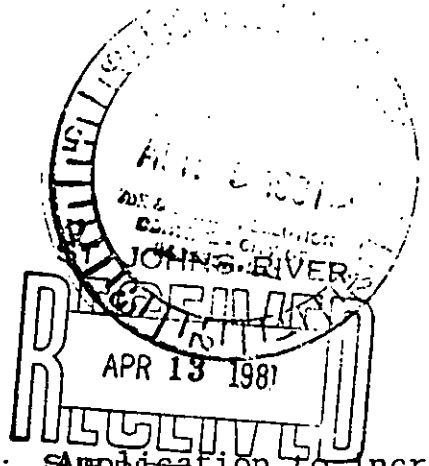
Anheuser-Busch, Inc.
ONE OF THE ANHEUSER-BUSCH COMPANIES

April 3, 1981



Mr. E. P. Balducci
Assistant Pollution Control Engineer
Department of Health, Welfare &
Bio-Environmental Services
515 West 6th STreet
Jacksonville, Florida 32206

RE: Application to Increase Boiler Stack Height - Jacksonville Brewery.

Dear Mr. Balducci:

Please find enclosed a check for $20.00 and 5 copies of page 2 of our Application to Increase Stack Height. This takes care of items 1 & 2 in your letter of March 16, 1981 to Mr. J. Mueller. The remaining items, 3, 4, & 5 will be answered directly to you from Don DeHart in Corporate Headquarters, St. Louis.

Since the three boiler renewal permits were cancelled in lieu of consolidation, will we get credit for the $60.00 application fees?

Very truly yours,

Tom Martin

Tom Martin
Asst. Resident Engineer

TM:

Enclosure

CC: Mr. J. Mueller
Mr. D. DeHart

CC: Mr. Carl Back
Dept. Environmental Regulations
2600 Blairstone Road
Tallahassee, Fla. 32301

Anheuser-Busch, Inc
P. O. Box 18017
AMF
Jacksonville, FL 32229

Anheuser-Busch, Inc.
ONE OF THE ANHEUSER-BUSCH COMPANIES

CHECK NUMBER
No. 23 0293

DATE April 8, 1981

PAY TO THE ORDER OF Florida Department of Environmental Regulation

$ **20.00

Larry Faulkner

4-27
810 MANUFACTURERS BANK AND TRUST COMPANY, OF ST. LOUIS

⑈230293⑈ ⑆081000278⑆ 00 0027 0⑈

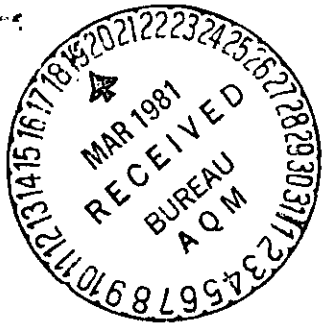
DETACH THIS VOUCHER BEFORE PRESENTING CHECK

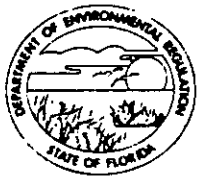
C.V. NO.

INVOICE	AMOUNT	DISCOUNT	CK'ED OTHER DEDUCTIONS	APP NET TO PAY
Application fee to increase boiler stack height. Boilers #1 - #4.	20.00			20.00

Anheuser-Busch, Inc.
JACKSONVILLE, FLORIDA

AC 16-39951





STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Air Pollution [ ] New[1] [X] Existing[1]

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

COMPANY NAME: Anheuser-Busch, Inc. COUNTY: Duval

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Process Steam Boilers Nos. 1, 2, 3 and 4

SOURCE LOCATION: Street 111 Busch Drive City Jacksonville

UTM: East 7437930 North 3366820 to 3366850

Latitude 30 ° 25 ' 59 "N Longitude 81 ° 38 ' 47 "W

APPLICANT NAME AND TITLE: Mr. John Mueller, Plant Manager

APPLICANT ADDRESS: P. O. Box 18017, A.M.F. Jacksonville, FL 32229

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Anheuser-Busch, Inc.

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

*Attach letter of authorization

Signed: John Mueller

John Mueller, Plant Manager
Name and Title (Please Type)

Date: _____ Telephone No. (904) 751-0700

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

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

Signed: Charles M. Nolan, P.E.

PAT NOLAN, P.E.
Name (Please Type)

(Affix Seal)

Pat Nolan & Associates
Company Name (Please Type)

8282 Western Way Circle, Suite 111
Mailing Address (Please Type) Jax., Fla. 32216

Florida Registration No. 19889 Date: (904) Telephone No. 731-4288

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

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

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

1. Total Process Input Rate (lbs/hr): for each of four boilers - 90,000 lb/hr max (water-steam)

2. Product Weight (lbs/hr): - 90,000 lb/hr max (steam)

C. Airborne Contaminants Emitted: See attached Emission Calculations
EACH boiler at 100 x 10^6 BTU/hr input

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	17.2	36.5	Use 17-2.05(6) Table II	10	17.2	75.4	1,2,3,4
Sulfur Dioxide	239	506	Source "E"(1)(b)	250	239	1046	-
			1.a.* (per Mr. E.				
			Balducci)				
Nitrogen Oxide	40.0	85	None specified	--	40.0	175	

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5])

[1]See Section V, Item 2.

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

[3]Calculated from operating rate and applicable standard

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

[5]If Applicable

* 0.1 lb particulate per 10^6 BTU heat input.

2.5 lb SO_2 per 10^6 BTU heat input

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

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Sulfur Dioxide	239	506	Source "E"(1)(b)	250	239	1046	
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[3]Calculated from operating rate and applicable standard

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

[5]If Applicable

* 0.1 lb particulate per 10^6 BTU heat input.

2.5 lb SO_2 per 10^6 BTU heat input

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
No. 6 fuel oil	8 bbl	16 bbl	100 per boiler

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

Fuel Analysis:

Percent Sulfur: 2.28 (nominal based on 2.5 lb $SO_2/10^6$ BTU) Percent Ash: 0.1 max

Density: 8.2 (nominal) lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb 150,000 (nominal) BTU/gal

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

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

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

About 10 GPM of boiler blowdown is routed in the sanitary sewer system to the District No. 2 City Sewage Treatment Plant.

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

Stack Height: 100 ft. Stack Diameter: 4.5 ft.

Gas Flow Rate: 33,100 (est.) ACFM Gas Exit Temperature: 410 °F.

Water Vapor Content: 6.2 % Velocity: 35 FPS

SECTION IV: INCINERATOR INFORMATION

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

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (^oF)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

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

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

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

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

Brief description of operating characteristics of control devices: _____

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

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

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

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

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

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

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

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F

e. Velocity: FPS

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

1.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

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

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

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

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____ no sites _____ TSP _____( )SO^{2*} _____ Wind spd/dir

Period of monitoring _____/_____/_____ to _____/_____/_____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

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

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

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from _____/_____/_____ to _____/_____/_____
month day year month day year

2. Surface data obtained from (location) _____

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

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

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	_____ grams/sec
SO^2	_____ grams/sec

E. Emission Data Used in Modeling

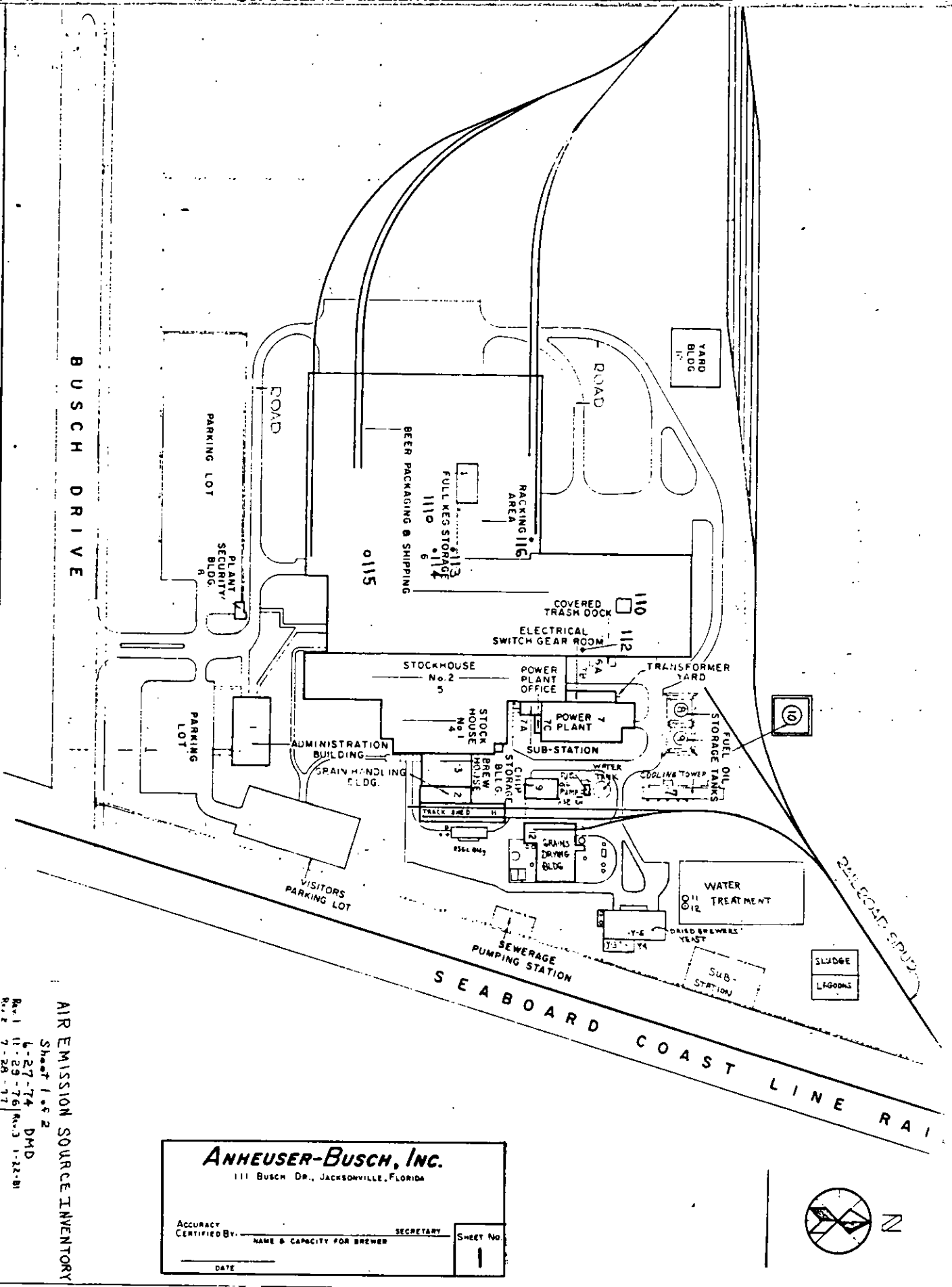
Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

