STATE OF FLORIDA
DEPARTMENT OF POLLUTION CONTROL
3201 GOLF COURSE BOULEVARD
PUNTA GORDA, FLORIDA 33950

PETER P. BALJET
EXECUTIVE DIRECTOR

DAVID H. LEVIN
CHAIRMAN

July 15, 1974

Mr. A. R. Mayo, V.P.
U. S. Sugar Corporation
Post Office Box 1207
Clewiston, Florida 33440

RE: Hendry Co. - AP

U. S. Sugar Corporation
Boiler #1

Dear Mr. Mayo:

Pursuant to your recent application, please find enclosed a permit (No.AC26-2028A) dated 7-12-74 to construct the subject pollution source.

This permit will expire on 7-1-75 , and will be subject to the conditions, requirements and restrictions checked or indicated otherwise in the attached sheet construction "Permit Conditions".

This permit is issued under the authority of Florida Statutes 403.016(16). The time limits imposed herein are a condition to this permit and are enforceable under Florida Statute 403.161. You are hereby placed on Notice that the Department will review this permit before the scheduled date of expiry and will seek court action for violation of the conditions and requirements of this permit.

You have ten (10) days from the date of receipt hereof within which to seek a review of the conditions and requirements contained in this permit.

Your continued cooperation in this matter is appreciated, and in future communication please refer to your permit number.

Yours truly,

Philip R. Edwards

Philip R. Edwards,
Regional Administrator

PRE/TWD/jp
Encls.

cc: Frank S. Kleeman, P.E.
Palm Beach CHD
DPC - Tallahassee

STATE OF FLORIDA

DEPARTMENT OF POLLUTION CONTROL

CONSTRUCTION PERMIT

FOR U. S. SUGAR CORPORATION
POST OFFICE BOX 1207
CLEWISTON, FLORIDA 33440

PERMIT NO. AC26-2028A DATE 7-12-74

PURSUANT TO THE PROVISION OF SECTION 403.061(16) OF CHAPTER 403, FLORIDA STATUTES AND CHAPTER 17-4, FLORIDA ADMINISTRATIVE CODE, THIS PERMIT IS ISSUED TO:
MR. A. R. MAYO, VICE PRESIDENT

FOR THE CONSTRUCTION OF:
JOY TURBULAIRE SIZE 125, TYPE D, IMPINGEMENT SCRUBBER
FOR BOILER #1

LOCATED AT: CLEWISTON SUGAR MILL, OWEN STREET, CLEWISTON
UTM EAST 7,505,938 NORTH 2,956,875

IN ACCORDANCE WITH THE APPLICATION DATED 4-22-74
AND IN CONFORMITY WITH THE STATEMENTS AND SUPPORTING DATA ENTERED THEREIN, ALL OF WHICH ARE FILED WITH THE DEPARTMENT AND ARE CONSIDERED A PART OF THIS PERMIT.

THIS PERMIT SHALL BE EFFECTIVE FROM THE DATE OF ITS ISSUANCE UNTIL 7-1-75
AND SHALL BE SUBJECT TO ALL APPLICABLE LAWS OF THE STATE AND THE RULES AND REGULATIONS OF THE DEPARTMENT.

Phil R. Edwards
PHILIP R. EDWARDS,
REGIONAL ADMINISTRATOR

PETER P. BAEJET,
EXECUTIVE DIRECTOR

FORM 1-J

STATE OF FLORIDA

DEPARTMENT OF POLLUTION CONTROL

CONSTRUCTION PERMIT PROVISOS

AIR POLLUTION SOURCES

Permit No. AC26-2029A Date: 7-12-74

[X] 1. Construction of this installation shalll be completer by 11-1-74.

[X] 2. This construction permit expires on 7-1-75 following an initial period of operation for appropriate testing to determine compliance with the Rules of the Florida Pollution Control Board.

[X] 3. All applicable rules of the Departmnet including design discharge limitations specified in the application shall be adhered to. The permit holder may also need to comply with county, municipal, federal, or other state regulations prior to construction.

[X] 4. The applicant shall continue the retention of the engineer of record for the inspection of the construction of this project. Upon completion the engineer shall inspect for conformity to construction permit applications and associated documents. A report of such inspection shall be submitted by the engineer to the Department of Pollution Control for consideration toward the issuance of an operation permit.

[X] 5. This boiler shall be tested for particulates within 30 days after it is placed in operation. Thest test results are required prior to our issuance of an operation permit and shall be submitted in duplicate to the DPC Southwest Florida Regional Office 3201 Golf Course Blvd., Punta Gorda, Florida 33950

[ ] 6. The operation of this installation shall be observed for visible emissions in accordance with Method (-Visible Determination of the Opacity of Emissions from Stationary Sources (Federal Register, December 23, 1971). The observation results are required prior to our ussuance of an operation permit, and shall be submitted in duplicate to the DPC Florida Regional Office,

[ ] 7. Stack sampling for total particulate or otther contaminant emissions shall be conducted if found by the DPC Florida Regional Office to be necessary as a basis for the issuance of an operation permit.

[X] 8. Satisfactory ladders, platforms, and other safety devices shall be provided/available as well as necessary ports to facilitate the carrying out of an adequate sampling program.

[ ] 9. The following items are required prior to our issuance of an operation permit in addition to the engineer of record's report of inspection:

(a) An emission report for total particulates and sulfur oxides based upon actual operations.

(b) A tabular summary of actual records of frequencies and durations of soot blowing as well as boiler blowdown characteristice and disposal practices.

These items are required prior to our issuance of an operation permit and shall be submitted in duplicate to the DPC Florida Regional Office, _____

[X] 10. There shall be no discharges of liquid effluents or contaminated runoff from the plant site.

[X] 11. All fugitive dust gerated at this site shall be adequately controlled.

(X) 12. Provisions shall be made to enable an accurate determination of bagasse and fuel oil feed rates.

BEST AVAILABLE COPY

PERMITTED BY SOUTHWEST REGION DEPT. OF POLLUTION CONTROL
PERMIT NO. AC26-20388A
DATE 7/12/74

If applicant is a corporation, a Certificate of Good Standing must be submitted with application.

This may be obtained, for a $5.00 charge, from the Secretary of State, Bureau of Corporate Records, Tallahassee, Florida 32304.

STATE OF FLORIDA
DEPARTMENT OF POLLUTION CONTROL

PAID MAY 14 1974

APPLICATION TO OPERATE/CONSTRUCT POLLUTION SOURCES

60th Day SEP 12 1974

RECEIVED MAY - 2 1974 S. W. REGION DPC

SECTION I – GENERAL INFORMATION FOR ALL POLLUTION SOURCES

I TO BE FILLED IN BY APPLICANT

Source Type: Air Pollution

Type application: [ ] Operation [ ] Temporary Operation [x] Construction

Status Source: [ ] New [x] Existing [ ] Modification

Source Name: U.S. Sugar Corp. Clewiston Mill Boiler #1 Mfg. by Riley Stoker Corp. Serial No. 23566 County: Hendry

Source Location: Street: Foot of Owen St. City: Clewiston

(Water Source Only) Lat: ____° ____' ____" Long: ____° ____' ____"

(Air Source Only) UTM: East 7505938 North 2956875

Appl. Name and Title: A. R. Mayo, Vice President

Appl. Address: U.S. Sugar Corp. P.O. Box 1207 Clewiston, Fla. 33440

II TO BE FILLED IN BY REGION (*BY BUREAU OF PERMITTING)

Control No: Region ____ County ____ Type ____ *Project ____

Type Permit	Date Rec'd	*Permit No.	*Issue Date	*Compl. Date	*Exp. Date

Source Description: ____

Control Equipment: ____

Water Permits

Receiving Body Code: ____ Surface Water Code: ____

Station No.: Influent: ____ Effluent: ____

Effluent:	Average	Design	% Reduction
Flow rate, MGD			
BOD, lbs/day			
Susp. Sol., lbs/day			
Other:			

Air Permits

Operating Time: [ ] Continuous [ ] Intermittent

Fuel: Type ____ M-BTU/hr. In Put ____

Incinerator: Capacity, tons/day ____ Type Waste ____

Mfg. & Model ____

Pollutant Emissions, lbs/day	Actual	Design	Allowable
Particulate			
Sulfur Oxides			
Other:			

Implementation: Estimated Appl. Filing Date ____

Estimated Start of Const. ____ Estimated Compliance Date ____

DESCRIPTION OF PROPOSED PROJECT

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

Pollution control facility consists of Joy Mfg. Co. Turbulaire impingement-type scrubber, Size 125, Type D. This scrubber is a larger size than, but similar to, the ones which were operated in connection with the #2 Boiler during the 1973-74 sugar cane processing season. By-pass is provided for emergency use only, such as for cleaning due to plugging of scrubber.

Stack emission tests indicate that the facility will provide full compliance of the source with the new DPC Btu Emission Standard for Bagasse Boilers.

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

Federally or State Financed Projects only:

Planning Complete N.A.

Financing Program Complete

Indicate other local, state and/or federal agency approvals and dates

All projects:

Start of Construction 6-1-74

Completion of Construction 11-1-74

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

Estimated cost of of scrubber including installation $90,000

D. Indicate any previous DPC permits, issuance dates, and expiration dates.

This Boiler is operating under Permit No. AO 50-2028, issued 5-16-73 and expiring on 7-1-75.

C 1

AIR POLLUTION SOURCES & CONTROL DEVICES

A. Identification of Air Contaminants

1) [x] Particulates
   a) [ ] Dust b) [x] Fly Ash c) [x] Smoke d) [ ] Other (Identify)

2) [x] Sulfur Compounds
   a) [x] SO_x as SO_2 b) [ ] Reduced Sulfur as H_2S c) [ ] Other (Identify)

3) [x] Nitrogen Compounds
   a) [x] NO_x as NO_2 b) [ ] NH_3 c) [ ] Other (Identify)

4) [ ] Flourides 5) [ ] Acid Mist 6) [ ] Odor

7) [ ] Hydrocarbons 8) [ ] Volatile Organic Compounds

9) [ ] Other (Specify): _____

B. Raw Materials and Chemicals Used (Be Specific)

Description	Utilization Tons/day, lbs./day, etc.	Approximate Contaminant Content		Relate to Flow Diagram
		Type	% Wt.	
Bagasse	1082 T/day	-	-	A
No. 6 Fuel Oil	9.6 T/day	S	2.4	B

C. Process Weight:

1) Total Process Weight Rate 91,000 lbs./hr. [See Sec. 17-2.04(2)]
2) Product Weight 175,000 lb./hr. expressed as Steam
3) Normal Operating Time 24 hours per day, if seasonal describe: Approx. 150 days/yr. (Nov. 1 thru March 31)

D. Airborne Contaminants Discharged:

Name of Contaminant	Actual Discharge	Discharge Criteria*	Allowable Discharge*	Relate Location to Flow Diagram
Particulates	85.0 lbs/hr 153 T/yr	Btu Std.	98.9	C
SO_2	38.1 lbs/hr 68.6 T/yr	N.A.	N.A.	C
NO_x	107.8 lbs/hr 194 T/yr	N.A.	N.A.	C

* Refer to Chapter 17-2 Florida Administrative Code
(Discharge Criteria: Process Weight Rate, #/tonP_2O_5, #/M BTU/hr etc.)

E. Control Devices:

Name	Eff.	Conditions of Operation, Particle Size Range, etc.	Relate to Flow Diagram
Joy Turbulaire Impingement			
Scrubber Model No.(Type) D	65% 10 microns & up		D
Size 125, Serial No.	91%	35% under 10 microns	
74-477-04A			

F. Fuels:

Type (Be specific)	Daily Consumption *	Daily Consumption **	Heat Input BTU/hr.	Relate to Flow Diagram
Bagasse	927 T/day Range 0 - 1200	1082 T/day	325 x 10^6	A
No. 6 Fuel Oil	8.2 T/day Range 0 - 12	9.6 T/day	14.8 x 10^6	B

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

See Addendum sheets and Process Flow Diagram.

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

Scrubber water is used to sluice cane juice mud, which is impounded in settling ponds.

* At design capacity (150,000 lbs/hr steam)

** At operating capacity (175,000 lbs/hr steam)

C 1

ADDENDUM TO PERMIT APPLICATION
FOR
AIR POLLUTION SOURCES

Listed below are clarifications of some of the information required on the application form. All information submitted must be in the format outlined below. Space is also provided below for additional information not contained in the original form.

AIR POLLUTION SOURCES & CONTROL DEVICES:

Item: C 1) Show the derivation of process weight.

Item: C 3) Normal operating time must be given as Hrs/Day, Days/Week and Weeks/Year.

If seasonal, give % operation by month.

Contaminants must include but not limited to: particulate matter, sulfur oxides, carbon monoxide, hydrocarbons and nitrogen oxides. This information must be submitted even though an applicable standard may not exist.

Also give actual discharge of each contaminant in lbs/hr and tons/yr.

Item: E In the space provided for Name, give model number and serial number of control device.

On separate page, give basis for efficency on the process, i. e. calculations, (Do not give a general efficency).

Item: F Include the commercial standard number of fuel oil and % sulfur, e.g. No. 6 fuel oil with 2.5% sulfur.

In the space provided for daily consumption, give mean and extremes.

Heat input must be the design capacity.

If application is for boiler, include manufacturer, model no. and serial no.

ADDITIONAL INFROMATION REQUIRED:

1. Flow diagram of process (without revealing trade secrets)
2. Plot plan
3. Stack data:
   Height (ft.): 75
   Diameter (ft.): 7.3
   Temperature (°F): 160 (exit)
   Flow Rate (ft/min.) 4240 at 30" Hg.

Kleeman Engineering, Inc.

CHEMICAL & ENVIRONMENTAL ENGINEERS

Frank S. Kleeman, P.E. - Pres.
R. Lynn Peyton - V. Pres.

305/731-912
305/731-0140

ADDENDUM CALCULATIONS
APPLICATION FOR PERMIT TO

CONSTRUCT

FOR: U.S. SUGAR CORP.
CLEWISTON MILL BOILER #1

Item C-1 Derivation of Process Weight

Fuel Oil Burned (No. 6) 800 lbs./ hr.

Bagasse Burned 90,200 lbs./hr.

Calculated on Btu basis as follows:

Steam Generated 175,000 lbs/hr.
Btu Value of Steam 1067 Btu/lb.
Btu Value of Fuel Oil 18,500 Btu/lb.
Furnace Efficiency 55 %
Btu Value of Bagasse 3600 Btu/lb.

Heat Output = 175,000 x 1067 = 186.7×10^6 Btu/hr

Heat Input = $\frac{186.7 \times 10^6}{.55}$ = 339.5×10^6 Btu/hr.

Heat Input from Oil = 800 x 18,500 = 14.8×10^6 Btu/hr

Heat Input from Bagasse = $339.5 \times 10^6 - 14.8 \times 10^6 = 324.7 \times 10^6$ Btu/hr

Bagasse Burned = $\frac{324,700,000}{3600}$ = 90,200 Lbs/hr.

Total Process Weight = 800 + 90,200 = 91,000 Lbs/hr

Bagasse Burned Daily = $\frac{90,200 \times 24}{2000}$ = 1082 Tons/day

Oil Burned Daily = $\frac{800 \times 24}{2000}$ = 9.6 Tons/day

1507 N.W. 47 AVE. FT. LAUDERDALE, FLORIDA 3331

Item D Emission Calculations

Stack emissions tests were conducted by U.S. SUGAR on BOILER #2 on Nov. 13, 14 & 15, 1973.

