

# Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

October 28, 1992

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

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

Dear Mr. Kelly:

Attached is one copy of the Revised Technical Evaluation and Preliminary Determination and proposed permit for the modification to the No. 2 cement kiln. The modification will allow a significant increase in the allowable emissions of NO<sub>x</sub>, nitrogen oxides.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Preston Lewis of the Bureau of Air Regulation.

Sincerely,

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

CHF/BM/rbm

Attachments

cc: B. Thomas, SWD  
J. Koogler, Ph.D., P.E., K&A  
J. Harper, EPA  
B. Mitchell, NPS  
C. Hetrick, HCBCC  
D. Beason, Esq., DER  
D. Dee, Esq., CFWES&C

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

CERTIFIED MAIL

In the Matter of an  
Application for Permit by:

DER File No. AC 27-212252  
PSD-FL-188  
Hernando County

Southdown, Inc. dba  
Florida Mining & Materials  
Post Office Box 6  
Brooksville, Florida 34605-0006

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INTENT TO ISSUE

The Department of Environmental Regulation gives notice of its intent to issue a permit (copy attached) for the proposed project as detailed in the application specified above, for the reasons stated in the attached Revised Technical Evaluation and Preliminary Determination.

The applicant, Southdown, Inc. dba Florida Mining & Materials, applied on April 22, 1992, to the Department of Environmental Regulation for a permit to modify the No. 2 cement kiln. The modification will allow a significant increase in the allowable emissions of NOx, nitrogen oxides, as an adjustment upward to compensate for any potential peaks in NOx emissions that would put the kiln in violation with its current allowable limit. The proposed action will occur at the existing facility located off U.S. Highway 98 northwest of Brooksville, Hernando County, Florida.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.) and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that a construction permit is required for the proposed work.

Pursuant to Section 403.815, F.S., and Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "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 the one with significant circulation in the area that may be affected by the permitting action. 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, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 (904-488-1344), within 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.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 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 at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

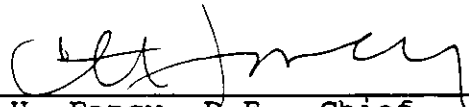
The Petition shall contain the following information;

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department 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 facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and,
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL REGULATION



C. H. Fancy, P.E., Chief  
Bureau of Air Regulation  
2600 Blair Stone Road  
Tallahassee, Florida 32399  
904-488-1344

c: B. Thomas, SWD  
J. Koogler, Ph.D., P.E., K&A  
J. Harper, EPA  
B. Mitchell, NPS  
C. Hetrick, HCBCC  
D. Beason, Esq., DER  
D. Dee, Esq., CFWES&C

**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy clerk hereby certifies that this INTENT TO ISSUE and all copies were mailed by certified mail before the close of business on 11-12-92 to the listed persons.

Clerk Stamp

**FILING AND ACKNOWLEDGMENT**

FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Keri J. Ober                      11-12-92  
Clerk    Date

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
NOTICE OF INTENT TO ISSUE PERMIT

AC 27-212252  
PSD-FL-188

The Department of Environmental Regulation gives notice of its intent to issue a permit to Southdown, Inc. dba Florida Mining & Materials, Post Office Box 6, Brooksville, Florida 34605-0006, for a modification to the No. 2 cement kiln. The modification will allow a significant increase in the allowable emissions of NOx, nitrogen oxides, as an adjustment upward to compensate for any potential peaks in NOx emissions that would put the kiln in violation with its current allowable limit. The proposed modification will occur at the existing facility located off U.S. Highway 98 northwest of Brooksville, Hernando County, Florida. A determination of Best Available Control Technology (BACT) was required. The Class I nitrogen dioxide increment consumed is 0.32 vs. 2.5 allowable annual average, in micrograms per cubic meter. The maximum predicted increase in ambient concentration for nitrogen dioxide is less than significant in the Class II area surrounding the plant, thus no increment consumption was calculated. The Department is issuing this Intent to Issue for the reasons stated in the Revised Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (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 at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department 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 facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and,
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application 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 Regulation  
Bureau of Air Regulation  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Department of Environmental Regulation  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619-8218

Hernando County Government Center  
Administration Building  
20 N. Main Street, Rm. 461  
Brooksville, Florida 34601

Any person may send written comments on the proposed action to Mr. Preston Lewis at the Department's Tallahassee address. All comments received within 30 days of the publication of this notice will be considered in the Department's final determination. Further, a public hearing can be requested by any person. Such requests must be submitted within 30 days of this notice.

