

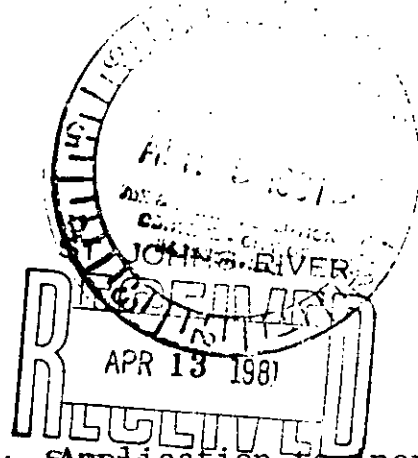


Anheuser-Busch, Inc.

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~~
~~District JAX~~
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
Asst. Resident Engineer

TM:

Enclosure

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

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



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

CHECK NUMBER

No.

23 0293

DATE April 8, 1981

\$ **20.00

PAY TO THE ORDER OF **Florida Department of Environmental Regulation**

Larry Rawls

4.21
810 - MANUFACTURERS BANK AND TRUST COMPANY, OF ST. LOUIS

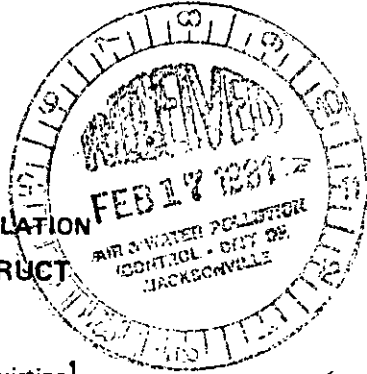
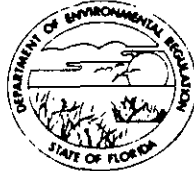
⑈ 2302938⑈ ⑆081000278⑆ 00 0027 0⑈

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 [X] Existing 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 0 25 . 59 "N Longitude 81 0 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, 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

1See 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)

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

**C. Airborne Contaminants Emitted: See attached Emission Calculations
EACH boiler at 100×10^6 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 I	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)

¹See Section V, Item 2.

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

³Calculated from operating rate and applicable standard

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

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

⁵If Applicable

2.5 lb SO₂ 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 100×10^6 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)

¹See Section V, Item 2.

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

³Calculated from operating rate and applicable standard

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

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

⁵If Applicable

2.5 lb SO₂ 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 Percent Ash: 0.1 max
8.2 (nominal) SO₂/10⁶ BTU) lbs/gal Typical Percent Nitrogen: _____
 Density: _____ 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 (°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: | 4. Capital Costs: |
| 2. Operating Principles: | 6. Operating Costs: |
| 3. Efficiency: * | 8. Maintenance Cost: |
| 5. Useful Life: | |
| 7. Energy: | |
| 9. Emissions: | |

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

10. Stack Parameters

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

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

1.

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

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

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

2.

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

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

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

*Explain method of determining efficiency.

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

3.

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

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

*Explain method of determining efficiency above.

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

4.

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

F. Describe the control technology selected:

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

a.

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

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

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

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration
_____	_____
_____	_____
_____	_____

(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 () SO²* _____ Wind spd/dir

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

Other data recorded : _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

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

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

B. Meteorological Data Used for Air Quality Modeling

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

2. Surface data obtained from (location) _____

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

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

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

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

E. Emission Data Used in Modeling

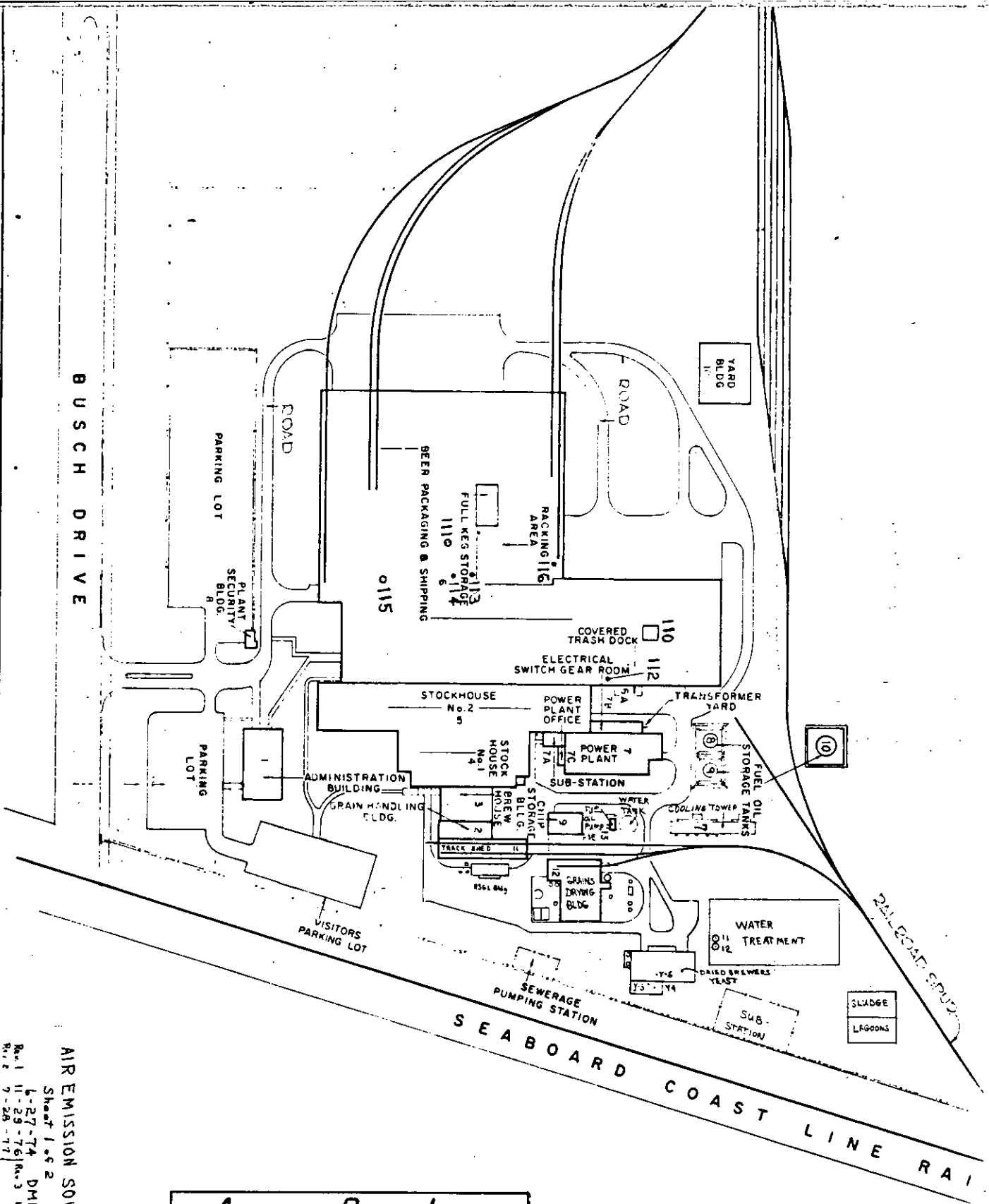
Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

