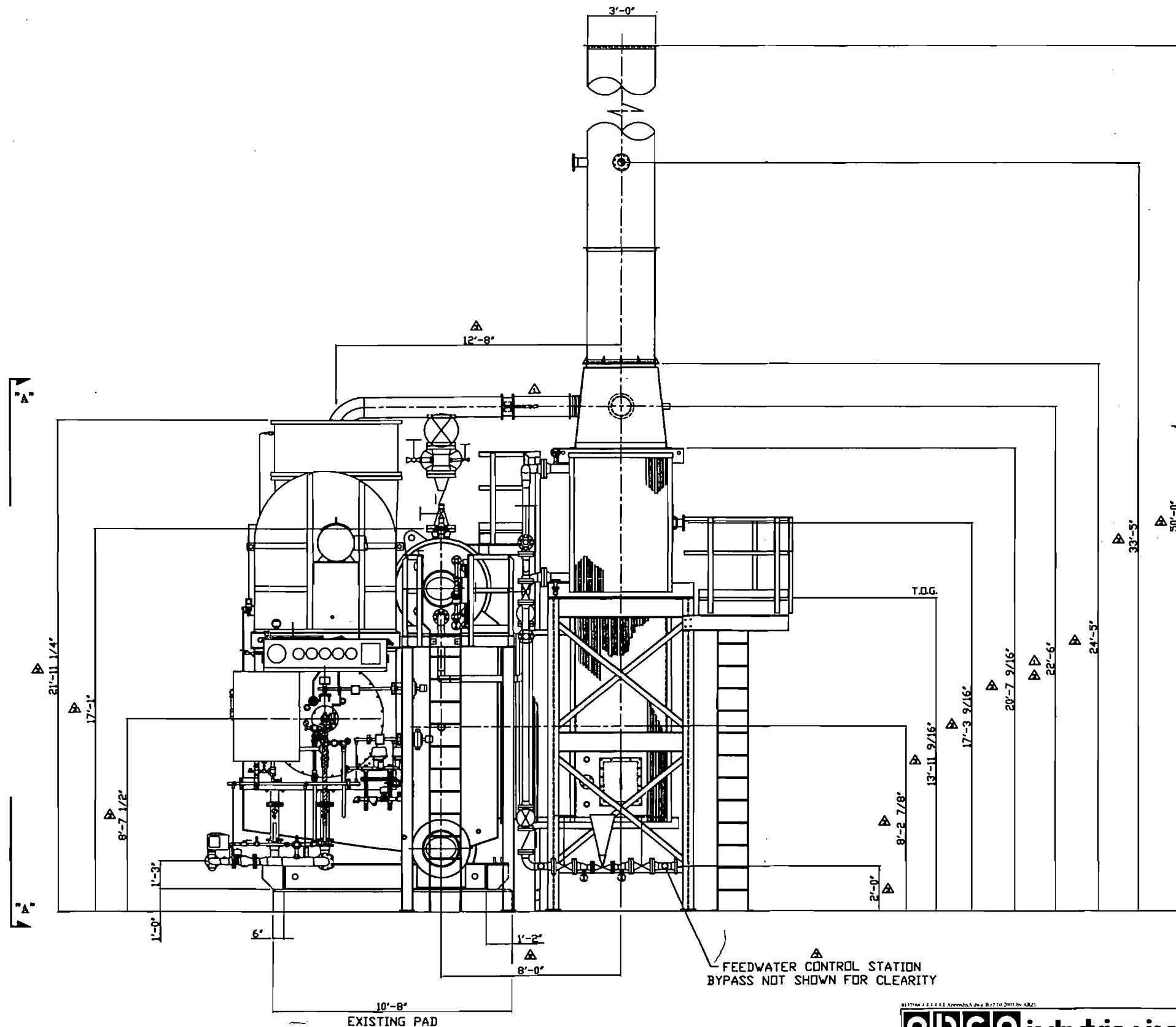


SECTION "A"-"A"



END VIEW

REVISIONS					
NO.	DATE	DOCUMENT NO.	BY	APPR	DESCRIPTION
1	05/31/01	ADDED FGR DUCT	KF	RRD	
2	07/05/01	GENERAL REVISION	RRD	MV	
3	-	-	-	-	-
4	-	-	-	-	-
5	-	-	-	-	-
6	-	-	-	-	-

ABCO industries inc.
ABILENE, TEXAS

THIS DRAWING AND DESIGN ARE THE PROPERTY OF ABCO INDUSTRIES, INC. THEY ARE SUBMITTED ON THE CONDITION THAT THEY ARE NOT TO BE COPIED IN PART, IN WHOLE, OR FOR ANY PURPOSE DETRIMENTAL TO ABCO INDUSTRIES, INC.

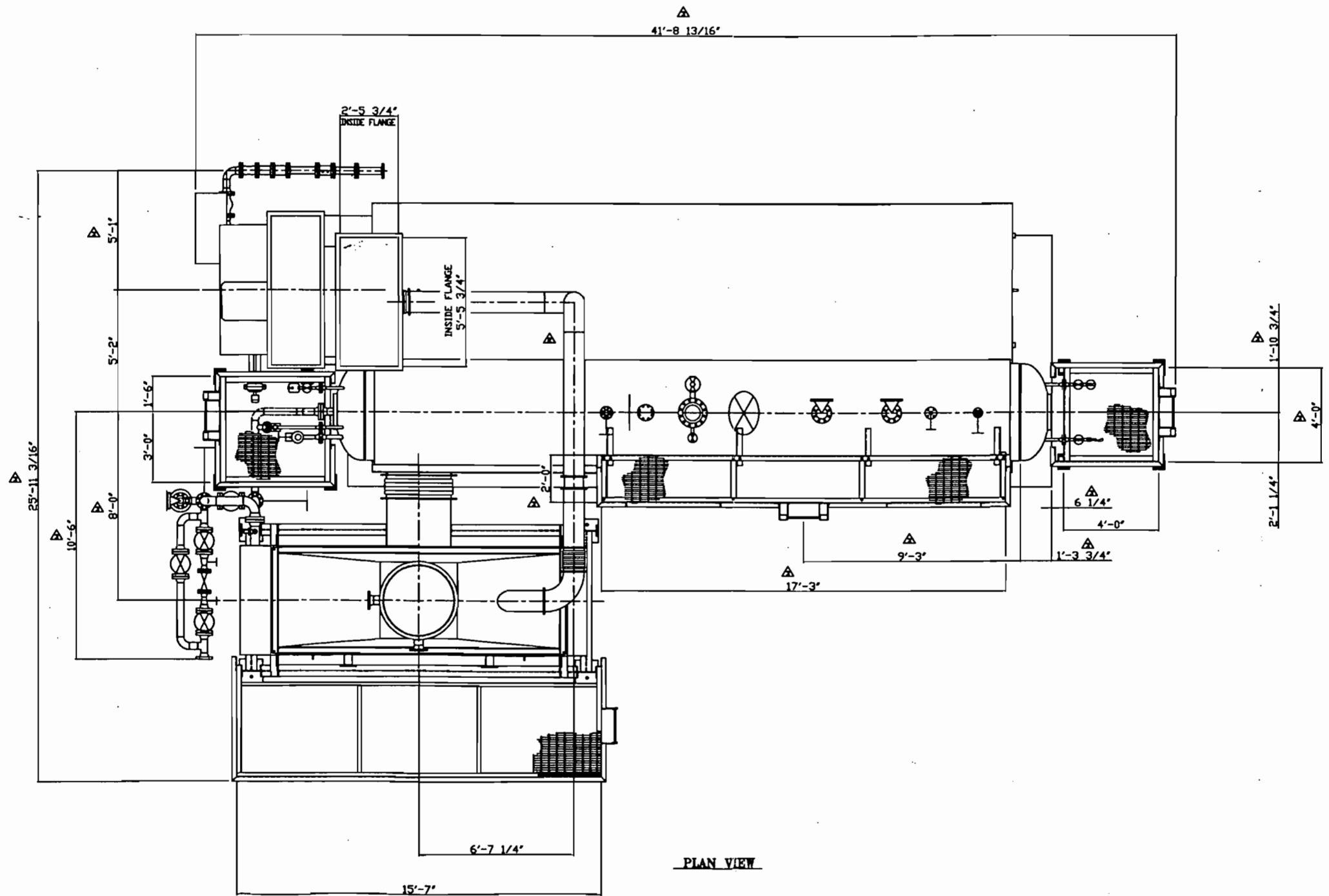
SYSTEM GENERAL ARRANGEMENT (END)

