

AC 27-61033
40/27/0021/12



DER

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BAQM

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION 12/21/82
APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

SOURCE TYPE: Silo Discharge 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) Silo Discharge Baghouse (M- 08)
SOURCE LOCATION: Street Cobb Road, 2 miles N.W. of City Brooksville
UTM: East 360.105 km North 3162.125 km
Latitude 26° 34' 48" N Longitude 82° 26' 15" 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: 12/21/82 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: [Signature]
John B. Kooqley, Ph.D., P.E.
Name (Please Type)

(Affix Seal)

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

Florida Registration No. 12925 Date: 12/21/82 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 to vent the material handling equipment under silos L-07, 12, 14, associated with a new cement manufacturing facility. 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 - \$235,000

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		
Clinker, Gypsum,	Particulate	2-3	244,000	L-07, 12, 14
Limestone	Matter			

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

1. Total Process Input Rate (lbs/hr): 244,000

2. Product Weight (lbs/hr): 244,000

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	1.8	6.9	17-2,630 FAC	1.8	180	686	M-08
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.

_____ Material collected in baghouse will be returned to the process

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

Stack Height: _____ 50 _____ ft. Stack Diameter: _____ 2.5 _____ ft.

Gas Flow Rate: _____ 14,000 _____ ACFM Gas Exit Temperature: _____ 100 _____ °F.

Water Vapor Content: _____ 2-3 _____ % Velocity: _____ 47.5 _____ 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	0.015 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:* | 8. 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.

360.105
3162.125

P.M. = 14,000 x 60 x 0.015 x 1/7000 x 0.126
= 0.23 g/sec

FORM PI-1 (72-9)

Ht = 50'
dia = 2.5'
Vel = 47.5 f.p.s

TABLE II
FABRIC FILTERS

Point Number (from Flow Diagram) <i>M-08</i>		Manufacturer & Model No. (if available)		
Name of Abatement Device <i>SILD DISCHARGE</i>		Type of Particulate Controlled <i>CLINKER, GYPSUM, LIMESTONE</i>		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
<i>14,000</i>		<i>100</i>	<i>10</i>	<i>0.015</i>
Pressure Drop (in. H ₂ O)		Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements (hp) (ft ³ /min)	
<i>11"</i>			<i>50</i>	<i>14,700</i>
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
<i>6.5</i>	<i>6</i>	<i>10</i>	<i>140</i>	<i>1</i>
Bag rows will be: Staggered <u>Straight</u>		Walkways will be provided between banks of bags: Yes <u>No</u>		
Filtering Material: <i>POLYESTER</i>				
Describe Bag Cleaning Method and Cycle: <i>PULSE JET</i>				
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.



DER
JAN 13 1983
BAQM

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO ~~OPERATE~~/CONSTRUCT
AIR POLLUTION SOURCES 9/28/82
12/21/82

SOURCE TYPE: Finish Mill (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) Finish Mill Baghouse (N-13)

SOURCE LOCATION: Street Cobb Road, 2 miles N.W. of City Brooksville
UTM: East 360.111 km North 3162.133 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: [Signature]
Richard C. Entorf, Senior Vice-President
Name and Title (Please Type)
Date: 12/21/82 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: [Signature]
John P. Koogler, Ph.D., P.E.
Name (Please Type)

(Affix Seal)

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

Florida Registration No. 12925 Date: 12/21/82 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 to vent the finish mill, which grinds cement clinker and gypsum associated with a new cement manufacturing facility. 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 - \$840,200

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		
Cement	Particulate	2-3	200,000	N-12
	Matter			

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

1. Total Process Input Rate (lbs/hr): 200,000
2. Product Weight (lbs/hr): 200,000

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	6.4	24.5	17-2.630 FAC	6.4	643	2449	N-13
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.

Material collected in the baghouse will be returned to the process

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

Stack Height: 70 ft. Stack Diameter: 5 ft.

Gas Flow Rate: 50,000 ACFM Gas Exit Temperature: 210 °F.