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.

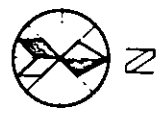
H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.



AIR EMISSION SOURCE INVENTORY
 Sheet 1 of 2
 6-27-74 DMD
 Rev. 1 11-26-76 Rev. 3 1-22-80
 Rev. 2 7-28-77

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

ACCURACY CERTIFIED BY: _____ SECRETARY _____ SHEET NO. 1
 NAME & CAPACITY FOR BREWER _____
 DATE _____

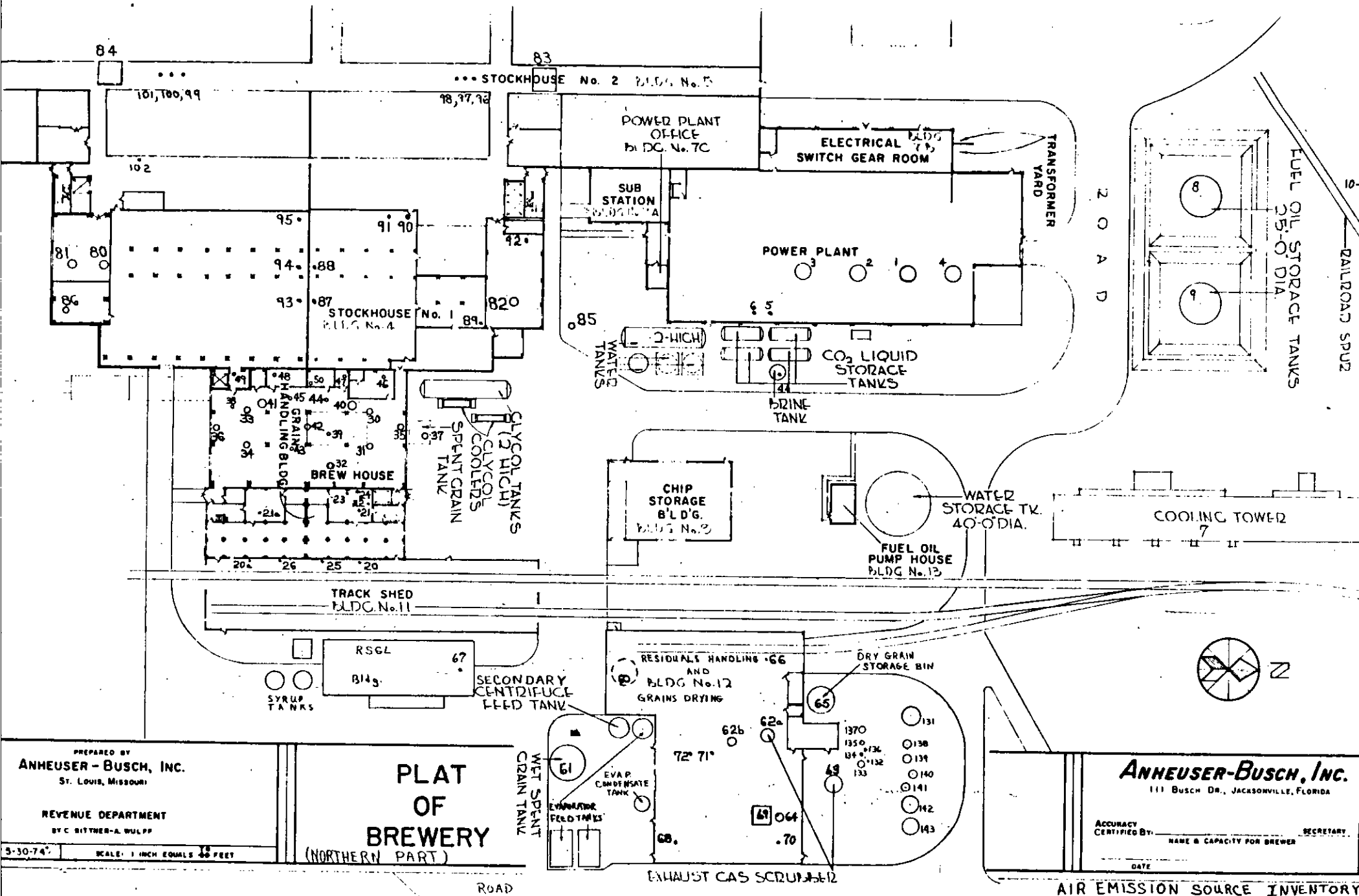


PREPARED BY
ANHEUSER - BUSCH, INC.
 ST. LOUIS, MISSOURI

REVENUE DEPARTMENT
 BY C. HITNER-A. WULFF