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

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

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

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



AIR EMISSION SOURCE INVENTORY

Sheet 1 of 2

6-27-74 DMD

Rev. 1 11-29-76 Rev. 3 1-22-81

Rev. 2 7-26-77

ANHEUSER-BUSCH, INC.

111 BUSCH DR., JACKSONVILLE, FLORIDA

ACCURACY CERTIFIED BY: _____ SECRETARY

NAME & CAPACITY FOR BREWER

DATE

SHEET NO. 1

PREPARED BY

ANHEUSER - BUSCH, INC.

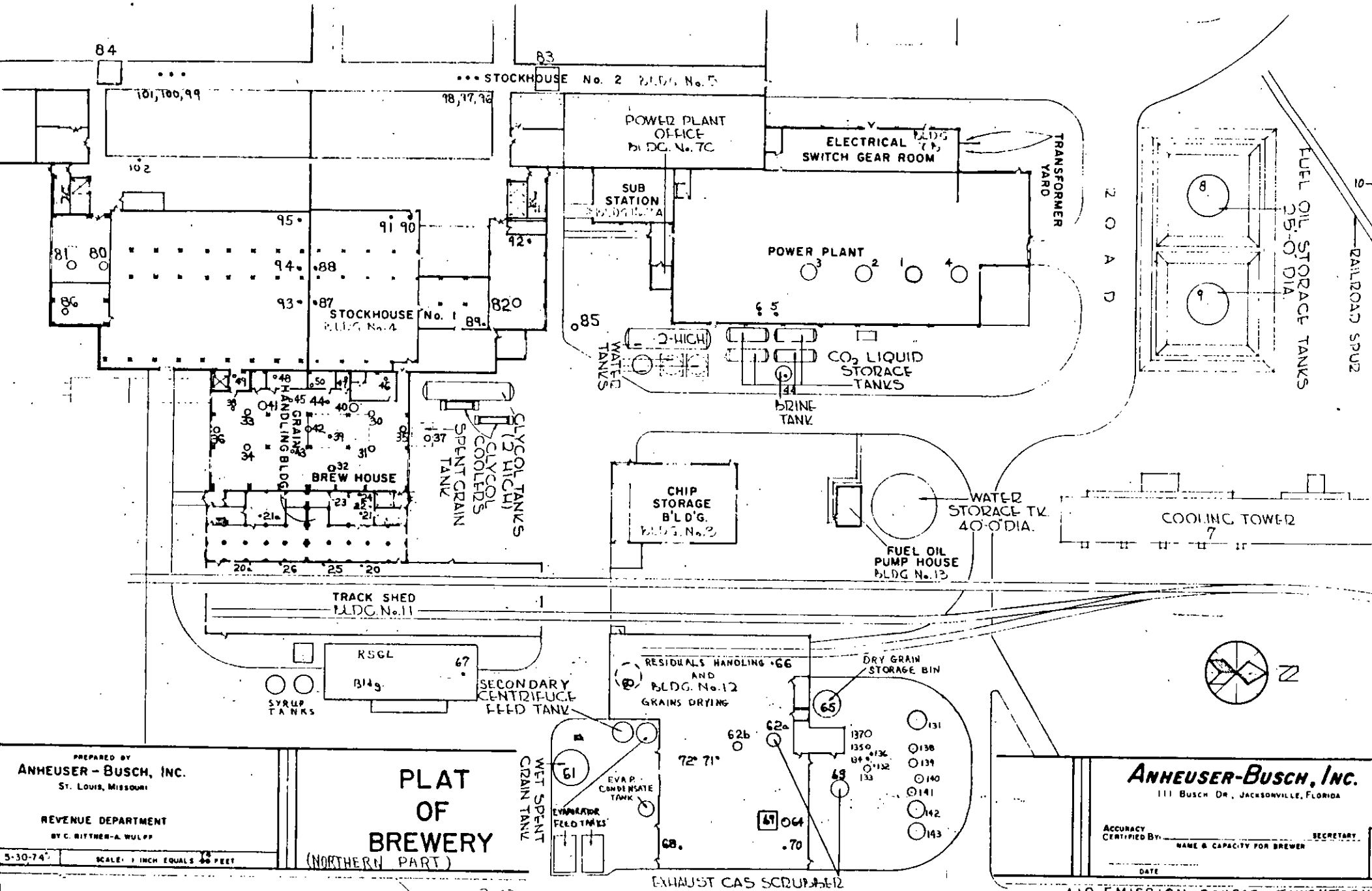
ST. LOUIS, MISSOURI

REVENUE DEPARTMENT

BY C. RITTNER-A. WULFF

DATE: 5-30-74 SCALE: 1 INCH EQUALS 300 FEET

PLAT OF BREWERY LOCATION PLAT



PREPARED BY
ANHEUSER-BUSCH, INC.
ST. LOUIS, MISSOURI

REVENUE DEPARTMENT
BY C. RITTNER-A. WULFF

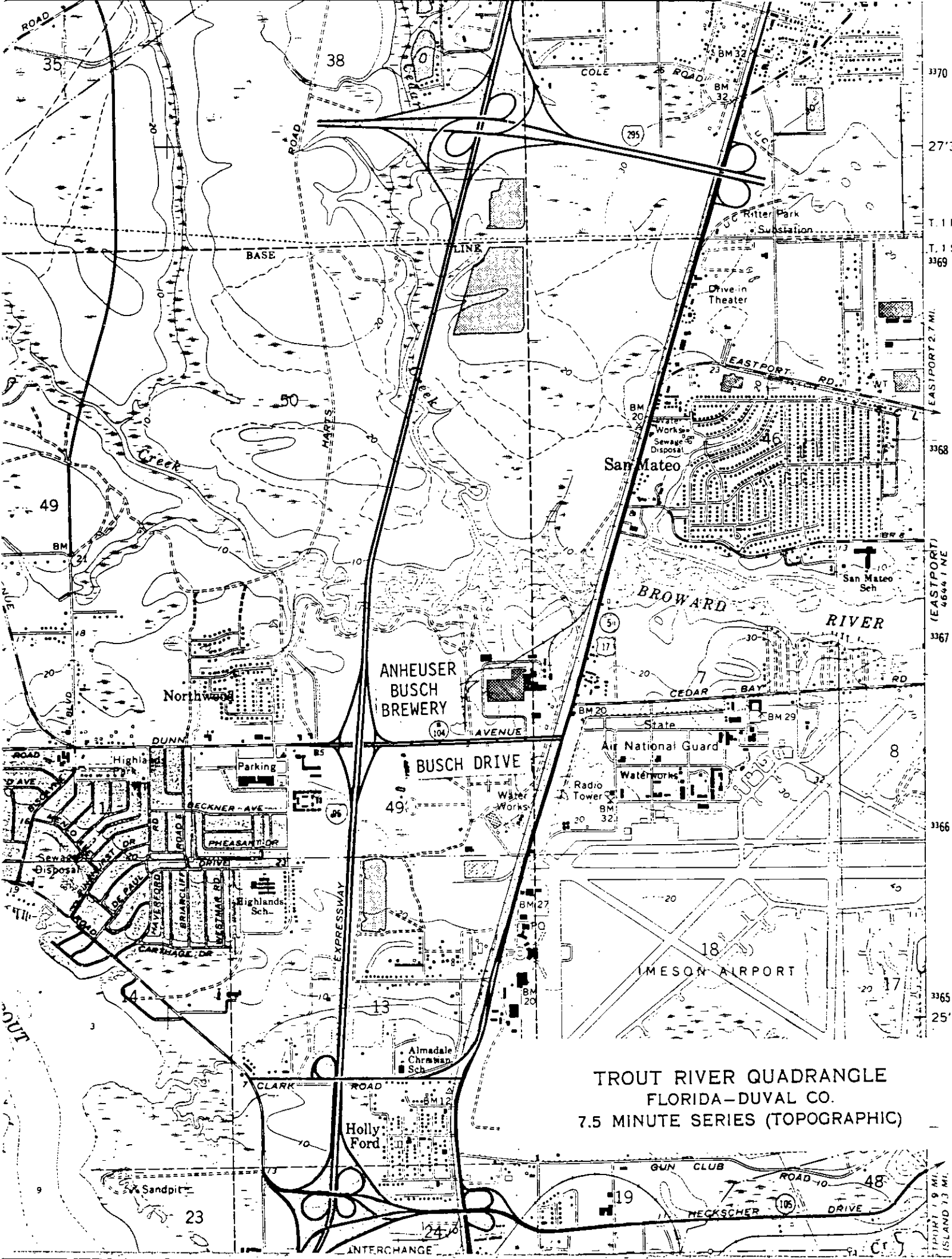
5-30-74 | SCALE: 1 INCH EQUALS 50 FEET

PLAT OF BREWERY (NORTHERN PART)

ANHEUSER-BUSCH, INC.
111 BUSCH DR., JACKSONVILLE, FLORIDA

ACCURACY CERTIFIED BY: _____ SECRETARY
NAME & CAPACITY FOR BREWER
DATE

AIR EMISSION SOURCE INVENTORY
Sheet 2 of 2
6-27-74 DMD
Rev. 1 11-29-76
Rev. 2 7-15-77
Rev. 3 6-21-79
Rev. 4 1-9-80
Rev. 5 1-22-81


TROUT RIVER QUADRANGLE
FLORIDA—DUVAL CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
ANHEUSER BUSCH BREWERY
BUSCH DRIVE
San Mateo
Northwood
Highlands Sch.
Almadale Christian Sch.
Holly Ford
IMESON AIRPORT
Ritter Park Substation
Drive-in Theater
Water Works
Sewage Disposal
San Mateo Sch
BROWARD RIVER
Air National Guard
Radio Tower
Parking
Sandpit
INTERCHANGE
EXPRESSWAY
CLARK ROAD
DUNN AVENUE
BECKNER AVE
PHEASANT DR
CARRIAGE DR
COLE ROAD
EASTPORT RD
CEDAR BAY RD
GUN CLUB ROAD
HECKSCHER DRIVE
HARTS Creek
Cedar
BASE LINE
T. 1 N.
T. 1 S.
EASTPORT 2.7 MI.
(EASTPORT) 4644 I NE
TXPRT 1.9 MI.
ISLAND 1.3 MI.
3370
27'30
3369
3368
3367
3366
3365
25'

ANHEUSER-BUSCH, INC.
JACKSONVILLE BREWERY
EMISSION CALCULATIONS PER BOILER

(Section III C and E)

I. Section IIIC and E

A. Emission Factors

From AP-42, 3rd. Ed. Table 1.3-1 For Industrial Residual Oil. Here S equals the percent by weight of sulfur in the oil.

Pollutant	Emission lb/1000 gal	Emission With 2.28% S oil, lb/1000 gal
Particulate	10(S) + 3	25.8
Sulfur Dioxide	157(S)	358.0
Nitrogen Oxides	60	60.0
Carbon Monoxide	5	5.0
Hydrocarbons	1	1.0

B. Sulfur Limit of Oil

SO_2 emissions limited to 2.5 lb $SO_2/10^6$ BTU input. This equates to:

$$\frac{2.5 \text{ lb } SO_2}{10^6 \text{ BTU}} \times \frac{.15 \times 10^6 \text{ BTU}}{\text{gal oil}} \times \frac{\text{gal oil}}{8.2 \text{ lb oil}} \times \frac{\text{lb S}}{2 \text{ lb } SO_2} = 0.02287 \frac{\text{lb S}}{\text{lb oil}} \text{ or } 2.28\% \text{ S}$$

C. Maximum Oil Usage

Bases: 100×10^6 BTU/hr max. input per boiler and 150,000 BTU/gal for No. 6 fuel oil.

$$\frac{100 \times 10^6 \text{ BTU}}{\text{hr}} \times \frac{\text{gal}}{0.15 \times 10^6 \text{ BTU}} = 667 \text{ gal/hr.}$$

D. Maximum Emissions

	(Emission Factor) (lb/1000 gal)	x	(Max. oil usage) x(0.667 x 1000 gal)	=	Max. Emissions
Particulates	25.8	x	0.667	=	17.2 lb/hr
SO_2	358.0	x	0.667	=	239.0 lb/hr
NO_x	60.0	x	0.667	=	40.0 lb/hr

E. Actual Annual Emissions

Bases: 2,828,000 gallons of No. 6 fuel oil used in boiler No. 1 in 1979.

$$\text{(Emission Factor)} \times \text{(Oil Used)} \times \left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right) = \text{Actual Emissions}$$