Water Vapor Content: 2-3 % Velocity: 42.4 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	0.015 gr/acf

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

- | | |
|---------------------------|----------------------|
| 1. Control Device/System: | 4. Capital Costs: |
| 2. Operating Principles: | 5. Useful Life: |
| 3. Efficiency: * | 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 - 363.111
N - 3162.133

PM = $50,000 \times 0.015 \times 60 \times 1/1000 \times 0.126$
= 0.819/sec
Ht = 70'
dia = 5.0'
Vel = 42.4 fpm

TABLE II
FABRIC FILTERS

Point Number (from Flow Diagram) N 13		Manufacturer & Model No. (if available)		
Name of Abatement Device FINISH MILL		Type of Particulate Controlled CEMENT		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
50,000		210	200	0.015
Pressure Drop (in. H ₂ O)		Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements (hp) (ft ³ /min)	
20"		0.043	300	52,500
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
5	6	10	650	ONE
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 27-61038
40/27/0021/14

DER

JAN 13 1983



BAQM

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

9/28/82
12/21/82

SOURCE TYPE: Cement Silo 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) Cement Silo Discharge Baghouse (0-17)

SOURCE LOCATION: Street Cobb Road, 2 miles N.W. of City Brooksville
UTM: East 360.125 km North 3162.100 km
Latitude 29° 24' 48" N Longitude 82° 25' 49" 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: 12/21/82 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: [Signature]
John B. Koogler, Ph.D., P.E.
Name (Please Type)

(Affix Seal)

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

Florida Registration No. 12925 Date: 12/21/82 Telephone No. (904) 377-5822

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



STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

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

SOURCE TYPE: Cement Silo 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) Cement Silo Discharge Baghouse (0-17)

SOURCE LOCATION: Street Cobb Road, 2 miles N.W. of City Brooksville
UTM: East 360.125 km North 3162.100 km
Latitude ° ' "N Longitude ° ' "W

APPLICANT NAME AND TITLE: Richard C. Entorf, Senior Vice-President

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*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

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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: _____
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SHOLTES & KOOGLER, ENVIRONMENTAL CONSULTANTS,
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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 to vent the bulk loading equipment under silo (Q-01), associated with a new cement manufacturing facility. 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 - \$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		
Cement	Particulate	2-3	600,000	0-13
	Matter			

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

1. Total Process Input Rate (lbs/hr): 600,000

2. Product Weight (lbs/hr): 600,000

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	0.6	2.4	17-2.630 FAC	0.6	64	245	Q-17
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			

¹ See Section V, Item 2.

² Reference 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)

³ Calculated from operating rate and applicable standard

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

⁵ If 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.
 Material collected in baghouse will be returned to the process as fines.

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

Stack Height: 50 | _____ ft. Stack Diameter: 1.5 | _____ ft.
 Gas Flow Rate: 5,000 | _____ ACFM Gas Exit Temperature: 160 | _____ °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	0.015 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.

Locate all at
 360.125
 3162.100

$PM = 5,000 \times 60 \times 0.015 \times 1/7000 \times 0.126$
 $= 0.0819/\text{sec, each source}$

Ht = 50'

dia = 1.5'

Vel = 47.2 f/s

TABLE II
 FABRIC FILTERS

Point Number (from Flow Diagram) Q. 17		Manufacturer & Model No. (if available)		
Name of Abatement Device CEMENT SILD DISCHARGE		Type of Particulate Controlled CEMENT		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F) 160	Particulate Grain Loading (grain/scf)	
Design Maximum 5,000	Average Expected		Inlet 20	Outlet 0.015
Pressure Drop (in. H ₂ O) 11"		Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements (hp) (ft ³ /min) 20 5250	
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 50	Number of Compartments in Baghouse 7
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.

DER

JAN 13 1983

BAQM



STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO ~~OPERATE~~ CONSTRUCT
AIR POLLUTION SOURCES

9/28/82
12/21/82

SOURCE TYPE: Cement Silo (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) Cement Silo Baghouse A (0-15)

SOURCE LOCATION: Street Cobb Road, 2 miles N.W. of City Brooksville
 UTM: East 360.125 km North 3162.110 km
 Latitude ° ' "N Longitude ° ' "W

APPLICANT NAME AND TITLE: Richard C. Entorf, Senior Vice-President

APPLICANT ADDRESS: Post Office Box 317, Leesburg, Florida 32748

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*Attach letter of authorization

Signed:
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 Name and Title (Please Type)
 Date: 12/21/82 Telephone No. (904) 787-0608

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Signed:
John B. Koogler, Ph.D., P.E.
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(Affix Seal)

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 Mailing Address (Please Type)

Florida Registration No. 12925 Date: 12/21/82 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 to vent it's associated cement storage silo,
associated with a new cement manufacturing facility. 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 - \$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. | |
| <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		
Cement	Particulate	2-3	200,000	0-01
	Matter			

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

1. Total Process Input Rate (lbs/hr): 200,000

2. Product Weight (lbs/hr): 200,000

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	0.6	2.4	17-2.630 FAC	0.6	64	245	0-15
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.

