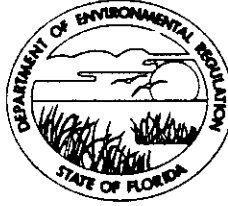


STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301



BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

February 9, 1982

Mr. George Townsend
AMAX Phosphate, Inc.
402 South Kentucky Ave., Suite 600
Lakeland, Florida 33801

Dear Mr. Townsend:

This is to acknowledge receipt and transaction of
your "Application to Construct an Air Pollution Source"
fee check ~~(3)~~.

The permit processing number (s) assigned are as
follows:

AC 29-52245

If we may be of further assistance, please feel free
to call me at (904) 488-1344.

Sincerely,

Tim Powell
FDER/BAQM

cc: J. J. Lewis

AMAX Phosphate, Inc.
A SUBSIDIARY OF AMAX INC
2 SOUTH KENTUCKY AVE. SUITE 600. LAKELAND, FLORIDA 33801

CONTROL NUMBER C 34077

BRANDON STATE BANK
BRANDON, FLORIDA
63-685
631
CHECK DATE NUMBER
2/3/82 2770

PAY TO THE ORDER OF

FLA. DEPT. OF ENVIRONMENTAL REGULATIONS
7601 HIGHWAY 301 NORTH
TAMPA, FLORIDA

CHECK AMOUNT \$*****20.00

AMAX Phosphate, Inc.
Richard J. Darrin
[Signature]

⑆063106857⑆ 10 615318⑈01

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Nº 33593

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from AMAX Date 2/3/82
Address _____ Dollars \$ _____
Applicant Name & Address _____
Source of Revenue _____
Revenue Code 111 Application Number 70
By [Signature]

AMAX Phosphate, Inc.

A SUBSIDIARY OF AMAX INC.

402 SOUTH KENTUCKY AVENUE • SUITE 600 • LAKELAND, FLORIDA 33801 • (813) 687-2561

February 4, 1982

D.E.R.

FEB 4 1982

SOUTHWEST DISTRICT
TAMPA

Mr. Dan Williams
Florida Department of Environmental Regulation
7601 Highway 301 North
Tampa, Florida 33610


Dear Mr. Williams:

Please find attached an application for a construction/ modification permit. This permit is for the installation of a baghouse at AMAX Phosphate, Inc. Plant City facility. Specifically, this unit will be installed at the Feed Preparation Facility as one of three baghouses serving that operation.

As you will recall, the details of the Feed Preparation environmental improvement projects were addressed in a letter to you from Fred Mullins dated December 28, 1981.

If you have any questions concerning the attached permit application, please let me know.

Sincerely,



George Townsend
Stack Team Coordinator

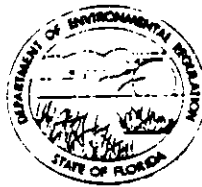
GT:la

cc: HCEPC
Mr. Fred Mullins

DER

FEB 8 1982

BAQM



D.E.R.

FEB 4 1982

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

SOUTHWEST DISTRICT
TAMPA

SOURCE TYPE: Point Source (Air Pollution) [] New¹ [X] Existing¹

APPLICATION TYPE: [X] Construction [] Operation [X] Modification

COMPANY NAME: AMAX Phosphate, Inc. COUNTY: Hillsborough

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) Phosphate Feed Preparation

SOURCE LOCATION: Street Coronet Road (7500 CFM Baghouse) City Plant City

UTM: East 17-393.8 North 3096.3

Latitude ° ' "N Longitude ° ' "W

APPLICANT NAME AND TITLE: J. J. Lewis, Plant Manager

APPLICANT ADDRESS: P. O. Box 790, Plant City, FL 33566

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of AMAX Phosphate, Inc.

I certify that the statements made in this application for a Modification (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]
J. J. Lewis, Plant Manager
Name and Title (Please Type)

Date: 2/4/82 Telephone No. (813) 752-1161

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]
David L. Nederveld
Name (Please Type)
Case Engineering, Inc.
Company Name (Please Type)

P. O. Box 6039, Lakeland, FL
Mailing Address (Please Type)
Date: _____ Telephone No. (813) 644-7580

Florida Registration No. 16820

¹ See 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.