Revised  
Technical Evaluation  
and  
Preliminary Determination

Southdown, Inc. dba Florida Mining & Materials  
Hernando County  
Brooksville, Florida

Construction Permit Number  
AC 27-212252  
PSD-FL-188

Department of Environmental Regulation  
Division of Air Resources Management  
Bureau of Air Regulation

October 28, 1992



## I. Application

### A. Applicant

Southdown, Inc. dba  
Florida Mining & Materials  
Post Office Box 6  
Brooksville, Florida 34605-0006

### B. Project and Location

Southdown, Inc. dba Florida Mining & Materials (FM&M) submitted an application package for a construction permit to increase the No. 2 cement kiln's emissions of NOx (nitrogen oxides) above the significant level (> 40 TPY). An Intent to Issue package, which included a Technical Evaluation and Preliminary Determination, proposed construction permit, and proposed BACT (Best Available Control Technology) determination, was issued on September 21, 1992, establishing a NOx emission limitation and compliance methodology. Based on a review of the proposed Intent package, comments were received from the applicant requesting changes that affect the original Intent package significantly enough to warrant issuing a revised Intent package. The project will occur at FM&M's portland cement facility located approximately nine miles northwest of Brooksville, off U.S. Highway 98, in Hernando County.

The UTM coordinates are Zone 17, 356.0 km East and 3,169.2 km North.

### C. Source Description and Controls

The kiln is used to produce clinker. The maximum kiln input feed rate of raw materials and recycle is 130 tons per hour, which is based on a measured preheater feed rate of 145 tons per hour, producing 79.6 tons per hour of clinker.

The No. 2 cement kiln's (kiln) primary fuel is coal, with a maximum heat input rate of 300 MMBtu/hr, which is based on a maximum coal feed rate of 24,000 lbs/hr. Flolite, a re-refined oil blend, is used as a start-up and a secondary fuel; and, the maximum feed rate is 2,069 gals/hr.

A baghouse is used to control the emissions of particulate matter (PM/PM<sub>10</sub>).

Low excess air firing and proper operation practices are used to minimize the emissions of NOx. The kiln will have a continuous oxygen monitor to analyze the oxygen in the kiln inlet, which is the exit point of the process combustion gases.

D. The Source Industrial Classification code is 3241: Cement Manufacturing.

E. The Source Classification Code numbers are:

- o 3-05-006-06 Cement Mfg-Dry Process Tons Cement Produced
- o 3-90-002-01 Bitum. Coal-Cement Kiln Tons Burned
- o 3-90-013-89 Liquid Waste-General 1000 Gals Burned

## II. Rule Applicability

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4, and 40 CFR (July, 1991 version).

The application package was deemed complete on June 24, 1992.

The facility is located an area designated as attainment for all criteria pollutants pursuant to Part IV, F.A.C. Chapter 17-2.

The facility is a major emitting facility for the pollutant NOx, in accordance with F.A.C. Rule 17-2.100, Definitions.

The proposed significant increase of NOx emissions is subject to the Prevention of Significant Deterioration (PSD) preconstruction review requirements pursuant to F.A.C. Rule 17-2.500(5), which includes the determination of Best Available Control Technology (BACT). BACT determination guidance is found in F.A.C. Rule 17-2.630.

In a previous PSD evaluation (PSD-FL-124), the kiln was permitted at 1025 TPY (250 lbs/hr @ 8200 hrs/yr) for NOx, which is the allowable level that the applicant is now seeking. A subsequent modification to the kiln (AC 27-173474 and PSD-FL-124A) resulted in an allowable NOx emissions level of 665.3 TPY (162.3 lbs/hr @ 8200 hrs/yr), which was a 39.9 TPY increase above the actual emissions level of 625.4 TPY (158.4 lbs/hr @ 7896 hrs/yr). The previous BACT determination required that low excess air firing be used to minimize NOx emissions.

The kiln is subject to the applicable provisions of F.A.C. Rules 17-2.600(7), Portland Cement Plants, and 17-2.660, Standards of Performance for New Stationary Sources, Section 60.60, Subpart F, Portland Cement Plants. Also, the kiln is subject to the applicable provisions of F.A.C. Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; and, 17-2.700: Stationary Point Source Emission Test Procedures. All applicable provisions of the 40 CFR shall be in accordance with the July, 1991 version.