Particulate emissions were determined as follows:

		Lbs/hr. Steam Generated	Lbs/hr. Oil Used
Run No. _____	_____	lbs/hr.	
Run No. _____	_____	" "	
Run No. _____	_____	" "	
Average	76.9	lbs/hr.	158,300

$76.9 \times \frac{175,000}{158,300} = 85.0$ LBS/HR ANTICIPATED PARTICULATE EMISSION AT OPERATING CAPACITY OF 175,000 LBS/HR STEAM

$\frac{85.0 \times 24 \times 150}{2000} =$ 153 Tons/yr Particulates

SO_2 emissions calculated from following formula:
(Dept. H.E.W. Pub. No. AP-52, p. 106)

Lbs. S per 1000 gals. oil burned = 158.8 x %S content of oil

$\frac{800 \text{ lbs/hr oil}}{1000 \times 8.0 \text{ lbs/gal}} \times 158.8 \times 2.4 =$ 38.1 lbs/hr SO_2

38.1 x 24 = 915 lbs/day SO_2 $\frac{915 \times 150}{2000} =$ 68.6 tons/yr

NO_x emissions were calculated from the following formulae:
(PHS Pub. No. 999-AP-29)

For No. 6 Oil $NO_x =$ 104 lbs./1000 gal.

For Bagasse $NO_x =$ 0.3 lb./10^6 Btu Heat Input

$\frac{800}{8.0 \text{ lbs/gal}} =$ 100 gal/hr Oil

NO_x (Oil) = $\frac{100}{1000} \times 104 =$ 10.4 lbs/hr x 24 = 250 lbs/day

NO_x (Bagasse) = 90,200 x 3600 = 324.7 x 10^6 Btu/hr.

324.7 x 0.3 = 97.4 lbs/hr. NO_x

Total NO_x = 10.4 + 97.4 = 107.8 lbs/hr.

$\frac{(10.4) \times 24 \times 150}{2000} =$ 18.7 tons/yr NO_x from Oil

$\frac{(97.4) \times 24 \times 150}{2000} =$ 175.3 tons/yr NO_x from Bagasse

18.7 + 175.3 = 194 tons/yr NO_x Total

CALCULATION OF ALLOWABLE PARTICULATE EMISSIONS

Allowable Particulates:

0.3 lbs. per 10^6 BTU of Heat Input from Bagasse
0.1 lbs. per 10^6 BTU of Heat Input from Oil

Heat Input (bagasse) 324.7 x 10^6 BTU per hour

Heat Input (oil) 14.8 x 10^6 BTU per hour

$$-\left(\frac{324.7}{97.4} \times 0.3\right) + \left(\frac{14.8}{1.5} \times 0.1\right) = 98.9 \text{ lbs./hr. Allowable Particulate Emissions}$$

ITEM E

CALCULATION OF SCRUBBER EFFICIENCY

Inlet particulate loading to the scrubbers was calculated utilizing emission test results performed on BRYANT #1 & #2 BOILERS which are similar in design capacity. Results of tests (see the attached report(s)) were as follows:

TEST # 38	During 3-12-74	808 lbs./hr.
TEST # 39	During 3-12-74	499 lbs./hr.
TEST # _____	During _____	_____ lbs./hr.
AVERAGE		654 lbs./hr.
AVERAGE EMISSIONS FROM SCRUBBERS (#2 BOILER)		58.1 lbs./hr.

$$\text{Scrubber Efficiency} = \frac{654 - 58.1}{654} \times 100$$

$$= 91\ \%$$

STATE OF FLORIDA
DEPARTMENT OF AIR AND WATER POLLUTION CONTROL

CONSTRUCTION PERMIT

FOR U. S. Sugar Corporation
P. O. Drawer 1207
Clewiston, Florida

PERMIT NO. AC-503 DATE November 7, 1972

PURSUANT TO THE PROVISION OF SECTION 403.061 (16) OF CHAPTER 403, FLORIDA STATUTES AND CHAPTER 17-4 FLORIDA ADMINISTRATIVE CODE, THIS PERMIT IS ISSUED TO:
A. R. Mayo, Vice President

FOR THE CONSTRUCTION OF THE FOLLOWING:
Two Joy Turbulaire Type D Impingement Scrubbers to be Added in Serice to Multicyclone Separators Serving #6 Fuel Oil & Bagasse Fired #2 Boiler

LOCATED AT: South of Clewiston, Hendry County, Florida
UTM N 2,956,875 E 505,938

IN ACCORDANCE WITH THE APPLICATION DATED August 21, 1972 AND IN CONFORMITY WITH THE STATEMENTS AND SUPPORTING DATA ENTERED THEREIN, ALL OF WHICH ARE FILED WITH THE DEPARTMENT AND ARE CONSIDERED A PART OF THIS PERMIT.

THIS PERMIT SHALL BE EFFECTIVE FROM THE DATE OF ITS ISSUANCE UNTIL 5/15/73 AND SHALL BE SUBJECT TO ALL APPLICABLE LAWS OF THE STATE AND THE RULES AND REGULATIONS OF THE DEPARTMENT.

Howard L. Rhodes

Howard L. Rhodes, Chief
BUREAU OF PERMITTING

VINCENT D. PATTON
EXECUTIVE DIRECTOR

FORM 1-J

STATE OF FLORIDA

DEPARTMENT OF POLLUTION CONTROL

CONSTRUCTION PERMIT PROVISOS

AIR POLLUTION SOURCES

Permit No. AC-503 Date: 11/7/72

[X] 1. Construction of this installation shall be completed by February 15, 1973.

[X] 2. This construction permit expires on May 15, 1973 following an initial period of operation for appropriate testing to determine compliance with the Rules of the Florida Pollution Control Board.

[X] 3. All applicable rules of the Department including design discharge limitations specified in the application shall be adhered to. The permit holder may also need to comply with county, municipal, federal, or other state regulations prior to construction.

[X] 4. The applicant shall continue the retention of the engineer of record for the inspection of the construction of this project. Upon completion the engineer shall inspect for conformity to construction permit applications and associated documents. A report of such inspection shall be submitted by the engineer to the Department of Pollution Control for consideration toward the issuance of an operation permit.

[ ] 5. This _____ shall be tested for _____ within _____ days after it is placed in operation. These test results are required prior to our issuance of an operation permit and shall be submitted in duplicate to the DPC _____ Florida Regional Office _____

[X] 6. The operation of this installation shall be observed for visible emissions in accordance with Method 9 -- Visible Determination of the Opacity of Emissions from Stationary Sources (Federal Register, December 23, 1971). The observation results are required prior to our issuance of an operation permit, and shall be submitted in duplicate to the DPC Southwest Florida Regional Office, 3201 Golf Course Blvd., Punta Gorda, Florida 33950.

[ ] 7. Stack sampling for total particulate or other contaminant emissions shall be conducted if found by the DPC _____ Florida Regional Office to be necessary as a basis for the issuance of an operation permit.

[X] 8. Satisfactory ladders, platforms, and other safety devices shall be provided/available as well as necessary ports to facilitate the carrying out of an adequate sampling program.

(TURN OVER)

[X] 9. The following items are required prior to our issuance of an operation permit in addition to the engineer of record's report of inspection:

(a) An emission report for total particulates and sulfur oxides based upon actual operations, based upon stack sampling.

(b) A tabular summary of actual records of frequencies and durations of soot blowing as well as boiler blowdown characteristics and disposal practices.

These items are required prior to our issuance of an operation permit and shall be submitted in duplicate to the DPC Southwest Florida Regional Office, 3201 Golf Course Blvd., Punta Gorda, Florida 33950.

[X] 10. There shall be no discharges of liquid effluents or contaminated runoff from the plant site.

[X] 11. All fugitive dust generated at this site shall be adequately controlled.

[X] 12. This construction permit is subject to approval by the Board of the Florida Department of Pollution Control.

State of Florida
Department of Air and Water Pollution Control

PAID

RECEIVED
NOV 15 1972
SW Region DAWPC

RECEIVED
SEP 27 1972
SW Region DAWPC

Application For Permit to Construct Air Pollution Sources

Applicant (Owner or authorized agent): A. R. Mayo, Vice President
(Name and Title)

Name of Establishment: United States Sugar Corporation
(Corporation, Company, Political SD, Firm, etc.)

Mailing Address: P.O. Drawer 1207 Clewiston, Florida 33440

Location of Pollution Source: _____ Clewiston
(Number and Street) (City)

UTM (meters)
N = 2,956,875
E = 505,938

Hendry
(County)

Nature of Industrial Operation: Raw Sugar Manufacture

Permit Applied For:

New Source ☐

Existing Source after modification ☒
Boiler #2 w/ enhanced scrubber

Existing Source ☐

Relocation, expansion or reconstruction ☐

APPROVED BY
FLORIDA DEPARTMENT
OF
POLLUTION CONTROL
V. D. PATTON, EXECUTIVE DIRECTOR
Date _____ Serial No. _____
Howard L. Rhodes
Chief, Permitting Bureau
NOTE: This Approval is not intended to cover structural display

Project Engineer:

E. R. Hendrickson, Ph.D., P.E.
Name

Environmental Engineering, Inc.
Firm

2324 Southwest 34th Street
Gainesville, Florida 32601
Mailing Address

E R Hendrickson
Signature

5088
Florida Registration Number

For Department's Use Only Permit No. AC-503 Date: NOV 7 1972

1-C

The undersigned owner or authorized representative* of United States Sugar Corporation is fully aware that the statements made in this form and the attached exhibits and statements constitute the application for a Construction Permit from the Florida Department of Air and Water Pollution Control and certifies that the information in this application is true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes and all the rules and regulations of the Department or revisions thereof. He also understands that the Permit is non transferable and, if granted a permit, will promptly notify the Department upon sale or legal transfer of the permitted establishment.

A. R. Mayo
Signature of owner or agent.

A. R. Mayo, Vice President
Name and Title

Date: 8/21/72

*Attach letter of authorization.

Estimated Schedule of
Construction of the Project

Begin Construction: September 1, 1972
Receive Equipment: September 10, 1972
Complete Construction: October 24, 1972

Information Regarding Pollution Sources and Proposed Control Facilities

1. Estimated cost of proposed control facilities $ 65,000.

2. Prepare and attach an 8½" x 11" flow diagram, without revealing trade secrets, identifying the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit where gaseous emissions and/or airborne particulates are involved and where finished products are obtained.

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

4. Submit an 8½" x 11' plot plan showing the exact location of the establishment and points of discharge in relation to the surrounding area, residences and other permanent structures and roadways.

I General

A. Raw Materials and Chemicals Used.

Description	Utilization Tons/day, Lbs./day, etc.	Approximate Contaminant Content		Relate to Flow Diagram
		Type	Percent Dry Weight	
Bagasse	920,000 lbs/day (dry basis)	Sulfur	Trace	Feed to Boiler #2
Fuel Oil #6	15,000 lbs/day	Sulfur	2.5% ave.	Feed to Boiler #2

B. Fuels

Type (Be Specific)	Daily Consumption	Gross Maximum Heat Output	Relate to Flow Diagram
Bagasse	920,000 lbs/day	5500 x 10^6 Btu	Boiler #2
Fuel Oil #6	15,000 lbs/day	270 x 10^6 Btu	Boiler #2

C. Products

Description	Average Daily Production (Tons/Day. Lbs/Hr. etc.)
Steam	200,000 lbs/hr (capacity)

D. Normal operation: Hours/Day 24 Day/Week 7

If operation or process is seasonal, describe: Seasonal during cane harvest; approximately November 1 to April 1.

II Identification of Air Contaminants

Compounds of:		Also —			
Chlorine	☐	Hydrocarbons	☐	Acid Mists	☐
Fluorine	☐	Smoke	☒	Odors	☐
Nitrogen	☒	Fly Ash	☒	Radioisotopes	☐
Sulfur	☒	Dusts	☐	Other _____	☐

Specific Compounds _____

III Air Pollution Control Devices

Contaminant	Control Device	Relate to Flow Diagram	Operating Efficiency	Conditions (Particle Size Range, Temp. etc.)
Fly Ash	Multiclone	Boiler #2	Approx. 30%	(existing)
	Impingement Scrubber	Boiler #2	Est. 98%+	(proposed new)

Provide a brief description of the control device or treatment system. Attach separate sheets giving details regarding principle of operation, manufacturer, model, size, type and capacity of control treatment device and the basis for calculating its efficiency. Show any bypasses of the control device and specify when such bypasses are to be used and under what conditions.

The existing control device consists of an American-Standard Series 361 Packaged Flyash Collector installed between boiler and stack. The unit includes a vertical bank of small-diameter dry cyclones and automatic hopper discharge valves. The efficiency originally was calculated by measuring the stack discharge and the weight of flyash discharged from the hoppers for a given period of time.

It is proposed to add two impingement scrubbers (Joy Turbulaire Type D) and FD fan (FD with respect to the scrubber) in series with the existing multiclones. Estimated efficiency is based on manufacturers estimates for 6 inches of water pressure drop, inlet loading of one grain per actual cubic foot, and provided flyash particle size is 35 percent or less smaller than 10 micrometers.

General Description of scrubber included in "Installation, Operating, and Maintenance Instructions for Turbulaire Scrubber, Type D", a copy of which is attached.

General Arrangement for this installation is shown on Joy Manufacturing Company drawing 13271-4, 072-259-04, a copy of which is attached.

IV. Contaminant Balance

From contaminant content in raw materials, waste products, and manufactured products, summarize daily contaminant flow:

	Pounds Contaminant per Day	
	Input	Output
List Raw Materials: DNA List Manufactured Products: List Solid Wastes: List Liquid Wastes:		
Totals		
Airborne Wastes (Total input minus total output)		

Note: If more than one contaminant, specify each
Contaminants recovered in control devices should be shown as either a liquid or a solid waste.

V. Discharged Emissions to Atmosphere

A. Discharge Points and Design Conditions

Discharge Point Description	Relate to Flow Diagram	Height above Ground (ft.)	Cross Sect. Area (sq. ft.)	Periods of Flow Hrs./ Day	Hrs./ Wk.	Temp. of Discharge (°F)
Stack #2	Boiler #2	75 ft.	41.3 sq.ft.	24	168	160°F

NOTE: SO_2 and NO_X values listed below were assumed to be no different from those listed in the permit to operate previously filed except that some reduction in SO_2 could be expected through the scrubber even if water alone is used.

B. Tabulation of Discharged Contaminants

Discharge Point — Relate to Flow Diagram	Flow Rate at Std. Cond. (cfm)	Total Contaminants Discharged: Particulates Gr/ft3 (Std.Cond.)	Particulates lbs./ Day	Other Contaminants (F⁻, SO_X, NO_X etc.) Gr/ft3 (Std. Cond.)	lbs/ Day	Gr/ft3 (Std.Cond)	lbs/ Day
Stack #2	37,656*	0.077	596*	SO_2	< 900	NO_X	1850
Totals							

*Calculated from manufacturers estimates

VI. Treatment and Disposal of Liquid and Solid Waste

1. Identify the contaminants which will be discharged as liquid or solid wastes.

2. Describe the treatment and disposal of liquid and solid wastes. Indicate the concentrations and volume of individual contaminants in treated wastes before disposal.

No contaminated solid or liquid wastes will be discharged from the premises due to this operation. The scrubber water will be circulated through the existing ash pond where the solid material will settle. The liquor containing some fines, will be recirculated to the scrubber. There will be no liquid effluent from this pond, as approximately 40 gpm of make-up water will be required to replace that lost by evaporation plus a small entrainment loss. Lime will be added to the ash pond if required for pH control.

