker but was never built. Another dry process plant with preheater and calcining loop received a BACT determination of 2.09 lb NO_X/ton clinker. However, it appears that since that time a less stringent standard was applied. Two other dry process preheater/precalciner plants (including proposed Florida Rock Industries Plant) received a NO_X value of 2.5 lb/ton clinker **(later revised to 2.8 lb/ton)**. A review of the NOx emission rate summary indicates that the applicant's proposal is not representative of the most stringent BACT determinations made to-date for plants utilizing dry processes.

The dry process with preheater/precalciner is considered to be the most energy-efficient process. Dry process preheater designs, such as the one to be employed by FCS, are also energy efficient. Therefore one would expect the lower fuel use to result in relatively low NO_X, all else being equal.

A survey of stack test data from various kilns around the country, operating for more than three years, suggests that a lower emission level than the one proposed for NOx is possible. Additionally, the Department became aware of a recent BACT determination in Nevada which was based on application of SNCR. These factors will also be considered in determining what emission rate can be achieved in accordance with a top-down BACT determination.

Sulfur dioxide

Sulfur dioxide (SO_2) may be generated both from sulfur compounds such as sulfates in the raw materials and from sulfur in the fuel. The sulfur content of both raw materials and fuels varies from plant to plant and with geographic location. Sulfur dioxide at this facility will be generated by the combustion of coal and tires in the kiln and generation of sulfur gases from the raw materials.

The exhaust gas from a cement kiln can contain varying amounts of SO_2. Under low oxygen conditions, sulfates in the raw materials can be converted to SO_2. At high temperature and excess air conditions, some of the sulfur introduced into the cement kiln with the raw materials, and most of the sulfur contained in the fuel, are converted to SO_2. Most of the SO_2 subsequently reacts with oxygen and alkali compounds (such as Na_2O and K_2O vaporized at sintering temperatures) to form alkali sulfates, which are found in cement clinker and in kiln dust. The amount of SO_2 released in the kiln flue gases will vary with the amount of excess alkali available for absorption. Additional SO_2 may be removed through contact with the incoming raw materials and, to some extent, in the particulate control equipment.

SO_2 control processes can be classified into five categories: fuel/material sulfur content limitations, absorption by a solution, adsorption on a solid bed, direct conversion to sulfur, or direct conversion to sulfuric acid.

FCS proposes to limit SO_2 emissions by taking advantage of the alkaline environment in the kiln, preheater, and raw mill to effect substantial removal of SO_2. Ultimately the sulfur is incorporated into the clinker lattice structure, thus minimizing the amount emitted to the atmosphere. Some additional SO_2 removal through contact with particulate matter may also take place in the kiln/cooler baghouse.

The SO_2 limit proposed by the applicant (0.55 lbs/ton clinker) is less stringent than some BACT determinations for other portland cement plants.

A review of the BACT determinations for cement plants as contained in the BACT Clearinghouse indicates SO_2 reduction levels from 70 to 96% (percent) from facilities utilizing the dry processes. The Department did not find instances of BACT involving measures beyond those proposed by FCS. Some plants use baghouses as proposed by FCS instead of Electrostatic Precipitators (ESPs) for particulate control. It is possible that the filter cake on the bags enhances SO_2 removal compared with an ESP. However the difference is marginal compared with the primary removal mechanism involving oxidation of SO_2 to SO_3, alkali reactions, and subsequent removal of sulfates as particulate matter and with the clinker.

A survey of stack test data from different facilities around the country operating for at least three years demonstrates lower rates possible for SO_2. This factor along with the energy efficiency of the plant, and the possible benefits of removal by the particulate control system will be considered by the Department in making a top-down BACT determination.

COMBUSTION PRODUCTS

Particulate Matter (PM, PM10) and Beryllium

Particulate Matter is generated by the various physical and chemical processes at a cement manufacturing plant. Sources of particulate matter at cement plants include (1) quarrying and crushing, (2) raw material storage, (3) grinding and blending, 4) clinker production, 5) finish grinding, and 6) packaging and loading. Additional sources of PM are raw material storage piles, conveyers, storage silos, and unloading facilities. The largest emission source of PM within cement plants is the pyroprocessing system that includes the kiln and clinker cooler exhaust stacks (in this case, common kiln/cooler stack). Emissions from kilns are affected by several factors, including differences in convective patterns, material movement patterns, burner locations and insertion lengths, heat transfer mechanisms, and the type of clinker cooler that supplies secondary air to the kiln for combustion. Typically, dust from the pollution control equipment servicing the kiln and cooler is collected and recycled into the kiln and thus incorporated into the clinker. FCS has not stated that all cement kiln dust (CKD) captured in the baghouse will be returned to the pyroprocessing system as raw material. It is expected that the majority of it will be recycled, while any excess will be stored in a silo for sale.

Common control devices for stack gases include settling chambers, inertial separators, impingement separators, wet scrubbers, fabric filters, and electrostatic precipitators. Fabric filters (baghouses) and electrostatic precipitator (ESPs) are generally considered equivalent for particulate control. Both types of devices can achieve removal efficiencies of over 99%. ESPs and baghouses are used extensively as control devices at cement plants. ESPs are generally specified for kiln and clinker cooler exhaust gases because of their ability to operate effectively at varying temperatures. Baghouses are also used at various facilities for particulate control from kilns and coolers. Both types of control equipment provide for the recovery/recycling of collected dust back into the process stream. Baghouses are also used to control particulate emissions from most other material processing operations at cement plants.

Common controls to limit particulate emissions from fugitive sources (such as roadways, stockpiles, and material processing and conveying equipment) include wet suppression, sweeping, application of surfactants, paving of roads and covering of stockpiles to reduce wind erosion. Wet suppression of fugitive particulate emissions is considered as BACT for most material handling operations and unpaved roads. Dust from stockpiles can be minimized by relatively high material moisture content with additional water spraying as necessary.

Small quantities of beryllium (Be) are generated by the combustion of coal and fuel oil blends. Beryllium will be generated as a particulate emission from the combustion of fuels, and will be controlled by the kiln/cooler baghouse. The applicant projects low emissions of Be such that it will not be subject to BACT.

A review of the BACT Clearinghouse shows that baghouses and ESPs are widely used to control particulate matter from process emission units at cement plants. They are commonly accepted as BACT.

The applicant has proposed the New Source Performance Standard NSPS limits of 0.3 pounds per ton of dry feed (kiln) and 0.1 pounds per ton of dry feed (cooler) as BACT for this facility. The NSPS values constitute the "floor" for BACT determinations. Consideration will also be given to any more stringent emission rates determined for kilns in Florida.

PRODUCTS OF INCOMPLETE COMBUSTION

Carbon Monoxide and Volatile Organic Compounds

Carbon monoxide (CO) is a pollutant formed by the incomplete combustion (oxidation) of carbon containing compounds in the cement kiln fuel and during the transformation of cement raw materials to cement clinker. When insufficient oxygen is provided, more CO and less CO_2 are formed than under excess air conditions. Substantial quantities of CO and CO_2 are also generated through calcining of limestone and other calcareous material. This calcining process thermally decomposes $CaCO_3$ to CaO and CO_2. The calcining of limestone in the cement manufacturing process liberates large amounts of CO_2, which is available for dissociation into CO.