DATE: 5-30-74 SCALE: 1 INCH EQUALS 316 FEET

PLAT OF BREWERY LOCATION PLAT



PREPARED BY
ANHEUSER-BUSCH, INC.
 St. Louis, Missouri

REVENUE DEPARTMENT
 BY C. BITTNER-A. WULFF

**PLAT
 OF
 BREWERY**
 (NORTHERN PART)

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

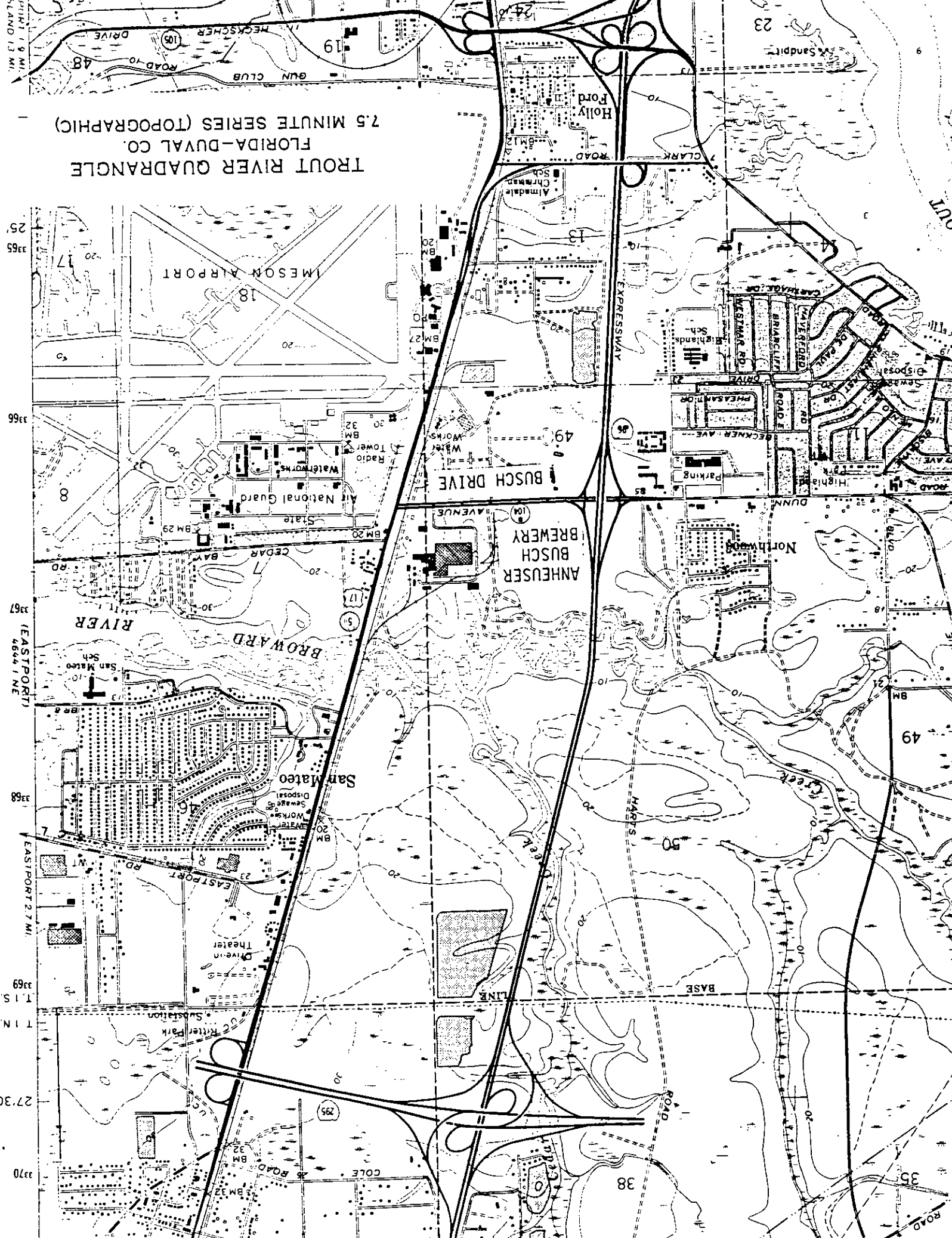
ACCURACY CERTIFIED BY: _____ SECRETARY: _____
 NAME & CAPACITY FOR BREWER
 DATE

3-30-74 SCALE: 1 INCH EQUALS 45 FEET

Rev. 5 1-22-81

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

TROUT RIVER QUADRANGLE
FLORIDA-DUAL CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