STATE OF FLORIDA

DEPARTMENT OF POLLUTION CONTROL

CONSTRUCTION PERMIT

FOR: U.S. SUGAR CORPORATION
POST OFFICE BOX 1207
CLEWISTON, FLORIDA 33440

PERMIT NO. AC26-2030A DATE 7-15-74

PURSUANT TO THE PROVISION OF SECTION 403.061(16) OF CHAPTER 403, FLORIDA STATUTES AND CHAPTER 17-4, FLORIDA ADMINISTRATIVE CODE, THIS PERMIT IS ISSUED TO:
MR. A. R. MAYO, VICE PRESIDENT

FOR THE CONSTRUCTION OF:
JOY TURBULAIRE SIZE 90, TYPE D, IMPINGEMENT SCRUBBER

FOR BOILER #3

LOCATED AT: CLEWISTON SUGAR MILL, OWEN STREET, CLEWISTON
UTM EAST 7,505,938 NORTH 2,956,875

IN ACCORDANCE WITH THE APPLICATION DATED 4-22-74
AND IN CONFORMITY WITH THE STATEMENTS AND SUPPORTING DATA ENTERED THEREIN, ALL OF WHICH ARE FILED WITH THE DEPARTMENT AND ARE CONSIDERED A PART OF THIS PERMIT.

THIS PERMIT SHALL BE EFFECTIVE FROM THE DATE OF ITS ISSUANCE UNTIL 7-1-75 AND SHALL BE SUBJECT TO ALL APPLICABLE LAWS OF THE STATE AND THE RULES AND REGULATIONS OF THE DEPARTMENT.

Philip R. Edwards

PHILIP R. EDWARDS,
REGIONAL ADMINISTRATOR

PETER P. BALJET,
EXECUTIVE DIRECTOR

FORM 1-J

STATE OF FLORIDA

DEPARTMENT OF POLLUTION CONTROL

CONSTRUCTION PERMIT PROVISOS

AIR POLLUTION SOURCES

Permit No. AC26-2030A Date: 7-15-74

[X] 1. Construction of this installation shalll be completer by 6-1-75.

[X] 2. This construction permit expires on 7-1-75 following an initial period of operation for appropriate testing to determine compliance with the Rules of the Florida Pollution Control Board.

[X] 3. All applicable rules of the Departmnet including design discharge limitations specified in the application shall be adhered to. The permit holder may also need to comply with county, municipal, federal, or other state regulations prior to construction.

[X] 4. The applicant shall continue the retention of the engineer of record for the inspection of the construction of this project. Upon completion the engineer shall inspect for conformity to construction permit applications and associated documents. A report of such inspection shall be submitted by the engineer to the Department of Pollution Control for consideration toward the issuance of an operation permit.

[X] 5. This boiler shall be tested for particulates within 30 days after it is placed in operation. Thest test results are required prior to our issuance of an operation permit and shall be submitted in duplicate to the DPC Southwest Florida Regional Office 3201 Golf Course Blvd., Punta Gorda, Florida 33950

[ ] 6. The operation of this installation shall be observed for visible emissions in accordance with Method (-Visible Determination of the Opacity of Emissions from Stationary Sources (Federal Register, December 23, 1971). The observation results are required prior to our ussuance of an operation permit, and shall be submitted in duplicate to the DPC Florida Regional Office,

[ ] 7. Stack sampling for total particulate or otther contaminant emissions shall be conducted if found by the DPC Florida Regional Office to be necessary as a basis for the issuance of an operation permit.

[X] 8. Satisfactory ladders, platforms, and other safety devices shall be provided/available as well as necessary ports to facilitate the carrying out of an adequate sampling program.

(OVER)

[ ] 9. The following items are required prior to our issuance of an operation permit in addition to the engineer of record's report of inspection:

(a) An emission report for total particulates and sulfur oxides based upon actual operations.

(b) A tabular summary of actual records of frequencies and durations of soot blowing as well as boiler blowdown characteristice and disposal practices.

These items are required prior to our issuance of an operation permit and shall be submitted in duplicate to the DPC_____ Florida Regional Office,_____

_____

[X] 10. There shall be no discharges of liquid effluents or contaminated runoff from the plant site.

[X] 11. All fugitive dust gerated at this site shall be adequately controlled.

(X) 12. Provisions shall be made to enable an accurate determination of bagasse and fuel oil feed rates.

BEST AVAILABLE COPY

PERMIT ... BY ... DEPT. OF POLLUTION ...

PERMIT NO. AC26-2030A

DATE 7/15/74

If applicant is a corporation, a Certificate of Good Standing must be submitted with application.

This may be obtained, for a $5.00 charge, from the Secretary of State, Bureau of Corporate Records, Tallahassee, Florida 32304.

STATE OF FLORIDA
DEPARTMENT OF POLLUTION CONTROL

PAID MAY 14 1974

APPLICATION TO OPERATE/CONSTRUCT POLLUTION SOURCES

60th Day SEP 12 1974

RECEIVED MAY - 2 1974 S. W. REGION DPC

SECTION I – GENERAL INFORMATION FOR ALL POLLUTION SOURCES

I TO BE FILLED IN BY APPLICANT

Source Type: Air Pollution

Type application: [ ] Operation [ ] Temporary Operation [x] Construction

Status Source: [ ] New [x] Existing [ ] Modification

Source Name: U.S. Sugar Corp. Clewiston Mill Boiler #3 County: Hendry

Mfg. by Babcock & Wilcox Co. Contract No. F 710

Source Location: Street: Foot of Owen St. City: Clewiston

(Water Source Only) Lat: ° ' " Long: ° ' "

(Air Source Only) UTM: East 7505938 North 2956875

Appl. Name and Title: A. R. Mayo, Vice President

Appl. Address: U.S. Sugar Corp. P.O. Drawer 1207 Clewiston, Fla. 33440

II TO BE FILLED IN BY REGION (*BY BUREAU OF PERMITTING)

Control No: Region ____ County ____ Type ____ *Project ____

Type Permit	Date Rec'd	*Permit No.	*Issue Date	*Compl. Date	*Exp. Date

Source Description: ____

Control Equipment: ____

Water Permits

Receiving Body Code: ____ Surface Water Code: ____

Station No.: Influent: ____ Effluent: ____

Effluent:	Average	Design	% Reduction
Flow rate, MGD			
BOD, lbs/day			
Susp. Sol., lbs/day			
Other:			

Air Permits

Operating Time: [ ] Continuous [ ] Intermittent

Fuel: Type ____ M-BTU/hr. In Put ____

Incinerator: Capacity, tons/day ____ Type Waste ____

Mfg. & Model ____

Pollutant Emissions, lbs/day	Actual	Design	Allowable
Particulate			
Sulfur Oxides			
Other:			

Implementation: Estimated Appl. Filing Date ____

Estimated Start of Const. ____ Estimated Compliance Date ____

DESCRIPTION OF PROPOSED PROJECT

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

Pollution control facility consists of a Joy Mfg. Co. Turbulaire impingement-type scrubber, Size 90, Type D. This scrubber is a larger size than, but otherwise similar to, the ones which were operated in connection with the #2 Boiler during the 1973-74 cane processing season. By-pass is provided for emergency use only, such as for cleaning due to plugging of scrubber.

Stack emissions tests indicate that the facility will provide full compliance of the source with the new DPC Btu Emission Standaed for Bagasse Boilers.

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

Federally or State Financed Projects only:

Planning Complete N.A.

Financing Program Complete

Indicate other local, state and/or federal agency approvals and dates

All projects:

Start of Construction 7-15-74

Completion of Construction 8-15-75

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

Estimated cost of scrubber plus installation $80,000

D. Indicate any previous DPC permits, issuance dates, and expiration dates.

This Boiler is operating under Permit No. AO 26-2030, issued 5-16-73 and expiring on 7-1-75.

AIR POLLUTION SOURCES & CONTROL DEVICES

A. Identification of Air Contaminants

1) [x] Particulates
   a) [ ] Dust b) [x] Fly Ash c) [x] Smoke d) [ ] Other (Identify)

2) [x] Sulfur Compounds
   a) [x] SO_x as SO_2 b) [ ] Reduced Sulfur as H_2S c) [ ] Other (Identify)

3) [x] Nitrogen Compounds
   a) [x] NO_x as NO_2 b) [ ] NH_3 c) [ ] Other (Identify)

4) [ ] Flourides 5) [ ] Acid Mist 6) [ ] Odor

7) [ ] Hydrocarbons 8) [ ] Volatile Organic Compounds

9) [ ] Other (Specify): _____

B. Raw Materials and Chemicals Used (Be Specific)

Description	Utilization Tons/day, lbs./day, etc.	Approximate Contaminant Content		Relate to Flow Diagram
		Type	% Wt.	
Bagasse	792.4 T/day	-	-	A
No. 6 Fuel Oil	30.0 T/day	S	2.4	B

C. Process Weight:

1) Total Process Weight Rate 43,530 lbs./hr. [See Sec. 17-2.04(2)]
2) Product Weight 100,000 lb./hr. expressed as Steam
3) Normal Operating Time ~~24 hours per day~~, if seasonal describe: ~~Approx. 150 days/yr.~~ (Nov. 1 thru March 31)

D. Airborne Contaminants Discharged:

Name of Contaminant	Actual Discharge	Discharge Criteria*	Allowable Discharge*	Relate Location to Flow Diagram
Particulates	48.6 lbs/hr 87.5 T/yr	Btu Std.	48.9	C
SO2	119 lbs/hr 214 T/yr	N.A.	N.A.	C
NO_x	76.8 lbs/hr 138.2 T/yr	N.A.	N.A.	C

* Refer to Chapter 17-2 Florida Administrative Code
(Discharge Criteria: Process Weight Rate, #/tonP_2O_5, #/M BTU/hr etc.)

E. Control Devices:

Name	Eff.	Conditions of Operation, Particle Size Range, etc.	Relate to Flow Diagram
Joy Turbulaire Impingement Scrubber, Model No.(Type) Size 90, Serial No. Not available	D	65% 10 microns & up 35% under 10 microns	D

F. Fuels:

Type (Be specific)	Daily Consumption	Heat Input BTU/hr.	Relate to Flow Diagram
Bagasse	492.4 tons/day Range 0 - 600	147.7×10^6	A
No. 6 Fuel Oil	30.0 Tons/day Range 0 - 40	46.3×10^6	B

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

See Addendum sheets and Process Flow Diagram

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

Scrubber water is used to sluice cane juice mud, which is impounded in settling ponds.

C 3

ADDENDUM TO PERMIT APPLICATION FOR AIR POLLUTION SOURCES

Listed below are clarifications of some of the information required on the application form. All information submitted must be in the format outlined below. Space is also provided below for additional information not contained in the original form.

AIR POLLUTION SOURCES & CONTROL DEVICES:

Item: C 1) Show the derivation of process weight.

Item: C 3) Normal operating time must be given as Hrs/Day, Days/Week and Weeks/Year.

If seasonal, give % operation by month.

Contaminants must include but not limited to: particulate matter, sulfur oxides, carbon monoxide, hydrocarbons and nitrogen oxides. This information must be submitted even though an applicable standard may not exist.

Also give actual discharge of each contaminant in lbs/hr and tons/yr.

Item: E In the space provided for Name, give model number and serial number of control device.

On separate page, give basis for efficency on the process, i. e. calculations, (Do not give a general efficency).

Item: F Include the commercial standard number of fuel oil and % sulfur, e.g. No. 6 fuel oil with 2.5% sulfur.

In the space provided for daily consumption, give mean and extremes.

Heat input must be the design capacity.

If application is for boiler, include manufacturer, model no. and serial no.

ADDITIONAL INFROMATION REQUIRED:

1. Flow diagram of process (without revealing trade secrets)
2. Plot plan
3. Stack data:
   - Height (ft.): 60
   - Diameter (ft.): 5.0
   - Temperature (°F): 160 (exit)
   - Flow Rate (ft/min.) 3140 at 30" HG.

Kleeman Engineering, Inc.

CHEMICAL & ENVIRONMENTAL ENGINEERS

Frank S. Kleeman, P.E. - Pres.
R. Lynn Peyton - V. Pres.

305/731-9121
305/731-0146

ADDENDUM CALCULATIONS
APPLICATION FOR PERMIT TO

CONSTRUCT

FOR: U.S. SUGAR CORP.
CLEWISTON MILL BOILER #9

Item C-1 Derivation of Process Weight

Fuel Oil Burned (No. 6) 2500 lbs./ hr.

Bagasse Burned 41,030 lbs./hr.

Calculated on Btu basis as follows:

Steam Generated 100,000 lbs/hr.

Btu Value of Steam 1067 Btu/lb.

Btu Value of Fuel Oil 18,500 Btu/lb.

Furnace Efficiency 55 %

Btu Value of Bagasse 3600 Btu/lb.

Heat Output = $100{,}000 \times 1{,}067 = 106.7 \times 10^6$ Btu/hr.

Heat Input = $\frac{106.7 \times 10^6}{.55} = 194.0 \times 10^6$ Btu/hr.

Heat Input from Oil = $2500 \times 18{,}500 = 46.3 \times 10^6$ Btu/hr.

Heat Input from Bagasse = $194.0 \times 10^6 - 46.3 \times 10^6 = 147.7 \times 10^6$ Btu/hr.

Bagasse Burned = $\frac{147{,}700{,}000}{3600} = 41{,}030$ Lbs/hr.

Total Process Weight = $2500 + 41{,}030 = 43{,}530$ Lbs/hr.

Bagasse Burned Daily = $\frac{41{,}030 \times 24}{2000} = 492.4$ Tons/day

Oil Burned Daily = $\frac{2500 \times 24}{2000} = 30.0$ Tons/day

1507 N.W. 47 AVE. FT. LAUDERDALE, FLORIDA 33313

Item D Emission Calculations

Stack emissions tests were conducted by U.S. SUGAR on BOILER #2 on Nov. 12, 14 & 15, 1973.

Particulate emissions were determined as follows:

	Lbs/hr. Steam Generated	Oil Used
Run No. ____	____ lbs/hr.	
Run No. ____	____ " "	
Run No. ____	____ " "	
Average (BOILER #2)	76.9 lbs/hr.	158,300

$76.9 \times \frac{100,000}{158,300} = 48.6$ LBS/HR ANTICIPATED PARTICULATE EMISSIONS AT OPERATING CAPACITY OF 100,000 LBS/HR STEAM

$\frac{48.6 \times 24 \times 150}{2000} = 87.5$ Tons/yr Particulates

SO_2 emissions calculated from following formula:
(Dept. H.E.W. Pub. No. AP-52, p. 106)

Lbs. S per 1000 gals. oil burned = 158.8 x %S content of oil

$\frac{2500 \text{ lbs/hr oil}}{1000 \times 8.0 \text{ lbs/gal}} \times 158.8 \times 2.4 = 119$ lbs/hr SO_2

$119 \times 24 = 2858$ lbs/day SO_2 $\frac{2858 \times 150}{2000} = 214$ tons/yr S

NO_x emissions were calculated from the following formulae:
(PHS Pub. No. 999-AP-29)

For No. 6 Oil NO_x = 104 lbs./1000 gal.

For Bagasse NO_x = 0.3 lb./10^6 Btu Heat Input

$\frac{2500}{8.0 \text{ lbs/gal}} = 313$ gal/hr Oil

NO_x (Oil) = $\frac{313}{1000} \times 104 = 32.5$ lbs/hr x 24 = 780 lbs/day

NO_x (Bagasse) = $41,030 \times 3600 = 147.7 \times 10^6$ Btu/hr.