VOC is also a pollutant formed by the incomplete combustion of fuel or hydrocarbons contained in the raw materials.

Emissions of CO can potentially be reduced at portland cement plants by two main methods: utilization of proper combustion practices to maximize the oxidation of CO to CO_2 and reducing the quantity of CO in the flu gas stream (flue gas control).

Emissions of VOC can be controlled by add-on control devices by the mechanisms of adsorption, absorption, or incineration (afterburning). Incineration processes include flame incineration, thermal incineration, and catalytic incineration. No add-on controls for CO or VOC have been demonstrated for cement plants.

The high temperatures and control of excess air and fuel, typically results in simultaneous optimization for control of products of incomplete combustion and NO_X. The applicant proposes

proper combustion practices as BACT to control emissions of CO from this plant. The applicant estimates low emissions of VOC such that the new kiln will not be subject to BACT for this pollutant.

A review of the BACT Clearinghouse reveals that for CO and VOC, BACT from cement plants for these pollutants is proper combustion practices.

BACT Determination by DEP:

Based on the information provided by the applicant and the information searches conducted by the Department, lower emissions limits can be obtained employing the top-down BACT approach for SO_2 and NO_X.

The Department has determined that the NO_X and SO_2 levels proposed by the applicant are roughly equal to typical emission limits from plants already in operation throughout the country and do not reflect previous BACT determinations for portland cement plants.

The Department reviewed Document EPA-453/R-94-004, "Alternative Control Techniques - NO_X Emissions from Cement Manufacturing." Various methods beyond the one proposed by the applicant are detailed. As previously mentioned, the high energy efficiency of the dry preheater process also suggests a lower NO_X limit is achievable. Based on the referenced document, it appears that SNCR, Low NO_X burners and Indirect Firing are available (at least as technology transfer) to consider in achieving a lower NO_X emission limit.

The Department also reviewed a paper presented at the Air and Waste Management Association (AWMA) International Specialty Conference on Waste Combustion in Boilers and Industrial Furnaces. The paper, "Reduction of NO_X Emissions from Cement Kiln/Calciner through the Use of the NO_XOUT Process," which was written by representatives of Nalco and Ash Grove Cement, suggests that SNCR is a viable control method. A level as low as 1.0 lb/ton of clinker was reached based on demonstration tests conducted at the Ash Grove cement plant in Seattle, Washington.

Recently a proposed cement plant (Great Star Cement, Clark County, Nevada) was permitted with the urea-based SNCR/NO_XOUT process as BACT. The process relies on the reaction between ammonia and NO_X to yield molecular nitrogen. The delivery system consists of urea injectors in one of the preheater sections. The objective was to achieve 50% reduction of NO_X emissions. At that level there should be no ammonia slip while meeting the BACT limit of 3.1 lb/ton clinker.

The Department recently issued a (preliminary) BACT determination to Florida Rock Industries (FRI) with a NO_X limit of 2.5 lb/ton clinker (subsequently revised to 2.8 lb/ton). FRI had proposed a BACT limit of 4.6 lbs/ton. The Department is requiring FRI to examine additional control options, such as SNCR to insure the limit is achieved.

Based on a recent Nalco estimate prepared for Great Star Cement, the capital costs for SNCR on a 3100 TPD kiln is $471,000 ($54,165 on an annualized basis). Operating costs to reduce NO_X emissions by 3.0 lb/ton clinker are $674,000. First year costs are projected to be $728,000 and $410/ton NO_X removed.

The Department examined the worst case scenario which assumes that FCS can only achieve its proposed BACT NO_X value of 4.3 lb/ton clinker while employing proper combustion practices. The Department reviewed the degree to which SNCR can be employed in order to achieve a further (roughly 40%) NO_X reduction to 2.5 lb/ton clinker.

For the FCS plant, the purchase and installation of an SNCR system similar to the one proposed for Great Star Cement (but with a lower removal objective) would be approximately $575,000 for an annualized capital investment of approximately $65,000 per year. Annual operating costs would be approximately $200,000. First year costs would be approximately $265,000 or approximately $425 per additional ton of NO_X removed.

The cost per ton of NO_X removed is well within BACT costs for industry in general. The added cost to clinker production is low (approximately $0.40 per ton of clinker) relative to other factors such as raw materials, product, and transportation cost fluctuations.

The Department is also aware of a cement plant owned by Mitsubishi in California, which makes use of a similar principal by injecting municipal wastewater sludge into a preheater section and relying (to some extent) on released ammonia to help lower NO_X emissions.

FCS previously ruled out SNCR as infeasible because the "optimum temperature range to drive the SNCR reactions between 1600-2000 degrees F is encountered in a typical kiln system only in the kiln itself." FCS contends that injection of ammonia/urea in the kiln will cause increases in NO_X.

Although SNCR has been demonstrated in the U.S. on a preheater/precalciner kiln and is being required at another one, the previously-mentioned EPA cement plant NO_X document refers to an

SNCR demonstration in Europe on a preheater type kiln. It is possible that the applicant considered the temperature of the materials entering the kiln rather than the gases leaving the kiln.

Subsequent to issuance of the Preliminary BACT Determination, the Department was unable to verify actual application of SNCR at any preheater type kiln including the one mentioned in Europe. The kiln manufacturer, Polysius, was not willing to provide a NO_X limit guarantee of less than 4 lb/ton nor willing to guarantee the performance of product quality from the kiln with an SNCR system attached.

The Department agrees that SNCR has not been demonstrated on a preheater type cement kiln. However the Department rejects the claim by Polysius that the kiln cannot meet a NO_X emission limit less than 4 lb/ton.

For SO_2 the Department reviewed information in the BACT Clearinghouse, performance test results, and various cement technology documents detailing the chemical reactions and technological problems of making cement. It is the conclusion of the Department that the key factors in SO_2 removal is maintaining proper ratios of sulfur and alkali in the kiln environment and intimate contact between raw materials and exhaust gases. This is considered by the Department to be BACT. It is clear that FCS can insure low SO_2 emissions is through its preheater dry process.

The Department believes that lower values than proposed by the applicant with no add-on gas treatment, are possible. This is substantiated by the letter of October 28, 1983 from Sholtes and Koogler, Environmental Consultants, regarding the original kiln at FCS (which is identical to the one proposed). Per page 13, "Polysius (cement plant designer) states that if only sulfur dioxide from the cement plant were considered, sulfur dioxide emissions as low as 20 pounds per hour could be expected from the cement plant." This is further proved by actual emissions tests from the original kiln which average about 10 lbs of SO_2 per hour or approximately 0.1 lbs/ton clinker.

The Department has also concluded that sulfuric acid mist emissions are not expected to be significant because free sulfite (SO_3) will preferentially react with clinker and kiln dust in the alkali environment of the kiln. Also, little water is available to complete the reaction to acid mist.