3370
27.30
1 N
1 S
69cc
3368
3367
3366
25

35
38
49
50
55
60
65
70
75
80
85
90
95
100
105
110
115
120
125
130
135
140
145
150
155
160
165
170
175
180
185
190
195
200
205
210
215
220
225
230
235
240
245
250
255
260
265
270
275
280
285
290
295
300
305
310
315
320
325
330
335
340
345
350
355
360
365
370
375
380
385
390
395
400
405
410
415
420
425
430
435
440
445
450
455
460
465
470
475
480
485
490
495
500
505
510
515
520
525
530
535
540
545
550
555
560
565
570
575
580
585
590
595
600
605
610
615
620
625
630
635
640
645
650
655
660
665
670
675
680
685
690
695
700
705
710
715
720
725
730
735
740
745
750
755
760
765
770
775
780
785
790
795
800
805
810
815
820
825
830
835
840
845
850
855
860
865
870
875
880
885
890
895
900
905
910
915
920
925
930
935
940
945
950
955
960
965
970
975
980
985
990
995

ISLAND 1.3 MI.
TRIP 1.9 MI.

9

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.

<u>Pollutant</u>	<u>Emission lb/1000 gal</u>	<u>Emission With 2.28% S oil, lb/1000 gal</u>
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

SO₂ emissions limited to 2.5 lb SO₂/10⁶ BTU input. This equates to:

$$\frac{2.5 \text{ lb SO}_2}{10^6 \text{ BTU}} \times \frac{.15 \times 10^6 \text{ BTU}}{\text{gal oil}} \times \frac{\text{gal oil}}{8.2 \text{ lb oil}} \times \frac{1 \text{ lb S}}{2 \text{ lb SO}_2} = 0.02287 \frac{\text{lb S}}{\text{lb oil}} \text{ or } 2.28\% \text{ S}$$

C. Maximum Oil Usage

Bases: 100 x 10⁶ 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) (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.

	(Emission Factor) (lb/1000 gal)	x	(Oil Used) (2,828 x 1000 gal)	x	$\left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right)$	=	Actual Emissions
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.

	{ Hourly Potential Emissions }	x	{ Operating Time }	x	$\left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right)$	=	Annual Potential Emissions
	(lb/hr)	x	(8760 hr/yr)	x	$\left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right)$		
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 SO₂ per 10⁶ BTU input over a 2-hr average. No limit is specified for NO_x. From application, each boiler has input capacity of 100 x 10⁶ BTU/hr.

	(Emission Limit)	x	(Input Capacity)	=	Allowable Emissions
	(lb/10 ⁶ BTU)		(100 x 10 ⁶ BTU/hr)		
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 -- 0.0132 lb H₂O/lb dry air @ 60% RH and 80° F.
(wet air)

At 120 % of theoretical air (20% excess)

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

Incoming H₂O -- 1.2(7.46)(0.0132) = 0.12 lb

Thus, in flue gases

$$\text{Total water -- } 0.12 + 0.51 = 0.63 \text{ lb}$$

$$\text{Total gases -- } 0.63 + 8.95 + 0.54 = 10.12 \text{ lb}$$

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

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(KM)
-----	-------	---------------	-----------	--------------	------	---------------	-----------	--------------

TRM
RDY
*F.540

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

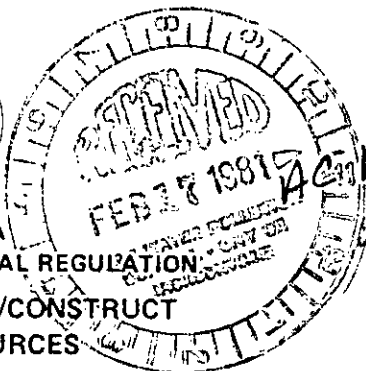
*F.584
YEARLY SECOND MAXIMUM 24-HOUR CONC= 2.0302E-04 DIRECTION= 5 DISTANCE= 1.0
+ KM DAY= 79
RDY

DAY 79 = 22 HAS
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.



16-39951

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

SOURCE TYPE: Air Pollution New¹ Existing¹

APPLICATION TYPE: 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 Charles M. Nolan, P.E.

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

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

¹See 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)

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

C. Airborne Contaminants Emitted: See attached Emission Calculations
EACH boiler at 100×10^6 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 I	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)

¹See Section V, Item 2.

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

³Calculated from operating rate and applicable standard

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

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

⁵If Applicable

2.5 lb SO₂ 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)

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

**C. Airborne Contaminants Emitted: See attached Emission Calculations
EACH boiler at 100 x 10⁶ 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)

¹See Section V, Item 2.

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

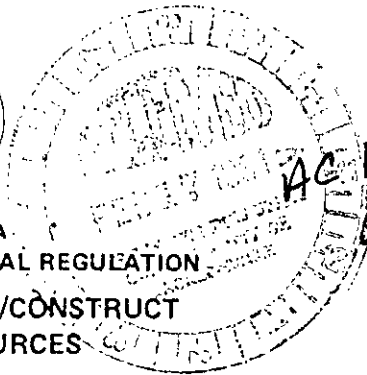
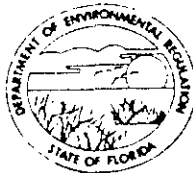
³Calculated from operating rate and applicable standard

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

⁵If Applicable

* 0.1 lb particulate per 10⁶ BTU heat input.