CUSTOMER: TROPICANA PRODUCTS, INC.
FORT PIERCE, FLORIDA

P.O. No. - 1882

SCALE: 3/8"=1' 0" DRAWN BY: KF DRAWING NUMBER: D-201006-0-02

DATE: 05/14/01 APPR BY: RRD



PLAN VIEW

9137564-4 1.0 4.1.1 Appendix A, 4.1.17 10/2001 by ARZ

ABC industries, inc.
 ABILENE, TEXAS

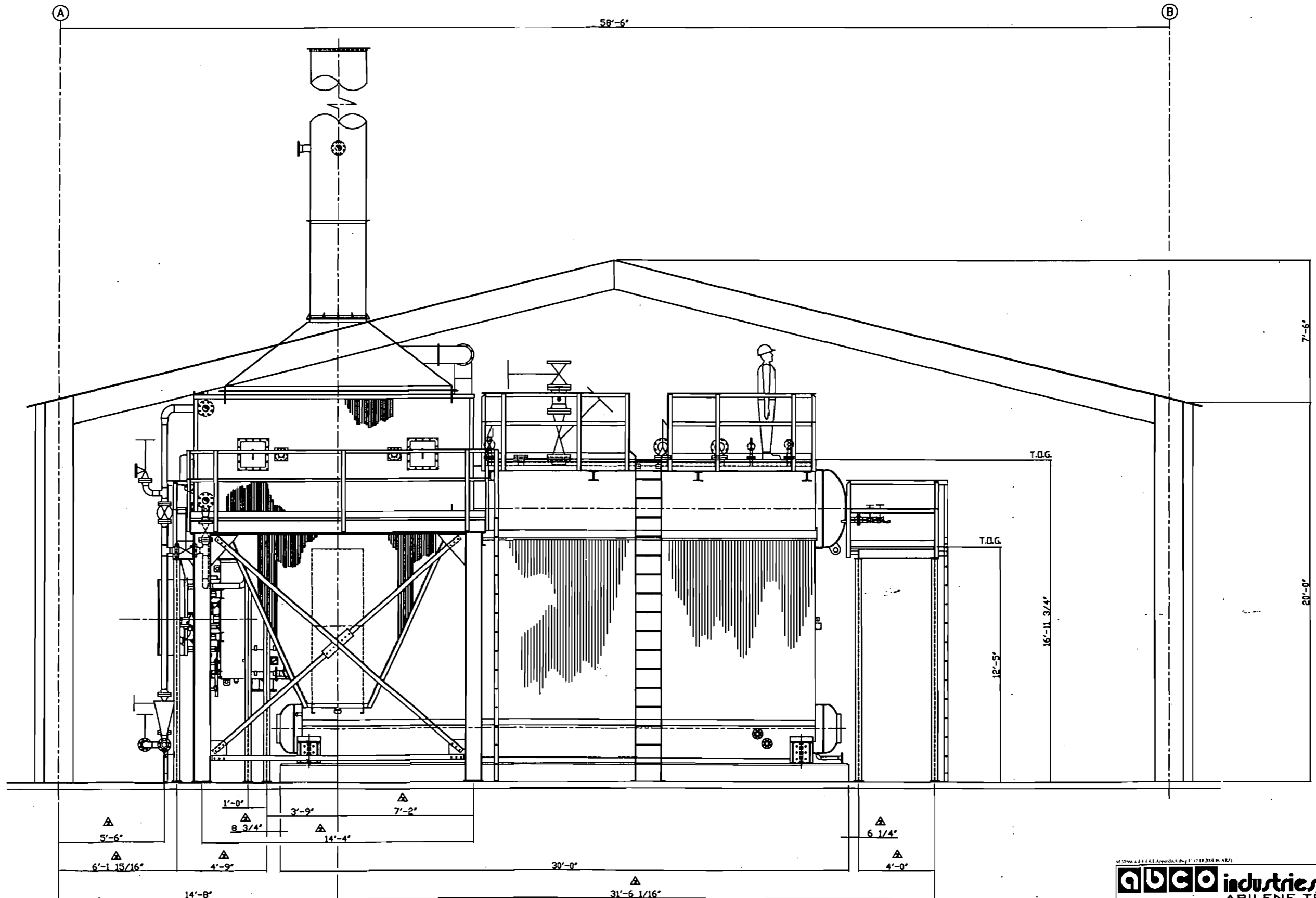
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SYSTEM GENERAL ARRANGEMENT (PLAN)

CUSTOMER: TROPICANA PRODUCTS, INC.
 P.O. No. - 1882
 FORT PIERCE, FLORIDA

SCALE: 3/8"=1' 0" DRAWN BY: RRD DRAWING NUMBER: D-201006-0-01
 DATE: 04/19/01 APPR BY: MV REV: 3

REVISIONS					
NO.	DATE	DOCUMENT NO.	BY	APPR	DESCRIPTION
△	05/15/01	GENERAL REVISION	KF	RRD	
△	05/31/01	ADDED FGR DUCT	KF	RRD	
△	07/05/01	GENERAL REVISION	RRD	MV	
△	-	-	-	-	-
△	-	-	-	-	-
△	-	-	-	-	-



ELEVATION VIEW

REVISIONS				
NO.	DATE	DOCUMENT NO.	BY	APPR
1	05/31/01	ADDED FOR DUCT	KF	RRD
2	07/05/01	GENERAL REVISION	RRD	MV
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-

ABCO industries, inc.
 ABILENE, TEXAS

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SYSTEM GENERAL ARRANGEMENT (ELEVATION)

CUSTOMER: TROPICANA PRODUCTS, INC.
 FORT PIERCE, FLORIDA

SCALE: 3/8"=1' 0"
 DATE: 05/15/01

DRAWN BY: KF
 APPR BY: RRD

DRAWING NUMBER: D-201006-0-03
 REV: 2

SENDER: COMPLETE THIS SECTION

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1. Article Addressed to:
 Mr. Richard Coyle
 Director of Operations
 Tropicana Products, Inc.
 6500 Glades Cutoff Road
 Ft. Pierce, FL 34981

2. Article Number (Copy from service label)
 7000 2870 0000 7028 2522

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) B. Date of Delivery
SEP 10-24-96

C. Signature Agent
 Addressee

D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

PS Form 3811, July 1999

Domestic Return Receipt

102595-99-M-1789

**U.S. Postal Service
 CERTIFIED MAIL RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)**

OFFICIAL USE

7000 2870 0000 7028 2522

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Postmark
Here

Sent To
 Richard Coyle
 Street, Apt. No.; or PO Box No.
 6500 Glades Cutoff Road
 City, State, ZIP+4
 Ft. Pierce, FL 34981

PS Form 3800, May 2000

See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Richard Coyle
 Director of Operations
 Tropicana Products, Inc.
 6500 Glades Cutoff Road
 Ft. Pierce, FL 34981

2. Article Number (Copy from service label)
 7000 2870 0000 7028 3062

PS Form 3811, July 1999

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) **ES 12-28-01** B. Date of Delivery

C. Signature *Joe Fleming* Agent Addressee

D. Is delivery address different from item 1? Yes No
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3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

Domestic Return Receipt

102595-99-M-1789

**U.S. Postal Service
 CERTIFIED MAIL RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)**

OFFICIAL USE

7000 2870 0000 7028 3062

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Postmark
 Here

Sent To
 Richard Coyle
 Street, Apt. No.; or PO Box No.
 6500 Glades Cutoff Road
 City, State, ZIP+4
 Ft. Pierce, FL 34981

PS Form 3800, May 2000

See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mail piece, or on the front if space permits.

1. Article Addressed to:

Mr. Richard Coyle, Director of
Operations
Tropicana Products, Inc.
6500 Glades Cutoff Road
Ft. Pierce, Florida 34981

2. Article Number (Copy from service label)

7000 0520 0020 9371 2578

PS Form 3811, July 1999

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) B. Date of Delivery

PS 1-30-02

C. Signature Agent
 Addressee
 X Robert Harris

D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

3. Service Type

- Certified Mail Express Mail
- Registered Return Receipt for Merchandise
- Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

**U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)**

9252
1246
9371
0200
0250
0007

Mr. Richard Coyle

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Postmark
Here

Recipient's Name (Please Print Clearly) (To be completed by mailer)

Mr. Richard Coyle

Street, Apt. No.; or PO Box No.

6500 Glades Cutoff Road

City, State, ZIP+4

Ft. Pierce, Florida 34981

PS Form 3800, February 2000

See Reverse for Instructions

Table 3-6. BACT Determinations for NO_x Emissions for Natural Gas-Fired Industrial Boilers, Less Than 100 MMBtu/hr

Company	State	RBLC ID	Permit Date	Throughput	Emission Limits		Control Equipment/Description	% Efficiency
					As Provided In LAER/BACT Clearinghouse	Converted to lb/MMBtu ^a		
Shell Offshore, Inc.	AL	AL-0045	10/25/89	48.2 MMBtu/hr	4.8 lb/hr	0.100	Low NOx Burners	50
Huls America	AL	AL-0052	8/31/90	38.9 MMBtu/hr	0.075 lb/MMBtu	0.075	Low NOx Burners	--
Champion International Corporation	AL	AL-0066	5/8/91	5.83 MMBtu/hr	0.05 lb/MMBtu	0.05	Flue Gas Recirculation	--
Anniston Army Depot	AL	AL-0139	6/19/97	13.4 MMBtu/hr	0.03 lb/MMBtu	0.03	Low NOx Burners, Clean Fuel	79
Anniston Army Depot	AL	AL-0140	6/19/97	11.7 MMBtu/hr	0.03 lb/MMBtu	0.03	Low NOx Burners, Clean Fuel	79
Intel Corporation	AZ	AZ-0022	4/10/94	50 MMBtu/hr	-- --	--	Low NOx Burners	--
Toma-Tek Inc.	CA	CA-0408	3/1/89	90 MMBtu/hr	3.05 lb/hr	0.034	Low NOx Burners, Good Combustion Practices	--
Sunland Refinery	CA	CA-0513	9/24/92	12.6 MMBtu/hr	0.036 lb/MMBtu	0.036	Low NOx Burner and FGR	--
American Soda, LLP, Parachute Facility	CO	CO-0040	5/6/99	80.8 MMBtu/hr	0.05 lb/MMBtu	0.05	Low NOx Combustion System	--
Orange Cogeneration, L.P.	FL	FL-0068	12/30/93	100 MMBtu/hr	0.13 lb/MMBtu	0.13	Low NOx Burners	--
Mid-Georgia Cogeneration	GA	GA-0063	4/3/96	60 MMBtu/hr	0.1 lb/MMBtu	0.1	Dry Low NOx Burner with FGR	--
Naturalgas Pipeline Company	IL	IL-0043	3/1/89	8.4 MMBtu/hr	0.1 lb/MMBtu	0.1	--	--
Waupaca Foundry - Plant 5	IN	IN-0068	1/19/96	93.9 MMBtu/hr	6.94 lb/hr	0.074	Low NOx Burners	--
I/N Kote	IN	IN-0039	11/20/89	70.8 MMBtu/hr	0.05 lb/MMBtu	0.05	Flue Gas Recirculation and Fuel Selection	--
General Electric Company	IN	IN-0043	9/17/89	93 MMBtu/hr	0.133 lb/MMBtu	0.133	Staged Combustion Air & Low Excess Air	--
Toyota Motor Corporation Services of N.A.	IN	IN-0069	8/9/96	58 MMBtu/hr	0.1 lb/MMBtu	0.1	Low NOx Burners and Fuel Selection	--
Transamerican Refining Corporation (TARC)	LA	LA-0085	1/15/93	1.2 MMBtu/hr	0.14 lb/hr	0.117	Good Combustion Practices	--
Air Liquide America Corporation	LA	LA-0112	2/13/98	95 MMBtu/hr	0.05 lb/MMBtu	0.05	Low NOx Burners	--
Indelk Energy Services of Otsego	MI	MI-0228	3/16/93	99 MMBtu/hr	0.06 lb/MMBtu	0.06	Flue Gas Recirculation	40
Fulton Cogeneration Associates	NY	NY-0039	1/29/90	90 MMBtu/hr	0.14 lb/MMBtu	0.14	Combustion Control	--
Kamine/Besicorp Corning L.P.	NY	NY-0048	11/5/92	33.5 MMBtu/hr	0.32 lb/MMBtu	0.32	Low NOx Burner and FGR	--
Kamine/Besicorp Syracuse L.P.	NY	NY-0072	12/10/94	33 MMBtu/hr	0.035 lb/MMBtu	0.035	Induced Flue Gas Recirculation	70.9
Kamine/Besicorp Syracuse L.P.	NY	NY-0072	12/10/94	2.5 MMBtu/hr	0.12 lb/MMBtu	0.12	No Controls	--
Indek - Yerkes Energy Services	NY	NY-0077	6/24/92	99 MMBtu/hr	0.2 lb/MMBtu	0.2	No Controls	--
CNG Transmission Corporation	WV	WV-0011	5/3/93	10 MMBtu/hr	140 lb/MMcf	0.137	--	--
					AVERAGE	0.09		
					MAXIMUM	0.32		
					MINIMUM	0.03		