The kiln inlet exhaust gas continuous emissions monitor for analyzing oxygen shall be calibrated, operated, recorded, and maintained in proper operating order.

When the kiln is switched to firing 100% Flolite for emergency purposes, the Department's Southwest District office shall be notified. In general, a log book shall be maintained recording, at a minimum, the date(s) and the beginning and ending "clock time(s)" of operation while firing 100% Flolite.

### III. Best Available Control Technology Determination

Because of the significant increase in emissions of NOx, a determination of BACT is required.

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 waste combustors, industrial and utility boilers, glass furnaces, and gas turbines, but currently 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.

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).

#### IV. Emission Limitations and Air Quality Analysis

##### A. Emission Limitations

Except for NO<sub>x</sub>, all other pollutants will remain at their presently permitted limits/standards. For NO<sub>x</sub>, the allowable emission limit shall be 250 lbs/hr, 30-day average; and, 1025 TPY (8200 hrs/yr).

##### B. Air Quality Analysis

###### 1. Introduction

The proposed project will result in emissions increases which are projected to be greater than the PSD significant emission rate for NO<sub>x</sub>. Therefore, the project is subject to the PSD NSR (new source review) requirements contained in F.A.C. Rule 17-2.500(5) for this pollutant. Part of these requirements is an air quality impact analysis for these pollutants, which includes:

- A PSD increment analysis;
- An analysis of existing air quality;
- An ambient Air Quality Standards analysis (AAQS);
- An analysis of impacts on soils, vegetation, visibility and growth-related air quality impacts; and,
- A Good Engineering Practice (GEP) stack height determination.

The analysis of existing air quality generally relies on preconstruction monitoring data collected in accordance with EPA-approved methods. The AAQS analyses are based on air quality dispersion modeling completed in accordance with EPA guidelines.

Based on these 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 contribute to a violation of any PSD increment or ambient air quality standard. A brief description of the modeling methods used and results of the required analyses follow. A more complete description is contained in the permit application on file.

###### 2. Analysis of the Existing Air Quality

Preconstruction ambient air quality monitoring may be required for pollutants subject to PSD review. However, an exemption to the monitoring requirement can be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined through air quality modeling, is less than a pollutant-specific de minimus concentration. The

predicted maximum concentration increase for NO<sub>x</sub> is 0.53 ug/m<sup>3</sup>, annual average, which is less than the PSD de minimus concentration for NO<sub>x</sub> of 14 ug/m<sup>3</sup>, annual average. Therefore, this project is not subject to preconstruction ambient air quality monitoring.

### 3. Modeling Method

The EPA-approved Industrial Source Complex Short-Term (ISC-ST2) dispersion model was used by the applicant to predict the impact of the proposed project on the surrounding ambient air. All recommended EPA default options were used. Downwash parameters were used because the stacks were less than the good engineering practice (GEP) stack height. Five years of sequential hourly surface and mixing depth data from the Tampa, Florida National Weather Service (NWS) station collected during 1982 through 1986 were used in the model.

### 4. Modeling Results

The applicant first evaluated the potential increase in ambient ground-level concentrations associated with the project to determine if these predicted ambient concentration increase would be greater than the specified PSD significant impact levels for NO<sub>2</sub>. Dispersion modeling was performed with receptors placed along the 36 standard radial directions (10 degrees apart) surrounding the proposed units at the following downwind distances: 0.9, 1.0, 1.25, 1.5, 1.75, 2.0, 2.5, 3.0, 4.0, and 5.0 km. The results of this modeling presented below show that the increase in ambient ground-level concentration is less than the PSD significant impact level for NO<sub>2</sub>. Therefore, further dispersion modeling for comparison with AAQS and PSD Class II increment consumption was not required for NO<sub>2</sub>.

	<u>NO<sub>2</sub></u>
Avg. Time	Annual
PSD Significant Level (ug/m <sup>3</sup> )	1.0
Ambient Concentration Increase (ug/m <sup>3</sup> )	0.53

The nearest PSD Class I area is the Chassahowitzka National Wilderness Area located about 14 km west of the facility. The Class I area modeling results show that the maximum predicted cumulative PSD increment consumption is 0.32 ug/m<sup>3</sup> or about 13 percent of the allowable Class I NO<sub>2</sub> increment of 2.5 ug/m<sup>3</sup>.