$147.7 \times 0.3 = 44.3$ lbs/hr. NO_x

Total NO_x = 32.5 + 44.3 = 76.8 lbs/hr.

$\frac{(32.5) \times 24 \times 150}{2000} = 58.5$ tons/yr NO_x from Oil

$\frac{(44.3) \times 24 \times 150}{2000} = 79.7$ tons/yr NO_x from Bagasse

58.5 + 79.7 = 138.2 tons/yr NO_x Total

CALCULATION OF ALLOWABLE PARTICULATE EMISSIONS

Allowable Particulates:

0.3 lbs. per 10^6 BTU of Heat Input from Bagasse
0.1 lbs. per 10^6 BTU of Heat Input from Oil

Heat Input (bagasse) 132.9 X 10^6 BTU per hour

Heat Input (oil) 61.1 X 10^6 BTU per hour

$$-\left(\frac{132.9}{39.9} \times 0.3\right) + \left(\frac{61.1}{61.1} \times 0.1\right) = 46.0 \text{ lbs./hr. Allowable Particulate Emissions}$$

ITEM E

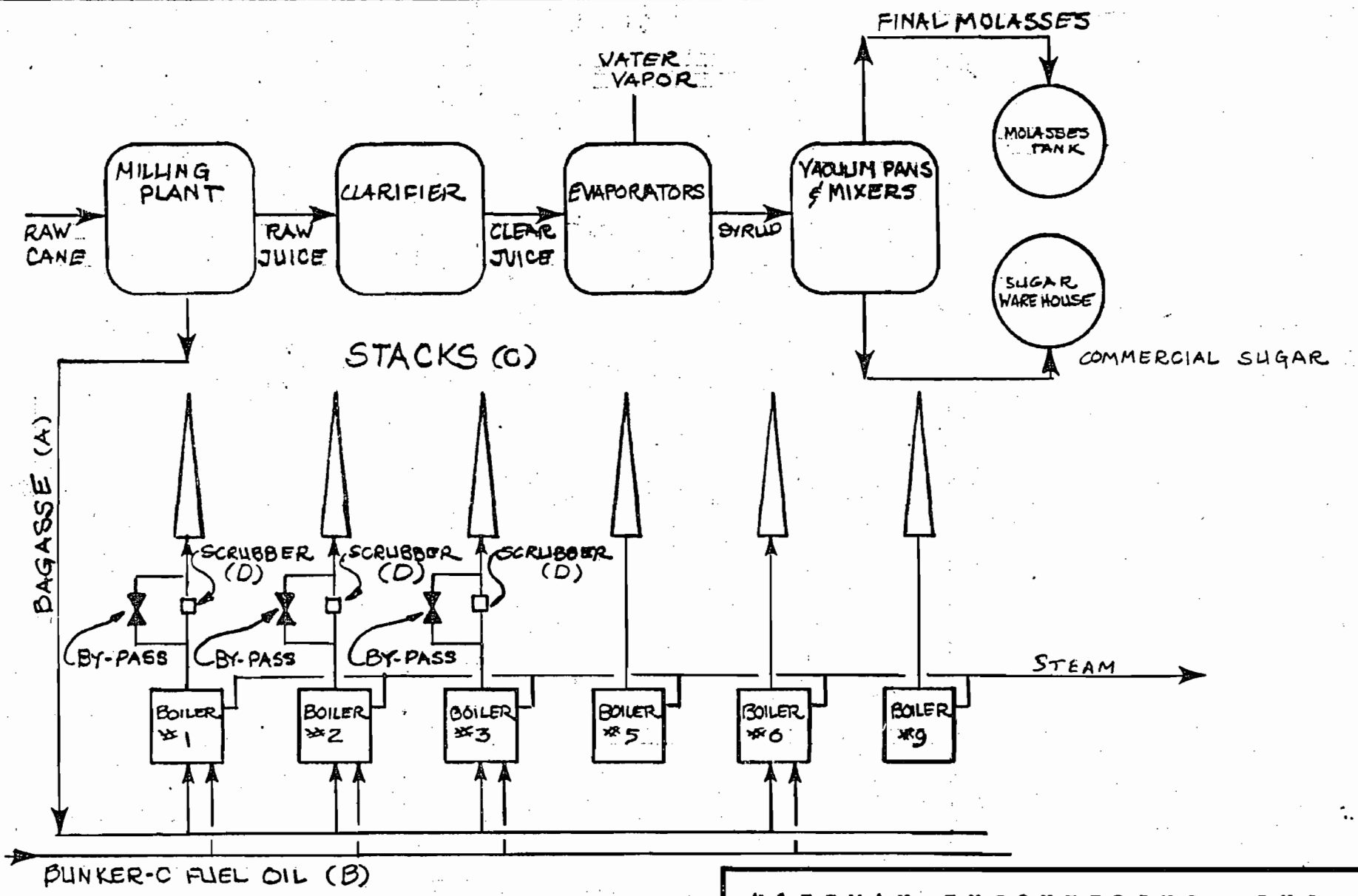
CALCULATION OF SCRUBBER EFFICIENCY

Inlet particulate loading to the scrubbers was calculated utilizing emission test results performed on BRYANT #1 & #2 BOILERS which are similar in design capacity. Results of tests (see the attached report(s)) were as follows:

TEST # 38	During 3-12-74	808	lbs./hr.
TEST # 39	During 3-12-74	499	lbs./hr.
TEST # _____	During _____	_____	lbs./hr.
AVERAGE (BOILER #1)		654	lbs./hr.
AVERAGE EMISSIONS FROM SCRUBBERS (BOILER #2)		58.1	lbs./hr.

$$\text{Scrubber Efficiency} = \frac{654 - 58.1}{654} \times 100$$

$$= 91\%$$



NOTE:

BOILERS #5 & #9 NOT IN SERVICE DURING '73/'74 PROCESSING SEASON.

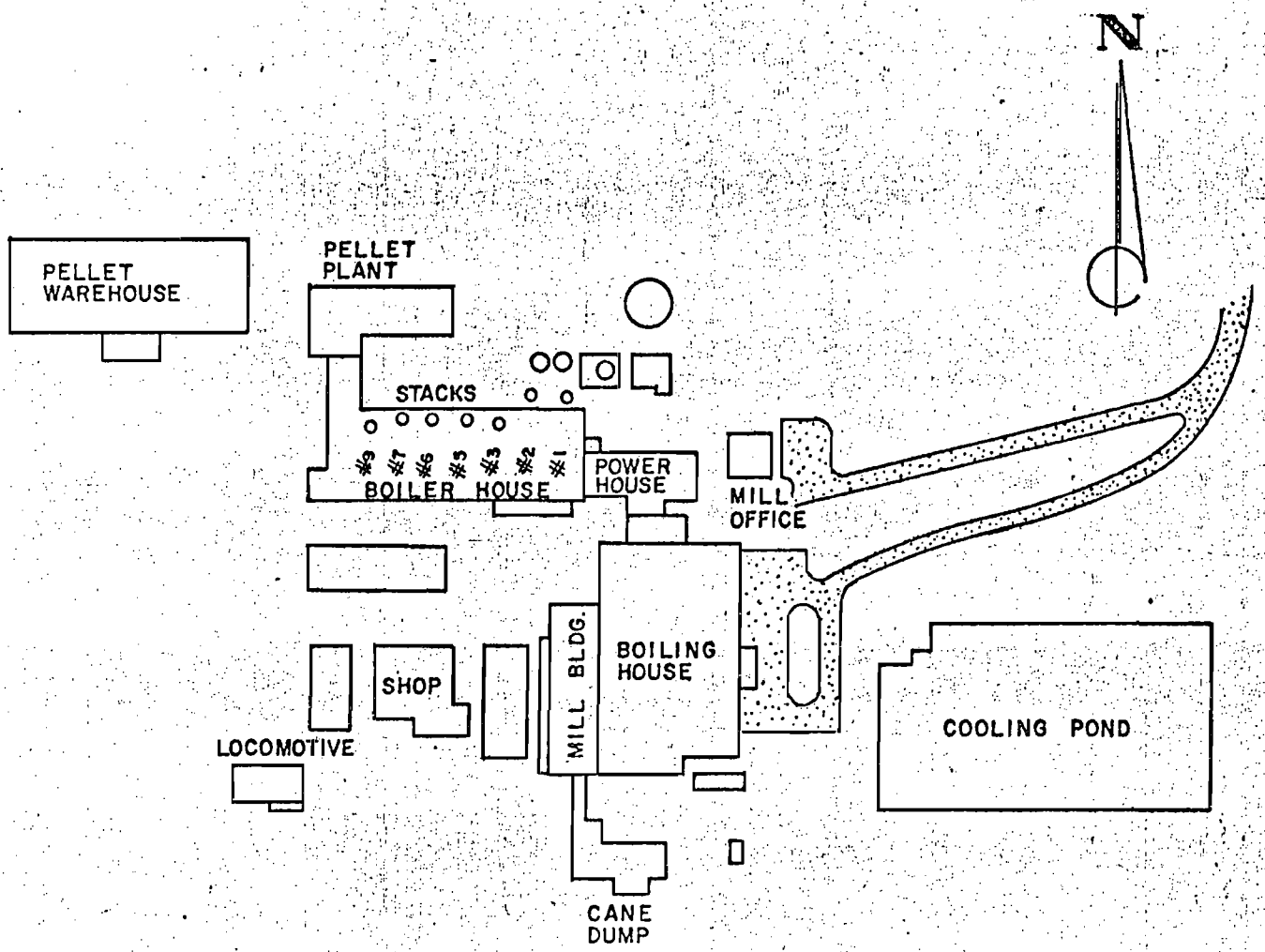
KLEEMAN ENGINEERING, INC.
1507 N.W. 47th AVE. Ft. Lauderdale, Fla. 33313

SCALE: NONE	APPROVED BY:	DRAWN BY R.L.P.
DATE: 4/19/74		REVISED

SCHEMATIC PROCESS FLOW DIAGRAM
U.S. Sugar Corp. - Clewiston Mill - Clewiston, Fla.

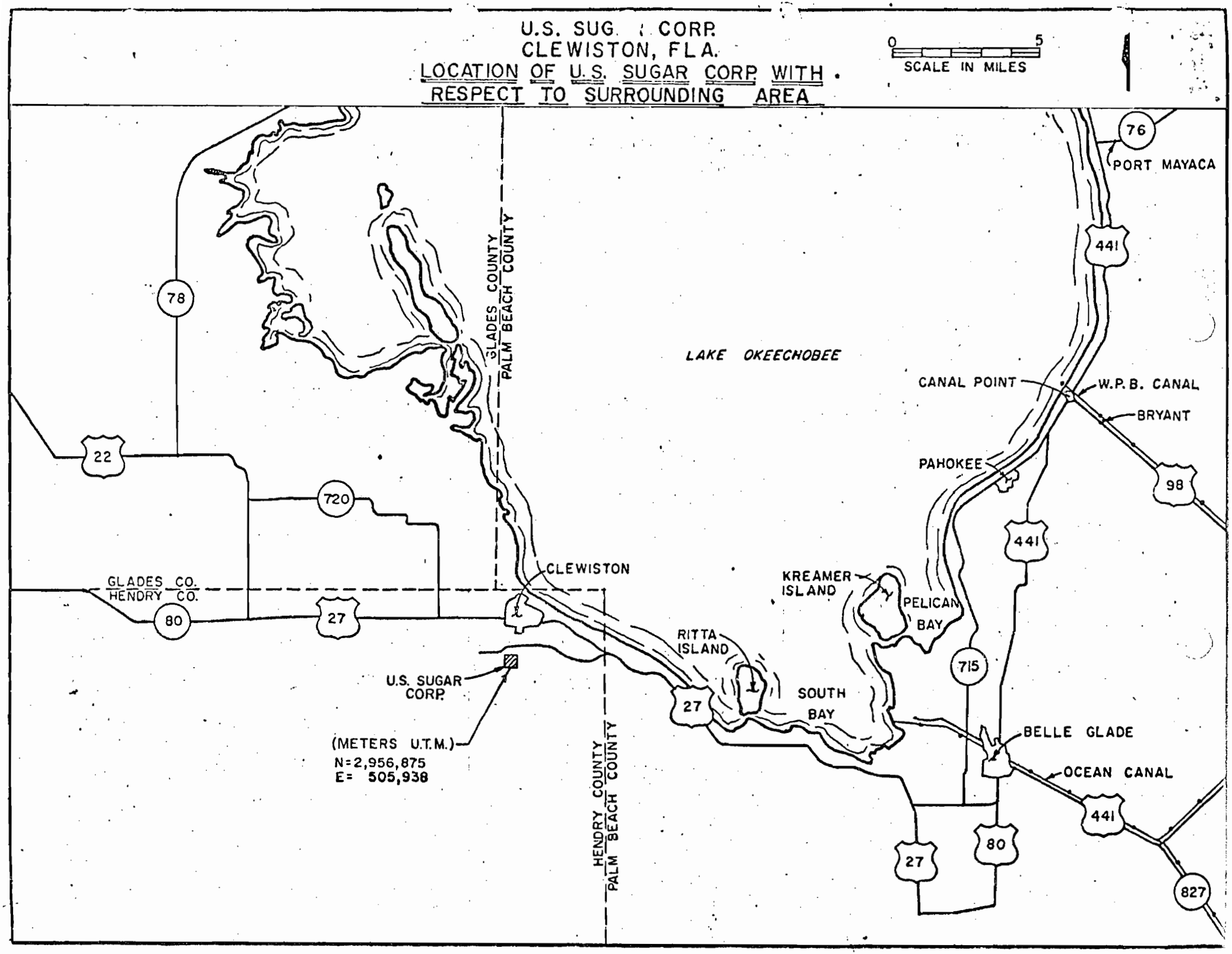
Proj. No(s). 03-74-0145, 0146 & 0153

DRAWING NUMBER



PLOT PLAN

U.S. SUGAR CORP.
CLEWISTON, FLORIDA


U.S. SUG. : CORP.
CLEWISTON, FLA.
LOCATION OF U.S. SUGAR CORP. WITH RESPECT TO SURROUNDING AREA
0
5
SCALE IN MILES
76
PORT MAYACA
441
78
GLADES COUNTY
PALM BEACH COUNTY
LAKE OKEECHOBEE
CANAL POINT
W.P.B. CANAL
BRYANT
22
720
PAHOKEE
98
441
CLEWISTON
GLADES CO.
HENDRY CO.
80
27
KREAMER ISLAND
PELICAN BAY
RITTA ISLAND
715
U.S. SUGAR CORP.
(METERS U.T.M.)
N=2,956,875
E= 505,938
27
SOUTH BAY
BELLE GLADE
OCEAN CANAL
HENDRY COUNTY
PALM BEACH COUNTY
441
27
80
827

STATEMENTS BY APPLICANT AND ENGINEER

A. **Applicant**

The undersigned owner or authorized representative of * U.S. Sugar Corp. is fully aware that the statements made in this application for a Construct permit are true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to maintain and operate the pollution source and pollution control facilities in such a manner as to comply with the provisions of Chapter 403 Florida Statutes and all the rules and regulations of the Department or revisions thereof. He also understands that a permit, if granted by the Department, will be non-transferable and he will promptly notify the Department upon sale or legal transfer of the permitted establishment.

A. R. Mayo

Signature of the Owner or Authorized Representative

A. R. Mayo, Vice President

Name and Title (Please Type)

Date: April 22, 1974 Telephone No.: (813) 983-8121

* Attach a letter of authorization

B. **Professional Engineer Registered in Florida:**

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 control and discharge of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution source(s) with appropriate control facilities, when properly maintained and operated, will comply 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 the applicant a set of instructions for the proper maintenance and operation of the installation covered in this application.