Material collected in baghouse will be returned to silo

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

Stack Height: 200 ft. Stack Diameter: 1.5 ft.

Gas Flow Rate: 5,000 ACFM Gas Exit Temperature: 180 °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	0.015 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: |
| 7. Useful Life: | |
| 8. Energy: | |
| 9. Emissions: | |

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

Locate all at
360.125
3163.110

FORM PI-2 (72-9)
PM = 5,000 x 60 x 0.015 x 1/7000 x 0.126
= 0.083/sec, each source
Ht = 200'
dia = 1.5'
Vel = 47.2 fpm

TABLE II
FABRIC FILTERS

Point Number (from Flow Diagram) <i>Q 15 (9 Units)</i>		Manufacturer & Model No. (if available)		
Name of Abatement Device <i>CEMENT SILO</i>		Type of Particulate Controlled <i>CEMENT</i>		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
<i>5,000</i>		<i>180</i>	<i>15</i>	<i>0.015</i>
Pressure Drop (in. H ₂ O)		Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements	
<i>10"</i>			(hp)	(ft ³ /min)
			<i>15</i>	<i>5250</i>
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
<i>6.5</i>	<i>6</i>	<i>10</i>	<i>50</i>	<i>1</i>
Bag rows will be:		Walkways will be provided between banks of bags:		
<i>Staggered</i>		<i>Yes</i>		
<i>Straight</i>		<i>No</i>		
Filtering Material: <i>POLYESTER</i>				
Describe Bag Cleaning Method and Cycle: <i>PULSE JET</i>				
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.

DER

JAN 13 1983

BAQM



AC 27-61041
40/29/OC21/16

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

9/28/82
12/21/82

SOURCE TYPE: Cement Silo 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) Cement Silo Baghouse B (Q-15)

SOURCE LOCATION: Street Cobb Road, 2 miles N.W. of City Brooksville

UTM: East 360.125 km North 3162.110 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: 12/21/82 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: 12/21/82 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 to vent it's associated cement storage silo,
associated with a new cement manufacturing facility. 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 - \$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		
Cement	Particulate	2-3	200,000	P-06
	Matter			

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

1. Total Process Input Rate (lbs/hr): 200,000

2. Product Weight (lbs/hr): 200,000

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	0.6	2.4	17-2.630 FAC	0.6	64	245	0-15
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.

Material collected in baghouse will be returned to silo

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

Stack Height: 200 ft. Stack Diameter: 1.5 ft.

Gas Flow Rate: 5,000 ACFM Gas Exit Temperature: 180 °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 8 1/2" 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 8 1/2" 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 8 1/2" 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	0.015 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.

Locate all at
 360.125
 3163.110

FORM PI-2 (72-9)
 $PM = 5,000 \text{ KG} \times 0.015 \times 1/7000 \times 0.126$
 $= 0.083 / \text{sec}$, each source
 Ht = 200'
 dia = 1.5'
 Vol = 47.2 fxs

TABLE II
 FABRIC FILTERS

Point Number (from Flow Diagram) <i>Q 15 (9 Units)</i>		Manufacturer & Model No. (if available)		
Name of Abatement Device <i>CEMENT SILO</i>		Type of Particulate Controlled <i>CEMENT</i>		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
<i>5,000</i>		<i>180</i>	<i>15</i>	<i>0.015</i>
Pressure Drop (in. H ₂ O)		Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements	
			(hp)	(ft ³ /min)
<i>10'</i>			<i>15</i>	<i>5250</i>
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
<i>6.5</i>	<i>6</i>	<i>10</i>	<i>50</i>	<i>1</i>
Bag rows will be: Staggered <input type="checkbox"/> <u>Straight</u> <input checked="" type="checkbox"/>		Walkways will be provided between banks of bags: Yes <input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/>		
Filtering Material: <i>POLYESTER</i>				
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

DER

JAN 13 1983

BAQM



STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO ~~OPERATE~~/CONSTRUCT AIR POLLUTION SOURCES
9/28/82
12/21/82

SOURCE TYPE: Cement Silo 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) Cement Silo Baghouse C (Q-15)

SOURCE LOCATION: Street Cobb Road, 2 miles N.W. of City Brooksville
UTM: East 360.125 km North 3162.110 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*
Richard C. Entorf, Senior Vice-President
Name and Title (Please Type)
Date: 12/21/82 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*
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: 12/21/82 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 to vent it's associated cement storage silo,
associated with a new cement manufacturing facility. 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 - \$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. | |
| <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		
Cement	Particulate	2-3	200,000	P-06
	Matter			

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

1. Total Process Input Rate (lbs/hr): 200,000

2. Product Weight (lbs/hr): 200,000

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	0.6	2.4	17-2.630 FAC	0.6	64	245	0-15
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.