Project consists of the installation of a 7,500 CFM (Air Flow Capacity) pulsaire dry dust collector (baghouse) with a cloth area of 1070 ft² (or more), and the necessary pickup points and duct work to capture fugitive particulate. The air to cloth ratio of dust collector will be approximately 7 CFM/1 ft² of cloth.

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

Start of Construction February, 1982 Completion of Construction July, 1982

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.)

Dust Collector and Ductwork: \$82,000

Total Cost including Engineering & Labor: \$276,000

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

The present feed preparation dust control units are being operated under the collective FDER Permit No. A029-6318 which was issued on May 9, 1979 and expires May 5, 1983.

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 20*; days/wk 7*; wks/yr 52*; if power plant, hrs/yr N/A; if seasonal, describe: *Operating time may vary due to production problems and market demand.

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>N/A</u> |
| b. If yes, has "Lowest Achievable Emission Rate" been applied? | <u>N/A</u> |
| c. If yes, list non-attainment pollutants. | <u>N/A</u> |
| 2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. | <u>No</u> |
| 3. Does the State "Prevention of Significant Deterioration" (PSD) requirements apply to this source? If yes, see Sections VI and VII. | <u>No</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		
Phosphate Rock	Particulate	100%	97,200	See Attachment D
Phosphate Rock	Fluoride	3.5%	97,200	See Attachment D
Phosphoric Acid	Fluoride	1.0%	27,700	
Caustic Soda	N/A	N/A	21,200	

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

- Total Process Input Rate (lbs/hr): 147,000
- Product Weight (lbs/hr): 120,000

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	1.30	4.6	Ch. 17-2.05 (2)	34.42	370	1,296	Attach. D
Fluoride			Covered by FDER Permit	No. A0 29-6315			
Sulfur Dioxide			Covered by FDER Permit	No. A0 29-6315			

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)
Seneca Model 100 - ZMY - 10	Particulate	99.65%	1.3 - ≥ 13.7 μ	Manufacturers Guarantee
Dry, Dust Collector (or Equivalent)		@ 7 gr/SCF		

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 *All emissions vented through scrubber covered in FDER Permit No. A0 29-6315.

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas	38.5 MMCF	40.8 MMCF	42 MMBTU/Hr.
*#5 Fuel Oil	6.37 BBL	6.94 BBL	42 MMBTU/Hr.

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

Fuel Analysis:

Percent Sulfur: 2.08% Percent Ash: N/A
 Density: 7.563 lbs/gal Typical Percent Nitrogen: N/A
 Heat Capacity: 19,040 BTU/lb 144,000 BTU/gal

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

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

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

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

Stack Height: 107 ft. Stack Diameter: 17 1/8" X 17 1/8" (2.04 Ft.²) ft.
 Gas Flow Rate: 7,500 ACFM Gas Exit Temperature: 110 °F.
 Water Vapor Content: N/A % Velocity: 61.4 FPS

*Note: Fuel oil is used only during periods of natural gas curtailment.

SECTION IV: INCINERATOR INFORMATION

Not Applicable

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)	F _u		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: _____

Not Applicable

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 Attachment 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. See Attachment B
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). See Attachment B
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 C-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). See Attachment C-2
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 D
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 E
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 E

9. An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. Therebeck 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

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
Phosphate Rock Dust	.02 Grains/SCF

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

- 1. Control Device/System: Cloth Filter (Baghouse), 2,000 CFM
- 2. Operating Principles: Filtration
- 3. Efficiency: 99 + %
- 4. Capital Costs: Not Available
- 5. Useful Life: 20 Years
- 6. Operating Costs: \$5,400 Per Annum (Fan)
- 7. Energy: Not Available
- 8. Maintenance Cost: \$905 Per Annum (Bag Replacement & Other)
- 9. Emissions: .02 Grains/SCF

Contaminant	Rate or Concentration
Phosphate Rock Dust	.02 Grains/SCF

*Explain method of determining D 3 above.