Signature Frank S. Kleeman

Mailing Address: Kleeman Engineering, Inc.
1507 N.W. 47th Ave.
Ft. Lauderdale, Fla. 33313

Name: Frank S. Kleeman, P.E.
(please type)

Telephone No.: (305) 731-9121

Florida Registration Number 13622

Date: April 19, 1974

(Please affix seal)

COMMENT SHEET

DATE: 7/15/74 COUNTY: Hendry Palm Beach TYPE: CAP

SOURCE NAME: U.S Sugar Corp.

COMMENTS: Application to install scrubbers on Boilers #1, 2, 3 for Clewiston mill and Boiler #3 on Bryant mill have been reviewed. Based on test results on a similar installation, compliance with the 0.3 lb/mm BTU rule is expected. Scrubbers will be constructed of stainless steel Palm Beach program has no objections. Recommend approval.

PAID

State of Florida
Department of Air and Water Pollution Control

RECEIVED
NOV 15 1972
SW Region DAWPC

Application For Permit to Construct Air Pollution Sources

Applicant (Owner or authorized agent): A. R. Mayo - Vice-President
(Name and Title)

Name of Establishment: U. S. Sugar Corporation
(Corporation, Company, Political SD, Firm, etc.)

Mailing Address: P. O. Drawer 1207, Clewiston, Florida 33440

Location of Pollution Source: (Number and Street) Clewiston, Florida (City)

Latitude 26° 44' 45" N

Longitude 80° 55' 30" W

Hendry
(County)

Nature of Industrial Operation: Bagasse Drying - New Scrubber

Permit Applied For:

New Source ☐

Existing Source Modification ☐

Existing Source ☐

Relocation, expansion or reconstruction ☐

APPROVED BY
FLORIDA DEPARTMENT
OF
POLLUTION CONTROL
V. D. PATTON, EXECUTIVE DIRECTOR ☒

Date Serial No.

Howard L. Rhodes

Chief, Permitting Bureau

NOTE: This Approval is not intended to cover structural display

RECEIVED
SEP 27 1972
SW Region DAWPC

Project Engineer:

David B. Smith
Name

Smith-Davis & Associates, Inc.
Firm

2512 S.W. 34th St., Gainesville, Florida 32501
Mailing Address

Signature

3108
Florida Registration Number

For Department's Use Only Permit No. AC-502 Date: NOV 7 1972

1-C

The undersigned owner or authorized representative* of U. S. Sugar Corporation is fully aware that the statements made in this form and the attached exhibits and statements constitute the application for a Construction Permit from the Florida Department of Air and Water Pollution Control and certifies that the information in this application is true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes and all the rules and regulations of the Department or revisions thereof. He also understands that the Permit is non transferable and, if granted a permit, will promptly notify the Department upon sale or legal transfer of the permitted establishment.

A. R. Mayo

Signature of owner or agent.

A. R. Mayo, Vice-President

Name and Title

Date: 8/16/72

*Attach letter of authorization.

Estimated Schedule of
Construction of the Project

Information Regarding Pollution Sources and Proposed Control Facilities

1. Estimated cost of proposed control facilities $ 10,000.00 Approximate installed cost.

2. Prepare and attach an 8½" x 11" flow diagram, without revealing trade secrets, identifying the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit where gaseous emissions and/or airborne particulates are involved and where finished products are obtained.

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

4. Submit an 8½" x 11' plot plan showing the exact location of the establishment and points of discharge in relation to the surrounding area, residences and other permanent structures and roadways.

I General

A. Raw Materials and Chemicals Used.

Description	Utilization Tons/day, Lbs./day, etc.	Approximate Contaminant Content		Relate to Flow Diagram
		Type	Percent Dry Weight	
Bagasse	10 Tons/hr. dry basis	Dust generated by drying	0.31% by weight dry basis	Wet bagasse to drying
No. 6 Fuel Oil	1375 lb/hr.	Sulfur	3% Max.	Fuel Oil to drying.
		NO_2 (formed by combustion)	13 lb/1000 lb	

B. Fuels

Type (Be Specific)	Daily Consumption	Gross Maximum Heat Output	Relate to Flow Diagram
No. 6 Fuel Oil	33000 lb	600 x 10^6 Btu	Fuel Oil to Drying

C. Products

Description	Average Daily Production (Tons/Day. Lbs/Hr. etc.)
Dry Bagasse	10 Tons/hr Max.

D. Normal operation: Hours/Day 24 Day/Week 7

If operation or process is seasonal, describe: Process is in operation during the cane harvesting season which is approximately November 1 to March 1.

II Identification of Air Contaminants

Compounds of:		Also —			
Chlorine	☐	Hydrocarbons	☐	Acid Mists	☐
Fluorine	☐	Smoke	☐	Odors	☐
Nitrogen	☒	Fly Ash	☐	Radioisotopes	☐
Sulfur	☒	Dusts	☒	Other _____	☐

Specific Compounds NO_2, SO_2

III Air Pollution Control Devices

Contaminant	Control Device	Relate to Flow Diagram	Operating Efficiency	Conditions (Particle Size Range, Temp. etc.)
Dust	Scrubber		99%	20% less than 10 micron.
SO_2	Scrubber		50%	See Note 1.

Provide a brief description of the control device or treatment system. Attach separate sheets giving details regarding principle of operation, manufacturer, model, size, type and capacity of control treatment device and the basis for calculating its efficiency. Show any bypasses of the control device and specify when such bypasses are to be used and under what conditions.

Scrubber is Western Precipitation, Turbulaire, Type DB, size 28. Operating Instructions, including a sketch, for this device are attached. It is anticipated construction can be completed by November 15, 1972.

Note 1. Collection efficiency for SO_2 will depend upon the steady state value of pH of the scrubber water. It is expected that the collection efficiency of 50% is a conservative value.

IV. Contaminant Balance

From contaminant content in raw materials, waste products, and manufactured products, summarize daily contaminant flow:

	Pounds Contaminant per Day	
	Input	Output
List Raw Materials:		
Bagasse:		
Dust formed by drying	1490	
No. 6 Fuel Oil:		
NO_2 formed by combustion	430	
SO_2 formed by combustion	1980	
List Manufactured Products:		
List Solid Wastes:		
List Liquid Wastes:		
Dust		1475
SO_2		990
Totals		
Dust	1490	1475
NO_2	430	0
SO_2	1980	990

Airborne Wastes (Total input minus total output)

Dust	15 lb/day
NO_2	430 lb/day
SO_2	990 lb/day

Note: If more than one contaminant, specify each
Contaminants recovered in control devices should be shown as either a liquid or a solid waste.

V. Discharged Emissions to Atmosphere

A. Discharge Points and Design Conditions

Discharge Point Description	Relate to Flow Diagram	Height above Ground (ft.)	Cross Sect. Area (sq. ft.)	Periods of Flow Hrs./ Day	Hrs./ Wk.	Temp. of Discharge (°F)
Scrubber Stack		Approx. 35'	12.6	24	168	154

B. Tabulation of Discharged Contaminants

Discharge Point – Relate to Flow Diagram	Flow Rate at Std. Cond. (cfm)	Total Contaminants Discharged: Particulates Gr/ft3 (Std.Cond.)	Particulates lbs./ Day	Other Contaminants (F^-, SO_x, NO_x etc.) Gr/ft3 (Std. Cond.)	Other Contaminants lbs/ Day	Other Contaminants Gr/ft3 (Std.Cond)	Other Contaminants lbs/ Day
Scrubber Stack	23,000	0.0032	15	NO_2 = 0.091	430	SO_2 = 0.21	990
Totals							

VI. Treatment and Disposal of Liquid and Solid Waste

1. Identify the contaminants which will be discharged as liquid or solid wastes.

2. Describe the treatment and disposal of liquid and solid wastes. Indicate the concentrations and volume of individual contaminants in treated wastes before disposal.

No contaminated solid or liquid wastes will be discharged from the premises due to this operation. The scrubber water will be discharged to the existing ash pond which serves the boiler scrubbers. The effluent from this scrubber is approximately 3 GPM, and this is but a small fraction of the makeup water normally required in the ash pond.

Kleeman Engineering, Inc.

New Address-- 2120 W. BROWARD BLVD. FT• LAUDERDALE, FLA• 33312

CHEMICAL & ENVIRONMENTAL ENGINEERS

Frank S. Kleeman - Pres.

R. Lynn Peylon - V. Pres.

731-9121

731-0146

May 12, 1975

Mr. Philip R. Edwards, Regional Administrator
Fla. Dept. of Pollution Control
2180 W. First St.
Suite 401
Ft. Myers, Fla. 33901

Attention: Mr. Thomas W. Davis, Engineer

Subject: U.S. Sugar Corp. - Clewiston Mill

Reference: Scrubber for Boiler #1 - DPC Construction Permit No. AC 26-2028A

Gentlemen:

I have inspected the reference facility and hereby certify that I have found the installation to be in general conformity with the information and associated document contained in the permit application.

I would like to note, however, that it is the intention of U.S. Sugar Corp. to delay installation of a by-pass until such time as it is determined to be essential to the continuing satisfactory operation of the scrubber.

Sincerely,

Frank S. Kleeman

Frank S. Kleeman, P.E.

Florida Registration No. 13622

cc: Palm Beach Co. H.D.
Mr. A. R. Mayo

1507 N.W. 47 AVE. LAUDERHILL, FLORIDA 33313

ADDENDUM TO PERMIT APPLICATION
FOR
AIR POLLUTION SOURCES

U.S. Sugar Corp. - Clewiston Mill - Boiler #1

Listed below are clarifications of some of the information required the application form. All information submitted must be in the format o lined below. Space is also provided below for additional information n contained in the original form.

AIR POLLUTION SOURCES & CONTROL DEVICES:

Item: C 1) Show the derivation of process weight.

Item: C 3) Normal operating time must be given as Hrs/Day, Days/Week and Weeks/Year.

If seasonal, give % operation by month.

Contaminants must include but not limited to: particulate matter, sulfur oxides, carbon monoxide, hydrocarbons and nitrogen oxides. This information must be submitted even though an applicable standard may not exist.

Also give actual discharge of each contaminant in lbs/hr and tons/yr.

Item: E In the space provided for Name, give model number and serial number of control device.

On separate page, give basis for efficency on the process, i. e. calculations, (Do not give a general efficency).

Item: F Include the commercial standard number of fuel oil and % sulfur, e.g. No. 6 fuel oil with 2.5% sulfur.

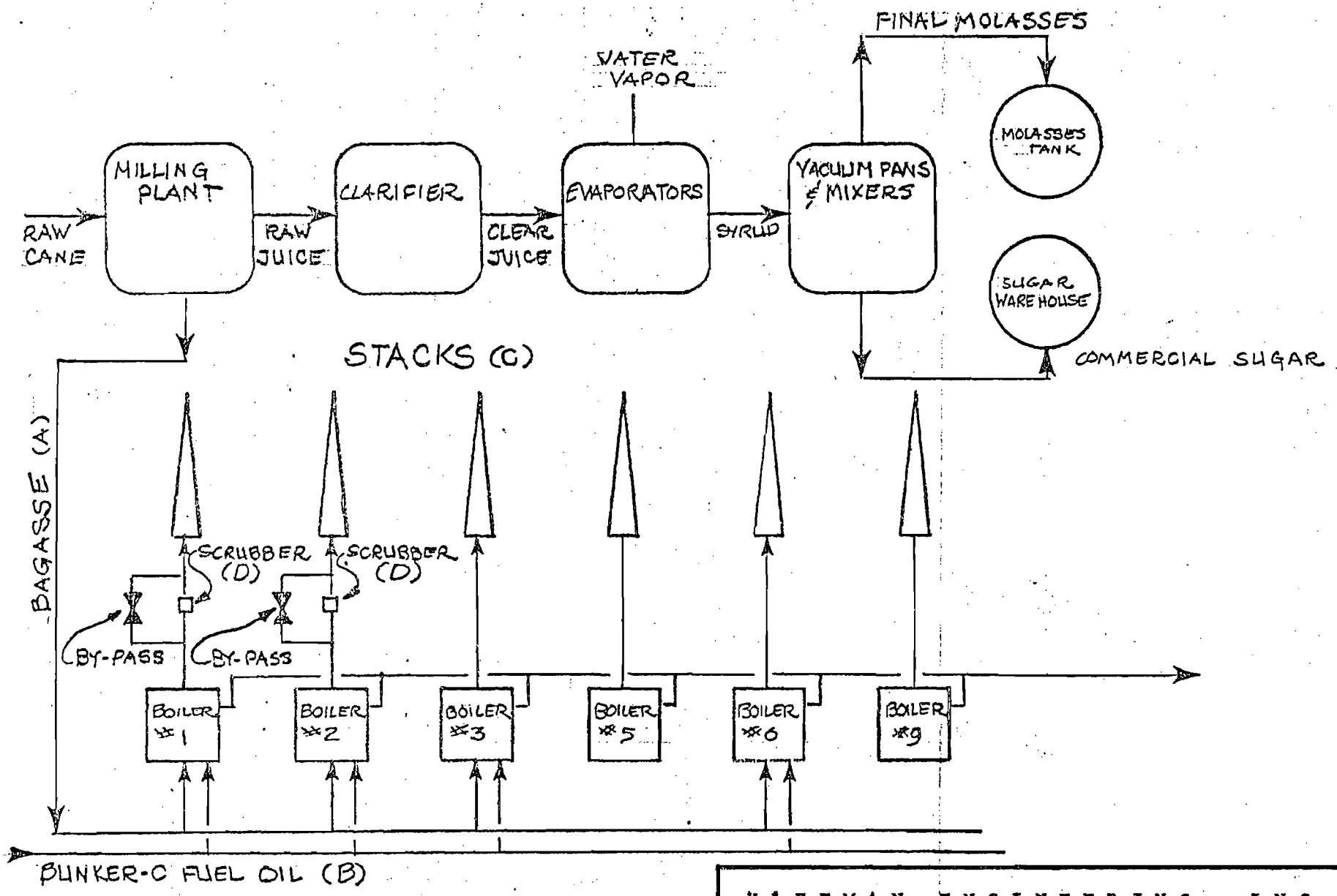
In the space provided for daily consumption, give mean and extremes.

Heat input must be the design capacity.

If application is for boiler, include manufacturer, model no. and serial no.

ADDITIONAL INFROMATION REQUIRED:

1. Flow diagram of process (without revealing trade secrets)
2. Plot plan
3. Stack data:
   Height (ft.): 75
   Diameter (ft.): 7.3
   Temperature (°F): 160 (exit)
   Flow Rate (ft/min.) 4240 at 30" Hg



NOTE:

BOILERS #5 & #9 NOT IN SERVICE DURING '73/'74 PROCESSING SEASON.