2.5 lb SO₂ per 10⁶ BTU heat input



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

SOURCE TYPE: Air Pollution New¹ Existing¹
 APPLICATION TYPE: 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 Charles M. Nolan, P.E.
PAT NOLAN, P.E.
 Name (Please Type)
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

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

SECTION II: GENERAL PROJECT INFORMATION

- A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.
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 100×10^6 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) Florida SO₂ ambient air quality standard.
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 SO₂ 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 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 100×10^6 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) Florida SO₂ ambient air quality standard.
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 SO₂ 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 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)
- Is this source in a non-attainment area for a particular pollutant?
 - If yes, has "offset" been applied? _____
 - If yes, has "Lowest Achievable Emission Rate" been applied? _____
 - If yes, list non-attainment pollutants.

 - Does best available control technology (BACT) apply to this source? If yes, see Section VI. _____
 - Does the State "Prevention of Significant Deterioration" (PSD) requirements apply to this source? If yes, see Sections VI and VII. _____
 - Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? _____
 - 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)

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

C. Airborne Contaminants Emitted: See attached Emission Calculations
EACH boiler at 100×10^6 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. 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)

¹See Section V, Item 2.

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

³Calculated from operating rate and applicable standard

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

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

⁵If Applicable

2.5 lb SO₂ 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 Percent Ash: 0.1 max
8.2 (nominal) SO₂/10⁶ BTU Density: _____ 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. _____

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 Percent Ash: 0.1 max
8.2 (nominal) SO₂/10⁶ BTU)
 Density: _____ 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 (°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: | 4. Capital Costs: |
| 2. Operating Principles: | 6. Operating Costs: |
| 3. Efficiency: * | 8. Maintenance Cost: |
| 5. Useful Life: | |
| 7. Energy: | |
| 9. Emissions: | |

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

- 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.

- 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

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 _____ () SO²* _____ Wind spd/dir
 Period of monitoring _____ / _____ / _____ to _____ / _____ / _____
 month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

- a) Was instrumentation EPA referenced or its equivalent? Yes No
- b) Was instrumentation calibrated in accordance with Department procedures? Yes No Unknown

B. Meteorological Data Used for Air Quality Modeling

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

- 2. Surface data obtained from (location) _____
- 3. Upper air (mixing height) data obtained from (location) _____
- 4. Stability wind rose (STAR) data obtained from (location) _____

C. Computer Models Used

- 1. _____ Modified? If yes, attach description.
- 2. _____ Modified? If yes, attach description.
- 3. _____ Modified? If yes, attach description.
- 4. _____ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

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.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

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

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

- a) Was instrumentation EPA referenced or its equivalent? _____ Yes _____ No
- b) Was instrumentation calibrated in accordance with Department procedures? _____ Yes _____ No _____ Unknown

B. Meteorological Data Used for Air Quality Modeling

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

- 2. Surface data obtained from (location) _____
- 3. Upper air (mixing height) data obtained from (location) _____
- 4. Stability wind rose (STAR) data obtained from (location) _____

C. Computer Models Used

- 1. _____ Modified? If yes, attach description.
- 2. _____ Modified? If yes, attach description.
- 3. _____ Modified? If yes, attach description.
- 4. _____ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

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

E. Emission Data Used in Modeling

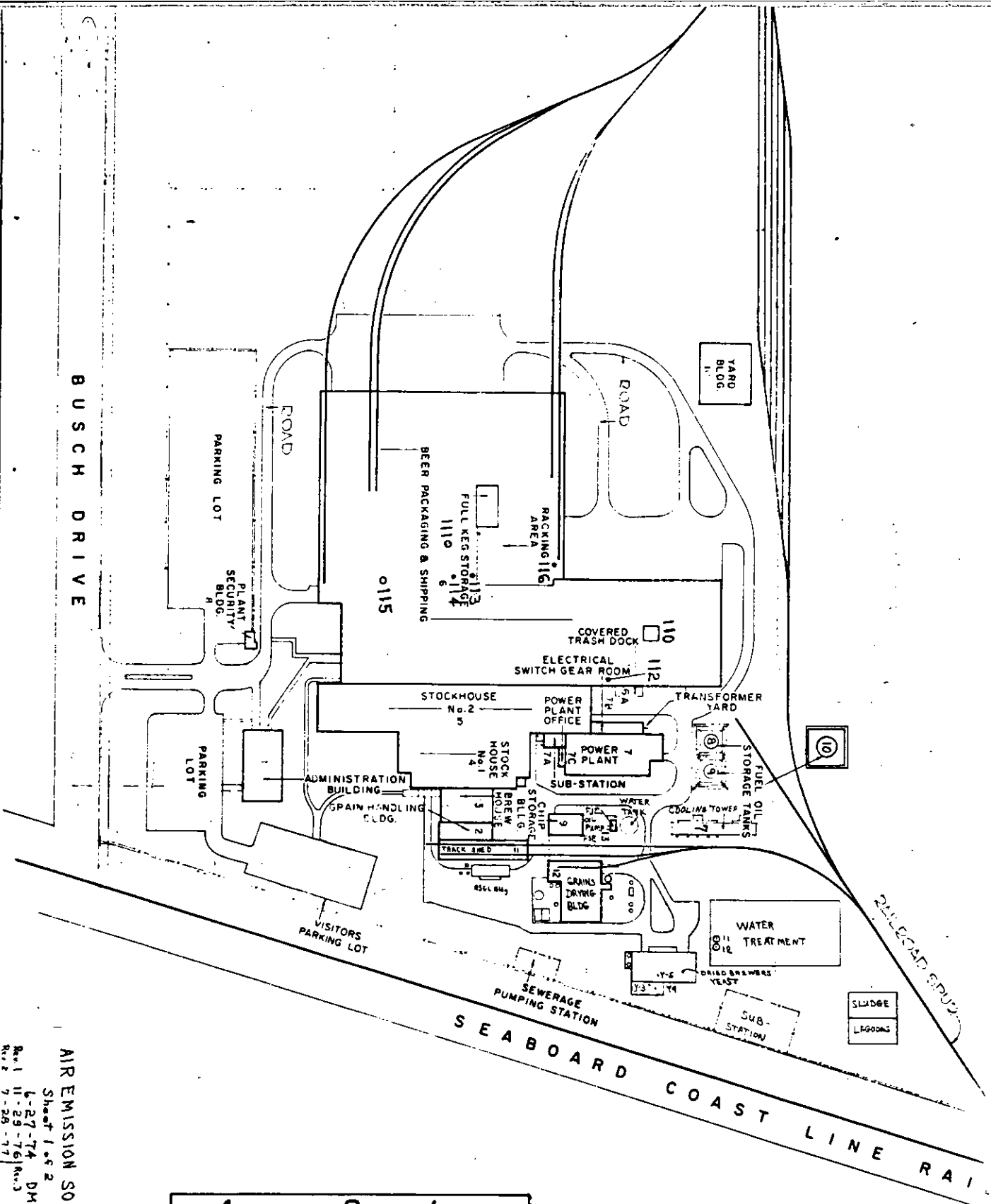
Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