$$\text{(lb/1000 gal)} \times \text{(2,828 x 1000 gal)} \times \left(\frac{1}{2000}\right)$$

Particulate	25.8	x	(2,828/2000)	=	36.5 tons/yr
SO_2	358.0	x	(1.414)	=	506 tons/yr
NO_x	60.0	x	(1.414)	=	84.8 tons/yr

F. Potential Emissions

1. Hourly Potential Emissions equal hourly Maximum Emissions (Par. D) as there are no additional emission control devices on the boilers.

2. Annual Potential Emissions assume continuous operation or 8760 hr/yr.

$$\begin{pmatrix}\text{Hourly}\\ \text{Potential}\\ \text{Emissions}\end{pmatrix} \times \begin{pmatrix}\text{Operating}\\ \text{Time}\end{pmatrix} \times \left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right) = \text{Annual Potential Emissions}$$

$$\text{(lb/hr)} \times \begin{pmatrix}8760\\ \text{hr/yr}\end{pmatrix} \times \left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right)$$

Particulate	17.2	x	(8760/2000)	=	75.4 tons/yr
SO_2	239.0	x	(4.38)	=	1046.0 tons/yr
NO_x	40.0	x	(4.38)	=	175.0 tons/yr

G. Allowable Emissions

Chapter 17-2.05(6) Table II Source E(2) states "apply latest technology" for particulate, sulfur dioxide, and nitrogen oxides. For plant locality per Mr. Ed Balducci on 4/22/80, we are to use limits of 0.1 lb. particulate and 2.5 lb SO_2 per 10^6 BTU input over a 2-hr average. No limit is specified for NO_x. From application, each boiler has input capacity of 100 x 10^6 BTU/hr.

	(Emission Limit) (lb/10^6 BTU)	x	(Input Capacity) (100 x 10^6 BTU/hr)	=	Allowable Emissions
Particulate	0.1	x	(100)	=	10 lb/hr
SO_2	2.5	x	(100)	=	250 lb/hr

II. Section III H

Percent water in flue gases

Reference: Steam, Its Generation and Use by Babcock and Wilcox Co. 37th Ed., 1963. Chapter 4, Table 5 (page 4 - 9).

For fuel oil per 10,000 BTU as fired.

Theoretical dry air -- 7.46 lb

Fuel -- 0.54 lb

Resulting Moisture -- 0.51 lb

Incoming moisture (wet air) -- 0.0132 lb H_2O/lb dry air @ 60% RH and 80° F.

At 120 % of theoretical air (20% excess)

Total dry air -- 1.2(7.46) = 8.95 lb

Incoming H_2O -- 1.2(7.46)(0.0132) = 0.12 lb

Thus, in flue gases

Total water -- 0.12 + 0.51 = 0.63 lb

Total gases -- 0.63 + 8.95 + 0.54 = 10.12 lb

So, water in flue gases -- $\frac{0.63}{10.12}$ (100%) = 6.2%

LIST

11/08/80. 16.36.17.
LIST OF RESULTS

ALL

1PLANT NAME: AB JACKSONVILLE BREWERY   POLLUTANT: SO2   EMISSION UNITS: GM/SEC   AIR QUALITY UNITS: GM/M**3
THIS RUN COMBINES ALL 4 BOILER STACKS INTO A SINGLE SOURCE

	MET FILE STN NO.	YR	REQUESTED STN NO.	YR
SURFACE	13889	70	13889	70
UPPER AIR	13861	70	13861	70

PLANT LOCATION: RURAL
NO TAPE OUTPUT
MET DATA WILL NOT BE PRINTED

```
DAY-- 1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

* N O T E * * * * * * * * * * * * * * *

ALL TABLES, INCLUDING SOURCE CONTRIBUTION, THAT CONTAIN -ANNUAL- IN THE HEADING ARE BASED ONLY ON THOSE I

DAYS MARKED BY [1[IN THE ABOVE TABLE

RING DISTANCES(KM)= .40 .60 .80 1.00 1.20

PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 0.0   PLANT ELEVATION (METERS ABOVE SEA LEVEL)-- 0.0

	RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)					RECEPTOR ELEVATIONS (METERS ABOVE SEA LEVEL)				
DIRECTION	RING"1	RING"2	RING"3	RING"4	RING"5	RING"1	RING"2	RING"3	RING"4	RING"5
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