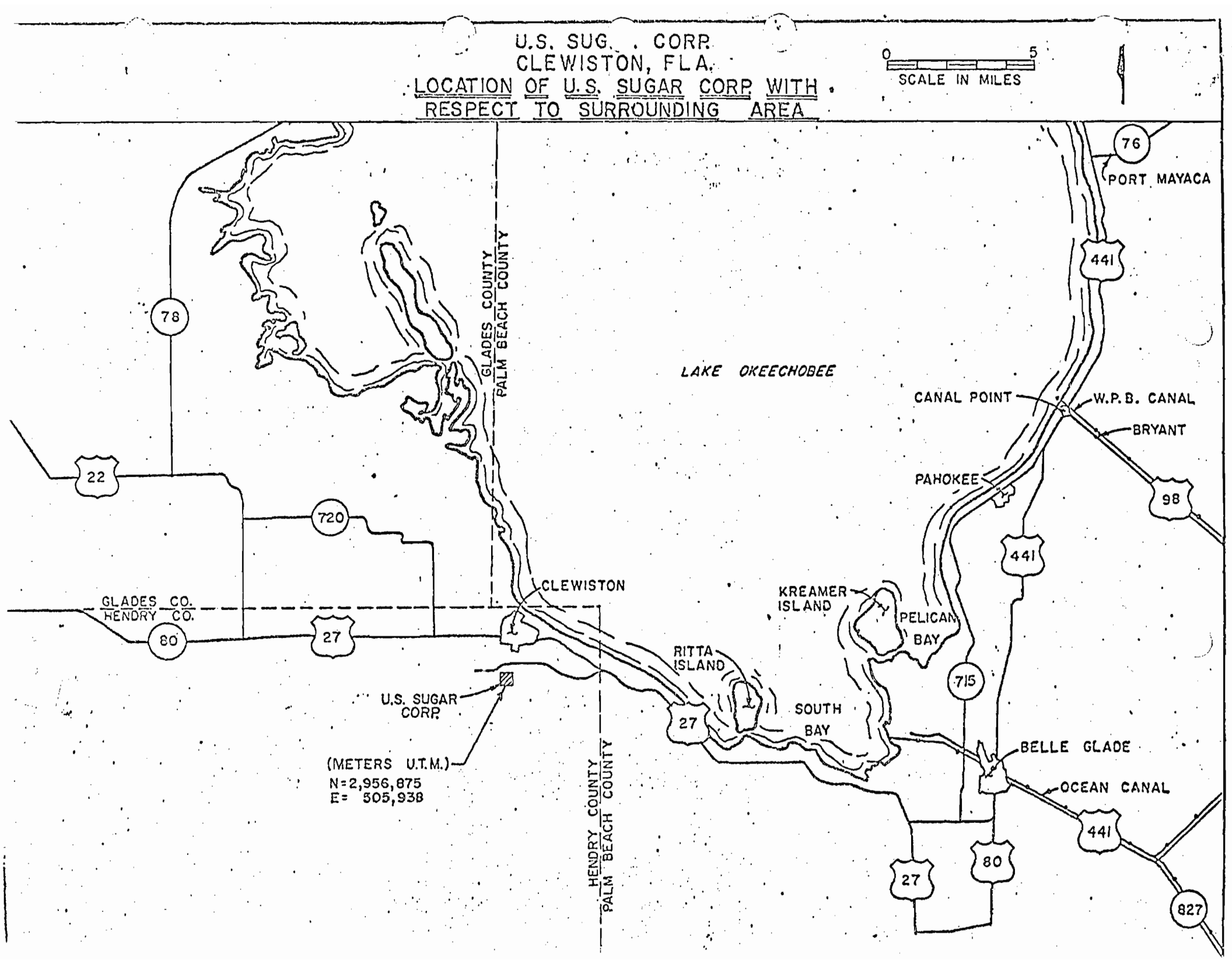
KLEEMAN ENGINEERING, INC.
1507 N.W. 47th AVE. Ft. Lauderdale, Fla. 33313

SCALE: NONE	APPROVED BY:	DRAWN BY R.L.P.
DATE: 4/19/74		REVISED

SCHEMATIC PROCESS FLOW DIAGRAM
U.S. Sugar Corp. - Clewiston Mill - Clewiston, Fla.

Proj. No(s). 03-74-0145, 0146 & 0153

DRAWING NUMBER


U.S. SUG. . CORP.
CLEWISTON, FLA.
LOCATION OF U.S. SUGAR CORP. WITH RESPECT TO SURROUNDING AREA
0
5
SCALE IN MILES
76
PORT MAYACA
441
78
GLADES COUNTY
PALM BEACH COUNTY
LAKE OKEECHOBEE
CANAL POINT
W.P.B. CANAL
BRYANT
22
720
PAHOKEE
98
441
CLEWISTON
GLADES CO.
HENDRY CO.
80
27
KREAMER ISLAND
PELICAN BAY
RITTA ISLAND
715
U.S. SUGAR CORP.
27
SOUTH BAY
BELLE GLADE
OCEAN CANAL
(METERS U.T.M.)
N=2,956,875
E= 505,938
HENDRY COUNTY
PALM BEACH COUNTY
441
27
80
827

STATEMENTS BY APPLICANT AND ENGINEER

A. **Applicant**

The undersigned owner or authorized representative of * U.S. Sugar Corp. is fully aware that the statements made in this application for a Operation permit are true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to maintain and operate the pollution source and pollution control facilities in such a manner as to comply with the provisions of Chapter 403 Florida Statutes and all the rules and regulations of the Department or revisions thereof. He also understands that a permit, if granted by the Department, will be non-transferable and he will promptly notify the Department upon sale or legal transfer of the permitted establishment.

A. R. Mayo
Signature of the Owner or Authorized Representative

A. R. Mayo, Vice President
Name and Title (Please Type)

Date: May 12, 1975 Telephone No.: (813) 983-8121

* Attach a letter of authorization

B. **Professional Engineer Registered in Florida:**

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 control and discharge of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution source(s) with appropriate control facilities, when properly maintained and operated, will comply 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 the applicant a set of instructions for the proper maintenance and operation of the installation covered in this application.

Signature Frank S. Kleeman

Mailing Address: Kleeman Engineering, Inc.
2120 W. Broward Blvd.
Ft. Lauderdale, Fla. 33312

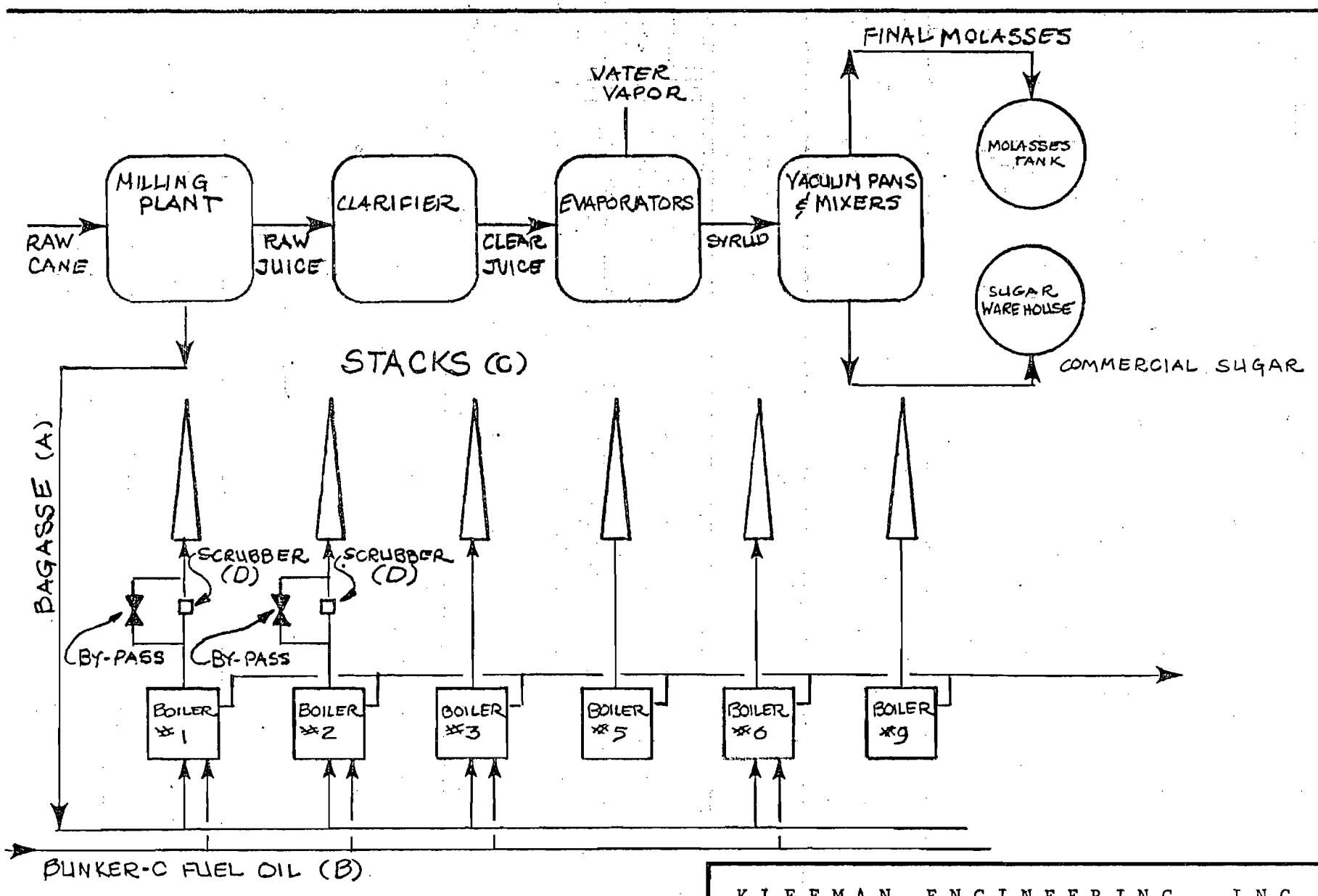
Name: Frank S. Kleeman, P.E.
(please type)

Telephone No.: (305) 581-1388

Florida Registration Number 13622

Date: May 12, 1975

(Please affix seal)



NOTE:

* BOILERS #5 & #9 NOT IN SERVICE DURING '73/'74 PROCESSING SEASON.

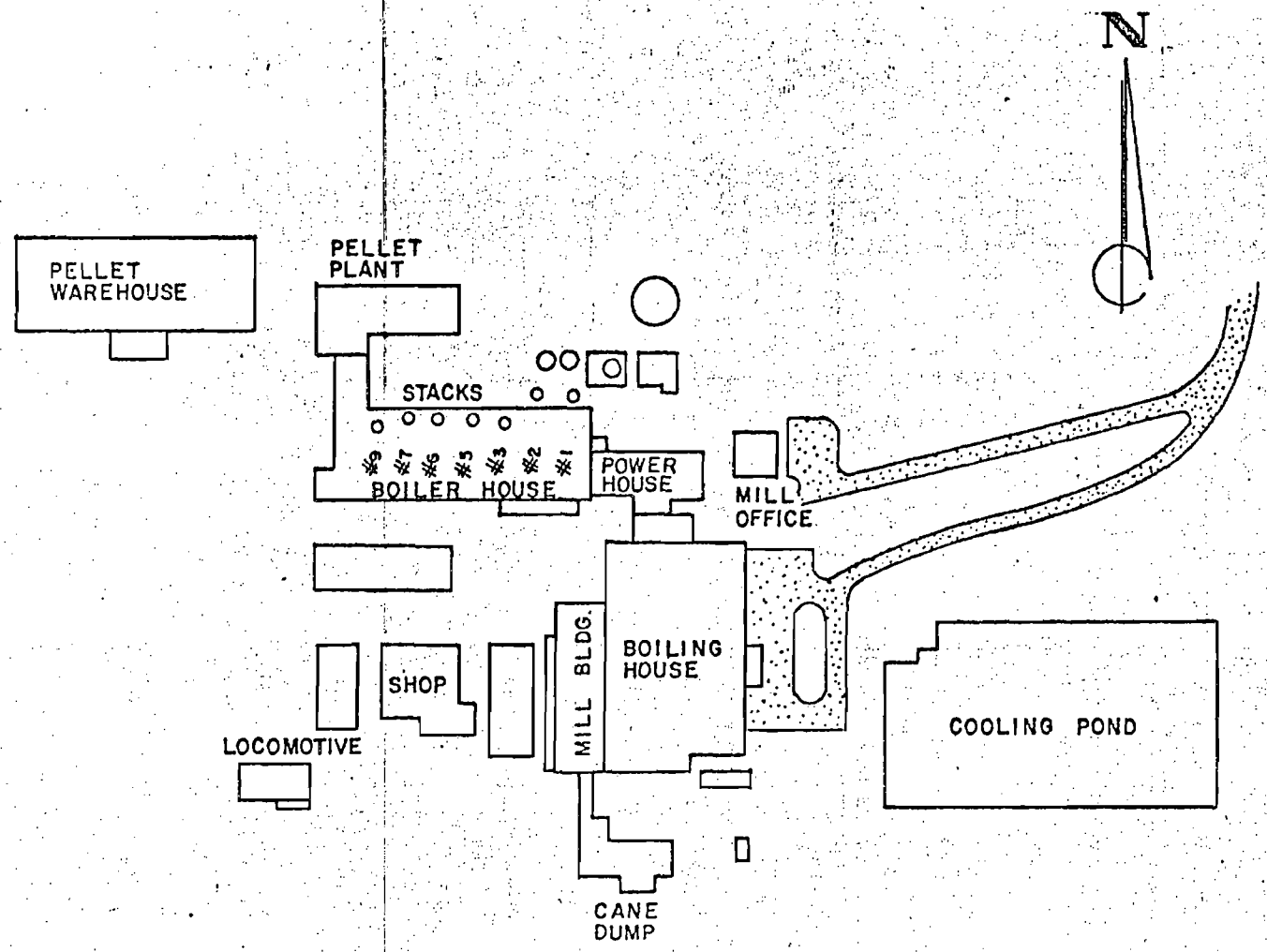
KLEEMAN ENGINEERING, INC.
1507 N.W. 47th AVE. Ft. Lauderdale, Fla. 33313

SCALE: NONE	APPROVED BY:	DRAWN BY R.L.P.
DATE: 4/19/74		REVISED

SCHEMATIC PROCESS FLOW DIAGRAM
U.S. Sugar Corp. - Clewiston Mill - Clewiston, Fla.