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, 2001

FGR = Flue Gas Recirculation

Footnotes:

^a To convert from lb/hr, the emission limit was divided by the throughput rate. To convert from lb/MMcf, the emission limit was divided by 1,020 MMcf/MMBtu.

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
 Mr. Richard Coyle, Director of Operations
 Tropicana Products, Inc.
 6500 Glades Cutoff Road
 Ft. Pierce, Florida 34981

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) B. Date of Delivery
 PS 1-30-02

C. Signature...
 X Robert Harris Agent
 Addressee

D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

2. Article Number (Copy from service label)
 7000 0520 0020 9371 2578

PS Form 3811, July 1999 Domestic Mail

7000 0520 0020 9371 2578

**U.S. Postal Service
 CERTIFIED MAIL RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)**

Mr. Richard Coyle

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Postmark
 Here

Recipient's Name (Please Print Clearly) (To be completed by mailer)
 Mr. Richard Coyle
 Street, Apt. No.; or PO Box No.
 6500 Glades Cutoff Road
 City, State, ZIP+4
 Ft. Pierce, Florida 34981



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

JAN 28 2002

RECEIVED

FEB 04 2002

4 APT-APB

BUREAU OF AIR REGULATION

Mr. C.H. Fancy, P.E.
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Thank you for sending the Technical Evaluation and Determination and draft Air Construction Permit (PSD-FL-303A) for addition of a boiler at the Tropicana Products citrus juice processing facility in Ft. Pierce, Florida. We have no comments on the evaluation or on the permit.

If you have any questions regarding this letter, please call Jim Little at 404-562-9102.

Sincerely,

A handwritten signature in black ink that reads "Gregg M. Worley".

Gregg M. Worley
Chief
Air Permits Section

Memorandum

Florida Department of Environmental Protection

TO: Howard Rhodes

FROM: *sf* Clair Fancy *gmg*

DATE: January 23, 2002

SUBJECT: Tropicana Products, Inc.
1110004-004-AC, PSD-FL-303A
Dual Fuel Boiler

Attached for approval and signature is a final air construction permit for the installation of a dual fuel boiler at Tropicana's existing Ft. Pierce facility. BACT is applicable to this project because the nitrogen oxides emissions exceed the significant emissions increase of 40 tons per year. Case-by-case MACT was not applicable to this project.

The applicant did not seek any relaxation in currently enforceable conditions in its other existing emissions units.

No comments were received during the public comment period.

I recommend your approval and signature.

March 11, 2002 is day 90 day.

Attachments

/es

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit by:

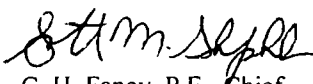
Mr. Richard Coyle, Director of Operations
Tropicana Products, Inc.
6500 Glades Cutoff Road
Ft. Pierce, Florida 34981

DEP File No. 1110004-004-AC, PSD-FL-303A
Additional Process Steam Boiler
St. Lucie County

Enclosed is Final Permit Number 1110004-004-AC, PSD-FL-303A. This permit authorizes Tropicana Products, Inc. to install an additional process steam boiler at its existing facility located at 6500 Glades Cutoff Road, Ft. Pierce, St. Lucie County. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes, by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.


C. H. Fancy, P.E., Chief
Bureau of Air Regulation

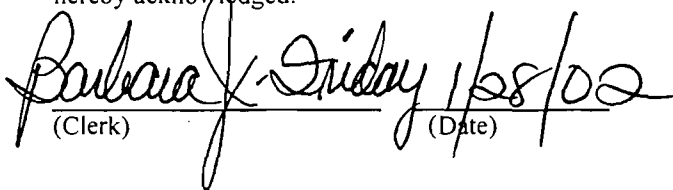
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit (including the Final permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 1/28/02 to the person(s) listed:

Mr. Richard Coyle, Tropicana Products, Inc.*
Mr. Ken Kosky, P.E., Golder
Mr. Tom Tittle, DEP Southeast District
Mr. Gregg Worley, EPA
Mr. John Bunyak, NPS

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.


(Clerk) 1/28/02 (Date)

1 APPLICANT NAME AND ADDRESS

Tropicana Products, Inc.
6500 Glades Cutoff Road
Ft. Pierce, Florida 34981

Authorized Representative: Richard Coyle, Director of Operations, Ft. Pierce Facility

2 PROJECT

The project is the installation of a process steam boiler to Tropicana's existing citrus processing facility in Ft. Pierce, St. Lucie County. The project description, emissions, and rule applicability are described in detail in Section I of the permit.

3 SOURCE IMPACT ANALYSIS

As discussed in more detail in Section I of the permit, the annual potential emissions associated with this project are: PM/PM₁₀, 6.15; SO₂, 21.75, NO_x, 41.91; CO, 80.41; VOC, 2.36; and sulfuric acid mist, 1.08 tons per year. An impact analysis was required for this project because it is subject to the requirements of PSD for these pollutants based on the NO_x emissions increase.

3.1 AIR QUALITY ANALYSIS INTRODUCTION

The proposed project will increase emissions of one regulated pollutant at a level in excess of PSD significant amounts, NO_x. PM₁₀, SO₂ and NO₂ are criteria pollutants and have national and state ambient air quality standards (AAQS), PSD increments, and significant impact levels defined for them. CO is a criteria pollutant and has only AAQS and significant impact levels defined for it. Sulfuric acid mist is a non-criteria pollutant and has no AAQS or PSD increments defined for it; therefore, only a qualitative analysis of the impacts of this pollutant was done.

This project was determined to be contemporaneous with the addition of 16 juice extractors at the facility (Permit No. 1110004-003-AC, PSD-FL-303). Therefore, the modeled impacts for the steam boiler were added to the impacts determined in the aforementioned permit for comparison to AAQS and applicable PSD increments. The applicant's initial Class II PM₁₀, SO₂ and NO₂ analyses of the project revealed no significant impacts in the area surrounding the proposed facility; therefore, full impact Class II AAQS and PSD Class II increment were not required. The applicant was asked to demonstrate compliance with the 24-hour SO₂ AAQS and when reviewed by the Department, was determined to be in compliance.

No impacts on the Everglades National Park were calculated since the project is located 180 km north of this Class I area.

Based on these required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988).

Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A more detailed discussion of the required analyses follows.

3.2 ANALYSIS OF EXISTING AIR QUALITY

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. This monitoring requirement may be satisfied by using previously existing representative monitoring data, if available. An exemption to the monitoring requirement shall be granted by rule if either of the following conditions is met: the maximum predicted air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimis ambient concentration; or the existing ambient concentrations are less than a pollutant-specific de minimis ambient concentration. If preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling. No de minimis ambient concentration is provided for ozone. Instead the net emissions increase of VOC is compared to a de minimis monitoring emission rate of 100 tons per year. The table below shows maximum project air quality impacts for comparison to these de minimis levels.

MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE DE MINIMIS LEVELS				
Pollutant	Averaging Time	Maximum Predicted Impact ($\mu\text{g}/\text{m}^3$)	Impact Greater than De Minimis (Yes/No)	De Minimis Level ($\mu\text{g}/\text{m}^3$)
PM ₁₀	24-hr	1.4	NO	10
CO	8-hr	30	NO	575
NO ₂	Annual	0.8	NO	14
SO ₂	24-hour	4.8	NO	13
VOC	Annual Emission Rate	2 TPY	NO	100 TPY

As shown in the table, all regulated pollutants are predicted to be less than the de minimis levels; therefore, preconstruction monitoring is not required for these pollutants.