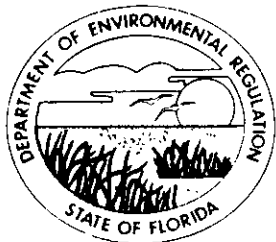
## 5. Additional Impacts Analysis

A Level-2 screening analysis using the EPA model VISCREEN showed that the requested increase in allowable NO<sub>x</sub> emissions is not expected to result in adverse visibility impacts in the Chassahowitzka Class I area. The Level-2 analysis was performed because the proposed project had exceeded the Level-1 visibility screening test criteria. No other significant air quality related values (AQRV) impacts on the Class I area are expected. In addition, the maximum predicted concentrations from NO<sub>x</sub> emissions are predicted to be less than the AAQS, including the national secondary standards designed to protect public welfare-related values. Therefore, no harmful effects on soils and vegetation are expected in the area of the project. Also, the proposed modification will not significantly change employment, population, housing or commercial/industrial development in the area to the extent that a significant air quality impact will result.

## V. Conclusion

Based on the information provided by FM&M, the Department has reasonable assurance that the proposed project, to allow an increase in the NO<sub>x</sub> emissions of the No. 2 cement kiln to 250 lbs/hr, 30-day average, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.

*[Handwritten signature]*  
#41755



# Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

**PERMITTEE:**  
Southdown, Inc. dba  
Florida Mining & Materials  
P. O. Box 6  
Brooksville, Florida  
34605-0006

**Permit Number:** AC 27-212252  
PSD-FL-188  
**Expiration Date:** December 31, 1993  
**County:** Hernando  
**Latitude/Longitude:** 28°38'34"N  
82°28'25"W  
**Project:** No. 2 Cement Kiln  
Modification

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4, and 40 CFR (July, 1991 version). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the modification of the No. 2 cement kiln to allow a significant increase in nitrogen oxides (NOx) above the previous actuals (625.4 TPY vs. 1025 TPY). The kiln's primary fuel is coal having a maximum allowable sulfur content of 1%, by weight. Flolite, a re-refined oil blend, is used as a backup fuel and during startups, shutdowns, and malfunctions. The kiln has a maximum process input rate of 130 tons per hour (clinker product weight of 79.6 tons per hour), 30-day rolling average, and a maximum heat input rate of 300.0 MMBtu/hr. A Fuller Reverse Air baghouse control system is used to control particulate matter and visible emissions. The facility is located in Brooksville, Hernando County, Florida. The UTM coordinates are Zone 17, 356.0 km East and 3169.9 km North.

The Source Industrial Code: 3241 Cement Manufacturing

The Source Classification Code numbers are:

- o 3-05-006-06 Cement Mfg-Dry Process Tons Cement Produced
- o 3-90-002-01 Bitum. Coal-Cement Kiln Tons Burned
- o 3-90-013-89 Liquid Waste-General 1000 Gals Burned

The source shall be modified in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Southdown, Inc. dba Florida Mining & Materials application received on April 22, 1992.
2. DER's transmittal letter of April 23, 1992.

**PERMITTEE:**  
**Southdown, Inc. dba**  
**Florida Mining and Materials**

**Permit Number: AC 27-212252**  
**PSD-FL-188**  
**Expiration Date: December 31, 1993**

**Attachments cont.:**

3. Dr. John B. Koogler's letter with enclosure received May 5, 1992.
4. Mr. James W. Pulliam, Jr.'s letter received via the FAX on May 15, 1992.
5. Mr. Charles B. Hetrick's letter received May 20, 1992.
6. Mr. C. H. Fancy's incompleteness letter with attachments mailed May 22, 1992.
7. Mr. Howard L. Rhodes's letter with enclosure mailed June 2, 1992.
8. Dr. John B. Koogler's letter with enclosures received June 24, 1992.
9. FAX received July 24, 1992, from Mr. Pradeep Raval.
10. FAX received July 24, 1992, from Mr. Gary Maier.
11. Mr. Charles B. Hetrick's letter received July 27, 1992.
12. Mr. James W. Pulliam, Jr.'s letter received August 20, 1992.
13. Technical Evaluation and Preliminary Determination dated September 21, 1992.
14. Dr. John B. Koogler's letter received October 14, 1992.
15. Dr. John B. Koogler's received October 19, 1992.
16. Response from the National Park Service received via the phone on October 20, 1992, by Mr. Preston Lewis.
17. Mr. Brian L. Beals's letter received October 21, 1992.
18. Revised Technical Evaluation and Preliminary Evaluation dated October 28, 1992.

**GENERAL CONDITIONS:**

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, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.