```
 STACK "  1-- COMBINED BOILER STACK


  STACK     MONTH       EMISSION RATE        HEIGHT     DIAMETER  EXIT VELOCITY   TEMP      VOLUMETRIC FLOW
                          (GMS/SEC)          (METERS)   (METERS)     (M/SEC)     (DEG.K)      (M**3/SEC)

    1        ALL          126.0000            30.50       1.37        10.60       483.00         15.63
  PLANT NAME: AB JACKSONVILLE BREWERY   POLLUTANT: SO2          EMISSION UNITS: GM/SEC    AIR QUALITY UNITS: GM/M**3

                                                 M A X   H O U R L Y                          M A X   2 4 - H O U R

        DAY        RATIO     CONCENTRATION  DIRECTION  DISTANCE(KM)  HOUR    CONCENTRATION  DIRECTION  DISTANCE(K
*TRM*
*RDY*
$F,540



 YEARLY MAXIMUM 24-HOUR CONC=  2.1508E-04  DIRECTION=   5  DISTANCE=  1.2 KM  DA
-Y=223
*RDY*


$F,584
 YEARLY SECOND MAXIMUM 24-HOUR CONC=  2.0302E-04  DIRECTION=   5  DISTANCE=  1.0
+ KM  DAY= 79
*RDY*


$F,628
 YEARLY MAXIMUM      3-HOUR CONC=  6.9294E-04  DIRECTION=  31  DISTANCE=   .6 KM
+  DAY=163    TIME PERIOD= 5
*RDY*


$F,672
 YEARLY SECOND MAXIMUM      3-HOUR CONC=  5.5427E-04  DIRECTION=  31  DISTANCE=
+  .8 KM  DAY=202    TIME PERIOD= 4
*RDY*
UNS RESULTS
*RDY*
BYE
CT = 01.03    SU-B =      12.4
KCH =   45
A541001   LOG OFF.   16.43.41.
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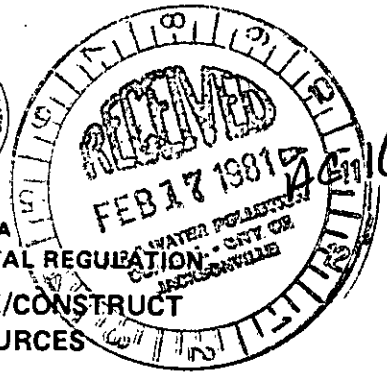

AC16-39951

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Air Pollution [ ] New[1] [X] Existing[1]

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

COMPANY NAME: Anheuser-Busch, Inc. COUNTY: Duval

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Process Steam Boilers Nos. 1, 2, 3 and 4

SOURCE LOCATION: Street 111 Busch Drive City Jacksonville

UTM: East 7437930 North 3366820 to 3366850

Latitude 30 ° 25 ' 59 "N Longitude 81 ° 38 ' 47 "W

APPLICANT NAME AND TITLE: Mr. John Mueller, Plant Manager

APPLICANT ADDRESS: P. O. Box 18017, A.M.F. Jacksonville, FL 32229

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Anheuser-Busch, Inc.

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

*Attach letter of authorization

Signed: John Mueller

John Mueller, Plant Manager
Name and Title (Please Type)

Date: _____ Telephone No. (904) 751-0700

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

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

Signed: Charles M. Nolan, P.E.

PAT NOLAN, P.E.
Name (Please Type)

(Affix Seal)

Pat Nolan & Associates
Company Name (Please Type)

8282 Western Way Circle, Suite 111
Mailing Address (Please Type) Jax., Fla. 32216

Florida Registration No. 19889 Date: (904) Telephone No. 731-4288

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

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

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

1. Total Process Input Rate (lbs/hr): for each of four boilers - 90,000 lb/hr max (water-steam)

2. Product Weight (lbs/hr): - 90,000 lb/hr max (steam)

C. Airborne Contaminants Emitted: See attached Emission Calculations
EACH boiler at 100 x 10^6 BTU/hr input

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	17.2	36.5	Use 17-2.05(6) Table II	10	17.2	75.4	1,2,3,4
Sulfur Dioxide	239	506.	Source "E"(1)(b)	250	239	1046	-
			1.a.* (per Mr. E.				
			Balducci)				
Nitrogen Oxide	40.0	85	None specified	--	40.0	175	

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5])

[1] See Section V, Item 2.

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

[3] Calculated from operating rate and applicable standard

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

[5] If Applicable

* 0.1 lb particulate per 10^6 BTU heat input.

2.5 lb SO_2 per 10^6 BTU heat input

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

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

1. Total Process Input Rate (lbs/hr): for each of four boilers - 90,000 lb/hr max (water-steam)

2. Product Weight (lbs/hr): - 90,000 lb/hr max (steam)

C. Airborne Contaminants Emitted: See attached Emission Calculations
EACH boiler at 100 x 10^6 BTU/hr input

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	17.2	36.5	Use 17-2.05(6) Table II	10	17.2	75.4	1,2,3,4
Sulfur Dioxide	239	506	Source "E"(1)(b)	250	239	1046	-
			1.a.* (per Mr. E.				
			Balducci)				
Nitrogen Oxide	40.0	85	None specified	--	40.0	175	

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Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5])

[1] See Section V, Item 2.

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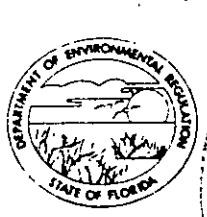
[3] Calculated from operating rate and applicable standard

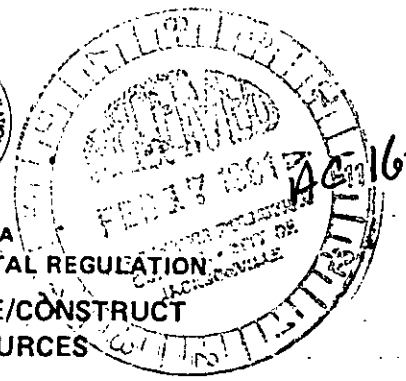
[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

* 0.1 lb particulate per 10^6 BTU heat input.

2.5 lb SO_2 per 10^6 BTU heat input





AC 16-39951

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Air Pollution [ ] New[1] [X] Existing[1]

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

COMPANY NAME: Anheuser-Busch, Inc. COUNTY: Duval

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Process Steam Boilers Nos. 1, 2, 3 and 4

SOURCE LOCATION: Street 111 Busch Drive City Jacksonville

UTM: East 7437930 North 3366820 to 3366850

Latitude 30 ° 25 ' 59 "N Longitude 81 ° 38 ' 47 "W

APPLICANT NAME AND TITLE: Mr. John Mueller, Plant Manager

APPLICANT ADDRESS: P. O. Box 18017, A.M.F. Jacksonville, FL 32229

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Anheuser-Busch, Inc.

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

*Attach letter of authorization

Signed: John Mueller

John Mueller, Plant Manager
Name and Title (Please Type)

Date: _____ Telephone No. (904) 751-0700

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

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

Signed: Charles M. Nolan, P.E.

PAT NOLAN, P.E.
Name (Please Type)

(Affix Seal)

Pat Nolan & Associates
Company Name (Please Type)

8282 Western Way Circle, Suite 111
Mailing Address (Please Type) Jax., Fla. 32216

Florida Registration No. 19889 Date: (904) Telephone No. 731-4288

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

SECTION II: GENERAL PROJECT INFORMATION

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

This construction will extend the height of each boiler stack from 52.5 ft to 100 ft. The four identical boilers are Babcock and Wilcox Co., Model FM 1035-79 (National Board No. 22857, 22856, 22855 and 23814). Computer modeling predicts that the higher stacks will allow the operation of all four boilers at 100 x 10^6 BTU/hr input each (capacity) without violating the Florida SO_2 ambient air quality standard.

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

Start of Construction July 1, 1981 Completion of Construction Aug. 31, 1981

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

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

A016-2435, -2436, and -2437 expired 6/30/80. Renewal requested subject to SO_2 modeling evaluation. Renewals to be withdrawn at the time of this application. A016-12824 expires 8/31/83.

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

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr ____ ;

if seasonal, describe: ____

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

1. Is this source in a non-attainment area for a particular pollutant? ____
   a. If yes, has "offset" been applied? ____
   b. If yes, has "Lowest Achievable Emission Rate" been applied? ____
   c. If yes, list non-attainment pollutants. ____
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. ____
3. Does the State "Prevention of Significant Deterioration" (PSD) requirements apply to this source? If yes, see Sections VI and VII. ____
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? ____
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? ____

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

SECTION II: GENERAL PROJECT INFORMATION

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

This construction will extend the height of each boiler stack from 52.5 ft to 100 ft. The four identical boilers are Babcock and Wilcox Co., Model FM 1035-79 (National Board No. 22857, 22856, 22855 and 23814). Computer modeling predicts that the higher stacks will allow the operation of all four boilers at 100 x 10^6 BTU/hr input each (capacity) without violating the Florida SO_2 ambient air quality standard.