The BACT emission levels are established by the Department as follows:

Source	Pollutant Emission Limit
Kiln (PM)	0.20 lbs/ton kiln feed (dry basis) and 0.31 lbs/ton clinker - 1 hour average
Kiln (PM_{10})	0.26 lbs/ton clinker - 1 hour average
Kiln (VE)	Visible emissions not to exceed 10 percent opacity
Kiln (SO_2)	0.27 lbs/ton clinker 24 hr rolling average Coal, blend of fuel oil and on-spec used oil (1.5 sulfur by weight), tires (up to 15% of heat input), and natural gas are the only fuels allowed
Kiln (NOx)	2.8 lbs/ton clinker - 24 hr rolling average
Kiln (CO)	2.0 lbs/ton clinker - 1 hr average
Kiln (SO_3)	0.014 lbs/ton clinker (non-BACT)
Kiln (VOC)	0.10 lbs/ton clinker (non-BACT)
Kiln (Be)	9.9×10^{-7} lbs/ton clinker (non-BACT)
Kiln (Hg)	2.4×10^{-5} lbs/ton clinker (non-BACT)
Kiln (Pb)	5.2×10^{-4} lbs/ton clinker (non-BACT)
Cooler (PM)	0.10 lbs/ton kiln feed (dry basis) and 0.16 lbs/ton clinker
Cooler (PM10)	0.13 lbs/ton clinker
Cooler (VE)	Visible emissions not to exceed 10% opacity
Minor points with baghouses	Visible emissions not to exceed 5% opacity
Fugitive sources	Visible emissions not to exceed 10% opacity

Compliance with the particulate emission limitations shall be in accordance with the EPA Reference Method 5 as contained in Appendix A, 40 CFR 60, and set forth in Subsection 60.64 of the NSPS for Portland Cement Plants, 40 CFR 60.

Compliance with opacity standards shall be determined by conducting observations in accordance with 40 CFR 60, Appendix A, Method 9.

Compliance with the SO_2 and NO_x emission limitations shall be demonstrated using CEMS.

Compliance with the CO limitations shall be demonstrated by 3 one-hour tests using EPA Method 10.

Pursuant to F.A.C. 62-4.070(3), 62-212.400(5)(c) and 62-296.330, the kiln/cooler exhaust system shall be equipped with continuous monitors to record NO_x and SO_2 for the purposes of compliance; opacity at the stack to indicate proper maintenance and operation; and CO and/or O_2 to optimize combustion conditions for pollution control.

Compliance with the VOC limitations shall be demonstrated (on a one time basis) by three one hour stack tests using Method 25 or 25A to confirm emission rate is less than the PSD significant emission rate.

Compliance with the Pb, Hg, and Be limitations shall be demonstrated (on a one time basis) by three one-hour stack tests using EPA Method 29 to confirm emission rate is less than the PSD significant emission rate.

BACT Determination Rationale:

BACT for visible emissions was determined to be more stringent than the NSPS for Portland Cement Plant, 40 CFR 60, Subpart F. With respect to the kiln, BACT for PM was determined to be more stringent than the NSPS for Portland Cement Plant, 40 CFR 60, Subpart F. The basis is the BACT Determination set by EPA for Pennsuco Cement, Medley, Florida in 1980.

BACT for SO_2 emissions from the cement kiln was based on the lowest number (0.28 lbs/ton clinker) given in the BACT Clearinghouse database. A slightly lower value of 0.27 lbs/ton clinker will also insure that ambient SO_2 concentration increases will be less than applicable National Park Service Significant Impact Level. Although it appears that FCS can achieve even lower values, it would be prudent to allow sufficient flexibility such that emissions of all combustion products can be minimized simultaneously.

For each small baghouse in the material handling process the exhaust gases must not exhibit greater than 5 percent opacity. The Department has determined that 5 percent opacity is BACT, and is attainable with a baghouse.

BACT for NO_X emissions from the cement kiln was determined to be equal to 2.8 lbs/tons of clinker. **This rate is lower than that of any preheater type kiln and is based on the Department's assessment of the capability of such a kiln without SNCR, notwithstanding assertions to the contrary by the manufacturer's representative.**

BACT for CO was determined to be 2.0 lbs/ton clinker. This value is greater than the proposed by FCS or given in AP-42. It will provide additional flexibility to minimize NO_X and SO_2 emissions.

No BACT determination was required for VOC. The Department set a limit higher than requested by FCS which will result in annual emissions less than the BACT threshold, but allow FCS a little more flexibility in optimizing all control for all combustion products.

No BACT determination was required for Pb. The limit requested by FCS was adopted insures BACT will not be triggered.

No BACT was required for Be. The limit requested by FCS was not adopted because it would trigger BACT. The adopted value willresult in emissions less than the PSD significant threshold value.

No BACT was required for Hg. The estimate provided by FCS will result in emissions less than the applicable BACT threshold.

Details of the Analysis May be Obtained by Contacting:

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C. H. Fancy, P.E., Chief
Bureau of Air Regulation

Date: 11/17/95

Approved By:

Howard L Rhodes

Howard L. Rhodes, Director
Division of Air Resources Mgmt.

Date: 11/17/95

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATION
PORTLAND CEMENT MANUFACTURING FACILITY
Florida Rock Industries
PSD-FL-228 and AC 01-267311
Alachua County

The applicant, Florida Rock Industries Inc. (FRI), plans to construct a 2,300 ton per day (maximum TPD as clinker) dry process portland cement plant with a preheater/precalciner design at its existing quarry approximately 2.5 miles northeast of Newberry, Alachua County, Florida. The project includes a single kiln and clinker cooler along with crushers, raw mill, finish mill, cement and clinker handling equipment, coal handling equipment, silos, and air pollution control equipment. The facility will, on average, operate at a lower rate and produce 712,500 tons per year (TPY) of clinker and yield 772,400 tons of portland cement per year. A process description is included in the Technical Evaluation and Preliminary Determination.

Table 1 is a list of the emission units from the proposed project.

BACT Determination Requested by the Applicant:

POLLUTANT	EMISSION LIMIT
Particulate Matter (kiln)	0.3 lbs/ton of dry kiln feed
Particulate Matter (cooler)	0.1 lbs/ton of dry kiln feed
Particulate Matter (material handling, conveying, storage)	0.01 gr/dscf by baghouses
Sulfur Dioxide (kiln)	0.54 lbs/ton clinker
Sulfuric Acid Mist (kiln)	Absorption by clinker. (future stack tests)
Nitrogen Oxides (kiln)	4.6 lbs/ton clinker
Carbon Monoxide (kiln)	3.6 lbs/ton clinker
Volatile Organic Compounds(kiln)	0.12 lbs/ton clinker
Beryllium	Particulate control equipment

Electrostatic Precipitators (ESPs) will be used to capture particulate matter from the kiln and the cooler. Fabric Filters (baghouses) and will be used to limit particulate emissions from all other process emission units.