PERMITTEE:  
Southdown, Inc. dba  
Florida Mining and Materials

Permit Number: AC 27-212252  
PSD-FL-188  
Expiration Date: December 31, 1993

**GENERAL CONDITIONS:**

This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

- a. Have access to and copy any 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.

PERMITTEE:  
Southdown, Inc. dba  
Florida Mining and Materials

Permit Number: AC 27-212252  
PSD-FL-188  
Expiration Date: December 31, 1993

**GENERAL CONDITIONS:**

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.

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 F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.

11. This permit is transferable only upon Department approval in accordance with F.A.C. Rules 17-4.120 and 17-30.300, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit constitutes compliance with:

- a. New Source Performance Standards (NSPS), 40 CFR 60.60, Subpart F, Portland Cement Plants;
- b. Prevention of Significant Deterioration; and,
- c. Best Available Control Technology (BACT).

PERMITTEE:  
Southdown, Inc. dba  
Florida Mining and Materials

Permit Number: AC 27-212252  
PSD-FL-188  
Expiration Date: December 31, 1993

**GENERAL CONDITIONS:**

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 for 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:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and,
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

**SPECIFIC CONDITIONS:**

1. The annual hours of operation of the No. 2 cement kiln shall not exceed 8200.

2. The No. 2 kiln's total process feed rate shall not exceed 130 tons per hour (wet basis), yielding a maximum clinker product weight of 79.6 tons per hour (dry basis), averaged on a rolling 30-day production period.

PERMITTEE:  
Southdown, Inc. dba  
Florida Mining and Materials

Permit Number: AC 27-212252  
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**SPECIFIC CONDITIONS:**

3. The No. 2 kiln's fuel input rate shall not exceed 300.0 MMBtu per hour. The sulfur content of the coal shall not exceed 1.0 percent, by weight, using ASTM D3177-75. Coals with heating values lower than 12,500 Btu per pound shall be fired only if the sulfur content to heat value ratio of the coal does not exceed 0.83 pounds of sulfur per MMBtu of heat input.

4. The total combined times when using Flolite, a re-refined oil blend, during startup periods (no coal used), idle times (maximum allowable process heat input of 300.0 MMBtu maintained but no process feed input), and as a limited supplemental fuel with coal (coal unable to sustain maximum allowable process heat input requirement), shall not exceed 250 hours per year. The Flolite shall not contain more than 1 percent sulfur, by weight. The maximum allowable Flolite usage rate is 2069 gals/hr (@ 145,000 Btu/gal). At all times, the Flolite shall contain no higher concentration of metals or toxics than the following:

Cadmium - 0.3 ppm; Lead - 5.0 ppm; and, Arsenic - 1.0 ppm.

5. Emissions from the No. 2 cement kiln shall not exceed the following:

Pollutant	Maximum Allowable Emissions	
	lbs/hr	tons per year
PM	13.5	55.35
SO <sub>2</sub>	11.5	47.15
NO <sub>x</sub>	250.0, 30-day avg.	1025.0
VOC	7.4	30.34
CO	64.0	262.4
VE	< 10% opacity	

Note: Except for NO<sub>x</sub>, the emission limitations were established in construction permit No. AC 27-173474 (PSD-FL-124A), issued July 20, 1990.

6. Annual compliance shall be demonstrated, in accordance with F.A.C. Rule 17-2.700 and 40 CFR 60, Appendix A (July, 1991 version), using the following:

- EPA Method 5 for PM (particulate matter)
- EPA Method 6 or 6C for SO<sub>2</sub> (sulfur dioxide)
- EPA Method 7E for NO<sub>x</sub> (nitrogen oxides; continuous 30-day period average)
- EPA Method 9 for VE (visible emissions)
- EPA Method 10 for CO (carbon monoxide)
- EPA Method 25A for VOC (volatile organic compounds)

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:

<u>Pollutant</u>	<u>Max. Net Increase in Emissions (TPY)</u>	<u>PSD Significant Emission Rate (TPY)</u>
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.

BACT Determination  
Southdown, Inc. dba FM&M  
AC 27-212252 & PSD-FL-188  
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#### 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



BACT Determination  
Southdown Inc., dba FM&M  
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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:

Approved by:

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

\_\_\_\_\_  
Carol M. Browner, Secretary  
Dept. of Environmental Regulation

\_\_\_\_\_, 1992  
Date

\_\_\_\_\_, 1992  
Date



ATTACHMENT 14