



SHOLTES & KOOGLER, ENVIRONMENTAL CONSULTANTS

1213 N.W. 6th Street Gainesville, Florida 32601 (904) 377-5822

SKEC 307-82-01

September 30, 1982

DER

SEP 30 1982

BAQM

Mr. Clair Fancy
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301

Subject: Florida Crushed Stone
Air Pollution Source Construction Permit Applications
and Application for State and Federal PSD Approval

Dear Mr. Fancy:

Attached are copies of State Air Pollution Source Construction Permit Applications and Applications for State and Federal PSD Review for a Portland Cement plant and power plant proposed by Florida Crushed Stone Company in Hernando County.

There are four copies each of 32 Air Pollution Source Construction Permit Applications plus two complete copies of the PSD Application. The PSD Application is presented in two volumes and an Attachment Package. The first volume of the Application includes the PSD Review while the second volume includes the computer print-outs generated as part of the Air Quality Review. The Attachment Package includes a plot plan of the proposed facility, a detailed process flow diagram and an equipment list which identifies the components shown on the flow diagram.

Your prompt review of these materials will be very much appreciated. If, during the review of the applications, you find that additional information is required, please contact us immediately so that we can prepare this information for you.

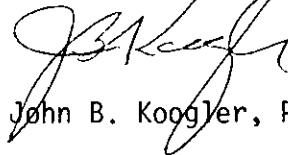
Mr. Clair Fancy
Florida Department of Environmental Regulation

September 30, 1982
Page two

We appreciate the cooperation you have shown us during the preliminary meetings leading to the preparation of the attached documents and look forward to a cooperative review process.

Very truly yours,

SHOLTES & KOOGLER
ENVIRONMENTAL CONSULTANTS, INC.



John B. Koogler, Ph.D., P.E.

JBK:sc
Attachments

cc: Mr. Richard C. Entorf (w/att.)

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATION
Florida Crushed Stone Company
Hernando County
(Amended April 6, 1982)

(This amended BACT determination supersedes the determination dated January 12, 1983. The applicant added one additional baghouse to Table 1 and reduced the expected amount of pollutants to be discharged in the kiln exhaust gases.)

The applicant plans to construct a Portland cement production facility two miles northwest of Brooksville, Florida. The manufacturing processes will use the latest innovations in dry cement technology and recirculation of hot exhaust gas streams to conserve energy. Baghouses will be used to limit the amount of particulate matter discharged into the atmosphere. The facility is designed to produce 600,000 tons of Portland cement per year. The operating schedule will be between 7620 and 8760 hours per year.

The maximum heat input to the cement kiln is 248 million Btu per hour and the design production rate is 75 tons of clinker per hour. The cement kiln when fired at maximum heat input will consume 10.3 tons of coal per hour and 9.25 tons per hour at the average firing rate. The coal used will have a sulfur content of 0.75 percent and a heating value of approximately 12,000 Btu per pound. The hot exhaust gases from the cement kiln are cooled in the kiln feed preheater and a rotary dryer before discharging through a baghouse into the atmosphere. Clinker from the kiln is reduced in temperature in a clinker cooler. The heated air discharge from the clinker cooler is used as pre-heated combustion air for the kiln and the power plant boiler.

The power plant boiler is designed to produce steam in excess of the cement plant requirements. The excess steam will be used to produce up to 125 megawatts of electrical power. The power plant will be reviewed by the Electrical Power Plant Siting Section as set forth in Chapter 17-17 of the Florida Administrative Code. This information is included in this determination because one large baghouse will control particulate emissions from gas streams ducted from both the power plant and portions of the cement plant.

The movement of raw materials, recycled materials, and product will be through enclosed transfer systems. All gas streams from the various transfer systems will vent through a baghouse into the ambient air. Table 1 lists the various point sources.

TABLE 1
BAGHOUSE INVENTORY

<u>AC-27 Permit</u>	<u>SOURCE</u>	<u>LB. PM/HR</u>	<u>TPY</u>	<u>IDENT.**</u>
61021	Kiln Feed	0.8	2.9	H-15***
61019	Cement Kiln*			
51019	Raw Materials Bin	0.8	3.0	D-18
61012	Pre Mix Bins	0.6	2.3	D-12
61013	Fly Ash Bin	0.6	2.4	D-23
61017	Raw Meal Transfer	0.3	1.0	F-14
61020	Blending Silo	3.3	12.7	G-12
61030	Clinker Silo	0.6	2.4	L-06
61032	Clinker Silo	0.6	2.4	L-08
61027	Cooler Discharge	0.8	2.9	L-16
61033	Silo Discharges	1.8	6.9	M-08
61037	Finish Mill	6.4	24.5	N-13
61038	Cement Silo Discharge	0.6	2.4	Q-17
61040	Cement Silo	0.6	2.4	Q-15A
61042	Cement Silo	0.6	2.4	Q-15C
61041	Cement Silo	0.6	2.4	Q-15B
61026	Coal Handling	0.8	2.9	S-04
	Particulate Totals	19.8	75.9	

* The cement kiln exhaust gases discharge into the ambient air through the power plant baghouse.