3.3 MODELS AND METEOROLOGICAL DATA USED IN THE AIR QUALITY ANALYSIS

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options in each modeling scenario. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project will not exceed the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) station at West Palm Beach, Florida. The 5-year period of meteorological data was from 1987 through 1991. This NWS station was selected for use in the study because it is the closest primary weather station

to the study area and is most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

Because five years of data are used in ISCST3, the highest-second-high (HSH) short-term predicted concentrations were compared with the appropriate AAQS or PSD increments as requested by the Department. For the annual averages, the highest predicted annual average was compared with the standards. For determining the project's significant impact area in the vicinity of the facility, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

3.4 SIGNIFICANT IMPACT ANALYSIS

Preliminary modeling is performed using only the proposed project's worst-case emission scenario for each pollutant and applicable averaging time. Over 700 receptors were placed along the facility's restricted property line and out to 80 km from the facility, which is located in a PSD Class II area. Modeling refinements were done, as needed, by using a polar receptor grid with a maximum spacing of 100 m along each radial and an angular spacing between radials of one or two degrees. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compares maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project were predicted in the vicinity of the facility. In the event that the maximum predicted impact of a proposed project is less than the appropriate significant impact level, a full impact analysis for that pollutant is not required. Full impact modeling is modeling that considers not only the impact of the project but also other major sources, including background concentrations, located within the vicinity of the project to determine whether all applicable AAQS or PSD increments are predicted to be met for that pollutant. Consequently, a preliminary modeling analysis, which shows an insignificant impact, is accepted as the required air quality analysis (AAQS and PSD increments) for that pollutant and no further modeling for comparison to the AAQS and PSD increments is required for that pollutant. The table below shows the results of this modeling. The radius of significant impact, if any, for each pollutant and applicable pollutant averaging time is also shown in the tables below.

MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE PSD CLASS II SIGNIFICANT IMPACT LEVELS IN THE VICINITY OF THE FACILITY					
Pollutant	Averaging Time	Maximum Predicted Impact ($\mu\text{g}/\text{m}^3$)	Significant Impact Level ($\mu\text{g}/\text{m}^3$)	Significant Impact? (Yes/No)	Radius of Significant Impact (km)
PM ₁₀	Annual	0.1	1	NO	---
	24-hr	1.4	5	NO	---
SO ₂	Annual	0.4	1	NO	---
	24-hour	4.8	5	NO	---
	3-hour	10.0	25	NO	---
CO	8-hr	30	500	NO	---
	1-hr	65	2,000	NO	---
NO ₂	Annual	0.8	1	NO	---

As shown in the tables the maximum predicted air quality impacts due to all regulated pollutant emissions from the proposed project are less than the PSD significant impact levels in the vicinity of the facility. Therefore, the applicant was not required to do full impact modeling in the vicinity of the facility. However, since maximum predicted 24-hour SO₂ impacts due to the aforementioned 16 juice extractor project (PSD-FL-303) were very close to the AAQS, the Department requested that the applicant demonstrate compliance with the 24-hour SO₂ AAQS by modeling all Tropicana sources as well as

TECHNICAL EVALUATION AND DETERMINATION

surrounding SO₂ emitting sources in a request for additional information. The applicant demonstrated compliance with AAQS to the Department.

4 BACT DETERMINATIONS

4.1 Available Information

The applicant reviewed recent BACT determinations posted in EPA's RACT/BACT/LAER Clearinghouse for use in the BACT analysis. A list of recent determinations regarding similar projects in the United States is provided in the following table.

TABLE 3A: RECENT NO_x EMISSION LIMIT PROPOSALS AND DETERMINATIONS FOR NATURAL GAS-FIRED INDUSTRIAL BOILERS, LESS THAN 100 MMBTU/HR

Project Location	Permit Date	Capacity (MMBtu/Hr)	Emission Limits		Control Equipment/Description
Shell Offshore, Inc., AL	10/25/89	48.2	4.8	lb/hr	Low NOx Burners
Huls America, AL	8/31/90	38.9	0.075	lb/MMBtu	Low NOx Burners
Champion International Corporation, AL	5/8/91	5.83	0.05	lb/MMBtu	Flue Gas Recirculation
Anniston Army Depot, AL	6/19/97	13.4	0.03	lb/MMBtu	Low NOx Burners, Clean Fuel
Anniston Army Depot, AL	6/19/97	11.7	0.03	lb/MMBtu	Low NOx Burners, Clean Fuel
Intel Corporation, AZ	4/10/94	50	--	--	Low NOx Burners
Toma-Tek Inc., CA	3/1/89	90	3.05	lb/hr	Low NOx Burners, Good Combustion Practices
Sunland Refinery, CA	9/24/92	12.6	0.036	lb/MMBtu	Low NOx Burner and FGR
American Soda, LLP, Parachute Facility, CO	5/6/99	80.8	0.05	lb/MMBtu	Low NOx Combustion System
Orange Cogeneration, L.P., FL	12/30/93	100	0.13	lb/MMBtu	Low NOx Burners
Mid-Georgia Cogeneration, GA	4/3/96	60	0.1	lb/MMBtu	Dry Low NOx Burner with FGR
Naturalgas Pipeline Company, IL	3/1/89	8.4	0.1	lb/MMBtu	--
Waupaca Foundry - Plant 5, IN	1/19/96	93.9	6.94	lb/hr	Low NOx Burners
I/N Kote, IN	11/20/89	70.8	0.05	lb/MMBtu	Flue Gas Recirculation and Fuel Selection
General Electric Company, IN	9/17/89	93	0.133	lb/MMBtu	Staged Combustion Air & Low Excess Air
Toyota Motor Corporation Services of N.A., IN	8/9/96	58	0.1	lb/MMBtu	Low NOx Burners and Fuel Selection
Transamerican Refining Corporation (TARC), LA	1/15/93	1.2	0.14	lb/hr	Good Combustion Practices
Air Liquide America Corporation, LA	2/13/98	95	0.05	lb/MMBtu	Low NOx Burners
Indelk Energy Services of Otsego, MI	3/16/93	99	0.06	lb/MMBtu	Flue Gas Recirculation
Fulton Cogeneration Associates, NY	1/29/90	90	0.14	lb/MMBtu	Combustion Control
Kamine/Besicorp Corning L.P., NY	11/5/92	33.5	0.32	lb/MMBtu	Low NOx Burner and FGR
Kamine/Besicorp Syracuse L.P., NY	12/10/94	33	0.035	lb/MMBtu	Induced Flue Gas Recirculation
Kamine/Besicorp Syracuse L.P., NY	12/10/94	2.5	0.12	lb/MMBtu	No Controls
Indek - Yerkes Energy Services, NY	6/24/92	99	0.2	lb/MMBtu	No Controls
CNG Transmission Corporation, WV	5/3/93	10	140	lb/MMcf	--

Tropicana Products, Inc.
Addition of a Process Steam Boiler

1110004-004-AC
PSD-FL-303A

3.2 Nitrogen Oxides (NO_x)

Discussion of NO_x Emissions

Emissions of NO_x are a result of the thermal fixation nitrogen in the combustion air (thermal NO_x) and the oxidation of nitrogen in the fuel (fuel NO_x). *Thermal NO_x* is primarily a function of peak flame temperature and available oxygen, which are factors that depend on boiler size, firing configuration, and operating practices. *Fuel NO_x* is a function of nitrogen in the fuel and the available oxygen. About 50% of the fuel nitrogen is converted to NO_x, which means that fuel NO_x emissions from firing natural gas or distillate oil is almost negligible because these fuels contain only trace amounts of fuel-bound nitrogen.

Description of Available NO_x Controls

The following technologies were identified as potentially applicable for the control of NO_x from boilers firing natural gas and distillate oil.

Low NO_x burners with Flue Gas Recirculation (LNB w/FGR): The following description is an excerpt from the July 1998 edition of Section 1.4.4 in AP-42.

“The two most prevalent combustion control techniques used to reduce NO_x emissions from natural gas-fired boilers are flue gas recirculation (FGR) and low NO_x burners. In an FGR system, a portion of the flue gas is recycled from the stack to the burner windbox. Upon entering the windbox, the recirculated gas is mixed with combustion air prior to being fed to the burner. The recycled flue gas consists of combustion products which act as inerts during combustion of the fuel/air mixture. The FGR system reduces NO_x emissions by two mechanisms. Primarily, the recirculated gas acts as a diluent to reduce combustion temperatures, thus suppressing the thermal NO_x mechanism. To a lesser extent, FGR also reduces NO_x formation by lowering the oxygen concentration in the primary flame zone. The amount of recirculated flue gas is a key operating parameter influencing NO_x emission rates for these systems. An FGR system is normally used in combination with specially designed low NO_x burners capable of sustaining a stable flame with the increased inert gas flow resulting from the use of FGR. When low NO_x burners and FGR are used in combination, these techniques are capable of reducing NO_x emissions by 60 to 90 percent.

Low NO_x burners reduce NO_x by accomplishing the combustion process in stages. Staging partially delays the combustion process, resulting in a cooler flame which suppresses thermal NO_x formation. The two most common types of low NO_x burners being applied to natural gas-fired boilers are staged air burners and staged fuel burners. NO_x emission reductions of 40 to 85 percent (relative to uncontrolled emission levels) have been observed with low NO_x burners.”

Selective Catalytic Reduction (SCR): This is an add-on control technology in which ammonia is injected into the exhaust gas stream in the presence of a catalyst bed to combine with NO_x in a reduction reaction forming nitrogen and water. For this reaction to proceed satisfactorily, the exhaust gas temperature must be maintained between approximately 450° F and 850° F. SCR is a commercially available and demonstrated control technology with numerous applications nationwide. Conventional SCR is technically feasible for this project with a control efficiency of approximately 75% to 85%.