Proj. No(s). 03-74-0145, 0146 & 0153

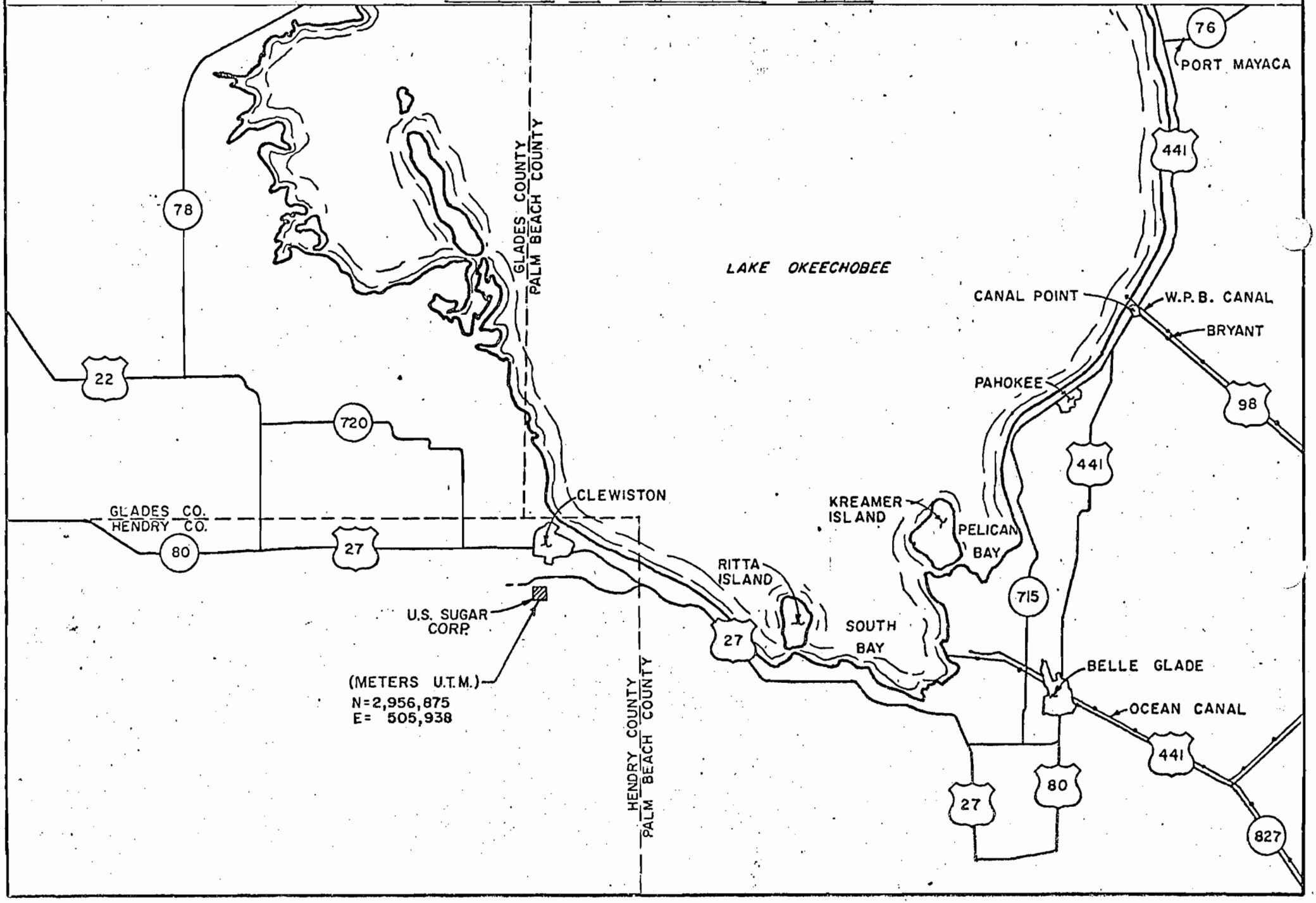
DRAWING NUMBER



PLOT PLAN

U.S. SUGAR CORP.
CLEWISTON, FLORIDA

U.S. SUG[illegible] CORP.
CLEWISTON, FLA.
LOCATION OF U.S. SUGAR CORP. WITH RESPECT TO SURROUNDING AREA



STATEMENTS BY APPLICANT AND ENGINEER

A. **Applicant**

The undersigned owner or authorized representative of * U.S. Sugar Corp. is fully aware that the statements made in this application for a Construct permit are true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to maintain and operate the pollution source and pollution control facilities in such a manner as to comply with the provisions of Chapter 403 Florida Statutes and all the rules and regulations of the Department or revisions thereof. He also understands that a permit, if granted by the Department, will be non-transferable and he will promptly notify the Department upon sale or legal transfer of the permitted establishment.

A. R. Mayo

Signature of the Owner or Authorized Representative

A. R. Mayo, Vice President

Name and Title (Please Type)

Date: April 22, 1974 Telephone No.: (813) 983-8121

* Attach a letter of authorization

B. **Professional Engineer Registered in Florida:**

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 control and discharge of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution source(s) with appropriate control facilities, when properly maintained and operated, will comply 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 the applicant a set of instructions for the proper maintenance and operation of the installation covered in this application.

Signature Frank S. Kleeman

Mailing Address: Kleeman Engineering, Inc.
1507 N.W. 47th Ave.
Ft. Lauderdale, Fla. 33313

Name: Frank S. Kleeman, P.E.
(please type)

Telephone No.: (305) 731-9121

Florida Registration Number 13622
(Please affix seal)

Date: April 19, 1974

PERMITTED
BY
SOUTHWEST REGION
DEPT. OF POLLUTION CONTROL
PERMIT NO. A026-2028A
DATE 6/20/75

RECEIVED
MAY 29 1975
SW REGION DPC

PAID MAY 29 1975

STATE OF FLORIDA
DEPARTMENT OF POLLUTION CONTROL

APPLICATION TO OPERATE/CONSTRUCT POLLUTION SOURCES

60th Day
AUG 20 1975

SECTION I – GENERAL INFORMATION FOR ALL POLLUTION SOURCES

I TO BE FILLED IN BY APPLICANT

Source Type: Air Pollution
Type application: [x] Operation [ ] Temporary Operation [ ] Construction
Status Source: [ ] New [x] Existing [ ] Modification

Source Name: U.S. Sugar Corp. - Clewiston Mill County: Hendry
Boiler #1 Mfg. by Riley Stoker Corp. Serial No. 23566
Source Location: Street: Foot of Owen St. City: Clewiston
(Water Source Only) Lat: ° ' " Long: ° ' "
(Air Source Only) UTM: East 7505938 North 2956875

Appl. Name and Title: A.R. Mayo, Vice President
Appl. Address: U.S. Sugar Corp. P.O. Box 1207 Clewiston, Fla. 33440

II TO BE FILLED IN BY REGION (*BY BUREAU OF PERMITTING)

Control No: Region County Type *Project

Type Permit	Date Rec'd	*Permit No.	*Issue Date	*Compl. Date	*Exp. Date

Source Description:
Control Equipment:

Water Permits

Receiving Body Code: Surface Water Code:
Station No.: Influent: Effluent:

Effluent:	Average	Design	% Reduction
Flow rate, MGD			
BOD, lbs/day			
Susp. Sol., lbs/day			
Other:			

Air Permits

Operating Time: [ ] Continuous [ ] Intermittent
Fuel: Type M-BTU/hr. In Put
Incinerator: Capacity, tons/day Type Waste
Mfg. & Model

Pollutant Emissions, lbs/day	Actual	Design	Allowable
Particulate			
Sulfur Oxides			
Other:			

Implementation: Estimated Appl. Filing Date
Estimated Start of Const. Estimated Compliance Date

DESCRIPTION OF PROPOSED PROJECT

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

Pollution Control facility consists of a Joy Mfg. Co. Turbulaire impingement-type scrubber, Size 125, Type D.

Stack tests for particulate emissions indicate that the facility is in full compliance with the Btu standard for bagasse boilers.

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

Federally or State Financed Projects only:

Planning Complete N.A.

Financing Program Complete

Indicate other local, state and/or federal agency approvals and dates

All projects:

Start of Construction N.A.

Completion of Construction

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

N.A.

D. Indicate any previous DPC permits, issuance dates, and expiration dates.

This boiler has been operating under Construction Permit No. AC 26-2028A, issued 7-12-74 and expiring 7-1-75.

U.S. Sugar Corp. - Clewiston Mill

Boiler #1

AIR POLLUTION SOURCES & CONTROL DEVICES

A. Identification of Air Contaminants

1) [x] Particulates
   a) [ ] Dust b) [x] Fly Ash c) [x] Smoke d) [ ] Other (Identify)

2) [x] Sulfur Compounds
   a) [x] SO_x as SO_2 b) [ ] Reduced Sulfur as H_2S c) [ ] Other (Identify)

3) [x] Nitrogen Compounds
   a) [x] NO_x as NO_2 b) [ ] NH_3 c) [ ] Other (Identify)

4) [ ] Flourides 5) [ ] Acid Mist 6) [ ] Odor

7) [ ] Hydrocarbons 8) [ ] Volatile Organic Compounds

9) [ ] Other (Specify): _____

B. Raw Materials and Chemicals Used (Be Specific)

Description	Utilization Tons/day, lbs./day, etc.	Approximate Contaminant Content		Relate to Flow Diagram
		Type	% Wt.	
Bagasse	1082 tons/day	-	-	A
No. 6 Fuel Oil	9.6 tons/day	S	2.4	B

C. Process Weight:

1) Total Process Weight Rate 91,000 lbs./hr. [See Sec. 17-2.04(2)]
2) Product Weight 175,000 lb./hr. expressed as Steam
3) Normal Operating Time 24 hours per day, if seasonal describe: Approx. 150 days/year (Nov. 1 thru March 31)

D. Airborne Contaminants Discharged:

Name of Contaminant	Actual Discharge	Discharge Criteria*	Allowable Discharge*	Relate Location to Flow Diagram
Particulates	77.1 lbs/hr 138.8 T/yr	Btu Std.	98.9 lbs/hr	C
SO_2	38.1 lbs/hr 68.6 T/yr	N.A.	N.A.	C
NO_x	107.8 lbs/hr 194 T/yr	N.A.	N.A.	C

* Refer to Chapter 17-2 Florida Administrative Code
(Discharge Criteria: Process Weight Rate, #/tonP_2O_5, #/M BTU/hr etc.)

E. Control Devices:

Name	Eff.	Conditions of Operation, Particle Size Range, etc.	Relate to Flow Diagram
Joy Turbulaire Impingement-type Scrubber, Model No. (Type) D Size 125, Serial No. 74-477-04A	88%	65% 10 microns & up 35% under 10 microns	D

F. Fuels:

Type (Be specific)	Daily Consumption *	Daily Consumption **	Heat Input BTU/hr.	Relate to Flow Diagram
Bagasse	927 T/day Range 0	1082 T/day - 1200	325×10^6	A
No. 6 Fuel Oil	8.2 T/day Range 0	9.6 T/day - 12	14.8×10^6	B

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

See Addendum Sheets and Process Flow Diagram.

By-pass shown will not be constructed until such time as it is determined to be essential to the continuing satisfactory operation of the scrubber.

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

Scrubber water is used to sluice cane juice mud, which is impounded in settling ponds.

* At design capacity (150,000 lbs/hr steam).

** At operating capacity (175,000 lbs/hr steam)

Kleeman Engineering, Inc.

CHEMICAL & ENVIRONMENTAL ENGINEERS

Frank S. Kleeman, P.E. - Pres.
R. Lynn Peyton - V. Pres.

305/731-912
305/731-0140

ADDENDUM CALCULATIONS
APPLICATION FOR PERMIT TO

OPERATE

FOR: U.S. SUGAR CORP.
CLEWISTON MILL - BOILER #1

Item C-1 Derivation of Process Weight

Fuel Oil Burned (No.6) 800 lbs./ hr.

Bagasse Burned 90,200 lbs./hr.

Calculated on Btu basis as follows:

Steam Generated 175,000 lbs/hr.
Btu Value of Steam 1067 Btu/lb.
Btu Value of Fuel Oil 18,500 Btu/lb.
Furnace Efficiency 55 %
Btu Value of Bagasse 3600 Btu/lb.

Heat Output = 175,000 x 1067 = 186.7×10^6 Btu/hr

Heat Input = $\frac{186.7 \times 10^6}{.55}$ = 339.5×10^6 Btu/hr.

Heat Input from Oil = 800 x 18,500 = 14.8×10^6 Btu/hr

Heat Input from Bagasse = $339.5 \times 10^6 - 14.8 \times 10^6$ = 324.7×10^6 Btu/hr

Bagasse Burned = $\frac{324,700,000}{3600}$ = 90,200 Lbs/hr.

Total Process Weight = 800 + 90,200 = 91,000 Lbs/hr

Bagasse Burned Daily = $\frac{90,200 \times 24}{2000}$ = 1082 Tons/day

Oil Burned Daily = $\frac{800 \times 24}{2000}$ = 9.6 Tons/day

Item D Emission Calculations

Stack emissions tests were conducted by ENVIRONMENTAL SC. & ENG., INC. on DEC. 12, 1974 on CLEWISTON BOILER #1.

Particulate emissions were determined as follows:

			Lbs/hr. Steam Generated	Lbs/hr. Oil Used
Run No. 1	67.0	lbs/hr.	172,650	861
Run No. 2	88.7	" "	190,900	715
Run No. 3	54.8	" "	114,390	3475
Average	70.2	lbs/hr.	159,390	1684

$\frac{175,000}{159,390} \times 70.2 = 77.1$ LBS/HR PARTICULATES EMITTED AT OPERATING CAPACITY OF 175,000 LBS/HR STEAM

$\frac{77.1 \times 24 \times 150}{2000} =$ 138.8 Tons/yr Particulates

SO_2 emissions calculated from following formula:
(Dept. H.E.W. Pub. No. AP-52, p. 106)

Lbs. SO_2 per 1000 gals. oil burned = 158.8 x %S content of oil

$\frac{800 \text{ lbs/hr oil}}{1000 \times 8.0 \text{ lbs/gal}} \times 158.8 \times 2.4 =$ 38.1 lbs/hr SO_2

38.1 x 24 = 915 lbs/day SO_2 $\frac{915 \times 150}{2000} =$ 68.6 tons/yr S

NO_x emissions were calculated from the following formulae:
(PHS Pub. No. 999-AP-29)

For No. 6 Oil $NO_x =$ 104 lbs./1000 gal.

For Bagasse $NO_x =$ 0.3 lb./10^6 Btu Heat Input

$\frac{800}{8.0 \text{ lbs/gal}} =$ 100 gal/hr Oil

NO_x (Oil) = $\frac{100}{1000} \times 104 =$ 10.4 lbs/hr x 24 = 250 lbs/day

NO_x (Bagasse) = 90,200 x 3600 = 324.7×10^6 Btu/hr.

324.7 x 0.3 = 97.4 lbs/hr. NO_x

Total NO_x = 10.4 + 97.4 = 107.8 lbs/hr.

$\frac{(10.4) \times 24 \times 150}{2000} =$ 18.7 tons/yr NO_x from Oil

$\frac{(97.4) \times 24 \times 150}{2000} =$ 175.3 tons/yr NO_x from Bagasse

18.7 + 175.3 = 194 tons/yr NO_x Total

Calculation of Allowable Particulate Emissions

Criteria for Allowable Particulates:

Bagasse	0.3 lbs per 10^6 Btu of Heat Input
Oil	0.1 lbs per 10^6 Btu of Heat Input

Heat Input from Bagasse = 324.7 x 10^6 Btu/hr.

Heat Input from Oil = 14.8 x 10^6 Btu/hr.

(324.7 x 0.3) + (14.8 x 0.1) = 98.9 lbs/hr. Allowable Particulate Emission

Item E Calculation of Scrubber Efficiency

Inlet particulate loading to the scrubber was calculated utilizing emissions test results performed on BRYANT #1 which is of similar design.

Test No. 38	Date 3-12-74	808	lbs/hr.
Test No. 39	Date 3-12-74	499	lbs/hr.
Test No.	Date		lbs/hr.
Average		654	lbs/hr.
Average emissions from Scrubber		77.1	lbs/hr.

Scrubber Efficiency = $\frac{654 - 77}{654} \times 100$

= 88 %

STATE OF FLORID.
DEPARTMENT OF POLLUTION CONTROL
3201 GOLF COURSE BOULEVARD
PUNTA GORDA, FLORIDA 33950

PETER P. BALJET
EXECUTIVE DIRECTOR

DAVID H. LEVIN
CHAIRMAN

July 15, 1974

Mr. A. R. Mayo, V.P.
U. S. Sugar Corp.
Post Office Box 1207
Clewiston, Fl. 33440

RE: Hendry Co. - AP

U.S. Sugar Corporation
Boiler #2

Dear Mr. Mayo:

Pursuant to your recent application, please find enclosed a permit (No.AC26-2029A) dated 7-12-74 to construct the subject pollution source.

This permit will expire on 7-1-75 , and will be subject to the conditions, requirements and restrictions checked or indicated otherwise in the attached sheet construction "Permit Conditions".