<u>Pollutant</u>	<u>Amended</u>	<u>Previous</u>	<u>Amended</u>
Particulates	49.5 lb/hr	50 lb/hr	189 TPY
SO ₂	80 lb/hr	100 lb/hr	305 TPY
NO _x	416 lb/hr	422 lb/hr	1585 TPY

** Plant equipment number

*** Baghouse source added

A Portland cement plant in one of the major facilities listed in Table 500-1 of 17-2.500, FAC, Prevention of Significant Deterioration (PSD). A BACT determination is required for each pollutant exceeding the significant emission rates in Table 500-2, which in this case are particulates, sulfur dioxide and nitrogen oxides. This facility is also subject to New Source Performance Standards (NSPS), 40 CFR 60.60, Subpart F.

BACT Determination Requested by the applicant:

Pollutant	Emission Limit
Particulates (kiln)	0.3 lbs/ton of dry kiln feed
Particulates (cooler)	0.1 lbs/ton of dry kiln feed
Sulfur dioxide (kiln)	Coal containing 0.75% sulfur
Nitrogen Oxides (kiln)	1.7 lbs/million Btu heat input
Nitrogen Oxides (rotary dryer)	0.2 lbs/million Btu heat input

Fabric filter baghouses will be used to limit particulate emissions from all other sources. Particulate matter discharged to the atmosphere will be in the range between 0.012 and 0.015 grains per actual cubic feet. (Table 1)

Date of Receipt of a BACT Application:

October 1, 1982

Date of Publication in the Florida Administrative Weekly:

October 15, 1982

Review Group Members:

Comments were obtained from the New Source Review Engineering Section, the Air Modeling Section, and the DER Southwest District Office.

BACT Determined by DER:

<u>Source</u>	<u>Pollutant Emission Limit</u>
Kiln	0.30 pound particulate matter per ton of feed (dry basis).
Kiln	Visible emissions not to exceed 10 percent opacity.
Kiln	0.60 pound SO ₂ per ton of feed (dry basis). Fossil fuels must be the only fuels fired.
Kiln	2.9 pounds NO _x per ton of feed (dry basis).
Clinker Cooler	0.10 pound particulate matter per ton of kiln feed (dry basis).
Clinker Cooler	Visible emissions not to exceed 10 percent opacity.
Dryer	Visible emissions not to exceed 10 percent opacity.
Raw Mill	Visible emissions not to exceed 10 percent opacity.

BACT for the sources (except the cement kiln) as listed in Table 1 is that visible emissions must not exceed 5 percent opacity.

Compliance with the particulate emission limitations will be in accordance with the EPA Reference Methods in Appendix A, 40 CFR 60, as set forth in Subsection 60.64 of the NSPS for Portland Cement Plants, 40 CFR 60.60.

Compliance with opacity standards will be determined by conducting observations in accordance with DER Method 9 (17-2.700(6)(a)9. FAC).

Compliance with the SO₂ and NO_x emission limitations will be in accordance with 40 CFR 60, Appendix A; Method 6 and 7.

The performance test for the cement kiln must be conducted with dryer feed shut off. The performance test for the clinker cooler must be conducted with the feed to the raw mill shut off. Since the kiln and clinker cooler have one common control device, their emission rates may be combined. The power plant boiler must be down during these performance tests.

BACT Determination Rationale

The NSPS visible emission limitation for the clinker cooler, dryer and raw mill exhaust gases is less than 10 percent opacity, and the cement kiln exhaust gases must not exceed 20 percent opacity. Exhaust gases from all four sources pass through a common baghouse and only one VE limitation would be practical. The visible emission BACT for these four sources and the baghouse was determined to be the 10 percent.

BACT for particulate emissions was determined to be equivalent to NSPS for Portland Cement Plants, 40 CFR 60.60, Subpart F.

BACT for SO₂ emissions from the cement kiln was determined to be equal to 25 percent of the rate calculated from the emission factor in AP-42, Table 1.1-2. The 75 percent reduction in SO₂ emissions is due to the alkaline nature and affinity for SO₂ of the material being processed.

BACT for the sources listed in Table 1, other than the cement kiln, is that the exhaust gases must not exhibit greater than 5 percent opacity. The department feels the 5 percent opacity determined as BACT, which is more stringent than the NSPS standard, is attainable with a baghouse.

BACT for NO_x emissions from the cement kiln was determined to be equal to 360 pounds per hour. This rate was obtained from the EPA-BACT clearinghouse report.