Material collected in baghouse will be returned to silo

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

Stack Height: 200 ft. Stack Diameter: 1.5 ft.

Gas Flow Rate: 5,000 ACFM Gas Exit Temperature: 180 °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	0.015 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.

Locate all at
 360.125
 3163.110

FORM PL-2 (72-9)
 $PM = 5,000 \times 60 \times 0.015 \times 17,000 \times 0.12$
 $= 0.083 \text{ g/sec, each source}$
 $H_t = 200'$
 $d: a = 1.5'$
 $Vol = 47.2 \text{ cfs}$

TABLE II
 FABRIC FILTERS

Point Number (from Flow Diagram) <i>Q 15 (9 Units)</i>		Manufacturer & Model No. (if available)		
Name of Abatement Device <i>CEMENT SILO</i>		Type of Particulate Controlled <i>CEMENT</i>		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
<i>5,000</i>		<i>180</i>	<i>15</i>	<i>0.015</i>
Pressure Drop (in. H ₂ O)		Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements	
			(hp)	(ft ³ /min)
<i>10"</i>			<i>15</i>	<i>5250</i>
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
<i>6.5</i>	<i>6</i>	<i>10</i>	<i>50</i>	<i>1</i>
Bag rows will be: Staggered		Walkways will be provided between banks of bags: Yes <input checked="" type="radio"/> No <input type="radio"/>		
Filtering Material:		<i>POLYESTER</i>		
Describe Bag Cleaning Method and Cycle:		<i>PULSE JET</i>		
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 specification.



FLORIDA CRUSHED STONE COMPANY

December 29, 1982

Mr. Clair Fancy
Environmental Administrator
Florida Dept. of Environmental Regulation
2600 Blairstone Road
Tallahassee, FL 32301

DER

DEC 30 1982

Dear Mr. Fancy:

BAQM

As you requested, enclosed are four revised copies of the Permit Applications for all sources associated with our proposed Cement Plant/Power Plant project near Brooksville.

If you have any questions on the attached, please contact Mr. John Koogler or myself.

Regards,

A handwritten signature in cursive script, appearing to read 'Rick', is written over the typed name.

Richard C. Entorf
Senior Vice President

RCE:se

Enclosure

cc: Buck Osen
Larry Curtin
John Koogler
Skip Haskell

AC 27-61015
PA 82-17



DER
DEC 30 1982
BAQM

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO ~~OPERATE~~ CONSTRUCT PERMITS 9/29/82
AIR POLLUTION SOURCES 12/21/82

SOURCE TYPE: Power Plant 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) Cement Kiln-Power Plant Baghouse (E-20)

SOURCE LOCATION: Street Cobb Road, 2 miles N.W. of City Brooksville
UTM: East 360.008 km North 3162.392 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: [Signature]
Richard C. Entorf, Senior Vice-President
Name and Title (Please Type)
Date: 12/21/82 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: [Signature]
John B. Koogler, Ph.D., P.E.
Name (Please Type)

(Affix Seal)

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

Florida Registration No. 12925 Date: 12/21/82 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 is proposed to control particulate matter emissions from the cement kiln, the clinker cooler, the raw mill and a rotary materials dryer associated with the cement plant and to control emissions from the associated power plant. The emissions from the baghouse will meet applicable emissions standards.

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.)
\$10,200,000 installed cost of baghouse

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? XX Yes XX No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr _____ ; if seasonal, describe: The plant will operate 7,884 hours per 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		
NOT APPLICABLE - See Section III,E for fuel use.				

B. Process Rate, if applicable: (See Section V, Item 1) SEE PAGE 3a

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

2. Product Weight (lbs/hr): _____

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	
SEE PAGE 3b							

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	Part.Matter	99+	> 2 µm	Est.

¹ See Section V, Item 2.

² Reference 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)

³ Calculated from operating rate and applicable standard

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

⁵ If Applicable

Section III-C.