Selective Non-Catalytic Reduction (SNCR): In the SNCR process, ammonia or urea is injected at high temperatures without a catalyst to reduce NO_x emissions to nitrogen and water vapor. The exhaust temperature must typically be maintained above 1600°F to allow the reaction to occur; otherwise uncontrolled NO_x will be emitted as well as unreacted ammonia. Also, the exhaust temperature must not exceed 2000°F or ammonia will actually be oxidized creating additional NO_x

emissions. New catalysts are available that can extend this temperature range to approximately 1000° F to 1950° F. For boilers, SNCR has achieved control efficiencies in the 25% to 75% range and is technically feasible for this project.

SCONOx™: This technology is a NOx and CO control system developed by Goal Line Environmental Technologies and distributed by ABB for large gas turbine projects. Specialized potassium carbonate catalyst beds reduce CO and NOx emissions using an oxidation-absorption-regeneration cycle. The required operating temperature range is between 300°F and 700°F, which requires a heat recovery steam generator for use with a combined cycle gas turbine. SCONOx™ can achieve a control efficiency greater than 90% and is technically feasible for this project.

Cannon Technology's Low Temperature Oxidation (LTO): This technology involves injecting ozone into a gas stream (approximately 300° F) to oxidize CO, NOx, and SO2 to carbonates, nitrates, and sulfates, which are then absorbed by a dilute nitric acid solution in a scrubber. The system was developed for steam boilers and test results show NOx emissions below 4 ppmvd at 3% oxygen for gas firing. However, only very small units (< 20 MMBtu per hour) have been tested. Because the exhaust gas will be approximately 400° F and the modified boiler is nearly ten times that of the largest tested unit with LTO, this technology was not evaluated further.

Applicant's Proposed NOx Controls

The applicant ranked the control technologies in the following order:

Rank	Technology	Control Efficiency (%)	Emissions Rate (lb/MMBtu) ^c	Annual Emissions TPY
1	LNB w/SCR ^a	92%	0.030	8.7
2	LNB w/SNCR ^b	72%	0.105	30.6
3	LNB w/FGR	60%	0.10 ^c	43.7 ^d

^a - SCR alone can achieve approximately 80% reduction.

^b - SNCR alone can achieve approximately 30% reduction.

^c - Proposed steam boiler emission rate for gas and oil firing.

^d - Based on an emission rate of 0.10 lb/MMBtu for natural gas at 99.8 MMBtu/hr for 8,760 hours.

The applicant states that SCR and SNCR would result in the following adverse impacts.

Energy Impacts: The applicant states that installation of SCR would result in energy penalties due to the pressure drop across the catalyst, energy required to operate the ammonia injection system, and possibly energy to reheat the exhaust gas. Similarly, SNCR would result in energy penalties to operate the system.

Environmental Impacts: The applicant indicates that installation of SCR would result in unreacted ammonia "slipping" past the catalyst, potential ammonia emissions from an accidental release, and solid waste disposal of the spent catalyst. Similarly, SNCR could result in urea emissions from an accidental release.

Economic Impacts: The applicant estimates that the installation of SCR would result in a capital cost of \$1.7 million, and annualized cost of \$377,460, and a cost effectiveness of \$10,794 per ton of NOx removed. The applicant estimates that the installation of SNCR would result in a lower capital cost but a much higher annualized cost, and a higher cost effectiveness based on experience.

Applicant's Proposal: Based on the estimated high capital and operating costs associated with the add on control systems, the applicant rejected both SCR and SNCR and proposes the following NOx standards based on LNB with FGR:

Oil: NOx emissions shall not exceed 0.10 lb/MMBtu of heat input

Gas: NOx emissions shall not exceed 0.055 lb/MMBtu of heat input

Department's Draft NOx BACT Determination

The Department does not necessarily endorse the applicant's cost evaluations, but generally agrees that neither SCR nor SNCR are cost effective for this project, which consists of a burner system modification to fire natural gas. It is noted that the costs of a SCONOx™ system were not estimated since it is not applied to boilers. However, costs for a comparable SCONOx™ system are typically higher than SCR and it is not expected that this technology would be cost effective or feasible for the project.

Draft NOx BACT Determination: The Department determines NOx BACT to be low-NOx burners with flue gas recirculation. The following limits represent BACT for NOx emissions.

Oil: NOx emissions shall not exceed 0.10 lb/MMBtu of heat input

Gas: NOx emissions shall not exceed 0.055 lb/MMBtu of heat input

As shown in Table 3A, this determination is consistent with recent BACT determinations for similarly sized boilers. The NOx limit for firing distillate oil was based on the proposed boiler manufacturer's guarantee, assuming that the fuel nitrogen content will be less than 0.02% by weight. Recent data on very low sulfur No. 2 distillate oil indicates a *maximum* nitrogen content of 0.015% by weight. Compliance with the emissions standards shall be demonstrated by conducting initial and annual performance tests in accordance with EPA Method 7e at permitted capacity.

3.3 Carbon Monoxide CO

Discussion of CO Emissions

Emissions of carbon monoxide (CO) will result from incomplete fuel combustion. In general, CO emissions are inversely proportional to NOx emissions. However, new advanced burner designs have also been able to lower CO emissions concurrently with reduced NOx emissions.

Applicant's Initial Proposed CO Controls

The applicant reviewed recent CO BACT determinations and noted that no add-on controls were required for similarly sized boilers. In addition, the applicant believes that the proposed emission standards are within the general range of these recent BACT determinations.

Applicant's Initial Proposal: The applicant proposed the following CO standards.

Gas/Oil: CO emissions shall not exceed 200 ppm at 3% O₂

Department's CO Determination

The Department discussed the feasibility of lower CO emissions rates for the boiler with the applicant. After additional discussions with the burner manufacturer, the applicant agreed to the following CO emissions standards that would avoid a BACT determination.

Gas/Oil: CO emissions shall not exceed 200 ppm at 3% O₂

The Department believes that a new boiler would be able to achieve a CO standard 200 ppm at 3% O₂. The requested emissions standard appears reasonable. Compliance with the emissions standards

shall be demonstrated by conducting initial and annual performance tests in accordance with EPA Method 10 at permitted capacity.

3.4 Particulate Matter (PM/PM₁₀) and Sulfur Dioxide (SO₂)

Discussion of PM/PM₁₀ and SO₂

Emissions of particulate matter (PM/PM₁₀) and sulfur dioxide (SO₂) will result from the combustion of natural gas and distillate oil. Particulate matter emissions increase with incomplete fuel combustion as well as with higher concentrations of ash, sulfur, and trace elements in the fuel. Sulfur dioxide emissions will increase with higher fuel sulfur contents. However, natural gas and very low sulfur distillate oil contain little ash, sulfur, or other contaminants.

Applicant's Proposed PM/PM₁₀ and SO₂ Controls

The applicant indicates that post-control devices are not typically applied to package boilers and would be cost prohibitive.

Applicant's Proposal: For both PM/PM₁₀ and SO₂, the applicant proposes the following fuel specifications and opacity standard.

Gas: Pipeline-quality natural gas with a maximum of 1 gr/100 cf, opacity shall not exceed 10%

Oil: No. 2 distillate oil with a maximum of 0.05% sulfur by weight, opacity shall not exceed 20%

Department's Draft PM/PM₁₀ and SO₂ BACT Determinations

The Department identifies several available control technologies for particulate matter removal including centrifugal collectors, electrostatic precipitators, fabric filters, and wet scrubbers. However, particulate emissions are estimated to be much less than 0.01 grains per dscf of exhaust gas, which is approximately the level of controlled emissions from a baghouse. Similarly, there is acid gas scrubbing equipment available to further reduce SO₂ emissions. The applicant proposes to fire pipeline-quality natural gas and very low sulfur distillate oil as the primary fuels with as a backup fuel. The Department agrees with the applicant that further control of particulate matter and sulfur dioxide emissions with any of these add-on control technologies would be cost prohibitive due to the very low uncontrolled emissions. The fuel sulfur contents proposed are clearly more stringent than the NSPS Subpart Db standard of 0.5% sulfur by weight. The specification of clean fuels constitutes a pollution prevention technique and is given favorable consideration in this case.

Draft PM/PM₁₀ and SO₂ BACT Determinations: The Department establishes the following fuel specifications as BACT for PM/PM₁₀ and SO₂.

Gas: Pipeline-quality natural gas

Oil: No. 2 distillate oil with a maximum of 0.05% sulfur by weight

The Department notes that pipeline-quality natural gas typically contains much less than 1 grain per 100 SCF of natural gas. Compliance with the fuel sulfur limit for distillate oil shall be demonstrated by an initial test and maintaining the fuel quality records provided by the vendor for each shipment. Limiting the fuel sulfur content also effectively limits the potential emissions of SAM and SO₂, so that additional emissions standards are unnecessary. In conjunction with the above fuel specifications, the Department also establishes the following standards as BACT for PM/PM₁₀.

Gas: Opacity shall not exceed 10%

Oil: Opacity shall not exceed 20%

The proposed fuels are natural gas and distillate oil containing no more than 0.05% by weight. It is expected that there will be no visible emissions plume from the stack because these fuels contain very little sulfur, ash, or other contaminants. After the initial performance test, the opacity standard will also serve as an indicator of efficient combustion and compliance with the particulate matter standards.

4 EXCESS EMISSIONS

Excess emissions for this emissions unit are specified in Section II of the permit. This permitting action does not change any authorization for excess emissions provided by other Department permits for other emissions units

5 LIMITS AND COMPLIANCE REQUIREMENTS

The permit limits the sulfur content of the distillate fuel oil and limits the heat input to the emissions units from all permitted fuels. Specific emission limits were not imposed because the potential emissions are below the PSD significance criteria. The fuel consumption limits and the compliance requirements are detailed in Section III of the permit.