This permit is issued under the authority of Florida Statutes 403.016(16). The time limits imposed herein are a condition to this permit and are enforceable under Florida Statute 403.161. You are hereby placed on Notice that the Department will review this permit before the scheduled date of expiry and will seek court action for violation of the conditions and requirements of this permit.

You have ten (10) days from the date of receipt hereof within which to seek a review of the conditions and requirements contained in this permit.

Your continued cooperation in this matter is appreciated, and in future communication please refer to your permit number.

Yours truly,

Philip R. Edwards,
Regional Administrator

PRE/TWD/jp
Encls.

cc: Frank Kleeman, P.E.
Palm Beach CHD
DPC - Tallahassee

STATE OF FLORIDA

DEPARTMENT OF POLLUTION CONTROL

CONSTRUCTION PERMIT

FOR U.S. SUGAR CORPORATION
POST OFFICE BOX 1207
CLEWISTON, FLORIDA 33440

PERMIT NO. AC26-2029A DATE 7-12-74

PURSUANT TO THE PROVISION OF SECTION 403.061(16) OF CHAPTER 403. FLORIDA STATUTES AND CHAPTER 17-4 FLORIDA ADMINISTRATIVE CODE. THIS PERMIT IS ISSUED TO:
MR. A. R. MAYO, VICE PRESIDENT

FOR THE CONSTRUCTION OF:
JOY TURBULAIRE SIZE 125, TYPE D, IMPINGEMENT SCRUBBER
FOR BOILER #2

LOCATED AT: CLEWISTON SUGAR MILL, OWEN STREET, CLEWISTON
UTM East 7,505,938 NORTH 2,956,875

IN ACCORDANCE WITH THE APPLICATION DATED 4-22-74
AND IN CONFORMITY WITH THE STATEMENTS AND SUPPORTING DATA ENTERED THEREIN. ALL OF WHICH ARE FILED WITH THE DEPARTMENT AND ARE CONSIDERED A PART OF THIS PERMIT.

THIS PERMIT SHALL BE EFFECTIVE FROM THE DATE OF ITS ISSUANCE UNTIL 7-1-75
AND SHALL BE SUBJECT TO ALL APPLICABLE LAWS OF THE STATE AND THE RULES AND REGULATIONS OF THE DEPARTMENT.

P.R. Edwards

PHILIP R. EDWARDS,
REGIONAL ADMINISTRATOR

PETER P. BALJET,
EXECUTIVE DIRECTOR

FORM 1-J

STATE OF FLORIDA

DEPARTMENT OF POLLUTION CONTROL

CONSTRUCTION PERMIT PROVISOS

AIR POLLUTION SOURCES

Permit No. AC26-2029A Date: 7-12-74

[X] 1. Construction of this installation shall be completed by 11-1-74

[X] 2. This construction permit expires on 7-1-75 following an initial period of operation for appropriate testing to determine compliance with the Rules of the Florida Pollution Control Board.

[X] 3. All applicable rules of the Department including design discharge limitations specified in the application shall be adhered to. The permit holder may also need to comply with county, municipal, federal, or other state regulations prior to construction.

[X] 4. The applicant shall continue the retention of the engineer of record for the inspection of the construction of this project. Upon completion the engineer shall inspect for conformity to construction permit applications and associated documents. A report of such inspection shall be submitted by the engineer to the Department of Pollution Control for consideration toward the issuance of an operation permit.

[X] 5. This boiler shall be tested for particulates within 30 days after it is placed in operation. These test results are required prior to our issuance of an operation permit and shall be submitted in duplicate to the DPC Southwest Florida Regional Office 3201 Golf Course Blvd., Punta Gorda, Florida 33950

[ ] 6. The operation of this installation shall be observed for visible emissions in accordance with Method 9 - Visible Determination of the Opacity of Emissions from Stationary Sources (Federal Register, December 23, 1971). The observation results are required prior to our issuance of an operation permit, and shall be submitted in duplicate to the DPC Florida Regional Office,

[ ] 7. Stack sampling for total particulate or other contaminant emissions shall be conducted if found by the DPC Florida Regional Office to be necessary as a basis for the issuance of an operation permit.

[X] 8. Satisfactory ladders, platforms, and other safety devices shall be provided/available as well as necessary ports to facilitate the carrying out of an adequate sampling program.

(TURN OVER)

[ ] 9. The following items are required prior to our issuance of an operation permit in addition to the engineer of record's report of inspection:

(a) An emission report for total particulates and sulfur oxides based upon actual operations.

(b) A tabular summary of actual records of frequencies and durations of soot blowing as well as boiler blowdown characteristics and disposal practices.

These items are required prior to our issuance of an operation permit and shall be submitted in duplicate to the DPC _____ Florida Regional Office, _____

_____

[X] 10. There shall be no discharges of liquid effluents or contaminated runoff from the plant site.

[X] 11. All fugitive dust generated at this site shall be adequately controlled.

(X) 12. Provisision shall be made to enable an accurate determination of bagasse and fuel oil feed rates.

If applicant is a corporation, a Certificate of Good Standing must be submitted with application.

This may be obtained, for a $5.00 charge, from the Secretary of State, Bureau of Corporate Records, Tallahassee, Florida 32304.

STATE OF FLORIDA
DEPARTMENT OF POLLUTION CONTROL

APPLICATION TO OPERATE/CONSTRUCT POLLUTION SOURCES

SECTION I – GENERAL INFORMATION FOR ALL POLLUTION SOURCES

I TO BE FILLED IN BY APPLICANT

Source Type: Air Pollution
Type application: [ ] Operation [ ] Temporary Operation [X] Construction
Status Source: [ ] New [X] Existing [ ] Modification

Source Name: U.S. Sugar Corp. Clewiston Mill Boiler #2 County: Hendry
Mfg. by Riley Stoker Corp. Serial No. 23567
Source Location: Street: Foot of Owen St. City: Clewiston
(Water Source Only) Lat: ____° ____' ____" Long: ____° ____' ____"
(Air Source Only) UTM: East 7505938 North 2956875

Appl. Name and Title: A. R. Mayo, Vice President
Appl. Address: U.S. Sugar Corp. P.O. Box 1207 Clewiston, Fla. 33440

II TO BE FILLED IN BY REGION (*BY BUREAU OF PERMITTING)

Control No: Region ____ County ____ Type ____ *Project ____

Type Permit	Date Rec'd	*Permit No.	*Issue Date	*Compl. Date	*Exp. Date

Source Description:
Control Equipment:

Water Permits

Receiving Body Code: Surface Water Code:
Station No.: Influent: Effluent:

Effluent:	Average	Design	% Reduction
Flow rate, MGD			
BOD, lbs/day			
Susp. Sol., lbs/day			
Other:			

Air Permits

Operating Time: [ ] Continuous [ ] Intermittent
Fuel: Type M-BTU/hr. In Put
Incinerator: Capacity, tons/day Type Waste
Mfg. & Model

Pollutant Emissions, lbs/day	Actual	Design	Allowable
Particulate			
Sulfur Oxides			
Other:			

Implementation: Estimated Appl. Filing Date
Estimated Start of Const. Estimated Compliance Date

DESCRIPTION OF PROPOSED PROJECT

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

Pollution control facility consists of a Joy Mfg. Co. Turbulaire scrubber, Size 125, Type D. This large scrubber will replace the two Size 40 scrubbers which were operated with this Boiler during the 1973-74 sugar cane processing season. By-pass is provided for emergency use only, such as for cleaning due to plugging of scrubber.

Stack emissions tests indicate that the facility will provide full compliance of the source with the new DPC Btu Emission Standard for Bagasse Boilers.

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

Federally or State Financed Projects only:

Planning Complete N.A.

Financing Program Complete

Indicate other local, state and/or federal agency approvals and dates

All projects:

Start of Construction 6-1-74

Completion of Construction 11-1-74

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

Estimated cost of scrubber, including installation $90,000

D. Indicate any previous DPC permits, issuance dates, and expiration dates.

This Boiler is operating under Permit No. AO 26-2029, issued 5-16-73 and expiring 7-1-75

C 2

AIR POLLUTION SOURCES & CONTROL DEVICES

A. Identification of Air Contaminants

1) [x] Particulates
   a) [ ] Dust b) [x] Fly Ash c) [x] Smoke d) [ ] Other (Identify)

2) [x] Sulfur Compounds
   a) [x] SO_x as SO_2 b) [ ] Reduced Sulfur as H_2S c) [ ] Other (Identify)

3) [x] Nitrogen Compounds
   a) [x] NO_x as NO_2 b) [ ] NH_3 c) [ ] Other (Identify)

4) [ ] Flourides 5) [ ] Acid Mist 6) [ ] Odor

7) [ ] Hydrocarbons 8) [ ] Volatile Organic Compounds

9) [ ] Other (Specify): _____

B. Raw Materials and Chemicals Used (Be Specific)

Description	Utilization Tons/day, lbs./day, etc.	Approximate Contaminant Content		Relate to Flow Diagram
		Type	% Wt.	
Bagasse	1018 T/day	-	-	A
No. 6 Fuel Oil	2400 lbs/day	S	2.4	B

C. Process Weight:

1) Total Process Weight Rate 84,900 lbs./hr. [See Sec. 17-2.04(2)]
2) Product Weight 158,300 lb./hr. expressed as Steam
3) Normal Operating Time 24 hours per day, if seasonal describe Approx. 150 days/yr. (Nov. 1 thru March 31)

D. Airborne Contaminants Discharged:

Name of Contaminant	Actual Discharge	Discharge Criteria*	Allowable Discharge*	Relate Location to Flow Diagram
Particulates	76.9 lbs/hr 138 T/yr	Btu Std.	91.8	C
SO_2	4.76 lbs/hr 8.55 T/yr	N.A.	N.A.	C
NO_x	92.9 lbs/hr 167.2 T/yr	N.A.	N.A.	C

* Refer to Chapter 17-2 Florida Administrative Code
(Discharge Criteria: Process Weight Rate, #/ton P_2O_5, #/M BTU/hr etc.)

E. Control Devices:

Name	Eff.	Conditions of Operation, Particle Size Range, etc.	Relate to Flow Diagram
Joy Turbulaire Impingement Scrubber, Model No.(Type) Size 125, Serial No. 74-477-04B	D 91%	65% 10 microns & up 35% under 10 microns	D

F. Fuels:

Type (Be specific)	Daily Consumption *	Daily Consumption **	Heat Input BTU/hr.	Relate to Flow Diagram
Bagasse	873 T/day Range 0 - 1200	1018T/day	314×10^6	A
No. 6 Fuel Oil	8.1 T/day Range 0 - 12	9.5 T/day	14.6×10^6	B

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

See Addendum sheets and Process Flow Diagram.

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

Scrubber water is used to sluice cane juice mud, which is impounded in settling ponds.

* At design capacity (150,000 lbs/hr steam)

** At operating capacity (175,000 lbs/hr steam)

The Clewiston News

Published Weekly — Clewiston, Florida

AFFIDAVIT OF PUBLICATION

State of Florida
County of Hendry

Before the undersigned authority, personally appeared Margaret McCall, who on oath says she is the General Manager of the Clewiston News, a weekly newspaper published at Clewiston in Hendry County, Florida, that the attached copy of achievement, being a

notice

in the matter of intent

in the

court, was published in

said newspaper in the issues of

March 13, 1991

Affiant further says that the said Clewiston News is a newspaper published at Clewiston, in said Hendry County, continuously published in said Hendry County, Florida each week, and has been entered as a second class mail matter at the post office in Clewiston, in said Hendry County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Margaret McCall

Sworn to and subscribed before me this 13th day of March, A.D. 19 91.

BK Christiansen
Notary Public

NOTARY PUBLIC STATE OF FLORIDA
MY COMMISSION EXP JUNE 27, 1993
BONDED THRU GENERAL INS. UND.

My Comission Expires .

CK-IIS

RECEIVED
MAR 18 1991
D.E.R. SOUTH

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

The Department of Environmental Regulation hereby gives notice of its intent to issue an amendment to the existing permits that will authorize the burning of soil contaminated with "virgin" fuels (No. 2 and No. 6 oil) and "on-spec" used oil (lubricants) in the existing bagasse/oil fired boilers Nos. 1, 2, 3, 5, and 6 at U.S. Sugar Corporation's sugar mill, located at W.C. Owens Avenue and Clewiston Street, Clewiston, Hendry County, Florida. The allowable emissions and ambient air impact of the boilers will not change as a result of burning this soil. A determination of Best Available Control Technology (BACT) was not required. The Department is issuing this intent to issue for the reasons stated in the Amendment of Permits Evaluation.

A Person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57 Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes. The petition shall contain the following information: (a) the name, address, and telephone number of each petitioner, the applicant's name and address, the Department application file number and the county in which the project is proposed; (b) a statement of how and when each petitioner received notice of the Department's action or proposed action; (c) a statement of how each petitioner's substantial interest are affected by the Department's action or proposed action; (d) a statement of the material facts disputed by petitioner, if any; (e) a statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) a statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) a statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action. If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this notice. person's whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within fourteen (14) days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S. and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rul 28-5.207, F.A.C.

The applications is available for public inspection during business hours, 8:A.M. to 5:P.M., Monday through Friday, except legal holidays, at:

Department of Environmental Regulation
Bureau of Air regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Environmental Regulation
South District
2269 Bay Street
Fort Myers, Florida 33901-2896

Palm Beach County Health Dept.
Division of Environmental Science and Engineering
901 E. Evernia Street
West Palm Beach, Florida 33402

Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments mailed within 14 days of the publication of this notice will be considered in the Department's final determination.

CN 91-112
March 13, 1991

Appendix H-1, Permit History/ID Number Changes

Permit History (for tracking purposes):

E.U. ID No.	Description	Permit No.	Issue Date	Expiration Date	Extended Date[1, 2]	Revised Date(s)
-001	Boiler No. 1	AC - 502	11/7/72	5/15/73		
		AC26 - 2028A	7/12/74	7/1/75		
		AO26 - 2028A	6/20/75	6/20/78		
		AO26 - 7065	10/15/80	10/15/85		12/5/80
		AO26 - 110300	10/8/85	10/8/90		12/9/85
		AO26 - 182886	8/1/90	8/1/95	3/21/96	7/24/92
-002	Boiler No. 2	AC - 503	11/7/72	5/15/73		
		AC26 - 2029A	7/12/74	7/1/75	11/30/75	
		AO26 - 2029A	1/13/76	1/13/79		
		AO26 - 7251	3/15/81	3/1/86		
		AO26 - 116614	3/5/86	3/5/91		
		AO26 - 186289	9/26/90	9/26/95	3/21/96	
-003	Boiler No. 3	AC26 - 2030A	7/15/74	7/1/75	11/30/75	
		AO26 - 2030	1/14/76	1/14/79		
		AO26 - 116616	3/5/86	3/5/91		
		AO26 - 191906	2/19/91	2/19/96	3/21/96	
-004	Boiler No. 4	AC26 - 80930 BACT/PSD	1/14/85	1/11/86		12/20/85 9/8/86
		AO26 - 115292	5/19/86	5/19/91		9/15/86
		AC26 - 126965 BACT	2/17/87	7/01/87	5/1/88	
		AO26 - 144701	2/15/88	2/15/93		
		AC26 - 248809 BACT/PSD-FL-217	8/09/95	6/01/96	3/21/96	
-005	Boiler No. 5	AC26 - 2031A	1/15/75	11/30/75	11/30/76	
		AO26 - 5069	5/30/78	5/2/83		
		AO26 - 68179	6/1/83	6/1/88		
		AO26 - 147105	4/8/88	4/8/93		
		AO26 - 225795	3/26/93	3/26/98	3/21/96	