Air Pollutants Emitted (Flow Diagram E20)

Contaminant	Emissions		Emission Standard	Uncontrolled Emissions ⁽¹⁾	
	(lbs/hr)	(tpy)		(lbs/hr)	(tpy)
<u>Power Plant/Cement Plant</u>					
Part. Matter	172.9	675	NSPS & BACT	17,290	67,540
Sulfur Dioxide	1488.8	6142	BACT	1,729	7,056
Nitrogen Oxides	1279.8	4990	BACT	1,280	4,990
<u>Power Plant</u>					
Part. Matter	123.4	486	BACT	12,340	48,640
Sulfur Dioxide	1408.8	5837	BACT	1,409	5,837
Nitrogen Oxides	863.8	3405	BACT	864	3,405

(1) Uncontrolled emissions based on 99 percent control efficiency for particulate matter and 75 percent sulfur dioxide sorption in the cement kiln.

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Power Plant - Coal	90,000	100,000	1234.0

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

Fuel Analysis: Coal
 Percent Sulfur: 0.75 Percent Ash: 10
 Density: ---- lbs/gal Typical Percent Nitrogen: 1.4
 Heat Capacity: 12,000 BTU/lb --- BTU/gal
 Other Fuel Contaminants (which may cause air pollution): None

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

G. Indicate liquid or solid wastes generated and method of disposal.
Ash generated in the power plant will be used in the cement plant. All material collected in the bag collector will be recovered and reused.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):
 Stack Height: 300 ft. Stack Diameter: 16 ft.
 Gas Flow Rate: 577,700/381,100 ACFM Gas Exit Temperature: 226/330 °F.
 Water Vapor Content: 16/8 % Velocity: 47.9/31.6 FPS
 Power plant and cement plant/power plant only.

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. Section III,A
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. ATTACHMENT 1
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). Section III,C
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.). 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). 99% for particulate matter.
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 Florida Crushed Stone PSD Application for BACT Review)

- 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

- D. Describe the existing control and treatment technology (if any).

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

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

10. Stack Parameters

- | | | | |
|---------------|------|-----------------|-----|
| a. Height: | ft. | b. Diameter: | ft. |
| c. Flow Rate: | ACFM | d. Temperature: | °F |
| e. Velocity: | FPS | | |

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

- a. Control Device:
- b. Operating Principles:

- c. Efficiency*:
- d. Capital Cost:
- e. Useful Life:
- f. Operating Cost:
- g. Energy*:
- h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:

- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

- a. Control Device:
- b. Operating Principles:

- c. Efficiency*:
- d. Capital Cost:
- e. Useful Life:
- f. Operating Cost:
- g. Energy**:
- h. Maintenance Costs:
- i. Availability of construction materials and process chemicals:

- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

- a. Control Device:
- b. Operating Principles:

- c. Efficiency*:
- d. Capital Cost:
- e. Life:
- f. Operating Cost:
- g. Energy:
- h. Maintenance Cost:

*Explain method of determining efficiency above.

- i. Availability of construction materials and process chemicals:
- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

- a. Control Device
- b. Operating Principles:
- c. Efficiency*:
- d. Capital Cost:
- e. Life:
- f. Operating Cost:
- g. Energy:
- h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:
- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

- 1. Control Device:
- 2. Efficiency*:
- 3. Capital Cost:
- 4. Life:
- 5. Operating Cost:
- 6. Energy:
- 7. Maintenance Cost:
- 8. Manufacturer:
- 9. Other locations where employed on similar processes:

a.

- (1) Company:
- (2) Mailing Address:
- (3) City:
- (4) State:
- (5) Environmental Manager:
- (6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

- (1) Company:
- (2) Mailing Address:
- (3) City:
- (4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

(8) Process Rate*:

10. Reason for selection and description of systems:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

(See Florida Crushed Stone PSD Application for Air Quality Review)

A. Company Monitored Data

1. _____ no sites _____ TSP () SO2* _____ Wind spd/dir
Period of monitoring _____ / _____ / _____ to _____ / _____ / _____
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. _____ Year(s) of data from _____ / _____ / _____ to _____ / _____ / _____
month day year month day year

2. Surface data obtained from (location) _____

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

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

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ 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

Table with 2 columns: Pollutant, Emission Rate. Rows for TSP and SO2 with blank lines for values and units (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.