Portland cement plants are among the major facilities listed in Florida Administrative Code (FAC) Chapter 62-212, Prevention of Significant Deterioration (PSD), Table 212.400-1, "Major Facilities Categories." A BACT determination is required for each pollutant exceeding the significant emission rates in Table 212.400-2, "Regulated Air Pollutants Significant Emissions Rates," which in this case are particulate matter (PM), sulfur dioxide (SO_2), carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_X), and Beryllium (Be).

This facility is also subject to:

- **40 CFR 60, Subpart F - Standards of Performance for Portland Cement Plants.**
- **40 CFR 60, Subpart OOO - Standards of Performance for Non-Metallic Mineral Processing Plants.**
- **40 CFR 60, Subpart Y - Standards of Performance for Coal Preparation Plants.**
- **40 CFR 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels).**

Date of Receipt of a BACT Application:

March 17, 1995

Review Group Members:

Teresa Heron and A. A. Linero of the New Source Review Section.

BACT Determination Procedure

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

(a) Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determination of any other state.

(d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from this facility can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as follows:

- Combustion Products (e.g., SO_2, NO_x, PM). Controlled generally by good combustion of clean fuels, reactions with clinker and raw materials, removal in add-on control equipment.

- Products of Incomplete Combustion (e.g., CO, VOC). Control is largely achieved by proper combustion techniques.

- Emissions from materials handling, conveyance, and storage (primarily PM). Controlled generally by fabric filters and reasonable precautions.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM, SO_2, H_2SO_4, fluorides, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

COMBUSTION PRODUCTS

Nitrogen Oxides (NOx)

Emissions of NO_X from dry process cement plants with a preheater/precalciner include the kiln, the calcining loop, and any fuel- fired support operation. Oxides of nitrogen (NOx) are generated during fuel combustion by oxidation of chemically bound nitrogen in the fuel (fuel NOx) and by thermal fixation of nitrogen in the combustion air (thermal NOx). As flame temperature increases, the amount of thermally generated NOx increases. Fuel type affects the quantity and type of NOx generated. Generally, natural gas is low in nitrogen. However it causes higher flame temperatures and generates more thermal NOx than oil or coal, which have higher fuel nitrogen content, but exhibit lower flame temperatures.

NO_X emissions represent a significant portion of the total emissions generated by this project, and should be minimized using BACT.

The emissions of NOx can potentially be reduced at Portland cement plants by two methods:

1. Minimizing the quantity of NOx generated during combustion (combustion modifications).

2. Reducing the quantity of NOx in the flue gas stream (flue gas controls).

A review of the EPA's BACT/LAER Clearinghouse indicates that NO_X emissions at most facilities are minimized by process control and good combustion practices.

The applicant stated that NO_X emissions at this facility will be controlled through Process Control and Secondary Combustion of Fuel. The applicant gave subsequent consideration to other possible control methods following a request by the Department for additional details justifying the selected method. The applicant rejected Selective Catalytic Reduction (SCR), Selective Non-catalytic Reduction (SNCR), and Low NO_X burners (LNB) "as technologies involving adverse economic or questionable environmental and energy impacts."

The applicant has proposed a NOx emission rate of 440.82 lb/hr. Taking into consideration the clinker production rate of 95.83 tons/hr and heat input of 364 MMBtu/hr, the proposed emission rate equates to 4.60 lb/ton feed and 1.21 lb/MMBtu, respectively.

The proposed NOx emission rate is compared below with previous BACT determinations made irrespective of cement manufacturing process.

Previous BACT Determinations

BASIS	Least Stringent	Most Stringent	Proposed
	Year 1978	Year 1981	Year 1995
lb/ton clinker	11.13	0.85	4.6

It is important to note that the facility which was given the 0.85 lb/ton NO_x limit has not been able to meet it since construction. Another plant with a NO_x limit of 1.11 lb/ton, utilizing the same process as planned by FRI, was never built. A plant with a process similar to that of FRI received a BACT determination of 2.09 lb NO_x/ton but apparently recieved a less stringent requirement in subsequent operating permits. Another plant with the same process as FRI received a NO_x value of 2.5 lb/ton. A review of the NOx emission rate summary indicates that the applicant's proposal is not representative of the most stringent BACT determinations made to-date for plants utilizing the same process. Also, these BACT determinations were established for sources which were permitted several years ago, and do not necessarily represent present top-down BACT evaluation.

The dry process with preheater/precalciner proposed by the applicant is the most energy-efficient process. Therefore one would expect the lower fuel use to result in the lowest possible emissions, all else being equal. Additionally, the lower flame temperature realized when burning coal (compared with burning gas or oil) as well as documented reductions from tire burning, are further reasons to expect the lowest possible emission rate among kilns employing Process Control and Secondary Combustion of Fuel.

A survey of stack test data from various kilns around the country, operating for more than three years, suggest that a lower emission level than the one proposed for NOx is possible . Additionally, the Department became aware of a recent BACT determination in Nevada which was based on application of SNCR. These factors will also be considered in determining what emission rate can be achieved in accordance with a top-down BACT determination.

Sulfur dioxide

Sulfur dioxide (SO_2) may be generated both from sulfur compounds such as sulfates in the raw materials and from sulfur (including pyrites) in the fuel. The sulfur content of both raw materials and fuels varies from plant to plant and with geographic location. Sulfur dioxide at this facility will be generated by the combustion

of coal and tires in the kiln and precalciner burners, and by the combustion of No. 2 fuel oil in the raw mill auxiliary heater. Sulfur reported as sulfite (SO_3) in the raw material is 0.08% (maximum as tested).

The exhaust gas from a cement kiln can contain varying amounts of SO_2. Under low oxygen conditions, sulfates in the raw materials can be converted to SO_2. At high temperature and excess air conditions, some of the sulfur introduced into the cement kiln with the raw materials (such as pyrites), and most of the sulfur contained in the fuel, are converted to SO_2. Most of the SO_2 subsequently reacts with oxygen and alkali compounds (such as Na_2O and K_2O vaporized at sintering temperatures) to form alkali sulfates, which are found in cement clinker and in kiln dust. The amount of SO_2 released in the kiln flue gases will vary with the amount of excess alkali available for absorption. Additional SO_2 may be removed through contact with the incoming raw materials and, to some extent, in the particulate control equipment.

Per the applicant, SO_2 control processes can be classified into five categories: fuel/material sulfur content limitations, absorption by a solution, adsorption on a solid bed, direct conversion to sulfur, or direct conversion to sulfuric acid.

FRI proposes to limit SO_2 emissions through Process Design and Material/Fuel Sulfur Limitations. This will be accomplished by taking advantage of the alkaline environment in the kiln, preheater/precalciner, and raw mill to effect substantial removal of SO_2. Ultimately the sulfur is incorporated into the clinker lattice structure, thus minimizing the amount emitted to the atmosphere. Some additional SO_2 removal through contact with particulate matter may also take place in the ESP.

The SO_2 limit proposed by the applicant (0.54 lbs/ton clinker) is less stringent than some BACT determinations for other portland cement plants.