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 7-28-77

Anheuser-Busch, Inc.
 111 Busch Dr., Jacksonville, Florida

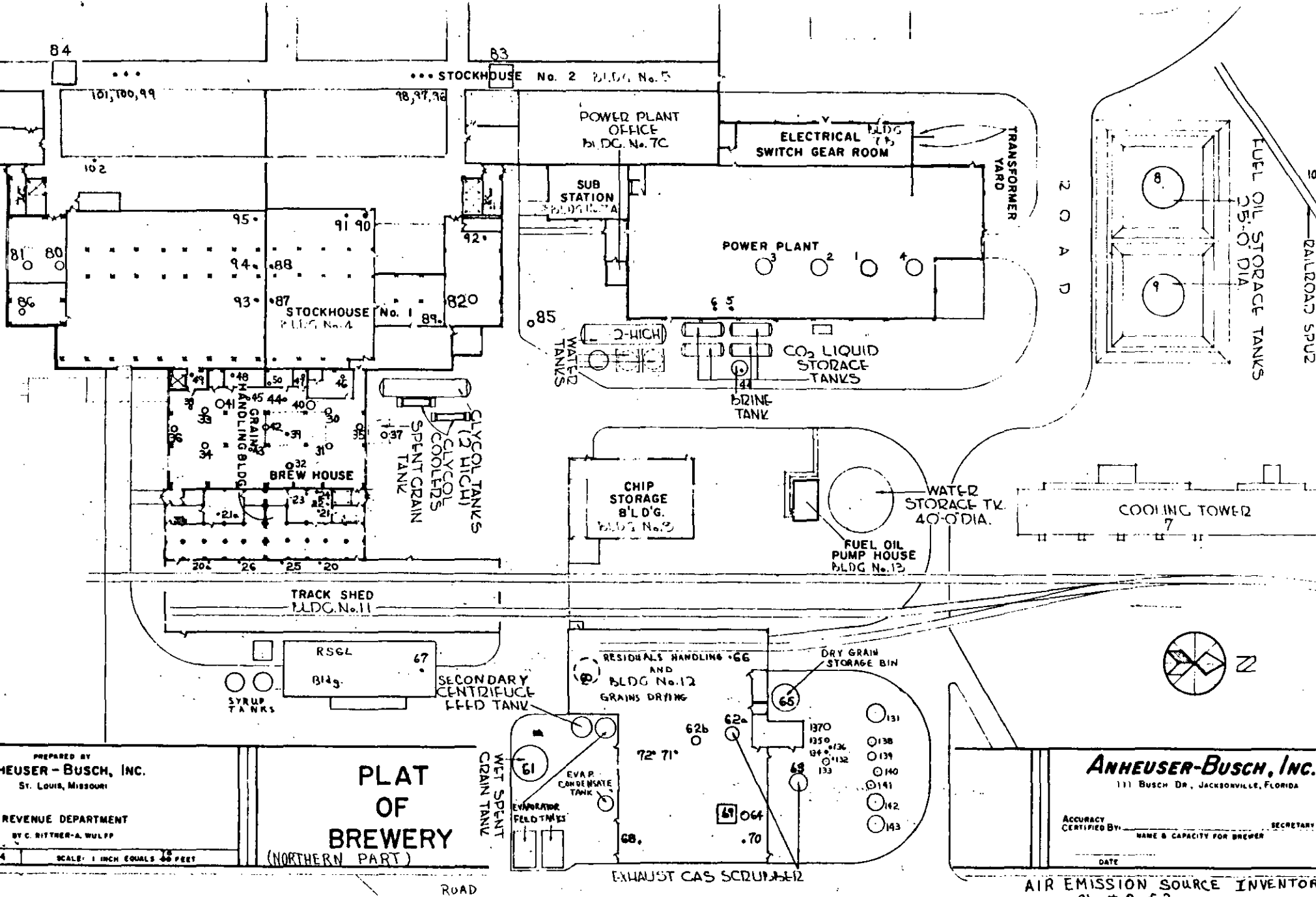
ACCURACY CERTIFIED BY: _____ SECRETARY: _____ SHEET NO. **1**
 NAME & CAPACITY FOR BREWER
 DATE: _____