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 - 360.008
N - 3162.392

FORM PL-2 (72-9)
See Attached sheet for emission
Calculations

Ht = 300'
dia = 16'
Vel = 47.9 f/s - includes power
plant gases

TABLE II
FABRIC FILTERS

Point Number (from Flow Diagram) <i>E20</i>		Manufacturer & Model No. (if available)		
Name of Abatement Device <i>POWER PLANT - KILN MILL BAG HOUSE</i>		Type of Particulate Controlled <i>LIMESTONE / FLYASH</i>		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
<i>578,800</i>	<i>550,000</i>	<i>230</i>	<i>25</i>	
Pressure Drop (in. H ₂ O)		Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements	
			(hp)	(ft ³ /min)
<i>6</i>		<i>0.0408</i>	<i>2250</i>	<i>580,000</i>
PARTICULATE DISTRIBUTION (By Weight)				
Micron Range	Inlet		Outlet	
<i>0.0-0.5</i>	<i>20 %</i>		<i>%</i>	
<i>0.5-1.0</i>	<i>20 %</i>		<i>%</i>	
<i>1.0-5.0</i>	<i>50 %</i>		<i>%</i>	
<i>5-10</i>	<i>%</i>		<i>%</i>	
<i>10-20</i>	<i>10 %</i>		<i>%</i>	
<i>over 20</i>	<i>%</i>		<i>%</i>	
FILTER CHARACTERISTICS				
Filtering Velocity (acfm/ft ² of Cloth)	Bag Diameter (in.)	Bag Length (ft)	Number of Bags	Number of Compartments in Baghouse
<i>1.6</i>	<i>12</i>	<i>37</i>	<i>3192</i>	<i>28</i>
Bag rows will be: <i>Staggered</i> <u><i>Straight</i></u>		Walkways will be provided between banks of bags: <i>Yes</i> <i>No</i>		
Filtering Material: <i>Fiber Glass - TEFLON COATED</i>				
Describe Bag Cleaning Method and Cycle: <i>Reverse Air - Variable cycle</i>				
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

FLORIDA CRUSHED STONE

POWER PLANT EMISSION CALCULATIONS

125 Megawatt Power Plant - Elect Power Output

Heat Input - 9872 BTU / KWH

$$\begin{aligned}\text{Plant Efficiency @ } 3413 \text{ BTU / KWH} \\ &= 3413 \times 100 / 9872 \\ &= 34.6\%\end{aligned}$$

Total Heat Input

$$\begin{aligned}&= 9872 \text{ BTU / KWH} \times 125000 \text{ KW} \\ &= 1234.0 \times 10^6 \text{ BTU / hr}\end{aligned}$$

Coal Consumption @ 12,330 BTU / lb

$$\begin{aligned}&= 1234 \times 10^6 / 12,330 \times 1/2000 \text{ ton / lb} \\ &= 50.0 \text{ tons / hr}\end{aligned}$$

