

DETAILED DESCRIPTION OF SOURCE

A. Describe the nature and extent of the project. Refer to existing pollution control facilities, expected improvement in performance of the facilities and state whether the project will result in full compliance. Attach additional sheet if necessary.

This source is the result of the operation of two (2) fluid bed reactors and one (1) rotary kiln. These units were previously permitted to operate under Permit No. AO 29-2082 which expired 7/1/75. Compliance test results revealed that the source was in compliance for fluorides, but out of compliance for particulate emissions. Changes in present emission controls improved emissions, however, not to the degree required by 17-2. Pilot scrubbers tested indicate satisfactory results can be obtained by replacing the existing tail gas scrubber with one of a different design. The decision was made to purchase a Ceilcote wet ionizing type scrubber which will permit this source to be in compliance. Approval for the expenditure has been obtained and the order placed. Installation is planned to meet an agreed upon compliance schedule with H.C.E.P.C., F.D.E.R. & E.P.A.

B. Schedule of Project Covered in this Application (Construction Permit Application Only).

Start of Construction July 1, 1977
Completion of Construction Sept. 1, 1977, final compliance October 1, 1977

C. Costs of Construction (Show a breakdown of costs for individual components/units of the project serving pollution control purpose only). Information on actual costs shall be furnished with the application for operation permit.

Based on supplier quotation, estimated cost to install, engineering, etc. the approved amount of the appropriation request is \$551,106.

D. For this source indicate any previous DER permit: issuance dates, and expiration dates; and orders and notices.

AO 29-2082 issued May 23, 1973, expired July 1, 1975. A-48-D issued April 13, 1970, valid until revoked or surrendered and superseded permits to operate Nos. 48, 48-B, 48-C.

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 ?YesX.No

AIR POLLUTION SOURCES & CONTROL DEVICES
(other than incinerators)

A. Identification of Air Contaminants

- 1) Particulates
 a) Dust b) Fly Ash c) Smoke d) Other (Identify)
- 2) Sulfur Compounds
 a) SO_x as SO₂ b) Reduced Sulfur as H₂S c) Other (Identify)
- 3) Nitrogen Compounds
 a) NO_x as NO₂ b) NH₃ c) Other (Identify)
- 4) Fluorides 5) Acid Mist 6) Odor
- 7) Hydrocarbons 8) Volatile Organic Compounds
- 9) Other (Specify) _____

B. Raw Materials and Chemicals Used (Be Specific)

Description	Utilization Rate	Approximate Contaminant Content		Relate to Flow Diagram
	lbs./hr. Tons/Day	Type	% Wt.	
Prepared Feed	339.6	Fluorine	3.38 in feed	A
		Dust	(1)	

(1) The gas input stream to this new equipment will be partially cleansed and the inlet dust loading is expected to be .11 GR./SCF

C. Process Rate:

- 1) Total Process input Rate* 14.15 T/Hr. Units. (Actual Occurrence)
- 2) Product Weight* 12.22 T/Hr. Units.
- 3) Normal Operating Time 24 hrs/day, if seasonal describe: _____
 hrs./day _____ days/wk. _____ wks/yr.

D. Airborne Contaminants Discharged:

Name of Contaminant	Actual** Discharge		Discharge Criteria Rate*	Allowable Discharge Lbs./hr.	Relate to Flow Diagram
	lbs./hr.	T/yr.			
Fluoride**	<2.11	<9.24	#/T. P ₂ O ₅ Input	2.11	2
Particulates**	<18.56	<81.29	lbs./hr.	18.56	2

*Refer to Chapter 17-2.04(2), Florida Administrative Code.
 (Discharge Criteria: Rate=#/ton P₂O₅, #/M BTU/hr., etc.)

**Estimate only if this is an application to construct.

**Emissions will not exceed this allowable amount. Gases from 3 separate production units exit this source. The new equipment will control two of the production units.