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F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr ____ ; if seasonal, describe: ____

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

1. Is this source in a non-attainment area for a particular pollutant?
   a. If yes, has "offset" been applied?
   b. If yes, has "Lowest Achievable Emission Rate" been applied?
   c. If yes, list non-attainment pollutants.
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII.
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?

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

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

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

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

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

1. Total Process Input Rate (lbs/hr): for each of four boilers - 90,000 lb/hr max (water-steam)

2. Product Weight (lbs/hr): - 90,000 lb/hr max (steam)

C. Airborne Contaminants Emitted: See attached Emission Calculations
EACH boiler at 100 x 10^6 BTU/hr input

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	17.2	36.5	Use 17-2.05(6) Table II	10	17.2	75.4	1,2,3,4
Sulfur Dioxide	239	506	Source "E"(1)(b)	250	239	1046	
		172 lbs	1.a.* (per Mr. E.				
		x4 = 688 lbs	Balducci)				
Nitrogen Oxide	40.0	85	None specified	--	40.0	175	

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5])

[1]See Section V, Item 2.

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

[3]Calculated from operating rate and applicable standard

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

[5]If Applicable

* 0.1 lb particulate per 10^6 BTU heat input.

2.5 lb SO_2 per 10^6 BTU heat input

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
No. 6 fuel oil	8 bbl	16 bbl	100 per boiler

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

Fuel Analysis:

Percent Sulfur: 2.28 (nominal based on 2.5 lb $SO_2/10^6$ BTU) Percent Ash: 0.1 max

Density: 8.2 (nominal) lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb 150,000 (nominal) BTU/gal

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

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

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

About 10 GPM of boiler blowdown is routed in the sanitary sewer system to the District No. 2 City Sewage Treatment Plant.

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

Stack Height: 100 ft. Stack Diameter: 4.5 ft.

Gas Flow Rate: 33,100 (est.) ACFM Gas Exit Temperature: 410 °F.

Water Vapor Content: 6.2 % Velocity: 35 FPS

SECTION IV: INCINERATOR INFORMATION

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

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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	avg/hr	max./hr	
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Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

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

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

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

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

Brief description of operating characteristics of control devices: _____

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

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

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

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

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

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

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

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

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

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F

e. Velocity: FPS

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

1.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

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

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

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1. Control Device:

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5. Operating Cost:

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7. Maintenance Cost:

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*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

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(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

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

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____ no sites _____ TSP _____ ( ) SO^{2}* _____ Wind spd/dir

Period of monitoring _____/_____/_____ to _____/_____/_____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

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

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

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from _____/_____/_____ to _____/_____/_____
month day year month day year

2. Surface data obtained from (location) _____

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

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

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	_____ grams/sec
SO^{2}	_____ grams/sec

E. Emission Data Used in Modeling

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

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

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

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

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

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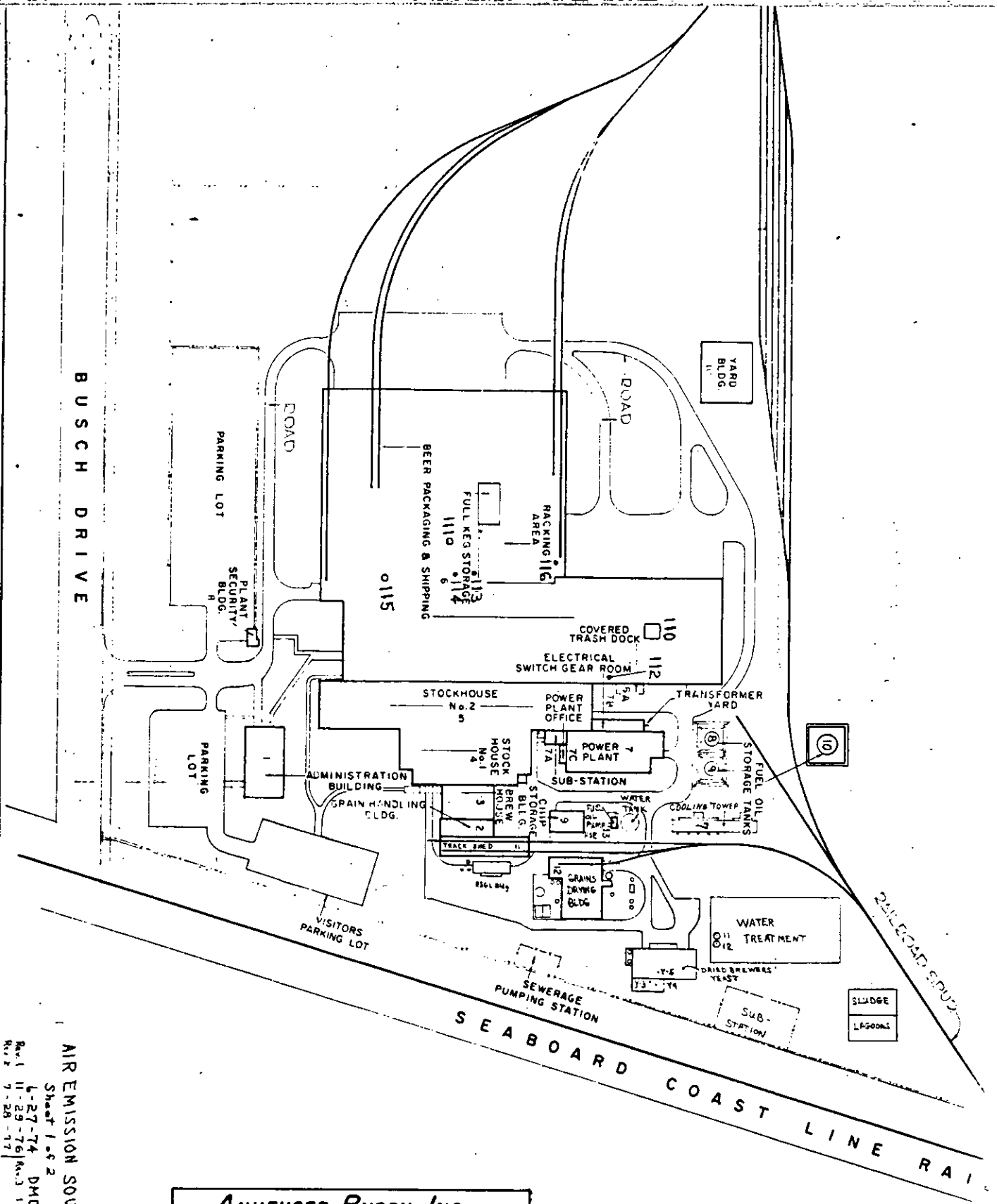


AIR EMISSION SOURCE INVENTORY
Sheet 1 of 2
6-27-74 DMD
Rev 1 11-29-76 Rev 2 7-28-77 Rev 3 1-22-81