PREPARED BY
ANHEUSER-BUSCH, INC.
 ST. LOUIS, MISSOURI
 REVENUE DEPARTMENT
 BY C. RITNER-A WULFF
 DATE: 5-30-74

**PLAT OF BREWERY
 LOCATION PLAT**

SCALE: 1 INCH EQUALS 310 FEET



PREPARED BY
ANHEUSER - BUSCH, INC.
 St. Louis, Missouri

REVENUE DEPARTMENT
 BY C. RITNER - A. WULFF

PLAT OF BREWERY
 (NORTHERN PART)

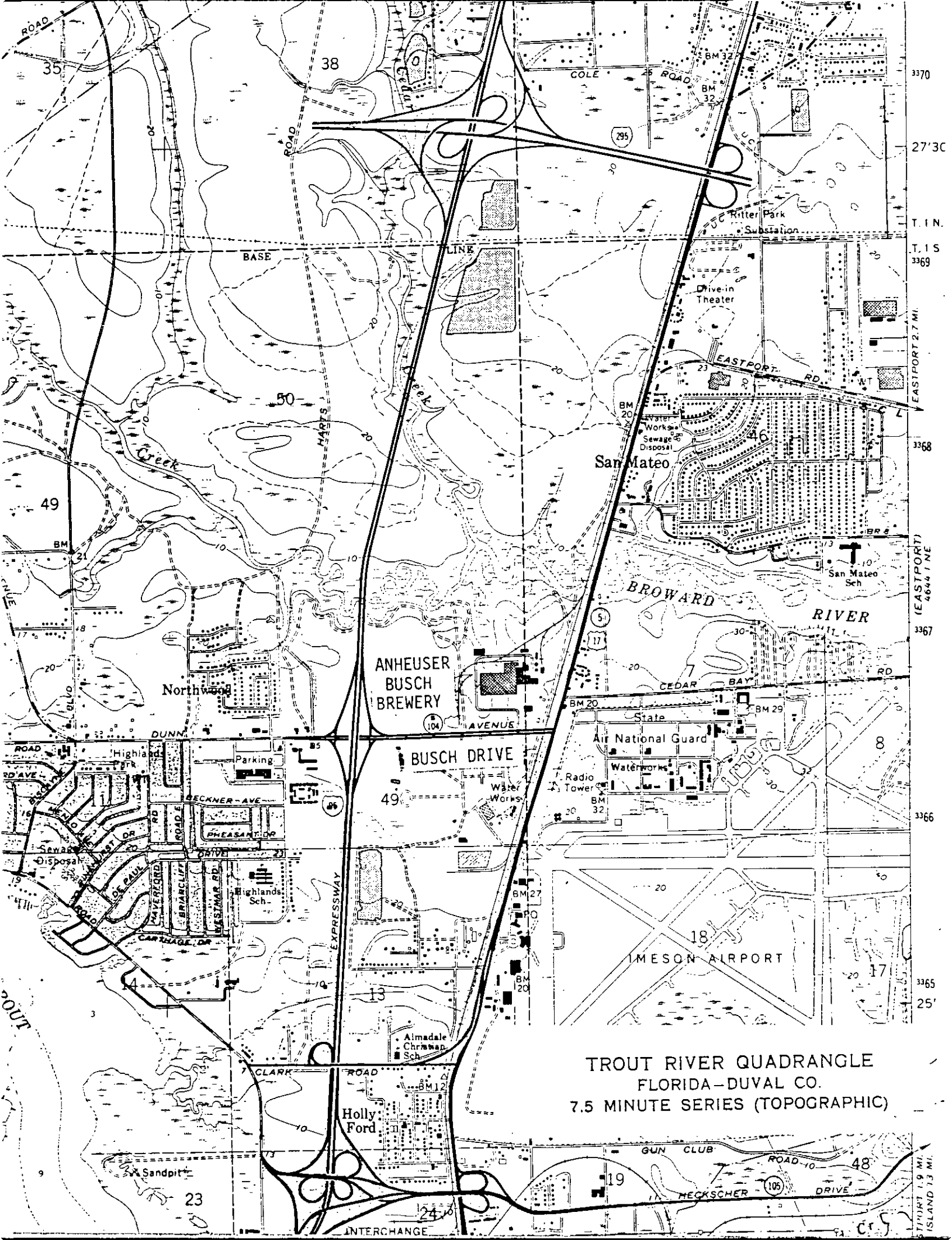
ANHEUSER-BUSCH, INC.
 111 BUSCH DR., JACKSONVILLE, FLORIDA

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

5-30-74 SCALE: 1 INCH EQUALS 40 FEET

AIR EMISSION SOURCE INVENTOR
 Sheet 2 of 2
 6-27-74 DMD Rev. 2 7-15-77
 Rev. 1 11-29-76 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)

370
27'30
T. 1 N.
T. 1 S
3369
EASTPORT 2.7 MI.
3368
EASTPORT
4644 1 NE
3367
3366
3365
25'
1.9 MI.
13 MI.



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.

<u>Pollutant</u>	<u>Emission lb/1000 gal</u>	<u>Emission With 2.28% S oil, lb/1000 gal</u>
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

SO₂ emissions limited to 2.5 lb SO₂/10⁶ BTU input. This equates to:

$$\frac{2.5 \text{ lb SO}_2}{10^6 \text{ BTU}} \times \frac{.15 \times 10^6 \text{ BTU}}{\text{gal oil}} \times \frac{\text{gal oil}}{8.2 \text{ lb oil}} \times \frac{1 \text{ lb S}}{2 \text{ lb SO}_2} = 0.02287 \frac{\text{lb S}}{\text{lb oil}} \text{ or } 2.28\% \text{ S}$$

C. Maximum Oil Usage

Bases: 100 x 10⁶ 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) (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.