D. Airborne Contaminants Discharged. (Cont'd.)

Name of Contaminant	Hourly Emission (lb./hr.)	Daily Emission (lb./day)	Yearly Emission (T/yr.)	Basis for Emission Estimate (Test Data, Material Balance)
Fluorides	2.11	50.64	9.24	Allowed limits & pilot test data
Particulates	18.56	445.44	81.29	" " " " "

E. Control Devices:

Name and Type (Model and Serial No.)	Contaminant	Efficiency*	Conditions of Operations	Basis for Efficiency (Operational Data, Test, Design, Data)
2-Cellcote Double Stage IWS 300 Systems	Particulate Matter	80% removal	Continuous	Based on operational data & pilot test results incorporated into design.
		Based on in-let-25,000 ACFM 100° F Sat'd	50 GPM, pack- ing=300 GPM/ stage, Total	
		0.11 Gr./SCF	2 stages=700 GPM; also inter-	

mittent deluge flush water pressure 25 PSIG

*See required supplement. (Include any test data and/or design data for efficiency substantiation)

F. Fuels No. 5 fuel oil and natural gas

Type (Be Specific, includes %S, etc.)	Daily Consumption *		Maximum Heat Input MBTU/hr.
	Avg./hr.	Max./hr.	
No. 5 fuel oil	398. gal.	434. gal.	60,760
Natural Gas	71.16	82.6	82,600

* Units: Natural Gas - MCF/hr.; Fuel Oils, Coal - lbs./hr.

Fuel Analysis: No. 5 fuel oil

Percent Sulfur 1.75 to 1.90 Percent Ash .012 to .026

Density 7.42 lb./gal.

Heat Capacity 18868 BTU/lb. 140,000 BTU/gal.

Other Fuel Contaminants

G. Describe briefly, without revealing trade secrets, the processes/operations generating the airborne emissions identified in this application.

Two (2) fluid bed reactors and one (1) rotary kiln used for the production of defluorinated phosphate.

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

Recirculated pond water and fresh water addition is used as a scrubbing medium. Wastewater discharge from the scrubbers is contained in a series of ponds and reused.

I. Emission Stack Geometry and Flow Characteristics, (Provide Date for each Stack).

Stack Height 152 ft, Stack Diameter 5.79 ft.

Gas Flow Rate 98,700 ACFM, Gas Exit Temperature 96 °F

J. Required Supplements:

1. Total process input rate and product weight – show deviation.

2. Efficiency Estimation.

3. An 8½" x 11" flow diagram, which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate whether raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particulates are evolved and where finished products are obtained.

4. An 8½" x 11" plot plan showing the exact location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

5. An 8½" x 11" plot plan showing the exact location of the establishment, and points of airborne emissions in relation to the surrounding area, residences and other permanent structures and roadways.

6. If applicable, provide a brief description of the control device or treatment system serving the discharge point for airborne contaminants identified in this application. Include details of the manufacturer, model, size, type and capacity for control/treatment device and the features of the discharge point (height above ground, diameter, period(s) of discharge and discharge temperature).

7. Plans for storm water control during and after construction.

INCINERATOR INFORMATION

N/A

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Patho- logical)	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 _____ Model No.: _____

Date Constructed: _____

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

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

Type of Pollution Control Device Cyclone Wet scrubber Afterburner
 Other (Specify): _____