This BACT determination was based upon the firing of coal. The firing of non-fossil fuels is not allowed.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended By:

C. H. Fancy, Deputy Chief, BAQM

Date: _____

Approved:

Victoria J. Tschinkel, Secretary

Date: _____

AC 27-61009

ELIMINATED



DER

SEP 30 1982

BAQM

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO ~~OPERATE~~/CONSTRUCT AIR POLLUTION SOURCES 9/28/82

SOURCE TYPE: Clay Crusher New¹ Existing¹
APPLICATION TYPE: Construction Operation Modification
COMPANY NAME: Florida Crushed Stone Company COUNTY: Hernando

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Clay Crusher (B-09)

SOURCE LOCATION: Street Cobb Road, 2 miles N.W. of City Brooksville
UTM: East 360.044 km North 3162.648 km
Latitude ° ' "N Longitude ° ' "W

APPLICANT NAME AND TITLE: Richard C. Entorf, Senior Vice-President
APPLICANT ADDRESS: Post Office Box 317, Leesburg, Florida 32748

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Florida Crushed Stone Company

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed:
Richard C. Entorf, Senior Vice-President
Name and Title (Please Type)
Date: 9/29/82 Telephone No. (904) 787-0608

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been ~~designed~~/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed:
John B. Koogler, Ph.D., P.E.
Name (Please Type)

(Affix Seal)

SHOLTES & KOOGLER, ENVIRONMENTAL CONSULTANTS
Company Name (Please Type) INC
1213 NW 6th Street, Gainesville, FL 32601
Mailing Address (Please Type)

Florida Registration No. 12925 Date: 9/29/82 Telephone No. (904) 377-5822

¹See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

A clay crusher associated with a new cement manufacturing facility to reduce the clay feed to size of less than two inches. Emissions will be controlled by a baghouse with an air to cloth ratio of 6.5-1.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction March, 1983 Completion of Construction December, 1984

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Installed Cost - \$168,000.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

None

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? Yes No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr _____ ; if seasonal, describe: Annual operating factor = 87% or 7620 hours/year

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant?

NO

a. If yes, has "offset" been applied?

--

b. If yes, has "Lowest Achievable Emission Rate" been applied?

--

c. If yes, list non-attainment pollutants.

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.

YES

3. Does the State "Prevention of Significant Deterioration" (PSD) requirements apply to this source? If yes, see Sections VI and VII.

YES

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?

NO

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?

NO

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Clay	Particulate	2-3	100,000	B-05
	Matter			

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 100,000

2. Product Weight (lbs/hr): 100,000

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission ¹		Allowed Emission ² Rate per Ch. 17-2, F.A.C.	Allowable ³ Emission lbs/hr	Potential Emission ⁴		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	1.0	3.8	17-2.630 FAC	1.0	100	380	B-09
Matter							

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles ⁵ Size Collected (in microns)	Basis for Efficiency (Sec. V, It ⁵)
Baghouse with 6.5-1 Air to Cloth Ratio	Particulate Matter	99+%	>2	Estimate

¹See Section V, Item 2.

²Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard

⁴Emission, if source operated without control (See Section V, Item 3)

⁵If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
None			

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating. Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

Dust collected in baghouse will be returned to the process

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: _____ 25 _____ ft. Stack Diameter: _____ 2.3 _____ ft.

Gas Flow Rate: _____ 10,000 _____ ACFM Gas Exit Temperature: _____ 70 _____ °F.

Water Vapor Content: _____ 2-3 _____ % Velocity: _____ 40.0 _____ FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ days/week _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume (ft) ³	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: Cyclone Wet Scrubber Afterburner Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight – show derivation. See Section 3A
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment 1
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). Based on 99 percent control efficiency
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). See Attachment 1
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). Estimated to be 99+ percent
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. See Attachment Package
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See Attachment Package
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See Attachment Package

- 9. An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY
See Attached PSD Application for PSD Analysis

- A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
 Yes No

Contaminant	Rate or Concentration

- B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) Yes No

Contaminant	Rate or Concentration

- C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
Particulate Matter	0.012 gr/acf

- D. Describe the existing control and treatment technology (if any). None

1. Control Device/System:
2. Operating Principles:
3. Efficiency: *
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____ no sites _____ 2 _____ TSP _____ 1 () SO₂ • _____ 0 _____ Wind spd/dir
 Period of monitoring _____ 5 / 26 / 82 _____ to _____ 9 / 26 / 82 _____
 month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? Yes _____ No

b) Was instrumentation calibrated in accordance with Department procedures? Yes _____ No _____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 5 Year(s) of data from 1 / 1 / 70 to 12 / 31 / 74
 month day year month day year