ANHEUSER-BUSCH, INC.
111 BUSCH DR., JACKSONVILLE, FLORIDA

ACCURACY CERTIFIED BY: _____ SECRETARY
NAME & CAPACITY FOR BREWER
DATE

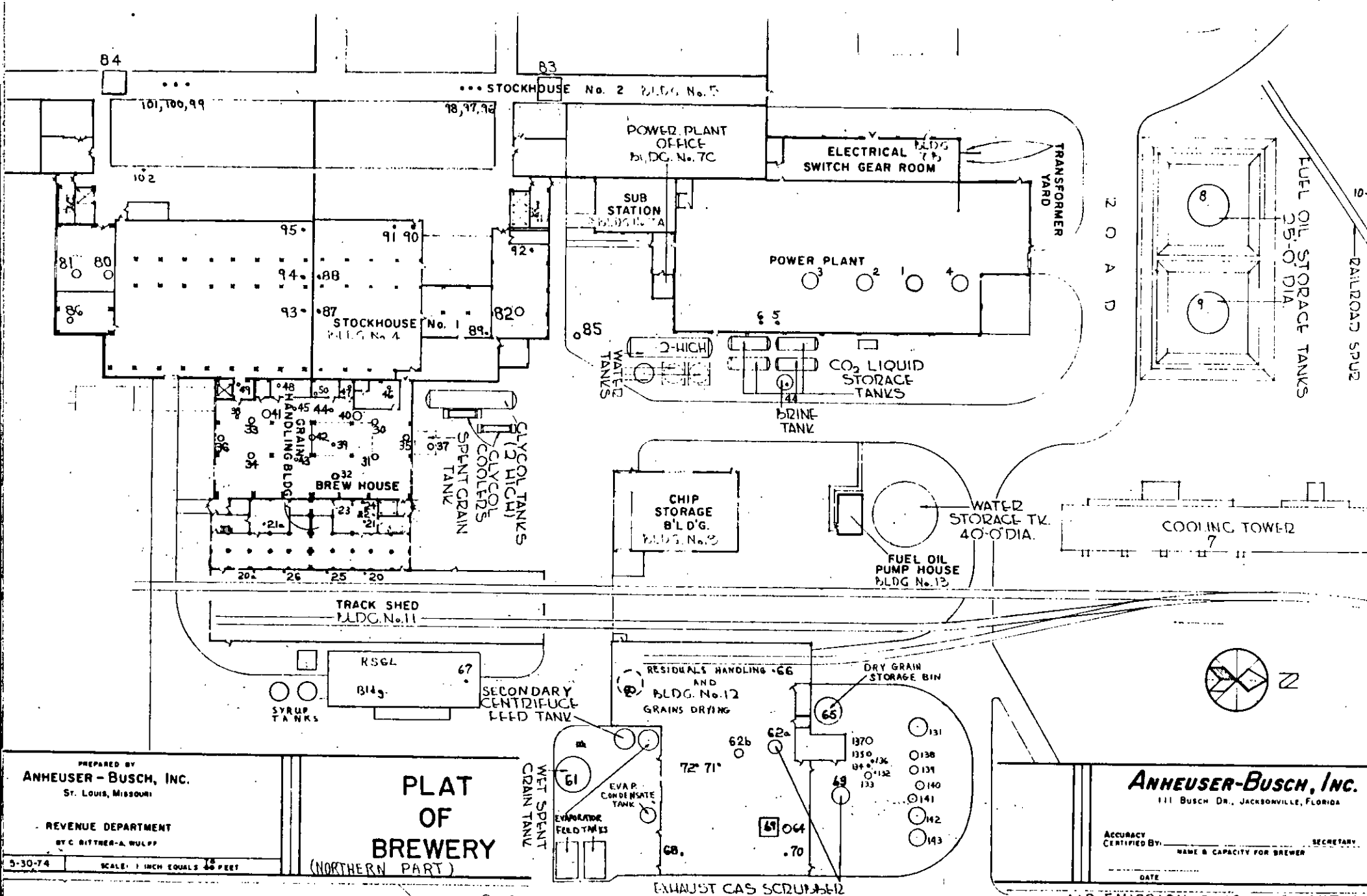
SHEET NO. 1

PREPARED BY
ANHEUSER - BUSCH, INC.
ST. LOUIS, MISSOURI

REVENUE DEPARTMENT
BY C. RITTNER-A WULFF

DATE: 5-30-74 SCALE: 1 INCH EQUALS 300 FEET

PLAT OF BREWERY LOCATION PLAT



PREPARED BY
ANHEUSER - BUSCH, INC.
St. Louis, Missouri
REVENUE DEPARTMENT
BY C. RITTNER-A. WULFF
5-30-74
SCALE: 1 INCH EQUALS 40 FEET

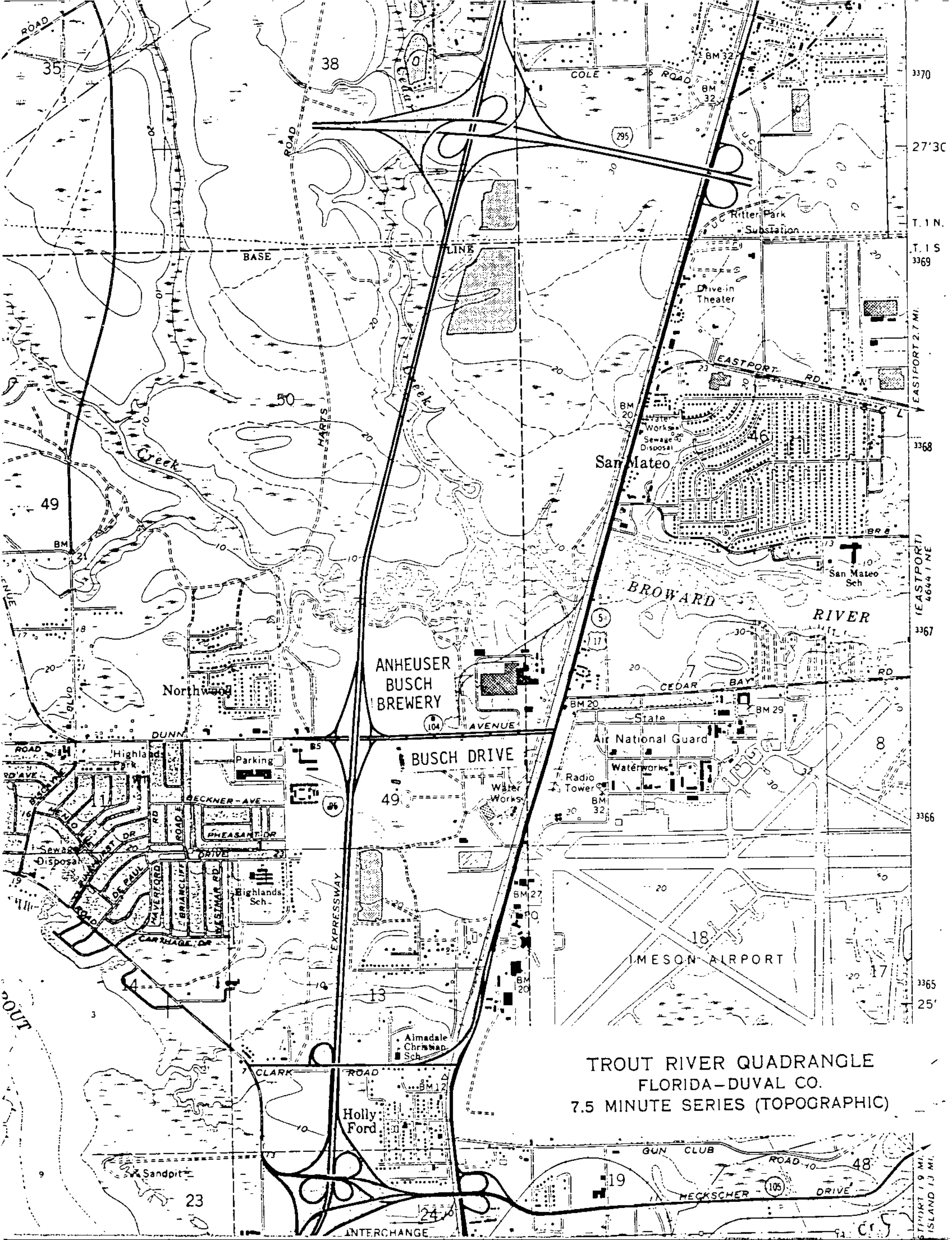
PLAT OF BREWERY
(NORTHERN PART)

ANHEUSER-BUSCH, INC.
111 Busch Dr., Jacksonville, Florida

Accuracy Certified By: _____ Secretary
Name & Capacity for Brewer
Date

AIR EMISSION SOURCE INVENTORY
Sheet 2 of 2
6-27-74 DMD

Rev. 1 11-29-76
Rev. 2 7-15-77
Rev. 3 6-21-79
Rev. 4 1-9-80
Rev. 5 1-22-81


TROUT RIVER QUADRANGLE
FLORIDA–DUVAL CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
COLE ROAD
BM 32
295
27'30
Ritter Park
Substation
T.1 N.
T.1 S.
BASE LINE
Drive-in Theater
EASTPORT RD
EASTPORT 2.7 MI.
Water Works
Sewage Disposal
San Mateo
Creek
HARTS
BROWARD RIVER
San Mateo Sch
(EASTPORT) 4644 I NE
ANHEUSER BUSCH BREWERY
Northwood
CEDAR BAY RD
State Air National Guard
Waterworks
Radio Tower
DUNN AVENUE
BUSCH DRIVE
Highlands Park
Parking
BECKNER AVE
PHEASANT DR
Sewage Disposal
DE PAUL
HAVERFORD
BRIARCLIFF
WESTMAR RD
Highlands Sch
CARTHAGE DR
EXPRESSWAY
Water Works
IMESON AIRPORT
Almadale Christian Sch
CLARK ROAD
Holly Ford
GUN CLUB ROAD
HECKSCHER DRIVE
Sandpit
INTERCHANGE
25'

ANHEUSER-BUSCH, INC.
JACKSONVILLE BREWERY
EMISSION CALCULATIONS PER BOILER

(Section III C and E)

I. Section IIIC and E

A. Emission Factors

From AP-42, 3rd. Ed. Table 1.3-1 For Industrial Residual Oil. Here S equals the percent by weight of sulfur in the oil.