Engineering Determination

10. Stack Parameters

- a. Height: 203 ft.
- b. Diameter: 8 3/8" X 10 1/8" (0.59 ft²) ft.
- c. Flow Rate: 2,050 ACFM
- d. Temperature: 110°F
- e. Velocity: 57.9 FPS

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

1.

- a. Control Device: Dust Collector (Baghouse)
- b. Operating Principles: Filtration, Dry Cloth
- c. Efficiency*: 99.65%
- d. Capital Cost: \$82,000
- e. Useful Life: 20 Years
- f. Operating Cost: \$12,000 Per Annum (Fans & Preheater)
- g. Energy*: Not Available
- h. Maintenance Cost: \$2,000 Per Annum (Bag Replacement & Other)
- 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. Engineering Determination

- 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: Dust Collector (Baghouse)
- 2. Efficiency*: 99.65%
- 3. Capital Cost: \$82,000
- 4. Life: 20 Years
- 5. Operating Cost: \$12,000 Per Annum (Fans & Preheater)
- 6. Energy: Not Available
- 7. Maintenance Cost: \$2,000 Per Annum (Bag Replacement & Other)
- 8. Manufacturer: Seneca Environment Products, Inc.
- 9. Other locations where employed on similar processes:

a.

- (1) Company: International Minerals & Chemical Corp.
- (2) Mailing Address: P. O. Box 1035
- (3) City: Mulberry (4) State: Florida
- (5) Environmental Manager: Gerry Geradin
- (6) Telephone No.: (813) 428-2531

*Explain method of determining efficiency above. Engineering Determination

- (7) Emissions*: .02 Grains/SCF

Contaminant	Rate or Concentration
Phosphate Rock Dust	.02 Grains/SCF

- (8) Process Rate*: 97,200 Lbs./Hour

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

Contaminant	Rate or Concentration

(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.

ATTACHMENT A

TOTAL PROCESS INPUT RATE

97,200 lb/hr Phosphate Rock Total Process Input Rate.

PRODUCT WEIGHT

97,200 lb/hr Total Process Input Rate

2.25 lbs/hr Particulate Loss to Atmosphere.

97,198 lbs/hr Product Weight.

ATTACHMENT B

EMMISSIONS ESTIMATE

Estimated baghouse loading: 5.76 grains/ft³
100% - 99.65% (baghouse efficiency) = 0.35% discharge
5.76 grains/ft³ x 7,500 SCFM airflow through the baghouse
= 43,200 grains/min. X 60 min./hour =
2,592,000 grains/hour + 7,000 grains/lb =
370 lbs/hour actual loading to the baghouse
370 lbs/hour loading X 0.35% discharge =
1.30 lbs/hour emissions
1.30 lbs/hour emissions X 7,008 hours annual operating time
= 9,110 lbs/year emissions + 2,000 lbs/ton =
4.6 tons/year emissions

POTENTIAL EMISSIONS

370 lbs/hour baghouse loading
370 lbs/hour X 7,008 hours annual operating time
= 2,593,000 lbs/year + 2,000 lbs/ton =
1,296 tons/year potential emissions

ATTACHMENT C-1

The Baghouse to be installed is a reverse pulse jet bag collector with a cloth area of 1070 ft² (or more) and an air flow of 7500 CFM. The resulting air to cloth ratio is 7.0 CFM/ft² cloth (or less). The material collected by this baghouse will be returned to the process.

Baghouses are considered to be the best available control technology by the U.S. Environmental Protection Agency when used to control nuisance particulate. Baghouses are considered to be 99%+ efficient, and this installation will meet or exceed this level.

seneca environmental products, inc.

82 NORTH WASHINGTON STREET • TIFFIN, OHIO 44883 • (419) 447-1282

DECEMBER 4, 1981

AMAX PHOSPHATE, INC.
POST OFFICE BOX 790
PLANT CITY, FLORIDA 33566

ATTN: JAMES WHITTUM


REFERENCE:

400-T-10 DUST COLLECTOR
100-IMT-10 DUST COLLECTOR

AS PER OUR DISCUSSIONS, PLEASE BE ADVISED THAT EQUIPMENT EFFICIENCY OF THE EQUIPMENT WILL APPROACH 99.99% BASED ON THE ANTICIPATED PARTICULATE SIZE AND DISTRIBUTION OF YOUR PHOSPHATE DUST.