6 PRELIMINARY DETERMINATION

Based on the foregoing technical evaluation of the application and additional information submitted by the applicant and other available information, the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations. The Department's preliminary determination is to issue the draft permit to allow the rebuild of the process steam boiler, subject to the terms and conditions of the draft permit.

7 FINAL DETERMINATION

An "INTENT TO ISSUE AIR CONSTRUCTION PERMIT" to Tropicana Products, Inc. for their existing citrus juice processing plant located at 6500 Glades Cutoff Road, Ft. Pierce, St. Lucie County was clerked on December 24, 2001. The "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" was published in The Tribune, St. Lucie County on December 26, 2001. The Draft Air Construction Permit was available for public inspection at the Southeast District office in West Palm Beach and the permitting authority's office in Tallahassee. Proof of publication of the "PUBLIC NOTICE OF INTENT TO ISSUE TITLE V AIR OPERATION PERMIT" was received on January 10, 2002.

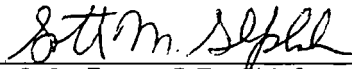
No comments were received during the thirty (30) day public comment period. As a result, the Final Air Construction permit will be issued, as noticed.

TECHNICAL EVALUATION AND DETERMINATION

DETAILS OF THIS ANALYSIS MAY BE OBTAINED BY CONTACTING:

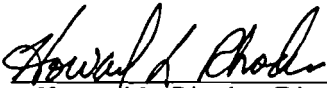
Edward J. Svec, Engineer IV
Department of Environmental Protection
Bureau of Air Regulation
Mail Station #5505
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Telephone: 850/488-0114

Recommended by:


for C. H. Fancy, P.E., Chief
Bureau of Air Regulation

01/28/02
Date

Approved by:


Howard L. Rhodes, Director
Division of Air Resources
Management

1/28/02
Date



Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

PERMITTEE

Tropicana Products, Inc.
6500 Glades Cutoff Road
Ft. Pierce, Florida 34981

Permit No.	1110004-004-AC, PSD-FL-303A
Project	Addition of Process Steam Boiler
SIC No.	2037
Expires:	December 31, 2002

Authorized Representative:

Richard Coyle, Director of Operations

PROJECT AND LOCATION

This permit authorizes Tropicana Products Inc., Ft. Pierce Plant, to install a process steam boiler equipped with low-NOx burners and utilizing flue gas recirculation. The boiler has a physical capacity of 99.8 MMBtu per hour heat input firing natural gas and 95.7 MMBtu per hour heat input firing very low sulfur distillate fuel oil (0.05% sulfur by weight).

This facility is located at 6500 Glades Cutoff Road, Ft. Pierce, St. Lucie County. The UTM coordinates are: Zone 17; 561.0 km E and 3028.1 km N.

STATEMENT OF BASIS

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297. The above named permittee is authorized to construct the emissions units in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

APPENDICES

The attached appendix is a part of this permit:

Appendix GC General Permit Conditions

Howard L. Rhodes, Director
Division of Air Resources
Management

"More Protection, Less Process"

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AIR CONSTRUCTION PERMIT
SECTION I. FACILITY INFORMATION

FACILITY AND PROJECT DESCRIPTION

This facility consists of an existing citrus processing facility that extracts juice from whole citrus fruit to produce single-strength and frozen concentrated juices and byproducts of juice production such as citrus oils, citrus molasses and animal feed.

The applicant proposed in this project to allow the addition of a process steam boiler, a D-Type Abco Industries Inc. boiler, with a design rating of 85,000 pounds per hour steam and a design heat input rate of 99.8 MMBtu per hour when firing natural gas and 95.7 MMBtu/hr when firing #2 distillate fuel oil at the Ft. Pierce facility. The applicant has requested continuous, dual-fuel operation (8,760 hours per year) for the steam boiler. PSD review is required due to the increase in nitrogen oxides (NO_x), above PSD thresholds. The applicant did not seek any relaxation in currently enforceable conditions in its other existing emissions units.

The emissions increases associated with this project were estimated by the applicant as follows in tons per year:

Pollutant	Net Increase¹	PSD Significance	Subject to PSD?
PM/PM ₁₀	6.15	25/15	No
SO ₂	21.75	40	No
NO _x	41.91	40	Yes
CO	80.41	100	No
VOC	2.36	40	No
SAM	1.08	7	No

¹ Potential emissions (shown as net increase) were estimated by the Department from allowable natural gas and distillate fuel oil usage and AP-42 emission factors (tables 1.3-1 and 1.3-3 for fuel oil, tables 1.4-1 and 1.4-2 for natural gas), with a heat content of 1,020 Btu/scf of natural gas and 131.1 million Btu/1,000 gallons of distillate fuel oil, given a design heat input capacity of 99.8 MMBtu/hour operating on natural gas and 95.7 MMBtu/hour operating on fuel oil, and the fuel use limits of the permit.

The proposed project is subject to preconstruction review requirements under the provisions of Chapter 403, F.S., and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. The existing facility is located in an area designated, in accordance with Rule 62-204.340, F.A.C., as attainment or unclassifiable for the criteria pollutants ozone, PM₁₀, carbon monoxide, SO₂, nitrogen dioxide and lead. This facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant exceeds 100 tons per year (TPY). At this facility potential emissions of PM/PM₁₀, SO₂, NO_x, CO and VOC exceed 100 TPY.

This facility is not within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 250 TPY for at least one criteria pollutant, the facility is also an existing Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD). The net increase, including emission increases from the contemporaneous juice extractor project at the facility, in emissions exceeds the PSD significance levels of Table 212.400-2, F.A.C. Therefore the project is subject to PSD requirements of Rule 62-212.400, F.A.C., for PM/PM₁₀, SO₂, NO_x, CO and VOC since the boiler is contemporaneous with the juice extractors project in 2000. The project is subject to a BACT determination, as discussed in the Department's Technical Evaluation and Determination.

AIR CONSTRUCTION PERMIT
SECTION I. FACILITY INFORMATION

The applicant stated that this facility is a major source of hazardous air pollutants (HAPs). This project is not subject to a case-by-case MACT determination, per Rule 62-204.800(10)(d)2, F.A.C., because it does not result in the construction or reconstruction of a major source of HAP emissions.

This project does not impose any requirements under the New Source Performance Standards, 40 CFR 60, or National Emissions Standards for Hazardous Air Pollutants, 40 CFR 61 or 63. The project is subject to the NSPS Subpart Dc for recordkeeping.

REVIEWING AND PROCESS SCHEDULE

July 18, 2001	Received permit application and fee
August 17, 2001	Department's request for additional information
September 17, 2001	Received applicant's response to Department's request
October 19, 2001	Department's second request for additional information
November 2, 2001	Received applicant's response to Department's second request
November 2, 2001	Application complete
December 24, 2001	Distributed Notice of Intent to Issue and supporting documents
December 26, 2001	Notice of Intent published in The Tribune, St. Lucie County

RELEVANT DOCUMENTS

The documents listed below are the basis of the permit. They are specifically related to this permitting action. These documents are on file with the Department.

- Permit application filed July 18, 2001 and applicant's additional information (October 30, 2001)
- Department's Technical Evaluation and Determination
- Department's Intent to Issue

AIR CONSTRUCTION PERMIT

SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

The following specific conditions apply to all emissions units at this facility addressed by this permit.

ADMINISTRATIVE

1. Regulating Agencies: All documents related to applications for permits to construct, operate or modify an emissions unit should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, phone number 850/488-0114. All documents related to reports, tests, minor modifications and notifications shall be submitted to the Department's Southeast District office at P.O. Box 15425, West Palm Beach, Florida 33416-5425, and phone number 561-681-6600.
2. General Conditions: The owner and operator is subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in Appendix GC of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes(F.S.). [Rule 62-4.160, F.A.C.]
3. Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of Chapter 403, F.S., and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-110, 62-204, 62-212, 62-213, 62-296, 62-297 and the Code of Federal Regulations Title 40, Part 60, adopted by reference in the F.A.C. regulations. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C., and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. New or Additional Conditions: Pursuant to Rule 62-4.080, F.A.C., for good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. Expiration: This air construction permit shall expire on ^DRAFT. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit. [Rules 62-210.300(1), 62-4.070(4), 62-4.080, and 62-4.210, F.A.C.]

PSD Expiration: Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. [Rules 62-4.070(4), 62-4.210(2) & (3), and 62-210.300(1)(a), F.A.C.]

BACT Determination Review: In conjunction with extension of the 18 month periods to commence or continue construction, extension of the permit expiration date, or where construction is conducted

AIR CONSTRUCTION PERMIT

SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

in two or more phases, the permittee may be required to demonstrate the adequacy of any previous determination of Best Available Control Technology (BACT) for the source. [Rules 62-4.070(4), 62-4.210(2) & (3), 62-210.300(1)(a), and 62-212.400(6)(b), F.A.C.]

7. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit must be obtained prior to the beginning of construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
8. Title V Operation Permit Required: This permit authorizes construction and/or installation of the permitted emissions unit and initial operation to determine compliance with Department rules. A revision to the Title V operation permit is required for regular operation of the permitted emissions unit. The owner or operator shall apply for a Title V operation permit at least ninety days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the Department's Southeast District office. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

EMISSION LIMITING STANDARDS

9. General Visible Emissions Standard: Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in this permit, no person shall cause, let, permit, suffer, or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20% opacity). The test method for visible emissions shall be EPA Method 9, incorporated and adopted by reference in Chapter 62-297, F.A.C. Test procedures shall meet all applicable requirements of Chapter 62-297, F.A.C. [Rule 62-296.320(4)(b)1, F.A.C.]
10. Unconfined Emissions of Particulate Matter: [Rule 62-296.320(4)(c), F.A.C.]
 - (a) No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity, including vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling; without taking reasonable precautions to prevent such emissions.
 - (b) Any permit issued to a facility with emissions of unconfined particulate matter shall specify the reasonable precautions to be taken by that facility to control the emissions of unconfined particulate matter.
 - (c) Reasonable precautions for this facility include the following:
 - Paving and maintenance of roads, parking areas and yards.
 - Removal of particulate matter from roads and other paved areas under the control of the owner or operator of the facility to prevent reentrainment, and from buildings or work areas to prevent particulate from becoming airborne.
 - Landscaping or planting of vegetation.
 - Limiting access to plant property by unnecessary vehicles.