Pollutant	Emission lb/1000 gal	Emission With 2.28% S oil, lb/1000 gal
Particulate	10(S) + 3	25.8
Sulfur Dioxide	157(S)	358.0
Nitrogen Oxides	60	60.0
Carbon Monoxide	5	5.0
Hydrocarbons	1	1.0

B. Sulfur Limit of Oil

SO_2 emissions limited to 2.5 lb $SO_2/10^6$ BTU input. This equates to:

$$\frac{2.5 \text{ lb } SO_2}{10^6 \text{ BTU}} \times \frac{.15 \times 10^6 \text{ BTU}}{\text{gal oil}} \times \frac{\text{gal oil}}{8.2 \text{ lb oil}} \times \frac{\text{lb S}}{2 \text{ lb } SO_2} = 0.02287 \frac{\text{lb S}}{\text{lb oil}} \text{ or } 2.28\% \text{ S}$$

C. Maximum Oil Usage

Bases: 100×10^6 BTU/hr max. input per boiler and 150,000 BTU/gal for No. 6 fuel oil.

$$\frac{100 \times 10^6 \text{ BTU}}{\text{hr}} \times \frac{\text{gal}}{0.15 \times 10^6 \text{ BTU}} = 667 \text{ gal/hr.}$$

D. Maximum Emissions

	(Emission Factor) (lb/1000 gal)	x	(Max. oil usage) x(0.667 x 1000 gal)	=	Max. Emissions
Particulates	25.8	x	0.667	=	17.2 lb/hr
SO_2	358.0	x	0.667	=	239.0 lb/hr
NO_x	60.0	x	0.667	=	40.0 lb/hr

E. Actual Annual Emissions

Bases: 2,828,000 gallons of No. 6 fuel oil used in boiler No. 1 in 1979.

$$\text{(Emission Factor)} \times \text{(Oil Used)} \times \left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right) = \text{Actual Emissions}$$

$$\text{(lb/1000 gal)} \times \text{(2,828 x 1000 gal)} \times \left(\frac{1}{2000}\right)$$

Particulate	25.8	x	(2,828/2000)	=	36.5 tons/yr
SO_2	358.0	x	(1.414)	=	506 tons/yr
NO_x	60.0	x	(1.414)	=	84.8 tons/yr

F. Potential Emissions

1. Hourly Potential Emissions equal hourly Maximum Emissions (Par. D) as there are no additional emission control devices on the boilers.

2. Annual Potential Emissions assume continuous operation or 8760 hr/yr.

$$\left\{\begin{matrix}\text{Hourly} \\ \text{Potential} \\ \text{Emissions}\end{matrix}\right\} \times \left\{\begin{matrix}\text{Operating} \\ \text{Time}\end{matrix}\right\} \times \left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right) = \text{Annual Potential Emissions}$$

$$\text{(lb/hr)} \times \left\{\begin{matrix}8760 \\ \text{hr/yr}\end{matrix}\right\} \times \left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right)$$

Particulate	17.2	x	(8760/2000)	=	75.4 tons/yr
SO_2	239.0	x	(4.38)	=	1046.0 tons/yr
NO_x	40.0	x	(4.38)	=	175.0 tons/yr

G. Allowable Emissions

Chapter 17-2.05(6) Table II Source E(2) states "apply latest technology" for particulate, sulfur dioxide, and nitrogen oxides. For plant locality per Mr. Ed Balducci on 4/22/80, we are to use limits of 0.1 lb. particulate and 2.5 lb SO_2 per 10^6 BTU input over a 2-hr average. No limit is specified for NO_x. From application, each boiler has input capacity of 100 x 10^6 BTU/hr.

	(Emission Limit) (lb/10^6 BTU)	x	(Input Capacity) (100 x 10^6 BTU/hr)	=	Allowable Emissions
Particulate	0.1	x	(100)	=	10 lb/hr
SO_2	2.5	x	(100)	=	250 lb/hr

II. Section III H

Percent water in flue gases

Reference: Steam, Its Generation and Use by Babcock and Wilcox Co. 37th Ed., 1963. Chapter 4, Table 5 (page 4 - 9).

For fuel oil per 10,000 BTU as fired.

Theoretical dry air -- 7.46 lb

Fuel -- 0.54 lb

Resulting Moisture -- 0.51 lb

Incoming moisture (wet air) -- 0.0132 lb H_2O/lb dry air @ 60% RH and 80° F.

At 120 % of theoretical air (20% excess)

Total dry air -- 1.2(7.46) = 8.95 lb

Incoming H_2O -- 1.2(7.46)(0.0132) = 0.12 lb

Thus, in flue gases

Total water -- 0.12 + 0.51 = 0.63 lb

Total gases -- 0.63 + 8.95 + 0.54 = 10.12 lb

So, water in flue gases -- $\frac{0.63}{10.12}$ (100%) = 6.2%

LIST

11/08/80. 16.36.17.
LIST OF RESULTS

1PLANT NAME: <AB JACKSONVILLE BREWERY> POLLUTANT: SO2 EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
THIS RUN COMBINES ALL 4 BOILER STACKS INTO A SINGLE SOURCE