2. Surface data obtained from (location) Tampa

3. Upper air (mixing height) data obtained from (location) Tampa

4. Stability wind rose (STAR) data obtained from (location) Tampa

C. Computer Models Used

1. CRSTER, Modified (See PSD Application) Modified? If yes, attach description.

2. PTMTPW, Unmodified Modified? If yes, attach description.

3. ISC - LT, Unmodified Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	See PSD Application _____ grams/sec
SO ₂	_____ grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

See PSD Application

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

E - 360.044
 N - 3162.648

P.M. 10000 acfm x 60 min/hr x 0.013 g/scf
 x 1/1000 lb/grain = 0.13 g/sec
 = 0.13 g/sec

Ht = 25 ft
 dia = 2.3 ft
 Vol = 40.0 ft³

TABLE II
 FABRIC FILTERS

Point Number (from Flow Diagram) B09		Manufacturer & Model No. (if available)		
Name of Abatement Device CLAY CRUSHER		Type of Particulate Controlled CLAY		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F) 70	Particulate Grain Loading (grain/scf)	
Design Maximum 10000	Average Expected		Inlet 15	Outlet 0.012
Pressure Drop (in. H ₂ O) 6		Water Vapor Content of Effluent Stream (lb water/lb dry air)		Fan Requirements (hp) (ft ³ /min) 2.5 10000
PARTICULATE DISTRIBUTION (By Weight)				
Micron Range		Inlet		Outlet
0.0-0.5				%
0.5-1.0				%
1.0-5.0				%
5-10				%
10-20				%
over 20				%
FILTER CHARACTERISTICS				
Filtering Velocity (acfm/ft ² of Cloth) 6.5	Bag Diameter (in.) 6	Bag Length (ft) 10	Number of Bags 100	Number of Compartments in Baghouse 1
Bag rows will be: Staggered <u>Straight</u>		Walkways will be provided between banks of bags: Yes <u>No</u>		
Filtering Material: <u>POLYESTER</u>				
Describe Bag Cleaning Method and Cycle: <u>PULSE JET</u>				
ADDITIONAL INFORMATION				

On separate sheets attach the following:

- A. Details regarding principle of operation
- B. An assembly drawing (Front and Top View) of the abatement device dimensioned and to scale clearly showing the design, size and shape.

If the device has bypasses, safety valves, etc., include in drawing and specify when such bypasses are to be used and under what conditions.

AC 27-61010

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STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO ~~OPERATE~~/CONSTRUCT 9/28/82
AIR POLLUTION SOURCES

SOURCE TYPE: Lime Stone Conveyor (New¹ Existing¹)
APPLICATION TYPE: (Construction Operation Modification)
COMPANY NAME: Florida Crushed Stone Company COUNTY: Hernando

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Lime Stone Conveyor Baghouse (B-10)

SOURCE LOCATION: Street Cobb Road, 2 miles N.W. of City Brooksville
UTM: East 360.123 km North 3162.379 km
Latitude ° ' "N Longitude ° ' "W

APPLICANT NAME AND TITLE: Richard C. Entorf, Senior Vice-President
APPLICANT ADDRESS: Post Office Box 317, Leesburg, Florida 32748

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Florida Crushed Stone Company
I certify that the statements made in this application for a construction
permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed:
Richard C. Entorf, Senior Vice-President
Name and Title (Please Type)
Date: 9/29/82 Telephone No. (904) 787-0608

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been ~~designed~~/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed:
John B. Koogler, Ph.D., P.E.
Name (Please Type)

(Affix Seal)

SHOLTES & KOOGLER, ENVIRONMENTAL CONSULTANTS
Company Name (Please Type) INC
1213 NW 6th Street, Gainesville, FL 32601
Mailing Address (Please Type)

Florida Registration No. 12925 Date: 9/29/82 Telephone No. (904) 377-5822

¹See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.
A lime stone conveyor associated with a new cement manufacturing facility
to transport lime stone. Emissions will be controlled by a baghouse with an
air to cloth ratio of 6.5-1.

B. Schedule of project covered in this application (Construction Permit Application Only)
 Start of Construction March, 1983 Completion of Construction December, 1984

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)
Installed Cost - \$84,000.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.
None

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? Yes No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr _____ ;
 if seasonal, describe: Annual operating factor = 87% or 7620 hours/year

G. If this is a new source or major modification, answer the following questions. (Yes or No)

- | | |
|---|------------|
| 1. Is this source in a non-attainment area for a particular pollutant? | <u>NO</u> |
| a. If yes, has "offset" been applied? | <u>--</u> |
| b. If yes, has "Lowest Achievable Emission Rate" been applied? | <u>--</u> |
| c. If yes, list non-attainment pollutants. | |
| 2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. | <u>YES</u> |
| 3. Does the State "Prevention of Significant Deterioration" (PSD) requirements apply to this source? If yes, see Sections VI and VII. | <u>YES</u> |
| 4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? | <u>NO</u> |
| 5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? | <u>NO</u> |

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Lime Stone	Particulate	2-3	800,000	B-08 and C-01
	Matter			

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 800,000

2. Product Weight (lbs/hr): 800,000

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission ¹		Allowed Emission ² Rate per Ch. 17-2, F.A.C.	Allowable ³ Emission lbs/hr	Potential Emission ⁴		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	0.5	1.9	17-2.630 FAC	0.5	50	190	B-10
Matter							

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles ⁵ Size Collected (in microns)	Basis for Efficiency (Sec. V, It ⁵)
Baghouse with 6.5-1	Particulate	99+%	>2	Estimate
Air to Cloth Ratio	Matter			

¹See Section V, Item 2.

²Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. - 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard

⁴Emission, if source operated without control (See Section V, Item 3)

⁵If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
None			

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating. Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

Dust collected in baghouse will be returned to the process

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: _____ 55 _____ ft. Stack Diameter: _____ 1.5 _____ ft.

Gas Flow Rate: _____ 5,000 _____ ACFM Gas Exit Temperature: _____ 70 _____ °F.

Water Vapor Content: _____ 2-3 _____ % Velocity: _____ 47.2 _____ FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ days/week _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume (ft) ³	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: Cyclone Wet Scrubber Afterburner Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight – show derivation. See Section 3A
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment 1
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). Based on 99 percent control efficiency
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). See Attachment 1
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). Estimated to be 99+ percent
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. See Attachment Package
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See Attachment Package
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See Attachment Package

- 9. An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY
See Attached PSD Application for PSD Analysis

- A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
 Yes No

Contaminant	Rate or Concentration

- B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) Yes No

Contaminant	Rate or Concentration

- C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
Particulate Matter	0.012 gr/acf

- D. Describe the existing control and treatment technology (if any). None

- | | |
|---------------------------|----------------------|
| 1. Control Device/System: | 4. Capital Costs: |
| 2. Operating Principles: | 5. Operating Costs: |
| 3. Efficiency:* | 6. Maintenance Cost: |
| 5. Useful Life: | |
| 7. Energy: | |
| 9. Emissions: | |

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____ no sites 2 TSP 1 () SO₂ 0 Wind spd/dir
 Period of monitoring 5 / 26 / 82 to 9 / 26 / 82
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

- a) Was instrumentation EPA referenced or its equivalent? Yes No
 b) Was instrumentation calibrated in accordance with Department procedures? Yes No Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 5 Year(s) of data from 1 / 1 / 70 to 12 / 31 / 74
month day year month day year

2. Surface data obtained from (location) Tampa

3. Upper air (mixing height) data obtained from (location) Tampa

4. Stability wind rose (STAR) data obtained from (location) Tampa

C. Computer Models Used

1. CRSTER, Modified (See PSD Application) Modified? If yes, attach description.
 2. PTMTPW, Unmodified Modified? If yes, attach description.
 3. ISC - LT, Unmodified Modified? If yes, attach description.
 4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	See PSD Application _____ grams/sec
SO ₂	_____ grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

See PSD Application

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

E - 360.123
N - 3162.379

P.M. = 5000 x 60 x 0.075 x 1/2000
= 0.0937500

TABLE II
FABRIC FILTERS

Ht = 55'
dia = 1.5 ft
Vel = 47.2 fpm

Point Number (from Flow Diagram) B10		Manufacturer & Model No. (if available)		
Name of Abatement Device LIMESTONE CONVEYOR		Type of Particulate Controlled LIMESTONE		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
5000		70	15	0.012
Pressure Drop (in. H ₂ O)		Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements	
			(hp)	(ft ³ /min)
6			15	5000
PARTICULATE DISTRIBUTION (By Weight)				
Micron Range		Inlet	Outlet	
0.0-0.5		%	%	
0.5-1.0		%	%	
1.0-5.0		%	%	
5-10		%	%	
10-20		%	%	
over 20		%	%	
FILTER CHARACTERISTICS				
Filtering Velocity (acfm/ft ² of Cloth)	Bag Diameter (in.)	Bag Length (ft)	Number of Bags	Number of Compartments in Baghouse
6.5	6	10	50	1
Bag rows will be: Staggered Straight		Walkways will be provided between banks of bags: Yes No		
Filtering Material: POLYESTER				
Describe Bag Cleaning Method and Cycle: PULSE JET				
ADDITIONAL INFORMATION				

On separate sheets attach the following:

- A. Details regarding principle of operation
- B. An assembly drawing (Front and Top View) of the abatement device dimensioned and to scale clearly showing the design, size and shape.

If the device has bypasses, safety valves, etc., include in drawing and specify when such bypasses are to be used and under what conditions.