A review of the BACT determinations for cement plants as contained in the BACT Clearinghouse indicates SO_2 reduction levels from 70 to 96% (percent) from facilities utilizing the dry processes. The Department did not find instances of BACT involving measures beyond those proposed by FRI. Some plants use baghouses for particulate control. It is possible that the filter cake on the bags enhances SO_2 removal compared with an ESP. However the difference is marginal compared with the primary removal mechanism involving oxidation of SO_2 to SO_3, alkali reactions, and subsequent removal of sulfates as particulate matter and clinker.

A survey of stack test data from different facilities around the country operating for at least three years demonstrates lower rates possible for SO_2. This factor along with the energy efficiency of the plant, and the possible benefits of removal by the particulate control system will be considered by the Department in making a top-down BACT determination.

COMBUSTION PRODUCTS

Particulate Matter (PM, PM10) and Beryllium

Particulate Matter is generated by the various physical and chemical processes at a cement manufacturing plant. Sources of particulate matter at cement plants include (1) quarrying and crushing, (2) raw material storage, (3) grinding and blending, 4) clinker production, 5) finish grinding, and 6) packaging and loading. Additional sources of PM are raw material storage piles, conveyers, storage silos, and unloading facilities. The largest emission source of PM within cement plants is the pyroprocessing system that includes the kiln and clinker cooler exhaust stacks. Emissions from kiln are affected by several factors, including differences in convective patterns, material movement patterns, burner locations and insertion lengths, heat transfer mechanisms, and the type of clinker cooler that supplies secondary air to the kiln for combustion. Typically, dust from the pollution control equipment servicing the kiln is collected and recycled into the kiln thereby, producing clinker from the dust. According to FRI's application, all cement kiln dust (CKD) captured in the ESP will be returned to the pyroprocessing system as raw material.

Common control devices for stack gases include settling chambers, inertial separators, impingement separators, wet scrubbers, fabric filters, and electrostatic precipitators. Fabric filters (baghouses) and electrostatic precipitator (ESPs) are generally considered equivalent for particulate control. Both types of devices can achieve removal efficiencies of over 99%. ESPs and baghouses are used extensively as control devices at cement plants. ESPs are generally specified for kiln and clinker cooler exhaust gases because of their ability to operate effectively at varying temperatures. Baghouses are also used at various facilities for particulate control from kilns and coolers. Both types of control equipment provide for the recovery/recycling of collected dust back into the process stream. Baghouses are also used to control particulate emissions from most other material processing operations at cement plants.

Common controls to limit particulate emissions from fugitive sources (such as roadways, stockpiles, and material processing and

conveying equipment) include wet suppression, sweeping, application of surfactants, paving of roads and covering of stockpiles to reduce wind erosion. Wet suppression of fugitive particulate emissions is considered as BACT for most material handling operations and unpaved roads. Wind erosion of particles from stockpiles can be limited by the processing of wet materials (1.5% moisture or greater), and by covering of stockpiles where feasible.

Small quantities of beryllium are generated by the combustion of coal in the kiln and calciner burner, and by the combustion of No. 2 fuel oil in the raw mill auxiliary air heater. Beryllium will be generated as a particulate emission from the combustion of fuels, and will be controlled by the ESP on the kiln.

A review of the BACT Clearinghouse shows that baghouses and ESPs are widely used to control particulate matter from process emission units at cement plants. They are commonly accepted as BACT.

The applicant has proposed the New Source Performance Standard NSPS limits of 0.3 per ton of dry feed (kiln) and 0.1 pounds per ton of dry feed (cooler) as BACT for this facility. The NSPS values constitute the "floor" for BACT determinations. Consideration will also be given to any more stringent emission rates determined for kilns in Florida.

PRODUCTS OF INCOMPLETE COMBUSTION

Carbon Monoxide and Volatile Organic Compounds

Carbon monoxide is a pollutant formed by the incomplete combustion (oxidation) of carbon containing compounds in the cement kiln fuel and during the transformation of cement raw materials to cement clinker. When insufficient oxygen is provided, more CO and less CO_2 are formed than under excess air conditions. Substantial quantities of CO and CO_2 are also generated through calcining of limestone and other calcareous material. This calcining process thermally decomposes $CaCO_3$ to CaO and CO_2. The calcining of limestone in the cement manufacturing process liberates large amounts of CO_2, which is available for dissociation into CO.

VOC is also a pollutant formed by the incomplete combustion of fuel or hydrocarbons contained in the raw materials.

Emissions of CO can potentially be reduced at portland cement plants by two main methods: utilization of proper combustion practices to maximize the oxidation of CO to CO_2 and reducing the quantity of CO in the flu gas stream (flue gas control).

Emissions of VOC can be controlled by add-on control devices by the mechanisms of adsorption, absorption, or incineration (afterburning). Incineration processes include flame incineration, thermal incineration, and catalytic incineration. No add-on controls for CO or VOC have been demonstrated for cement plants. The high temperatures and control of excess air and fuel, typically results in simultaneous optimization for control of products of incomplete combustion and NO_X. The applicant proposes combustion control as BACT for VOC and CO from this plant.

A review of the BACT Clearinghouse reveals that for CO and VOC, as BACT from cement plants for these pollutants is as proposed by the applicant.

BACT Determination by DEP:

Based on the information provided by the applicant and the information searches conducted by the Department, lower emissions limits can be obtained employing the top-down BACT approach for SO_2 and NO_X.

The Department has determined that the NO_X and SO_2 levels proposed by the applicant are roughly equal to typical emission limits from plants already in operation throughout the country and do not reflect the most stringent BACT determinations for portland cement plants. The Department appreciates the concern by the applicant that compliance with such emissions limits may be more difficult in the future as a result of possible implementation of enhanced monitoring requirements pursuant to the Title V Operating Permit Program. However, there has not been any change in the methods for setting limits as a result of this pending program.

The Department reviewed Document EPA-453/R-94-004, "Alternative Control Techniques - NO_X Emissions from Cement Manufacturing." Various methods beyond the one proposed by the applicant are detailed. Some of the methods discussed therein are already planned for this project including tire burning and staged combustion. As previously mentioned, the high energy efficiency of the dry preheater/precalciner process also suggests a lower NO_X limit is achievable. Based on the referenced document, it appears that SNCR, Low NO_X burners and Indirect Firing are available (at least as technology transfer) to consider in achieving a lower NO_X emission limit.

The Department also reviewed a paper presented at the Air and Waste Management Association (AWMA) International Specialty Conference on Waste Combustion in Boilers and Industrial Furnaces. The paper, "Reduction of NO_X Emissions from Cement Kiln/Calciner through the

Use of the NO_XOUT Process," which was written by representatives of Nalco and Ash Grove Cement, suggests that SNCR is a viable control method. A level as low as 1.0 lb/ton of clinker was reached based on demonstration tests conducted at the Ash Grove cement plant in Seattle, Washington.