AIR CONSTRUCTION PERMIT

SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

(d) In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

11. General Pollutant Emission Limiting Standards: [Rule 62-296.320(1)(a)&(2), F.A.C.]

- (a) No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department.
- (b) No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

[Note: An objectionable odor is defined in Rule 62-210.200(198), F.A.C., as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance.]

OPERATIONAL REQUIREMENTS

- 12. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by hazard of fire, wind or by other cause, the permittee shall immediately notify the Department's Southeast District office. The notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with Department rules. [Rule 62-4.130, F.A.C.]
- 13. Circumvention: No person shall circumvent any air pollution control device or allow the emission of air pollutants without the applicable air pollution control device operating properly. [Rule 62-210.650, F.A.C.]
- 14. Excess Emissions: This permit does not change any authorization for excess emissions provided by other Department permits for other emissions units. The following excess emissions provisions of state rule apply to this emissions unit (emissions unit 008) as specified below.
 - (a) Excess emissions resulting from start-up and shutdown are permitted for the emissions unit 008 providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24 hour period.
 - (b) Excess emissions resulting from malfunction of this emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration.
 - (c) Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during start-up, shutdown, or malfunction shall be prohibited.

AIR CONSTRUCTION PERMIT
SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

[Rules 62-210.700(1), (4) and (5), F.A.C.]

COMPLIANCE MONITORING AND TESTING REQUIREMENTS

15. Determination of Process Variables: [Rule 62-297.310(5), F.A.C.]

- (a) Required Equipment. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
- (b) Accuracy of Equipment. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

16. Required Stack Sampling Facilities: Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must meet any Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E. Sampling facilities shall also conform to the requirements of Rule 62-297.310(6), F.A.C. [Rule 62-297.310(6), F.A.C.]

17. Test Notification: The owner or operator shall notify the Department's Southeast District office at least 15 days prior to the date on which each formal compliance test is to begin. Notification shall include the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9., F.A.C.]

18. Compliance Test: A single compliance test shall be required annually to ensure the emission unit's compliance with permit conditions. The test shall be performed in the manner described in this permit as follows: EPA Method 7e shall be used to test NO_x for the initial compliance test as well as the annual compliance test. EPA Method 10 shall be used to test CO for the initial compliance test as well as the annual compliance test.

REPORTING AND RECORD KEEPING REQUIREMENTS

19. Duration of Record Keeping: Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least five years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule. [Rules 62-4.160(14)(a)&(b) and 62-213.440(1)(b)2.b., F.A.C.]

AIR CONSTRUCTION PERMIT

SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

20. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the applicable information listed in Rule 62-297.310(8)(c), F.A.C. [Rule 62-297.310(8), F.A.C.]
21. Excess Emissions Report: In case of excess emissions resulting from malfunction, the owner or operator shall notify the Department within one working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. A full written report on the malfunctions shall be submitted in a quarterly report if requested by the Department. [Rules 62-4.130 and 62-210.700(6), F.A.C.]
22. Annual Operating Report for Air Pollutant Emitting Facility: The Annual Operating Report for Air Pollutant Emitting Facility shall be completed each year and shall be submitted to the Department's Southeast District office by March 1 of the following year. [Rule 62-210.370(3), F.A.C.]

AIR CONSTRUCTION PERMIT
SECTION III. EMISSIONS UNITS SPECIFIC CONDITIONS

The following specific conditions apply to the following emissions units after construction.

EMISSIONS UNIT NO.	EMISSIONS UNIT DESCRIPTION
008	Process Steam Boiler

[Note: This emissions unit is a process steam boiler that is installed to serve as a source of steam to meet citrus processing needs. This boiler is limited to one of a physical capacity of 99.8 MMBtu/hour firing natural gas and 95.7 MMBtu/hour firing very low sulfur distillate fuel oil (0.05% sulfur by weight). This emissions unit is subject to the requirements of the state rules as indicated in this permit. This emissions unit is subject to a determination of Best Available Control Technology pursuant to Rule 62-296.406, F.A.C. The fuel authorized by this permit is consistent with that BACT determination. This emissions unit is subject to regulation under the New Source Performance Standards of 40 CFR 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.]

STATE RULE REQUIREMENTS

OPERATIONAL REQUIREMENTS

1. **Hours of Operation:** This emissions unit may operate up to 8,760 hours/year. [Rules 62-4.070(3) and 62-210.200, F.A.C., and limitation on potential to emit]
2. **Design Heat Input Capacity Limited:** The design heat input capacity of this emissions unit shall be limited to a maximum of 99.8 MMBtu per hour firing natural gas and 95.7 MMBtu per hour firing distillate fuel oil, based on the physical design and characteristics of the steam generation unit. [Rules 62-4.070(3) and 62-210.200, F.A.C., and limitation on potential to emit]
3. **Fuel Consumption Limited:** This emission unit shall be fired with natural gas and distillate fuel oil with a maximum sulfur content of 0.05 percent, by weight. Natural gas consumption by this emissions unit shall not exceed 857 million standard cubic feet in any consecutive 12-month period. Distillate fuel oil consumption by this emissions unit shall not exceed 6,392 thousand gallons in any consecutive 12-month period. [Rules 62-4.070(3), 62-210.200 and 62-296.406, F.A.C., BACT for small boilers, and limitation on potential to emit]
4. **Visible Emissions Limited:** Visible emissions from this emissions unit shall not exceed 20/10 percent opacity for oil/gas operation except for periods of startup/shutdown or malfunction. [Rule 62-296.406(1), F.A.C.]
5. **NOx Emissions Limited:** NOx emissions from this emissions unit shall not exceed 0.10 lb/MMBtu for oil operation and 0.055 lb/MMBtu for gas operation. Compliance shall be determined using EPA Method 7e, as described in 40 CFR 60 Appendix A.
6. **CO Emissions Limited:** CO emissions from this emissions unit shall not 200 ppm @ 3% O₂ for oil and/or gas firing. Compliance shall be determined using EPA Method 10, as described in 40 CFR 60 Appendix A.

COMPLIANCE MONITORING AND TESTING REQUIREMENTS

7. **Fuel Sulfur Content Tests:** The owner or operator shall determine the sulfur content of each delivery of distillate fuel oil received for these emissions units using ASTM D4057-88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, and one of the following test methods for

Tropicana Products, Inc.
Addition of a Process Steam Boiler

1110004-004-AC
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AIR CONSTRUCTION PERMIT

SECTION III. EMISSIONS UNITS SPECIFIC CONDITIONS

sulfur in petroleum products: ASTM D129-91, ASTM D1552-90, ASTM D2622-94, or ASTM D4294-90. A more recent version of these methods may be used. The owner or operator may comply with this requirement by receiving records from the fuel supplier that indicate the sulfur content of the distillate fuel oil delivered complies with the sulfur limit of specific condition 3 of this section. [Rules 62-4.070(3) and 62-297.440, F.A.C.]

8. Visible Emission Tests Required: The owner or operator shall demonstrate compliance with the visible emissions limit for this emissions unit upon initial installation and annually using EPA Method 9, as described in 40 CFR 60 Appendix A. [Rules 62-4.070(3) and 62-297.310, F.A.C.]

REPORTING AND RECORD KEEPING REQUIREMENTS

9. Fuel Sulfur Content Records: The owner or operator shall maintain records of sulfur content of each delivery of distillate fuel oil received for these emissions units, made pursuant to the requirements of specific condition 5 of this section. [Rule 62-4.070(3), F.A.C.]
10. Distillate Fuel Oil Consumption Records: The owner or operator shall make and maintain monthly records of natural gas and distillate fuel oil consumption for this emissions unit. From the monthly records of consumption of all permitted fuels, the owner or operator shall make records of the consecutive 12-month fuel consumption to demonstrate compliance with the fuel consumption limits of specific condition 3 of this section. All of these records shall be completed within ten days of the end of each month. [Rule 62-4.070(3), F.A.C.]
11. Records of Design Heat Input Capacity: The owner or operator shall maintain records of the design heat input capacity provided by the boiler's manufacturer or vendor to demonstrate compliance with condition 2 of this section. Such records shall be received prior to installation of this emissions unit, and shall be retained for each such emissions unit installed at the facility for a period of five years from the date of installation. [Rule 62-4.070(3), F.A.C.]
10. Pursuant to 40 CFR 60.48c NSPS Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units), the permittee is required to maintain daily records of the amount of natural gas combusted. Since none of the emission limits in Subpart Dc are applicable to this boiler when firing natural gas (the primary fuel for this boiler), it has been determined by the Department that keeping records for natural gas usage on a monthly rather than daily basis is adequate for the purpose of verifying the periods that only natural gas is burned in this unit. [Rule 62-296.810, F.A.C.; 40 CFR 60.48c(g) and (i)]
11. The permittee shall maintain a (daily) record of the quantity of fuel oil used for each day of operation. [Rule 62-204.800(7)(b)4., F.A.C.; 40 CFR 60.48c(g) and 40 CFR 60.48c(i)]
12. The permittee shall submit the following written notifications to the Air Compliance Section of the Southeast District Office of the Department:
 - a. A notification of the date construction (or reconstruction as defined under 60.15) of the boiler is commenced, postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.
 - b. A notification of the anticipated date of initial startup of the boiler, postmarked not more than 60 days nor less than 30 days prior to such date.
 - c. A notification of the actual date of initial startup of the boiler, postmarked within 15 days after such date.