	MET FILE STN NO.	YR	REQUESTED STN NO.	YR
SURFACE	13889	70	13889	70
UPPER AIR	13861	70	13861	70

PLANT LOCATION: RURAL
NO TAPE OUTPUT
MET DATA WILL NOT BE PRINTED

```
DAY-- 1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
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      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

* N O T E * * * * * * * * * * * * * * * *

ALL TABLES, INCLUDING SOURCE CONTRIBUTION, THAT CONTAIN -ANNUAL- IN THE HEADING ARE BASED ONLY ON THOSE I

DAYS MARKED BY [1[IN THE ABOVE TABLE

RING DISTANCES(KM)= .40 .60 .80 1.00 1.20

PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 0.0 PLANT ELEVATION (METERS ABOVE SEA LEVEL)-- 0.0

	RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)					RECEPTOR ELEVATIONS (METERS ABOVE SEA LEVEL)				
DIRECTION	RING"1	RING"2	RING"3	RING"4	RING"5	RING"1	RING"2	RING"3	RING"4	RING"5
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

STACK " 1-- COMBINED BOILER STACK

STACK	MONTH	EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	ALL	126.0000	30.50	1.37	10.60	483.00	15.63

PLANT NAME: AB JACKSONVILLE BREWERY POLLUTANT: SO2 EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

			MAX HOURLY				MAX 24-HOUR		
	DAY	RATIO	CONCENTRATION	DIRECTION	DISTANCE(KM)	HOUR	CONCENTRATION	DIRECTION	DISTANCE(K

TRM
RDY
$F,540

YEARLY MAXIMUM 24-HOUR CONC= 2.1508E-04 DIRECTION= 5 DISTANCE= 1.2 KM DA
+Y=223
RDY

$F,584
YEARLY SECOND MAXIMUM 24-HOUR CONC= 2.0302E-04 DIRECTION= 5 DISTANCE= 1.0
+ KM DAY= 79
RDY

DAY 79 = 22 Hrs.
M = 5

$F,628
YEARLY MAXIMUM 3-HOUR CONC= 6.9294E-04 DIRECTION= 31 DISTANCE= .6 KM
+ DAY=163 TIME PERIOD= 5
RDY

$F,672
YEARLY SECOND MAXIMUM 3-HOUR CONC= 5.5427E-04 DIRECTION= 31 DISTANCE=
+ .8 KM DAY=202 TIME PERIOD= 4
RDY
UNS RESULTS
RDY
BYE
CT = 01.03 SU-B = 12.4
KCH = 45
A541001 LOG OFF. 16.43.41.

SECTION II: GENERAL PROJECT INFORMATION Rev. 1, 4/14/81

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

This construction will extend the height of each boiler stack from 52.5 ft to 100 ft. The 4 identical boilers are Babcock and Wilcox Co., Model FM 1035-79 (National Board No. 22857, 22856, 22855 and 23814). Modeling predicts that the higher stacks will allow the operation of all 4 boilers at 100 x 10^6 BTU/hr input each (capacity) without violating the Florida SO2 ambient air quality standard.

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

Start of Construction July 1, 1981 Completion of Construction Aug. 31,1981

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

Extending boiler stacks from the present height of 52.5 ft to 100 ft. - $130,000 (est.

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

A016-2435, -2436, and -2437 expired 6/30/80. Renewal requested subject to SO_2 modeling evaluation. Renewals to be withdrawn at the time of this application. A016-12824 expires 8/31/83.

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

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr ____ ;

if seasonal, describe: ____

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

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

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

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY Rev. 1, 4/14/81

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

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration
Sulfur dioxide	250 lb/hr/boiler or 1000 lb/hr (maximum rate)

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

1. Control Device/System: None
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration
Sulfur dioxide	165.25 lb/hr/boiler or 661 lb/hr (maximum permit rate)

*Explain method of determining D 3 above.

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

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

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

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

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

Brief description of operating characteristics of control devices: _____

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

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

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

10. Stack Parameters At input of 66.1 x 10^6 BTU/hr (100 x 10^6 BTU/hr)

a. Height: present 52.5 ft. b. Diameter: 4.5 ft.

c. Flow Rate: est. 21,000 (33,100) ACFM d. Temperature: 390 (410) °F

e. Velocity: 22 (35) FPS

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

1.

a. Control Device: Stacks increased to height of 100 ft. and outlet diameter decreased to 3.5 ft.

b. Operating Principles: A taller stack (still less than GEP) will give better dispersion of SO_2 at ground level.

c. Efficiency*: NA (not applicable) d. Capital Cost: $130,000 (est.)

e. Useful Life: 20 years f. Operating Cost: ~ $ 0

g. Energy*: ~ $ 0 h. Maintenance Cost: none

i. Availability of construction materials ~~and process chemicals~~: stack materials are available

j. Applicability to manufacturing processes: NA

k. Ability to construct with control device, install in available space, and operate within proposed levels:

There is adequate space and support to install 100 ft. stacks.

2.

a. Control Device: Lower oil sulfur content to 1.5% from current 2.28%

b. Operating Principles: The SO_2 emissions from the firing of No. 6 fuel oil are directly proportional to the sulfur content of the oil.

c. Efficiency*: 33% $\left[\frac{(2.28 - 1.5)\ 100}{2.28}\right]$ d. Capital Cost: None

e. Useful Life: NA f. Operating Cost: Est. $300,000/yr (current prices)

g. Energy**: None h. Maintenance Costs: None

i. Availability of construction materials and process chemicals: No. 6 fuel oil with a 1.5% sulfur content is available in the Jacksonville area.

j. Applicability to manufacturing processes: NA

k. Ability to construct with control device, install in available space, and operate within proposed levels: NA

*Explain method of determining efficiency.

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

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device: Increasing boiler stack height to 100 ft. and decreasing outlet diameter to 3.5 ft.
2. Efficiency*: NA
3. Capital Cost: $130,000 (est.)
4. Life: 20 years
5. Operating Cost: ~ $ 0
6. Energy: ~ $ 0
7. Maintenance Cost: None
8. Manufacturer: Custom built
9. Other locations where employed on similar processes: The Corporation is not familiar with other locations which have increased stack heights specifically to meet ambient standards.

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

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(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

Modeling results show that increasing the stacks on the four existing boilers to 100 ft. will allow all four boilers to operate simultaneously at capacity and not violate the Florida ambient air quality standards for SO_2.

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

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION Rev. 1, 4/14/81

A. Company Monitored Data

1. _____ no sites _____ TSP _____( )SO^{2*} _____ Wind spd/dir

Period of monitoring ___/___/___ to ___/___/___
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

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

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

B. Meteorological Data Used for Air Quality Modeling

1. 1 Year(s) of data from 01 / 01/ 70 to 12 / 21 / 70
month day year month day year

Note: 5 years of data, 1970 thru 1974, were evaluated. 1970 gave the highest annual & 3 hr. concentrations.

2. Surface data obtained from (location) 13889 Jacksonville, FL

3. Upper air (mixing height) data obtained from (location) 13861 Waycross, GA

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

C. Computer Models Used

1. CRSTER (not modified) Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	-- grams/sec
SO^2	126.0 grams/sec

E. Emission Data Used in Modeling This is the total emission from all four (4) boilers operating continuously at capacity (100 x 10^6 BTU/hr each) at 2.5 lb $SO_2/10^6$ BTU.

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

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

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

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

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

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION Rev. 1, 4/14/81

A. Company Monitored Data

1. _____ no sites _____ TSP _____( )SO^{2*} _____ Wind spd/dir

Period of monitoring ___/___/___ to ___/___/___
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

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

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

B. Meteorological Data Used for Air Quality Modeling

1. 1 Year(s) of data from 01 / 01/ 70 to 12 / 21 / 70
month day year month day year

Note: 5 years of data, 1970 thru 1974, were evaluated. 1970 gave the highest annual & 3 hr. concentrations.

2. Surface data obtained from (location) 13889 Jacksonville, FL

3. Upper air (mixing height) data obtained from (location) 13861 Waycross, GA

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

C. Computer Models Used

1. CRSTER (not modified) Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	-- grams/sec
SO^2	126.0 grams/sec

E. Emission Data Used in Modeling This is the total emission from all four (4) boilers operating continuously at capacity (100 x 10^6 BTU/hr each) at 2.5 lb $SO_2/10^6$ BTU.

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

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

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

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

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

SECTION II: GENERAL PROJECT INFORMATION Rev. 2, 5/28/81

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

The applicant desires to increase the allowable maximum firing rate to 100 x 10^6 BTU/hr per boiler. This is the input capacity for each boiler as indicated on all previous permit applications. Each boiler is currently permitted to operate at a maximum of 66.1 x 10^6 BTU/hr. The four (4) boilers are Babcock & Wilcox Co., Model FM 1035-79 (National Board No. 22857, 22856, 22855 and 23814). Modeling predicts that 100 ft. stacks will allow the operation of all 4 boilers at 100 x 10^6 BTU/hr input each (capacity) without violating the Florida SO_2 ambient air quality standard.

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

Start of Construction _____ Completion of Construction _____

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

_____

_____

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

A016-2435, -2436, and -2437 expired 6/30/80. Renewal requested subject to SO_2 modeling evaluation. Renewals to be withdrawn at the time of this application.

A016-12824 expires 8/31/83.

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

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr _____ ;

if seasonal, describe: _____

_____

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

1. Is this source in a non-attainment area for a particular pollutant? no
   a. If yes, has "offset" been applied? _____
   b. If yes, has "Lowest Achievable Emission Rate" been applied? _____
   c. If yes, list non-attainment pollutants.

      _____

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. no
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. ?
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? no
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? no

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

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

A. Raw Materials and Chemicals Used in your Process, if applicable: Rev. 1, 5/28/81

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

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

1. Total Process Input Rate (lbs/hr): for each of four boilers - 90,000 lb/hr max (water-steam)

2. Product Weight (lbs/hr): - 90,000 lb/hr max (steam)

C. Airborne Contaminants Emitted: See attached Emission Calculations
EACH boiler at 100 x 10^6 BTU/hr input

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	10.0*	21.2	Use 17-2.05(6) Table II	10	10.0	43.8	1,2,3,4
Sulfur Dioxide	250**	530	Source "E"(1)(b)	250	250	1095	
			1.a.** (per Mr.				
			E. Balducci)				
Nitrogen Oxide	40.0	85	None specified	--	40.0	175	

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]

[1] See Section V, Item 2.

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

[3] Calculated from operating rate and applicable standard

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

[5] If Applicable

* Maximum allowable. Also see emission tests of April, 1981.

** 0.1 lb particulate per 10^6 BTU heat input.

2.5 lb SO_2 per 10^6 BTU heat input

E. Fuels

Rev. 1, 5/28/81

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
No. 6 fuel oil	8 bbl	16 bbl	100 per boiler

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

Fuel Analysis:

Percent Sulfur: 2.28 (nominal based on 2.5 lb $SO_2/10^6$ BTU) Percent Ash: 0.1 max.

Density: 8.2 (nominal) lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb 150,000 (nominal) BTU/gal

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

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

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

About 10 GPM of boiler blowdown is routed in the sanitary sewer system to the District No. 2 City Sewage Treatment Plant.

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

Stack Height: 100 ft. Stack Diameter: 4.5 (3.5 at outlet) ft.

Gas Flow Rate: 33,100 (est.) ACFM Gas Exit Temperature: 410 °F.

Water Vapor Content: 6.2 % Velocity: 35 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

E. Fuels

Rev. 1, 5/28/81

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
No. 6 fuel oil	8 bbl	16 bbl	100 per boiler

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

Fuel Analysis:

Percent Sulfur: 2.28 (nominal based on 2.5 lb $SO_2/10^6$ BTU) Percent Ash: 0.1 max.

Density: 8.2 (nominal) lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb 150,000 (nominal) BTU/gal

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

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

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

About 10 GPM of boiler blowdown is routed in the sanitary sewer system to the District No. 2 City Sewage Treatment Plant.

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

Stack Height: 100 ft. Stack Diameter: 4.5 (3.5 at outlet) ft.

Gas Flow Rate: 33,100 (est.) ACFM Gas Exit Temperature: 410 °F.

Water Vapor Content: 6.2 % Velocity: 35 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

D. Maximum Emissions

	(Florida allowable) $lb/10^6$ BTU input)	x	(capacity input) (100 x 10^6 BTU/hr input)	= Max. Emissions
Particulates	0.1	x	100	= 10.0 lb/hr
SO_2	2.5	x	100	= 250 lb/hr

NOTE: Particulate test results performed in April, 1981, confirm that the boilers meet this standard.

E. Actual Annual Emissions

Basis: 2,828,000 gallons of No. 6 fuel oil used in boiler No. 1 in 1979. At 150,000 BTU/gal, this is equivalent to 424.2 x 10^9 BTU input.

	(Florida allowable) $lb/10^6$ BTU input)	x	(annual input) (424.2 x 10^9 BTU)/2000	x $\left(\frac{1 \text{ ton}}{2000 \text{ ton}}\right)$	= Actual Emissions
Particulate	0.1	x	(424,200/2000)		= 21.2 tons/yr
SO_2	2.5	x	212.1		= 530 tons/yr

F. Potential Emissions

1. Hourly Potential Emissions equal hourly Maximum Emissions (Par. D) as there are no additional emission control devices on the boilers.

2. Annual Potential Emissions assume continuous operation or 8760 hr/yr.

$$\left(\begin{matrix}\text{Hourly}\\ \text{Potential}\\ \text{Emissions}\end{matrix}\right) \times \left(\begin{matrix}\text{Operating}\\ \text{Time}\end{matrix}\right) \times \left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right) = \text{Annual Potential Emissions}$$

$$(\text{lb/hr}) \times \left(\frac{8760 \text{ hr}}{\text{yr}}\right) / 2000$$

Particulate	10.0	x	(8760/2000)	=	43.8 tons/yr
SO_2	250	x	(4.38)	=	1095 tons/yr