	(Emission Factor) (lb/1000 gal)	x	(Oil Used) (2,828 x 1000 gal)	x	$\left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right)$	=	Actual Emissions
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

- Hourly Potential Emissions equal hourly Maximum Emissions (Par. D) as there are no additional emission control devices on the boilers.
- Annual Potential Emissions assume continuous operation or 8760 hr/yr.

	{ Hourly Potential Emissions }	x	{ Operating Time }	x	$\left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right)$	=	Annual Potential Emissions
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 SO₂ per 10⁶ BTU input over a 2-hr average. No limit is specified for NO_x. From application, each boiler has input capacity of 100 x 10⁶ 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 -- 0.0132 lb H₂O/lb dry air @ 60% RH and 80° F.
(wet air)

At 120 % of theoretical air (20% excess)

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

Incoming H₂O -- 1.2(7.46)(0.0132) = 0.12 lb

Thus, in flue gases

$$\text{Total water -- } 0.12 + 0.51 = 0.63 \text{ lb}$$

$$\text{Total gases -- } 0.63 + 8.95 + 0.54 = 10.12 \text{ lb}$$

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

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	

M A X H O U R L Y

DAY	RATIO	CONCENTRATION	DIRECTION	DISTANCE(KM)	HOUR	CONCENTRATION	DIRECTION	DISTANCE(KM)
-----	-------	---------------	-----------	--------------	------	---------------	-----------	--------------

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 100×10^6 BTU/hr input each

B. Schedule of project covered in this application (Construction Permit Application Only) (capacity) without violating the Florida SO₂ ambient air quality standard.
 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 SO₂ 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 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? | <u>No</u> |
| 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. | <u>No</u> |
| 3. Does the State "Prevention of Significant Deterioration" (PSD) requirements apply to this source? If yes, see Sections VI and VII. | <u>?</u> |
| 4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? | <u>No</u> |
| 5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? | <u>No</u> |

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

- 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 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
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 | 4. Capital Costs: |
| 2. Operating Principles: | 5. Operating Costs: |
| 3. Efficiency: * | 6. Maintenance Cost: |
| 7. Energy: | |
| 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 66.1×10^6 BTU/hr (100×10^6 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 SO₂ 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 SO₂ 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:

Rev. 1, 4/14/81

(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 SO₂.

*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 _____ () SO₂* _____ Wind spd/dir
 Period of monitoring _____ / _____ / _____ to _____ / _____ / _____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

- a) Was instrumentation EPA referenced or its equivalent? Yes No
- b) Was instrumentation calibrated in accordance with Department procedures? Yes No Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 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 10⁶ BTU/hr each) at
 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. 2.5 lb SO₂/10⁶ BTU.

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.

A. Company Monitored Data

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

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

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

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

B. Meteorological Data Used for Air Quality Modeling

1. 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	<u>126.0</u> grams/sec

E. Emission Data Used In Modeling

This is the total emission from all four (4) boilers operating continuously at capacity (100 x 10⁶ BTU/hr each) at

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.

2.5 lb SO₂/10⁶ BTU.

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 100×10^6 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 66.1×10^6 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 100×10^6 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 _____ 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 SO₂ 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 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 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? | 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 10⁶ 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 I	10	10.0	43.8	1,2,3,4
Sulfur Dioxide	250**	530	Source "E"(1)(b) 1.a.** (per Mr. E. Balducci)	250	250	1095	
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)

¹See Section V, Item 2.

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

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

** 0.1 lb particulate per 10⁶ BTU heat input.

³Calculated from operating rate and applicable standard

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

2.5 lb SO₂ per 10⁶ BTU heat input

⁵If Applicable

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 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. _____

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: $SO_2/10^6$ BTU)
 Percent Sulfur: 2.28 (nominal based on 2.5 lb SO₂/10⁶ 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 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. _____

D. Maximum Emissions

	(Florida allowable)	x	(capacity input)	= Max. Emissions
	(1b/10 ⁶ BTU input)	x	(100 x 10 ⁶ BTU/hr input)	
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 10⁹ BTU input.

	(Florida allowable)	x	(annual input)	x	$\left(\frac{1 \text{ ton}}{2000 \text{ ton}}\right)$	= Actual Emissions
	(1b/10 ⁶ BTU input)		(424.2 x 10 ⁹ BTU)	/	2000	
Particulate	0.1	x	(424,200/2000)			= 21.2 tons/yr
SO ₂	2.5	x	212.1			= 530 tons/yr

F. Potential Emissions

- Hourly Potential Emissions equal hourly Maximum Emissions (Par. D) as there are no additional emission control devices on the boilers.
- Annual Potential Emissions assume continuous operation or 8760 hr/yr.

	$\left(\frac{\text{Hourly Potential Emissions}}{1\text{b/hr}}\right)$	x	$\left(\frac{\text{Operating Time}}{\frac{8760 \text{ hr}}{\text{yr}}}\right)$	x	$\left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right)$	= Annual Potential Emissions
			/	2000		
Particulate	10.0	x	(8760/2000)			= 43.8 tons/yr
SO ₂	250	x	(4.38)			= 1095 tons/yr