Emissions

Particulate Matter @ 0.1 lb / 10⁶ BTU

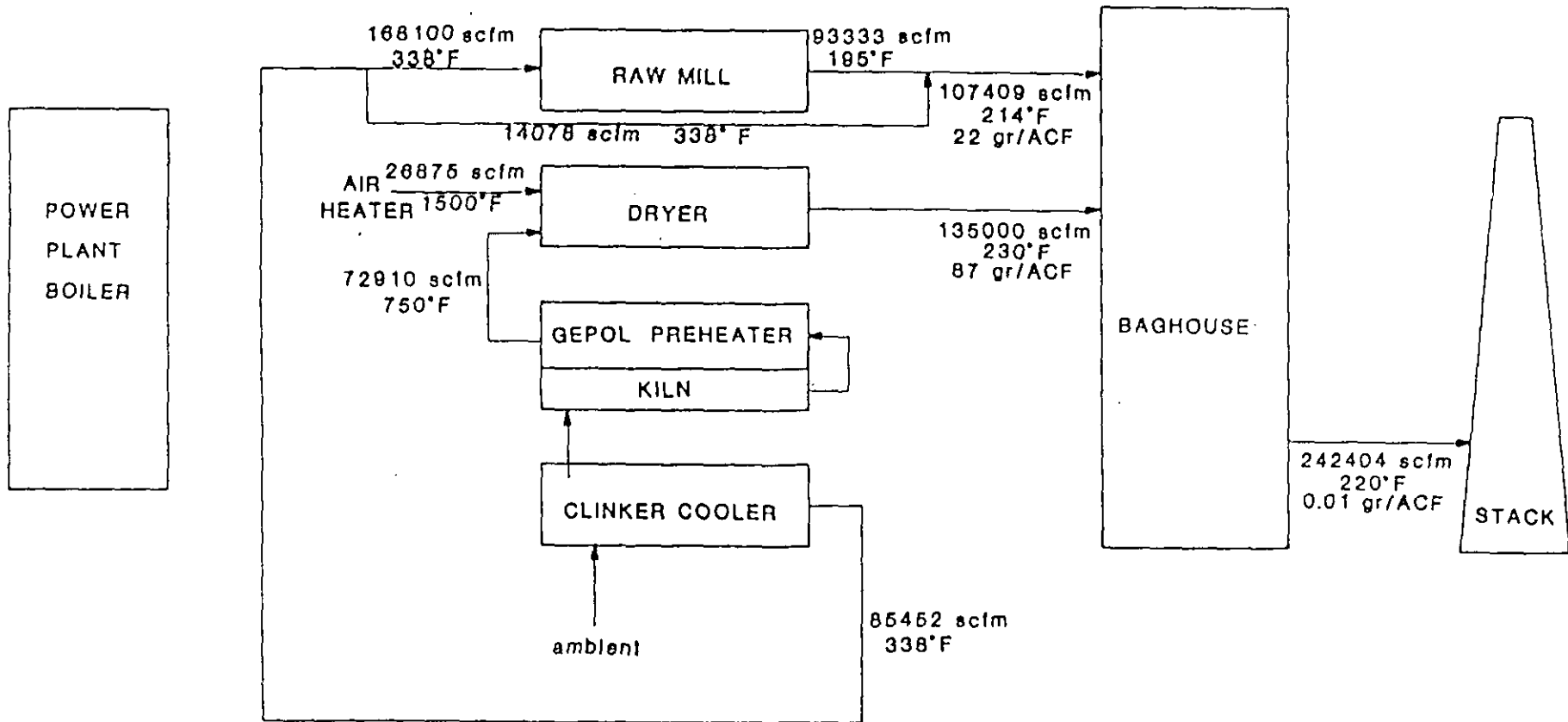
$$\begin{aligned}&= 1234.0 \times 0.1 \\ &= 123.4 \text{ lb / hr} \\ &\text{or} \\ &= 486.4 \text{ tons / yr @ } 90\% \text{ operating Factor}\end{aligned}$$

SO₂ @ 1.2 lb / 10⁶ BTU

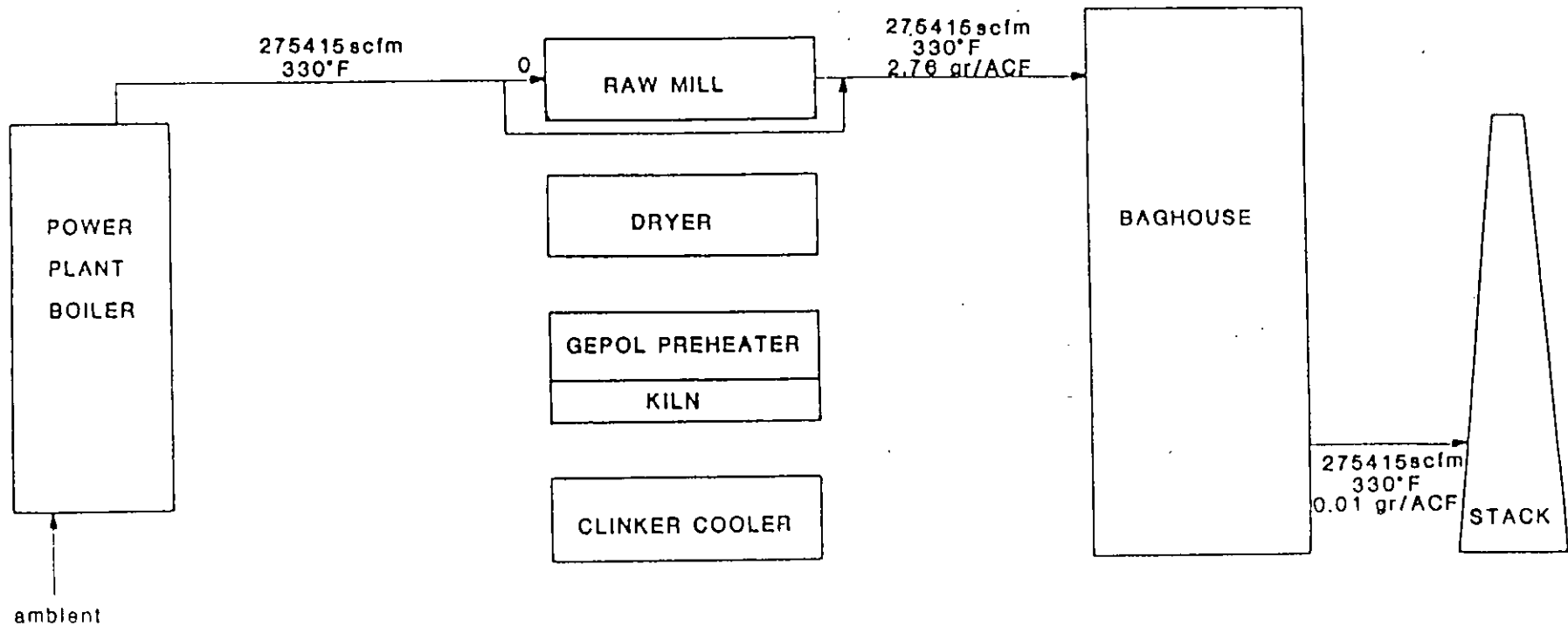
$$\begin{aligned}&= 1234.0 \times 1.2 \\ &= 1408.8 \text{ lb / hr} \\ &\text{or} \\ &= 5837.3 \text{ tons / yr @ } 90\% \text{ O.F.}\end{aligned}$$