Recently a proposed cement plant (Great Star Cement, Clark County, Nevada) was permitted with the urea-based SNCR/NO_XOUT process as BACT. The process relies on the reaction between ammonia and NO_X to yield molecular nitrogen. The delivery system consists of urea injectors in one of the preheater sections. The objective was to achieve only 50% reduction in NO_X emissions. At that level there should be no ammonia slip while meeting the BACT limit of 3.1 lb/ton clinker.

The Department examined the worst case scenario which assumes that FRI can only achieve its proposed BACT NO_X value of 4.6 lb/ton clinker while employing process control and secondary combustion of fuel. The Department reviewed the degree to which SNCR can be employed in order to achieve a further NO_X reduction to 2.5 lb/ton clinker.

Based on a recent Nalco estimate prepared for Great Star Cement, the capital costs for servicing a 3100 TPD kiln is $471,000 ($54,165 on an annualized basis). Operating costs to reduce NO_X emissions by 3.0 lb/ton clinker are estimated at $674,000. First year costs are projected to be $728,000 and $410/ton NO_X removed. After adjusting only the operating costs for the smaller FRI kiln and lesser removal objective, annual operating costs would be roughly $400,000. Thus the first year costs would be approximately $450,000 for a marginal cost less than $400/ton NO_X removed and less than $0.50/ton of clinker.

The cost per ton of NO_X removed is well within BACT costs for industry in general. The added cost to clinker production is low relative to other factors such as raw material, product, transportation cost fluctuations.

The Department is also aware of a cement plant owned by Mitsubishi in California, which makes use of a similar principal by injecting municipal wastewater sludge into a preheater section and relying (to some extent) on released ammonia to help lower NO_X emissions.

In addition to the BACT Clearinghouse and performance test results, the Department also reviewed various cement technology documents detailing the chemical reactions and technological problems of making cement. It is the conclusion of the Department that the key factors in SO_2 removal is maintaining proper ratios of sulfur and alkali in the kiln environment and intimate contact between raw

materials and exhaust gases. This is considered by the Department to be BACT. It is clear that FRI can, with good operating practices, insure the lowest possible SO_2 emissions through its preheater/precalciner dry process. The Department believes that lower SO_2 values than proposed by the applicant are possible without add-on gas treatment systems.

The Department has also concluded that sulfuric acid mist emissions are not expected to be significant because free sulfite (SO_3) will preferentially react with clinker and kiln dust in the alkali environment of the kiln. Also, little water is available to complete the reaction to acid mist.

The BACT emission levels are established by the Department as follows:

Source	Pollutant Emission Limit
Kiln (PM)	0.20 pounds particulate matter per ton of feed (dry basis) and 0.31 lbs/ton clinker
Kiln (PM_{10})	0.26 lbs/ton clinker
Kiln (VE)	Visible emissions not to exceed 10 percent opacity
Kiln (SO_2)	0.28 lbs/ton clinker (interim) 24 hr rolling average Coal (0.75% sulfur by weight), No. 2 fuel oil (0.05% sulfur by weight), and tires (up to 30% of heat input) are the only fuels allowed
Sulfuric Acid Mist	Absorption by clinker (future stack tests)
Kiln (NOx)	Revised to 3.8 ~~2.5~~ lbs/ton clinker - ~~24~~ hr rolling average
Kiln (CO)	3.6 lbs/ton clinker - 1 hr average
Kiln (VOC)	0.12 lbs/ton clinker - 1 hr average
Kiln (Be)	as controlled by PM BACT (ESP)
Cooler(PM)	0.10 pounds particulate matter per ton of kiln feed (dry basis) and 0.16 lbs/ton clinker

Cooler (PM10)	0.13 lbs/ton clinker
Cooler (VE)	Visible emissions not to exceed 10% opacity
Materials Handling Storage, Conveyance	Visible emissions not to exceed 10% opacity

Compliance with the particulate emission limitations shall be in accordance with the EPA Reference Method 5 as contained in Appendix A, 40 CFR 60, and set forth in Subsection 60.64 of the NSPS for Portland Cement Plants, 40 CFR 60.

Compliance with opacity standards shall be determined by conducting observations in accordance with 40 CFR 60, Appendix A, Method 9.

Compliance with the SO_2 and NO_x emission limitations shall be demonstrated using the CEMS.

Compliance with the CO limitations shall be demonstrated by 3 one-hour tests using EPA Method 10.

Compliance with the VOC limitations shall be demonstrated by 3 one-hour stack tests using Method 25 or Method 25A.

Pursuant to FAC 62-4.070(3), 62-212.400(5)(c) and 62-296.330, the kiln exhaust stack shall be equipped with continuous monitors to record NO_x and SO_2 for the purposes of compliance; opacity at both stacks to indicate proper maintenance and operation; and carbon monoxide and/or oxygen to optimize pollution control.

An additional purpose of the continuous monitors is to conduct a one-year program to optimize pollution removal and relate process variables to emissions. The Department will also consider a higher sulfur limit in the coal if it can be shown that the alkali/sulfur ratios are sufficiently balanced to minimize any additional SO_2 emissions.

BACT Determination Rationale:

BACT for visible emissions was determined to be more stringent than the NSPS for Portland Cement Plant, 40 CFR 60., Subpart F. With respect to the kiln, BACT for PM was determined to be more stringent than the NSPS for Portland Cement Plant, 40 CFR 60., Subpart F. The basis is the BACT Determination set by EPA for Pennsuco Cement, Medley, Florida in 1980.

BACT for SO_2 emissions from the cement kiln was based on the lowest number given in the BACT Clearinghouse. However the Department

recognizes that because of the wide differences in fuels and raw materials nationwide it may be possible to meet a lower number or impossible to meet the value recommended by the Department. That is why the limit given is only an interim one. The final one will be determined after review of the process/pollutant optimization program described above.

For each small fabric filter in the material handling process the exhaust gases must not exhibit greater than 10 percent opacity. The Department has determined that 10 percent opacity is BACT, and is attainable with a baghouse.

BACT for NO_x emissions from the cement kiln was determined to be equal to 2.5 pounds per tons of clinker. This rate was obtained from the BACT clearinghouse report and was achieved by a dry preheater/precalciner process plant. Unless the company commits to installing SNCR, FRI will need to develop a contingency project plan to implement additional technology if the plant fails to meet the NO_x limit. The Department will need to review and approve that plan prior to initiation of construction.

Details of the Analysis May be Obtained by Contacting:

Teresa Heron, Review Engineer
A. A. Linero, Administrator, New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

_____
C. H. Fancy, P.E., Chief
Bureau of Air Regulation

Date: _____

Approved:

_____
Howard L. Rhodes, P.E., Director
Division of Air Resources Management

Date: _____

Best Available Control Technology (BACT) Determination
Southdown, Inc. dba Florida Mining & Materials
Hernando County

The applicant proposes an increase in the allowable nitrogen oxide (NOx) emission limitation to 250 lbs/hr (8200 hrs/yr), which results in a significant increase in emissions. The purpose for the increase is to adjust the cement kiln's allowable limit upward to compensate for potential peaks in NOx emissions that would be in violation with the current allowable limitation of 162.3 lbs/hr (8200 hrs/yr). Due to source obligation, the base limitation used for evaluation purposes was 158.4 lbs/hr (7896 hrs/yr). The facility is located in an area designated attainment for all of the criteria pollutants.