AC 27-61012

40/27/0031/01



DER

SEP 30 1982

BAQM

9/28/82

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

SOURCE TYPE: Pre Mix Bins New¹ Existing¹
APPLICATION TYPE: Construction Operation Modification
COMPANY NAME: Florida Crushed Stone Company COUNTY: Hernando

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Pre Mix Bin Baghouse (D-21)

SOURCE LOCATION: Street Cobb Road, 2 miles N.W. of City Brooksville
17 UTM: East 360.005 km North 3162.477 km
Latitude 28° 35' 17" N Longitude 82° 25' 53" W

APPLICANT NAME AND TITLE: Richard C. Entorf, Senior Vice-President
APPLICANT ADDRESS: Post Office Box 317, Leesburg, Florida 32748

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Florida Crushed Stone Company

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: [Signature]
Richard C. Entorf, Senior Vice-President
Name and Title (Please Type)
Date: 9/29/82 Telephone No. (904) 787-0608

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been ~~designed~~ designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: [Signature]
John B. Koogler, Ph.D., P.E.
Name (Please Type)

(Affix Seal)

SHOLTES & KOOGLER, ENVIRONMENTAL CONSULTANTS
Company Name (Please Type) INC
1213 NW 6th Street, Gainesville, FL 32601
Mailing Address (Please Type)

Florida Registration No. 12925 Date: 9/29/82 Telephone No. (904) 377-5822

¹See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

A baghouse dust collector associated with a new cement manufacturing facility
to vent the pre mix and limestone bins. Emissions will be controlled by a
baghouse with a 6.5-1 air to cloth ratio.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction March, 1983 Completion of Construction December, 1984

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Installed Cost - \$168,000.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

None

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? Yes No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr _____ ; if seasonal, describe: Annual operating factor = 87% or 7620 hours/year

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1 Is this source in a non-attainment area for a particular pollutant?

NO

a. If yes, has "offset" been applied?

--

b. If yes, has "Lowest Achievable Emission Rate" been applied?

--

c. If yes, list non-attainment pollutants.

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.

YES

3. Does the State "Prevention of Significant Deterioration" (PSD) requirements apply to this source? If yes, see Sections VI and VII.

YES

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?

NO

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?

NO

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Limestone	Particulate	2-3	900,000	D-03
	Matter			

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____ 900,000

2. Product Weight (lbs/hr): _____ 900,000

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission ¹		Allowed Emission ² Rate per Ch. 17-2, F.A.C.	Allowable ³ Emission lbs/hr	Potential Emission ⁴		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	1.0	3.8	17-2.630 FAC	1.0	100	380	D-21
Matter							- -

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles ⁵ Size Collected (in microns)	Basis for Efficiency (Sec. V, It ⁵)
Baghouse with 6.5-1	Particulate	99+%	>12	Estimate
Air to Cloth Ratio	Matter			

¹See Section V, Item 2.

²Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. -- 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard

⁴Emission, if source operated without control (See Section V, Item 3)

⁵If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
None			

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating. Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

_____ Dust collected in baghouse will be returned to the process

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: _____ 125 _____ ft. Stack Diameter: _____ 2.3 _____ ft.

Gas Flow Rate: _____ 10,000 _____ ACFM Gas Exit Temperature: _____ 70 _____ °F.

Water Vapor Content: _____ 2-3 _____ % Velocity: _____ 42.0 _____ FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ days/week _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume (ft) ³	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: Cyclone Wet Scrubber Afterburner Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight – show derivation. See Section 3A
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment 1
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). Based on 99 percent control efficiency
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). See Attachment 1
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). Estimated to be 99+ percent
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. See Attachment Package
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See Attachment Package
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See Attachment Package

- 9. An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY
See Attached PSD Application for PSD Analysis

- A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
 Yes No

Contaminant	Rate or Concentration

- B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) Yes No

Contaminant	Rate or Concentration

- C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
Particulate Matter	0.012 gr/acf

- D. Describe the existing control and treatment technology (if any). None

1. Control Device/System:
2. Operating Principles:
3. Efficiency: *
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____ no sites 2 TSP 1 () SO₂ 0 Wind spd/dir
 Period of monitoring 5 / 26 / 82 to 9 / 26 / 82
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

- a) Was instrumentation EPA referenced or its equivalent? Yes No
- b) Was instrumentation calibrated in accordance with Department procedures? Yes No Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 5 Year(s) of data from 1 / 1 / 70 to 12 / 31 / 74
month day year month day year

2. Surface data obtained from (location) Tampa

3. Upper air (mixing height) data obtained from (location) Tampa

4. Stability wind rose (STAR) data obtained from (location) Tampa

C. Computer Models Used

- 1. CRSTER, Modified (See PSD Application) Modified? If yes, attach description.
- 2. PTMTPW, Unmodified Modified? If yes, attach description.
- 3. ISC - LT, Unmodified Modified? If yes, attach description.
- 4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	See PSD Application _____ grams/sec
SO ₂	_____ grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