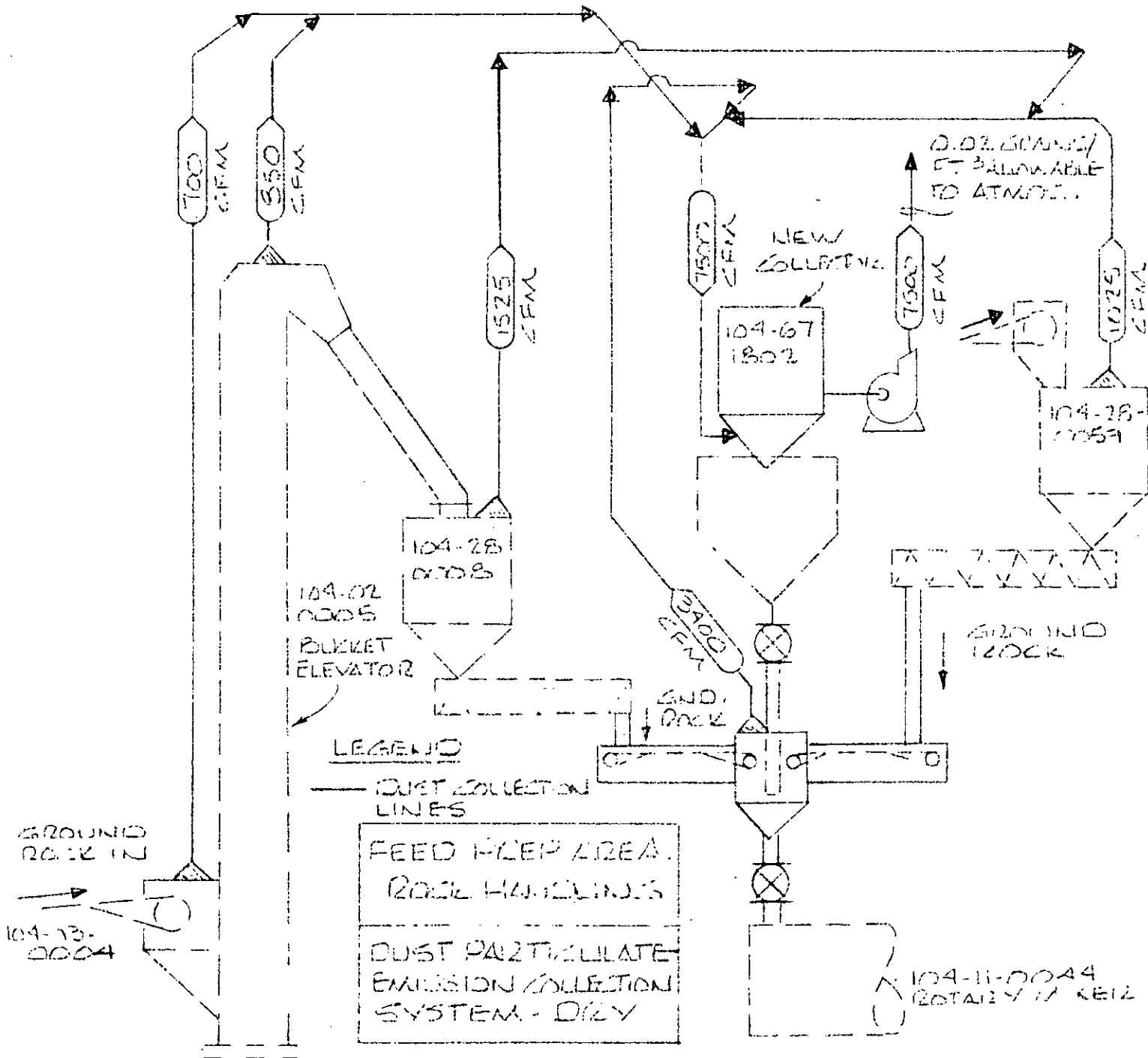
YOURS TRULY,

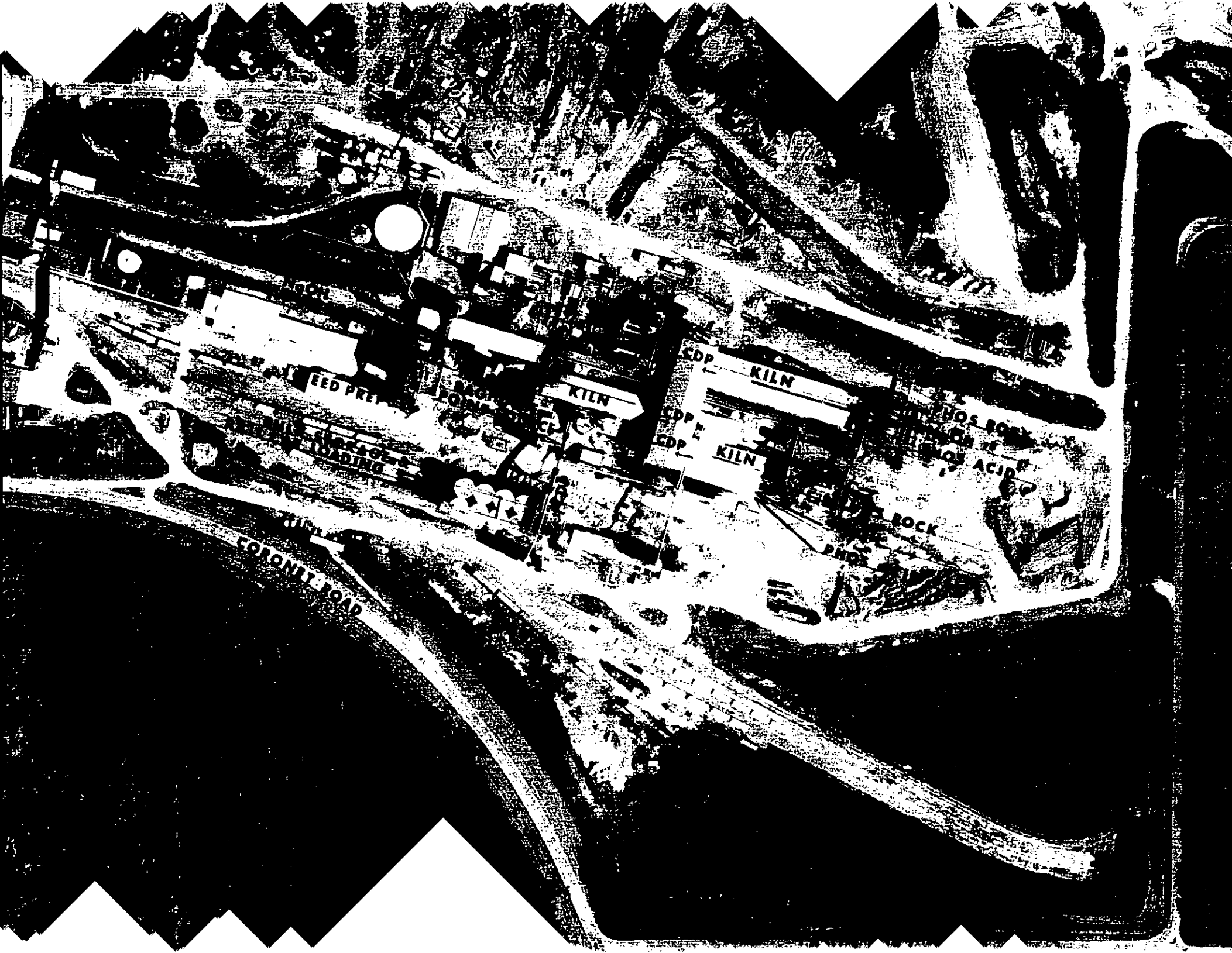
SENECA ENVIRONMENTAL PRODUCTS, INC.



TERRENCE E. DORNAN
VICE PRESIDENT-ENGINEERING

TED:AMC
CC:FILE
JOE FLOYD





LEED PREP

KILN

SDP

KILN

SDP

SDP

KILN

ROCK

ACID

ROCK

CORONIT ROAD