Brief Description of Operating Characteristics of Control Device: _____

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

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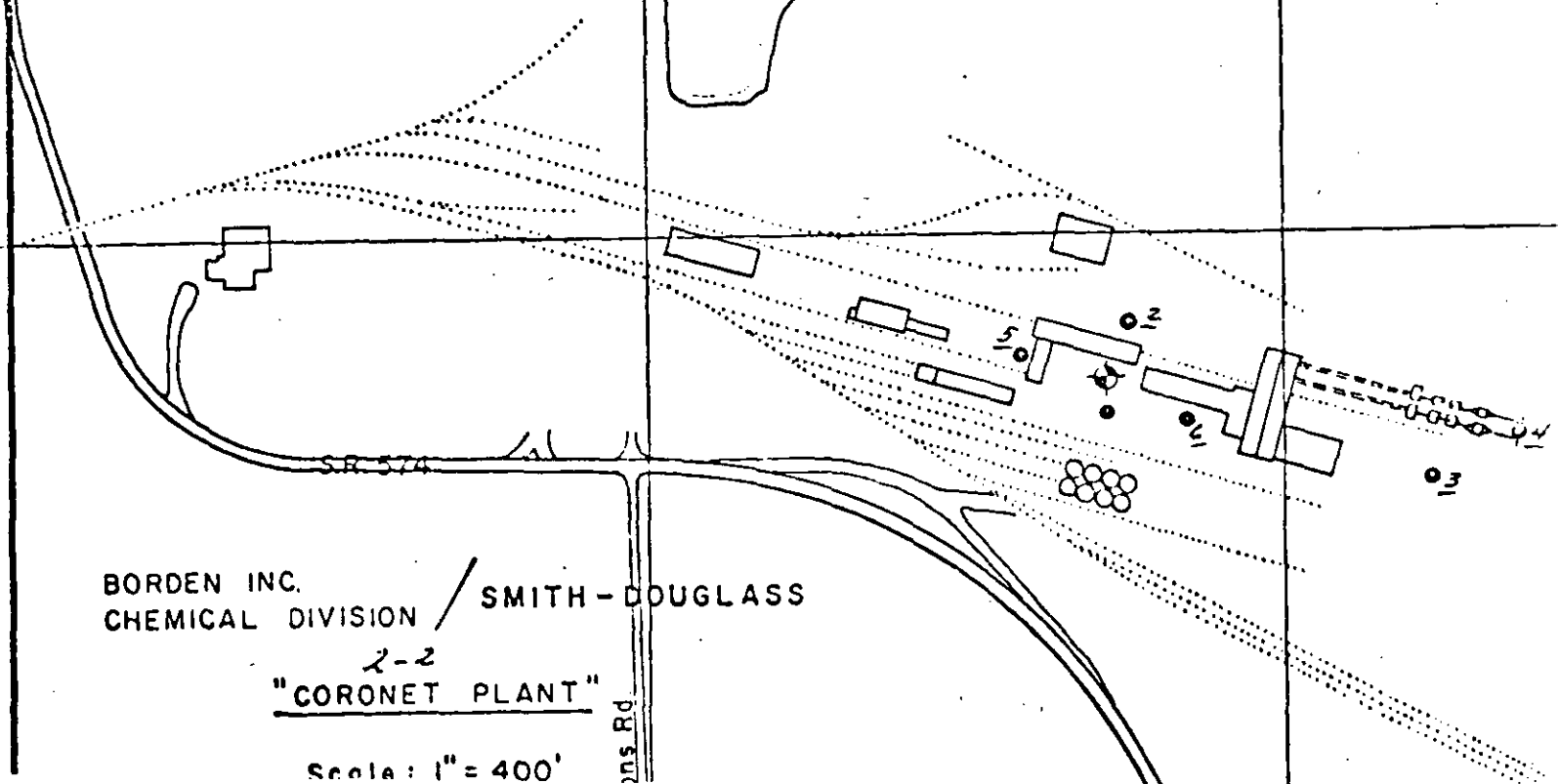
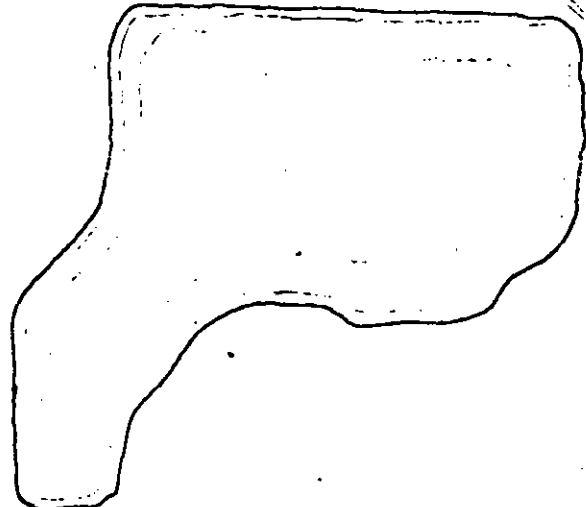
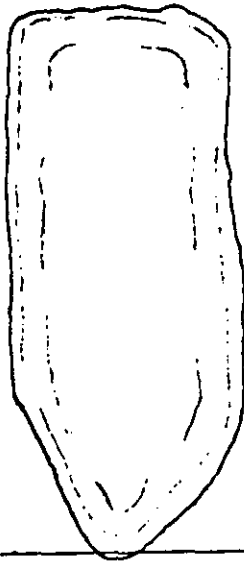
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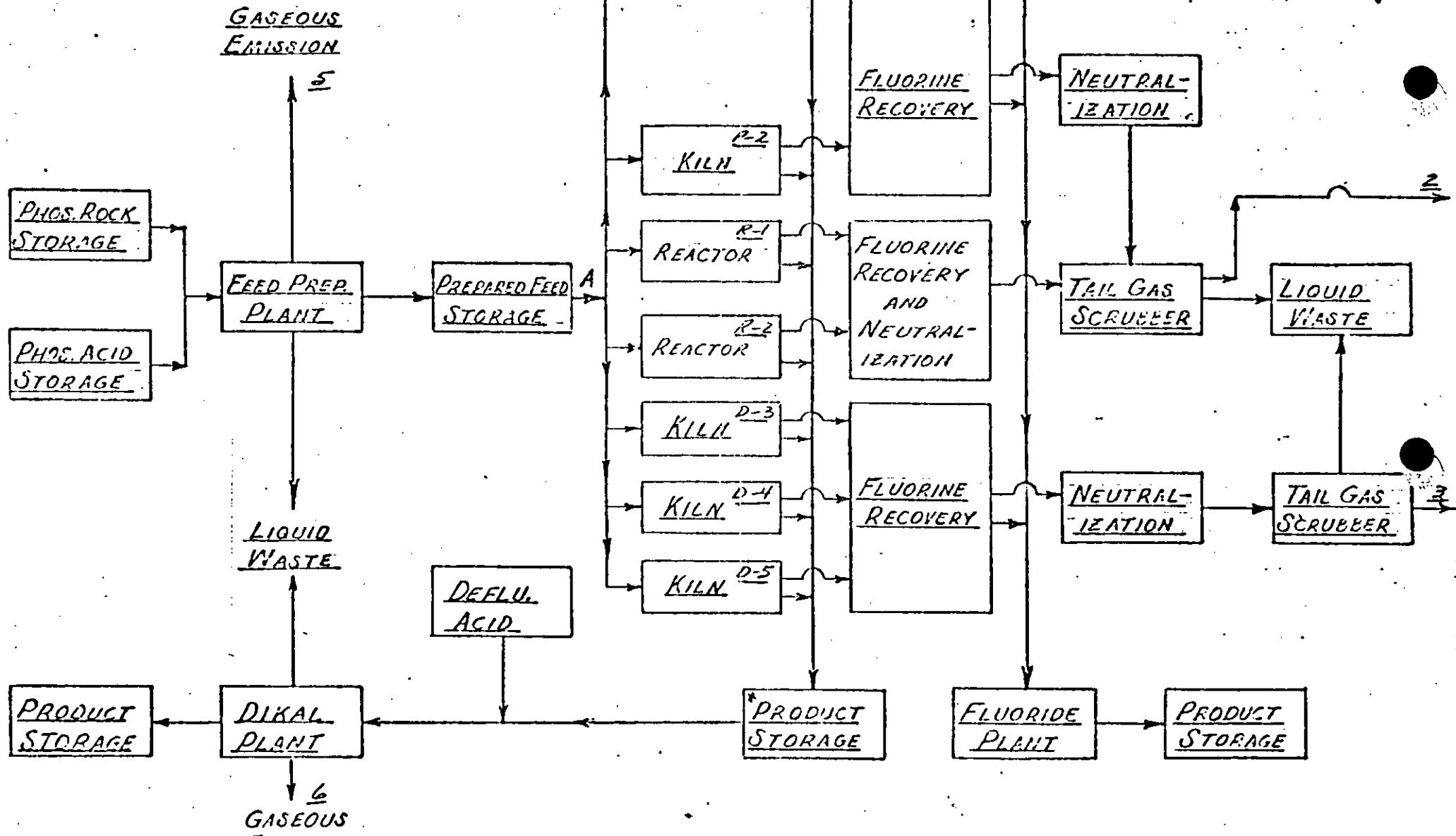
BORDEN INC. / SMITH-DOUGLASS
 CHEMICAL DIVISION

2-2
 "CORONET PLANT"

Scale: 1" = 400'

2nd St. Rd.

Flow Diagram 2-1
Borden Chemical Division
South-Cross
Plant City, Florida



SMITH-DOUGLASS

Division of
BORDEN CHEMICAL, BORDEN INC



J. J. POINTER
PRESIDENT

October 7, 1976

Mr. B. V. Galloway
Smith-Douglass Division
of Borden Chemical,
Borden, Inc.
P. O. Box 790
Plant City, Florida 33566

Dear Mr. Galloway:

You are authorized to sign on behalf of Borden, Inc., as Authorized Representative, Applications to Operate/Construct Pollution Sources, Pollution Performance Reports, and any other environmental applications or reports relating to the Agricultural Division of Borden, Inc.'s operation in the State of Florida.

Very truly yours,

JJP:hrr

C/c to Mr. R. S. Rydell