See PSD Application

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

E - 360.005
N - 3162.477

$P.F. = 10,000 \times 4.0 \times 0.02 \times 0.0001$
 $= 0.13 \text{ g/ft}^3$

TABLE II
FABRIC FILTERS

Ht = 125'
dia = 2.3' Vel = 42.0 fpm

Point Number (from Flow Diagram) D21		Manufacturer & Model No. (if available)		
Name of Abatement Device PREMIX BIN		Type of Particulate Controlled LIMESTONE		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F) 70	Particulate Grain Loading (grain/scf)	
Design Maximum 10,000	Average Expected		Inlet 15	Outlet 0.012
Pressure Drop (in. H ₂ O) 6		Water Vapor Content of Effluent Stream (lb water/lb dry air)		Fan Requirements (hp) (ft ³ /min) 25 10000
PARTICULATE DISTRIBUTION (By Weight)				
Micron Range		Inlet		Outlet
0.0-0.5		%		%
0.5-1.0		%		%
1.0-5.0		%		%
5-10		%		%
10-20		%		%
over 20		%		%
FILTER CHARACTERISTICS				
Filtering Velocity (acfm/ft ² of Cloth) 6.5	Bag Diameter (in.) 6	Bag Length (ft) 10	Number of Bags 100	Number of Compartments in Baghouse 1
Bag rows will be: Staggered <u>Straight</u>		Walkways will be provided between banks of bags: Yes <u>No</u>		
Filtering Material: <u>POLYESTER</u>				
Describe Bag Cleaning Method and Cycle: <u>PULSE JET</u>				
ADDITIONAL INFORMATION				

On separate sheets attach the following:

- A. Details regarding principle of operation
- B. An assembly drawing (Front and Top View) of the abatement device dimensioned and to scale clearly showing the design, size and shape.

If the device has bypasses, safety valves, etc., include in drawing and specify when such bypasses are to be used and under what conditions.

AC 27-61013

40/27/0021/02

DER



SEP 30 1982

BAQM

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
APPLICATION TO ~~OPERATE~~ CONSTRUCT
AIR POLLUTION SOURCES

9/28/82

SOURCE TYPE: Fly Ash Bin (New¹ Existing¹)
APPLICATION TYPE: Construction Operation Modification
COMPANY NAME: Florida Crushed Stone Company COUNTY: Hernando
Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Fly Ash Bin Baghouse (D-22)
SOURCE LOCATION: Street Cobb Road, 2 miles N.W. of City Brooksville
UTM: East 360.017 km North 3162.337 km
Latitude 28° 34' 55" N Longitude 82° 25' 53" W
APPLICANT NAME AND TITLE: Richard C. Entorf, Senior Vice-President
APPLICANT ADDRESS: Post Office Box 317, Leesburg, Florida 32748

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Florida Crushed Stone Company
I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed:
Richard C. Entorf, Senior Vice-President
Name and Title (Please Type)
Date: 9/29/82 Telephone No. (904) 787-0608

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been ~~designed~~ examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed:
John B. Koogler, Ph.D., P.E.
Name (Please Type)

(Affix Seal)

SHOLTES & KOOGLER, ENVIRONMENTAL CONSULTANTS.
Company Name (Please Type) INC.
1213 NW 6th Street, Gainesville, FL 32601
Mailing Address (Please Type)

Florida Registration No. 12925 Date: 9/29/82 Telephone No. (904) 377-5822

¹See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)
DER FORM 17-1.122(16) Page 1 of 10

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

A baghouse dust collector to vent a fly ash bin associated with a new
cement manufacturing facility. Emissions will be controlled by a baghouse
with an air to cloth ratio of 6.5-1.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction March, 1983 Completion of Construction December, 1984

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Installed Cost - \$168,000.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

None

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? Yes No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr _____ ;
 if seasonal, describe: Annual operating factor = 87% or 7620 hours/year

G. If this is a new source or major modification, answer the following questions. (Yes or No)

- | | |
|---|------------|
| 1. Is this source in a non-attainment area for a particular pollutant? | <u>NO</u> |
| a. If yes, has "offset" been applied? | <u>--</u> |
| b. If yes, has "Lowest Achievable Emission Rate" been applied? | <u>--</u> |
| c. If yes, list non-attainment pollutants. | |
| <hr/> | |
| 2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. | <u>YES</u> |
| 3. Does the State "Prevention of Significant Deterioration" (PSD) requirements apply to this source? If yes, see Sections VI and VII. | <u>YES</u> |
| 4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? | <u>NO</u> |
| 5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? | <u>NO</u> |

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Fly Ash	Particulate	5-6	8,000	D-22
	Matter			

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____ 8,000

2. Product Weight (lbs/hr): _____ 8,000

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission ¹		Allowed Emission ² Rate per Ch. 17-2, F.A.C.	Allowable ³ Emission lbs/hr	Potential Emission ⁴		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	1.0	3.9	17-2.630 FAC	1.0	100	390	D-22
Matter							

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles ⁵ Size Collected (in microns)	Basis for Efficiency (Sec. V, It ⁵)
Baghouse with 6.5-1	Particulate	99+%	>12	Estimate
Air to Cloth Ratio	Matter			

¹See Section V, Item 2.

²Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. - 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard

⁴Emission, if source operated without control (See Section V, Item 3)

⁵If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
None			

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating. Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

Fly ash collected in baghouse will be returned to the process

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 125 ft. Stack Diameter: 2.3 ft.

Gas Flow Rate: 10,000 ACFM Gas Exit Temperature: 70 °F.

Water Vapor Content: 2-3 % Velocity: 42.0 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ days/week _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume (ft) ³	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [] Cyclone [] Wet Scrubber [] Afterburner [] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight – show derivation. See Section 3A
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment 1
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). Based on 99 percent control efficiency
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). See Attachment 1
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). Estimated to be 99+ percent
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. See Attachment Package
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See Attachment Package
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See Attachment Package

- 9. An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY
See Attached PSD Application for PSD Analysis

- A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
 Yes No

Contaminant	Rate or Concentration

- B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) Yes No

Contaminant	Rate or Concentration

- C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
Particulate Matter	0.012 gr/acf

- D. Describe the existing control and treatment technology (if any). None

- | | |
|--|--|
| <ul style="list-style-type: none"> 1. Control Device/System: 2. Operating Principles: 3. Efficiency:* 5. Useful Life: 7. Energy: 9. Emissions: | <ul style="list-style-type: none"> 4. Capital Costs: 6. Operating Costs: 8. Maintenance Cost: |
|--|--|

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____ no sites 2 TSP 1 () SO₂ 0 Wind spd/dir
 Period of monitoring 5 / 26 / 82 to 9 / 26 / 82
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

- a) Was instrumentation EPA referenced or its equivalent? Yes No
- b) Was instrumentation calibrated in accordance with Department procedures? Yes No Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 5 Year(s) of data from 1 / 1 / 70 to 12 / 31 / 74
month day year month day year

- 2. Surface data obtained from (location) Tampa
- 3. Upper air (mixing height) data obtained from (location) Tampa
- 4. Stability wind rose (STAR) data obtained from (location) Tampa

C. Computer Models Used

- 1. CRSTER, Modified (See PSD Application) Modified? If yes, attach description.
- 2. PTMTPW, Unmodified Modified? If yes, attach description.
- 3. ISC - LT, Unmodified Modified? If yes, attach description.
- 4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	See PSD Application _____ grams/sec
SO ₂	_____ grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

See PSD Application

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

E - 360.017
N - 3162.337

$P.M. = 10,000 \times 50 \times 0.012 \times 10000 \times 0.012$
 $= 0.139 \text{ lb/sec}$

HT = 125'
dia = 2.3'
Vel = 42.0 f/s

TABLE II
FABRIC FILTERS

Point Number (from Flow Diagram) D22		Manufacturer & Model No. (if available)		
Name of Abatement Device FLY ASH BIN		Type of Particulate Controlled FLY ASH		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm) 10,000		Gas Stream Temperature (°F) 70	Particulate Grain Loading (grain/scf)	
Design Maximum 6	Average Expected		Inlet 15	Outlet 0.012
Pressure Drop (in. H ₂ O) 6		Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements (hp) (ft ³ /min) 25 10000	
PARTICULATE DISTRIBUTION (By Weight)				
Micron Range	Inlet		Outlet	
0.0-0.5	%		%	
0.5-1.0	%		%	
1.0-5.0	%		%	
5-10	%		%	
10-20	%		%	
over 20	%		%	
FILTER CHARACTERISTICS				
Filtering Velocity (acfm/ft ² of Cloth) 6.5	Bag Diameter (in.) 6	Bag Length (ft) 10	Number of Bags 100	Number of Compartments in Baghouse 1
Bag rows will be: Staggered <input type="radio"/> <u>Straight</u> <input checked="" type="radio"/>		Walkways will be provided between banks of bags: Yes <input type="radio"/> <u>No</u> <input checked="" type="radio"/>		
Filtering Material: <u>POLYESTER</u>				
Describe Bag Cleaning Method and Cycle: <u>PULSE JET</u>				
ADDITIONAL INFORMATION				

On separate sheets attach the following:

- A. Details regarding principle of operation
- B. An assembly drawing (Front and Top View) of the abatement device dimensioned and to scale clearly showing the design, size and shape.

If the device has bypasses, safety valves, etc., include in drawing and specify when such bypasses are to be used and under what conditions.