The applicant has indicated the maximum net change in pollutant emissions is as follows:

Pollutant	Max. Net Increase in Emissions (TPY)	PSD Significant Emission Rate (TPY)
NOx	399.6	40

Rule 17-2.500(2)(f)(3) of the Florida Administrative Code (F.A.C.) requires a BACT review of all regulated pollutants emitted in an amount equal to or greater than the significant rates listed in Table 500-2, F.A.C. Chapter 17-2.

BACT Determination Requested by the Applicant:

No. 2 Cement Kiln

NOx 250 lbs/hr, 30-day average

Date of Receipt of a BACT Application:

April 22, 1992

Review Group Members:

This determination was based on comments received from the applicant and the Permitting and Standards Section.

waste combustors, industrial and utility boilers, glass furnaces, and gas turbines, but not for portland cement kilns. Due to the optimum operational temperature requirements, the siting of a SCR or SNCR system in this existing cement kiln's configuration would be difficult and could lead to such problems as catalytic poisoning, additional NOx formation, inoperable conditions and adverse chemical reactions. As such, these add-on control systems are not considered technically proven and feasible at this time.

Another NOx reduction technique that was considered was the use of a low-NOx burner system. An evaluation was conducted for the potential availability of a low-NOx burner system for this type of source and it appears that this technology is not currently available.

Previous NOx BACT determinations have justified emissions limits of 240 - 1158 lbs/hr, of which the proposed limit of 250 lbs/hr is on the lower end. Another comparison is in "lbs NOx/ton clinker", and the range is 3.5 - 5.6, of which the No. 2 cement kiln will be at 3.2; also, on the lower side of the range for affected sources. Therefore, the NOx BACT limit recommended by the applicant is within the range of the previously issued BACT determinations; also, the control of excess combustion air and proper operation is currently being used to minimize NOx emissions.

A review of the proposed NOx increase in potential emissions have shown that there will not be an adverse affect to the environment.

In conclusion, the NOx emission rate requested by the applicant of 250 lbs/hr, 30-day average, is representative of BACT. For verification purposes, an annual test shall be conducted over a continuous 30-day period using EPA Reference Method 7E in accordance with 40 CFR 60., Appendix A (July, 1991 version).

BACT Determination Summary and Results:

C. No. 2 Cement Kiln

For the No. 2 Cement Kiln, the Department has evaluated the pollutant NOx for BACT. The Department will establish the emission rate for NOx at the emission rate that was requested by the applicant. Therefore, the Department has determined that BACT should be as follows:

*NOx	250 lbs/hr, 30-day average; 1025.0 TPY (8200 hrs/yr) Process design and operation

BACT Determination Procedure

In accordance with Florida Administrative Code Chapter 17-2, Air Pollution, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that in making the BACT determination the Department shall give consideration to:

(a) Any Environmental Protection Agency determination of Best Available Control Technology pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determinations of any other state.

(d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

BACT Analysis:

A. No. 2 Cement Kiln

NOx emissions potentially can be controlled by post-combustion reduction systems (i.e., selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR). Such add-on systems have been proposed or recommended for such source categories as municipal

Details of the Analysis May be Obtained by Contacting:

Bruce Mitchell, Permitting Engineer
Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

January 14, 1993
Date

Approved by:

Carol M. Browner, Secretary
Dept. of Environmental Regulation

Jan 26, 1993
Date

Department of Environmental Protection

Lawton Chiles
Governor

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Virginia B. Wetherell
Secretary

Received Dec 22, 97

FACSIMILE TRANSMISSION SHEET

Talked to Zell David on 12/22 at 11:50 am

DATE 12/17/97

To: Al Linero and Teresa Heron, DARM/BAR NSR Section

Phone #: Fax #: (850) 922-6979

From: David Zell - Permit Engineer

DEP Southwest District Office - Air Program

Phone: (813) 744-6100 Ext. 118

Operator: DRZ

Subject: Southdown, Inc. - Revised Title V Application w/ Modification Requests

Attached is a copy of the October 20, 1997 cover letter that accompanied Southdown's ELSA electronic submittal of their revised Title V application (which by the way we cannot view or print because EARS is non-functional in the SWD !). In the letter they reference modifications made in BAR-issued construction permit 0530010-003-AC (PSD-FL-233) (issued on June 27,1997) and request that certain changes be made to the operating hour and operating rate limitations of other Kiln No. 1 emission units "to reflect the provisions of PSD-FL-233". In addition they request changes to testing frequency on both kilns and clinker coolers and request the lowering of a PM limit on a cement silo baghouse. It appears from the language of the letter ("As part of this Title V application ...") that they are requesting that these changes be made as part of the Title V permitting process.

All of the operating hour and process rate limitations to be changed (as well as the PM limit to be lowered) were established in construction permits. We feel that this makes these changes modifications requiring a construction permit. Southdown claims that the changes do not trigger a PSD review because they will not in result a significant net increase of PM or PM10 (spreadsheet attached to letter shows PM increase of 17.5 TPY and PM10 increase of 14.89 TPY). We wonder why these modifications were not processed as part of the PSD-FL-233 application (did this subject of additional modifications to other EU's associated with Kiln No. 1 come up during processing of the application ?) and whether emission increases associated with the requested set of modifications are not really a part of the PSD-FL-233 project. Please let us know your thoughts on these issues. (AC required ? PSD review triggered ? Link to PSD-FL-233 ?)

The testing frequency requirement for the kilns and clinker coolers was just recently established by BAR in Specific Condition No. 5.1 of PSD-FL-233. We question whether it is appropriate for the District to consider making this change so soon after the PSD permit was issued. Is Southdown possibly sidestepping BAR NSR Section by requesting this change from the District ? Was the change requested by Southdown during the PSD permit processing and intentionally not granted by BAR ? Would a change in test frequency be considered as a modification of the PSD permit thereby requiring an AC ? In addition to the above questions, we have no precedent for using a '80% of the limit' criteria for reducing test frequency from annually to once every 5 years based on one compliance test. In the past when we have reduced test frequency it has been based upon a history of testing at levels significantly lower than 80% of the allowable. Southdown references as its main justification the upcoming MACT rule for cement plants (which we have not seen yet to my knowledge). Please comment on the above issues and how you feel that we should handle this testing frequency request.

Thank you very much for your assistance and cooperation.

Total Number of Pages, Including Cover Page: 6

DEP SWD Air Program Fax Number : (813) 744-6458

Southdown
Brooksville Cement Plant

October 20, 1997

Richard D. Garrity, Ph.D.
Director of District Management
Southwest District
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

Re: Southdown Inc. Title V Permit Application Revision

Dear Dr. Garrity:

Enclosed is a revised submission of Southdown's application (4 copies) for a Title V permit for our Portland cement manufacturing plant near Brooksville originally filed on June 13, 1996. We are submitting Section I and a resigned Compliance Statement (Attachment H) in hard copy, and Sections II and III in ELSA 1.3b.