NO_x @ 0.7 lb / 10⁶ BTU

$$\begin{aligned}&= 1234.0 \times 0.7 \\ &= 863.8 \text{ lb / hr} \\ &\text{or} \\ &= 3405.1 \text{ tons / yr @ } 90\% \text{ O.F.}\end{aligned}$$



POWER PLANT NOT OPERATING/CEMENT PLANT OPERATING



POWER PLANT OPERATING/CEMENT PLANT NOT OPERATING

AC 27-61021



DER

FEB 18 1983

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

BAQM
12/21/82

SOURCE TYPE: Kiln Feed 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) Kiln Feed Baghouse (H-15)

SOURCE LOCATION: Street Cobb Road, 2 miles N.W. of City Brooksville

UTM: East 360.044 km North 3162.306 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
construction

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: 12/21/82 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: 12/21/82 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 to vent the kiln feed system associated with a new
cement manufacturing facility. Emissions will be controlled by a baghouse
dust collector 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 - \$100,800

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		
Raw Meal	Particulate	2-3	250,000	H-05
	Matter			

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

1. Total Process Input Rate (lbs/hr): 250,000

2. Product Weight (lbs/hr): 250,000

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	0.8	2.9	17-2.630 FAC	0.8	77	294	H-15
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.

Material collected in baghouse will be returned to the process

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

Stack Height: 50 ft Stack Diameter: 2.0 ft

Gas Flow Rate: 6,000 ACFM Gas Exit Temperature: 200 °F

Water Vapor Content: 2-3 % Velocity: 31.8 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	0.015 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.

E - 360.044
N - 3162.306

$$P.N. = 6,000 \times 0.015 \times 60 \times 1/7000$$

$$= 0.10 \text{ g/sec}$$

$$H_t = 50$$

$$dia = 2.0'$$

$$Vel = 31.8 \text{ fps}$$

TABLE II
FABRIC FILTERS

Point Number (from Flow Diagram) <i>H15</i>		Manufacturer & Model No. (if available)		
Name of Abatement Device <i>KILN FEED</i>		Type of Particulate Controlled <i>RAW MEAL</i>		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
<i>6,000</i>		<i>200</i>	<i>20</i>	<i>0.015</i>
Pressure Drop (in. H ₂ O)		Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements	
<i>11"</i>			(hp)	(ft ³ /min)
			<i>20</i>	<i>6300</i>
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
<i>6.5</i>	<i>6</i>	<i>10</i>	<i>60</i>	<i>1</i>
Bag rows will be: Staggered		Walkways will be provided between banks of bags:		
<i>Straight</i>		Yes <i>No</i>		
Filtering Material: <i>POLYESTER</i>				
Describe Bag Cleaning Method and Cycle: <i>PULSE JET</i>				
ADDITIONAL INFORMATION				

On separate sheets attach the following:

- Details regarding principle of operation
- 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.