The major reason for this revised submission is to reflect the provisions of PSD-FL-233 issued on June 20, 1997. One of the significant changes in this Prevention of Significant Deterioration (PSD) permit is to increase the permitted hours for the No. 2 kiln and clinker cooler from 8200 to 8760 h/yr. As part of this Title V application, Southdown is requesting that the allowed operating hours for six other sources related to the No. 2 kiln system also be increased from 8200 to 8760 hours per year. To be consistent, it is also necessary to increase the permitted throughput for the No. 3 clinker silo (LO7) from 84 tons/h to 100 tons/h. Finally, Southdown is requesting that the throughput limits for the No. 1 kiln clinker silos (F31) be increased to 8760 h/yr and 100 tons/h to be consistent with the permitted hours and throughputs for the other units in the No. 1 kiln system. The enclosed spreadsheet shows that this increase will not result in a significant net increase of either particulate matter or PM_{10} and thus does not trigger PSD review. The ELSA forms have been completed using 8760 hours per year for these sources.

We have also corrected and updated several regulatory citations for applicable Florida rules. Except for an updated schedule for evaluating compliance issues related to fugitive emissions from the clinker reclaim (Document G) and a resigned compliance statement (Document H), the other enclosed documents are unchanged and are not being resubmitted.

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(800) 727-6261 • (352) 796-7241 • Fax: (352) 754-9836

For several sources, this application also requests changes to the testing frequency specified in PSD-FL-233 based on FAC 62-297.310(4) and the upcoming maximum achievable control technology (MACT) rule for Portland cement plants. For pollutants with allowable emissions greater than 100 tons/yr, this application generally reflects an annual compliance test pursuant to FAC 62-297.320(4). Because FAC 62-297 allows the DEP to establish other testing frequencies by permit, Southdown requests that if the initial compliance test for the kiln main stacks is less than 80 percent of the allowable emission limits for particulate matter, the Method 5 testing frequency for these sources be established at once every 5 years. This is consistent with the Method 5 testing frequency in the upcoming Portland cement MACT rule. Also, these stacks have continuous opacity monitors (COMs) that provide a continuous measure of particulate matter compliance. Method 9 opacity tests would be conducted on an annual basis. We believe these conditions would provide adequate assurance of compliance without the expense of an annual Method 5 test.

Because FAC 62-297.310(4) does not require an annual compliance test for SO_2 from the kiln stacks or particulate matter from the clinker cooler stacks (because potential emissions are less than 100 tons/yr for each pollutant), we are requesting a change in the testing frequency to once every 5 years as provided in the upcoming MACT rule.

For baghouse H3 (serving the cement silos for kiln No. 1, Unit 13) Southdown is requesting an allowable emission rate that is substantially more stringent than the limit in the current permit (AC 27-259945). The requested limits (2.22 lb/h and 9.7 tons/yr, compared to 36.05 lb/h and 157.9) are based on an estimated grain loading of 0.02 gr/dscf. These limits are being requested to avoid any obligation for an annual Method 5 test for this source. An annual Method 9 opacity test will, of course, be performed. This application reflects all of the requested changes discussed above.

Finally, this application reflects the applicability of EPA's recently signed Compliance Assurance Monitoring (CAM) rule (40 CFR Part 64) to all of the sources controlled by baghouses at the plant. As provided in 40 CFR 64.5, however, no Part 70 permit submission is required until the Title V permit is renewed or significantly modified (as long as your office finds this application complete by mid-April 1998). Thus, this application does not have information specifically related to compliance with the CAM rule.

If you have any questions or require further information, please call Matt Stone at (352) 796-7241.

Sincerely yours,

Don Kelly

Don Kelly
Plant Manager

DKB/tlp

Enclosure

PARTICULATE EMISSION INCREASES FOR SOUTHDOWN-BROOKSVILLE

ARMS No.	EPN No.	Baghouse ID No.	Source Description	Material	Flow Rate (acfm)	Temp. (F)	Grain Loading (gr/act)	Flow Rate (dscfm)	Actual Operating Hours (hrs/yr)	Requested Maximum Hours (hrs/yr)	Actual TSP Emissions (Ton/yr)	Allowable/ Potential TSP Emissions (Ton/yr)	Actual PM10 Emissions (Ton/yr)	Allowable/ PM10 Emissions (Ton/yr)	TSP Emissions Increase (Ton/yr)	PM10 Emissions Increase (Ton/yr)
012	EPN 12	G11	#2 Kiln Blending Silo	Raw Meal	11000	200	0.01	8800	8000	8760	3.77	4.86	3.21	4.13	1.09	0.93
015	EPN 15	L07	#3 Clinker Silo	Clinker	8500	185	0.01	6958	8000	8760	2.91	6.35	2.48	5.40	3.44	2.92
017	EPN 17	M09	Gypsum Hopper Transfer Belt	Gypsum	3000	150	0.01	2597	8790	8760	0.67	2.23	0.74	1.90	1.56	1.16
018	EPN 18	M10	#3 Finish Mill Day Tank	Cement	8500	140	0.01	7480	8790	8760	2.47	6.35	2.10	5.40	3.88	3.30
019	EPN 19	N23	#3 Finish Mill	Cement	46000	200	0.01	35800	8790	8760	13.39	17.52	11.38	14.89	4.13	3.51
013	EPN 13	H13	#2 Kiln Feed	Raw Meal	6000	130	0.01	5369	8000	8760	2.06	4.47	1.75	3.80	2.41	2.05
008	EPN 08	F31	Clinker Silos 1 & 2	Clinker	16000	200	0.01	12000	8000	8760	5.14	6.35	4.37	5.40	1.21	1.03
									TOTAL		30.52	48.14	26.03	40.92	17.52	14.89

NOTE:

ACTUAL EMISSIONS BASED ON ENGINEERING ESTIMATE OF GRAIN LOADING, FLOW RATE, AND TEMPERATURE AND ACTUAL OPERATING HOURS.

PM10 ACTUAL EMISSIONS BASED ON A PM10 FRACTION OF TSP = 85%

ALLOWABLE/POTENTIAL EMISSIONS BASED ON HOURLY EMISSION LIMITS AND 8760 HOURS.
EMISSIONS INCREASE = ALLOWABLE - ACTUAL

Fold at line over top of envelope to the right of the return address

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Don Kelley, Plant Mgr.
Southdown, Inc
PO Box 6
Brooksville, Fl
34605-0006

4a. Article Number
P 265 659 134

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
3/20/97

5. Received By: *(Print Name)*
Darlene A. Berger

8. Addressee's Address *(Only if requested and fee is paid)*
Wd

6. Signature: *(Addressee or Agent)*
X Darlene A. Berger

TAMPA FL

PS Form **3811**, December 1994 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

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Receipt for Certified Mail
No Insurance Coverage Provided.
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Street & Number Southdown	
Post Office, State, & ZIP Code Brooksville, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 3-18-97	

PS Form **3800**, April 1995

0530010-003-AC