AIR CONSTRUCTION PERMIT

SECTION III. EMISSIONS UNITS SPECIFIC CONDITIONS

- d. A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in 60.14 (e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional relevant information subsequent to this notice. [Rule 62-204.800(7)(b)4., F.A.C.; 40 CFR 60.7(a) and 40 CFR 60.48c(a)]
13. The permittee shall submit quarterly reports of the fuel oil supplier sulfur content certification records required by Condition 11 for any calendar quarter during which fuel oil is fired. In addition to the above, the quarterly report shall include a certified statement signed by the owner or operator of the facility that the records of the fuel supplier certifications submitted represent all of the fuel combusted during the quarter. The quarterly reports shall be submitted to the Air Compliance Section of the Southeast District Office of the Department within 30 days of the end of the quarter being reported. [Rule 62-204.800(7)(b)4., F.A.C.; 40 CFR 60.48c(e)(11)]

APPENDIX GC
GENERAL PERMIT CONDITIONS [RULE 62-4.160, F.A.C.]

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.
- Reasonable time may depend on the nature of the concern being investigated.
- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
- (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

APPENDIX GC
GENERAL PERMIT CONDITIONS [RULE 62-4.160, F.A.C.]

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology (X);
 - (b) Determination of Prevention of Significant Deterioration (X); and
 - (c) Compliance with New Source Performance Standards (X).
- G.14 The permittee shall comply with the following:
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements;
 - 2. The person responsible for performing the sampling or measurements;
 - 3. The dates analyses were performed;
 - 4. The person responsible for performing the analyses;
 - 5. The analytical techniques or methods used; and
 - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

Tropicana®

RECEIVED

JAN 10 2002

BUREAU OF AIR REGULATION

January 7, 2002

C.H. Fancy, P.E. Chief
Bureau of Air Regulation
Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: DEP File No. 1110004-004-AC, PSD-FL-303A
Addition of a Process Steam Boiler

Dear Sir or Madam:

Enclosed please find Affidavit of Publication as required.

Sincerely,



Scott Davis
Manager, Environmental
And Plant Services

Encl.

cc: E. Luce ✓
C. Halladay ✓
J. Sittler, SEID ✓
D. Worley, EPA ✓
D. Bumpal, WPS ✓



THE TRIBUNE
ST. LUCIE COUNTY, FLORIDA
 600 Edwards Road, Ft. Pierce, FL 34982

AFFIDAVIT OF PUBLICATION

STATE OF FLORIDA
 COUNTY OF ST. LUCIE

Before the undersigned authority personally appeared, Lynn Ferraro, General Manager; Kathy LeClair, Business Manager or Bob Rossi, Circulation Manager of The Tribune, a daily newspaper published at

Fort Pierce in St. Lucie County, Florida; that the attached copy of advertisement was published in The Tribune in the following issues below. Affiant further says that the said Tribune is a newspaper published at Fort Pierce in said St. Lucie County, Florida and that the said newspaper has heretofore been continuously published in said St. Lucie County, Florida daily and distributed in St. Lucie County, Florida, for a period of one year next preceding the first publication of attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper. The Tribune has been entered as second class matter at the Post Office in Fort Pierce, St. Lucie County, Florida and has been for a period of one year next preceding the first publication of the attached copy of advertisement.

<u>Ad #</u>	<u>Name</u>	<u>Date</u>	<u>Price Per Day</u>	<u>PO #</u>
2313883	TROPICANA PRODUCTS	12/26/2001	\$297.00	1110004004a
			Total	\$297.00

Subscribed and sworn to me before this date:

01/03/2002

[Signature]

Kathy Lee
 Notary Public

KATHY LEE
 My Comm Exp. 7/30/2002
 No. CC 763706
 Personally Known Other I.D.

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT
 STATE OF FLORIDA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 DEP File No. 1110004-004-AC, PSD-FL-303A
 Tropicano Products, Inc.
 St. Lucie County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Tropicano Products, Inc., for its existing citrus juice processing facility located at 6500 Glades Cutoff Road, Ft. Pierce, St. Lucie County. The applicant's mailing address is also: 6500 Glades Cutoff Road, Ft. Pierce, Florida 34208. The permit is to allow the addition of a process steam boiler, a D-Type Abco Industries Inc. boiler, with a design rating of 85,000 pounds per hour steam and a design heat input rate of 99.8 MMBtu per hour when firing natural gas and 95.7 MMBtu/hr when firing #2 distillate fuel oil at the Ft. Pierce facility. The applicant has requested continuous, dual-fuel operation (8,760 hours per year) for the steam boiler. PSD review is required due to the increase in nitrogen oxides (NOx) above PSD thresholds. This project is subject to the requirements for PSD. An air quality impact analysis was required.

Total emissions of pollutants from the changes authorized by this permit will not exceed the following:

Pollutant	Maximum Potential Emissions	PSD Significant Emission Rate
PM/PM10 (filterable plus condensable)	6.15	25/15'
CO	80.4	100
NOX	41.91	40
VOC	2.36	40
SO2	21.75	40
Sulfuric Acid Mist	1.08	7

The Department will issue the final permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of thirty (30) days from the date of publication of this Public Notice of Intent to Issue Air Construction Permit. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 Florida Statutes (F.S.), before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

Mediation is not available in this proceeding. A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address

indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code (F.A.C.).

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Protection Bureau of Air Regulation Suite 4, 111 S. Magnolia Drive Tallahassee, Florida 32301 Telephone: 850/488-0114 Fax: 850/922-6979 Dept. of Environmental Protection Southeast District 400 North Congress Avenue West Palm Beach, Florida 33401 Telephone: 561/681-6600

The complete project file includes the application, technical evaluations, draft permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, Title V Section, or the Department's reviewing engineer for this project, Edward J. Svec, Engineer IV, at the Bureau of Air Regulation in Tallahassee, Florida, or call 850/488-0114, for additional information. Written comments directed to the Department's reviewing engineer should be sent to the following mailing address: Dept. of Environmental Protection, Bureau of Air Regulation, Mail Station #5505, Tallahassee, Florida, 32399-2400.

December 26, 2001

2313883

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Richard Coyle
 Director of Operations
 Tropicana Products, Inc.
 6500 Glades Cutoff Road
 Ft. Pierce, FL 34981

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) B. Date of Delivery
FS 12-28-01

C. Signature Agent
 Addressee

Is delivery address different from item 1?
 If YES, enter delivery address below: Yes
 No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

2. Article Number (Copy from service label)
 7000 2870 0000 7028 3062

PS Form 3811, July 1999 Domestic Return Receipt 102595-99-M-1789

**U.S. Postal Service
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 (Domestic Mail Only; No Insurance Coverage Provided)**

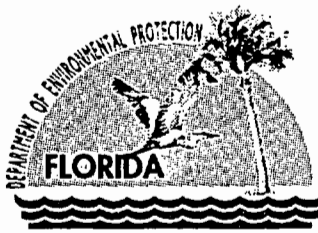
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 Richard Coyle
 Street, Apt. No., or PO Box No.
 6500 Glades Cutoff Road
 City, State, ZIP+4
 Ft. Pierce, FL 34981
 PS Form 3800, May 2000 See Reverse for Instructions



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

December 21, 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Richard Coyle, Director of Operations
Tropicana Products, Inc.
6500 Glades Cutoff Road
Ft. Pierce, Florida 34981

Re: DEP File No. 1110004-004-AC, PSD-FL-303A
Addition of a Process Steam Boiler

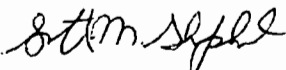
Dear Mr. Coyle:

Enclosed is one copy of the draft air construction permit for Tropicana Products, Inc. to install a process steam boiler, with a physical capacity of 99.8 MMBtu per hour heat input firing natural gas and 95.7 MMBtu per hour heat input firing very low sulfur distillate fuel oil (0.05% sulfur by weight) at its citrus juice processing plant located at 6500 Glades Cutoff Road, Ft. Pierce, St. Lucie County. The Technical Evaluation and Determination, the Department's Intent to Issue Air Construction Permit and the Public Notice of Intent to Issue Air Construction Permit are also included.

The Public Notice of Intent to Issue Air Construction Permit must be published one time only, as soon as possible, in the legal advertisement section of a newspaper of general circulation in the area affected, pursuant to the requirements Chapter 50, Florida Statutes. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Scott M. Sheplak, P.E., Administrator, Title V Section at the above letterhead address. If you have any other questions, please contact Edward J. Svec at 850/921-8985.

Sincerely,


for C. H. Fancy, P.E., Chief
Bureau of Air Regulation

CHF/es

Enclosures

"More Protection, Less Process"

Printed on recycled paper.

In the Matter of an
Application for Permit by:

Mr. Richard Coyle, Director of Operations
Tropicana Products, Inc.
6500 Glades Cutoff Road
Ft. Pierce, Florida 34981

DEP File No. 1110004-004-AC, PSD-FL-303A
Addition of a Process Steam Boiler
St. Lucie County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of draft permit attached) for the proposed project, detailed in the application specified above and the enclosed Technical Evaluation and Preliminary Determination, for the reasons stated below.

The applicant, Tropicana Products Inc., applied on July 18, 2001, to the Department for an air construction permit for its existing citrus juice processing facility located at 6500 Glades Cutoff Road, Ft. Pierce, St. Lucie County. The permit is to allow the addition of a process steam boiler, a D-Type Abco Industries Inc. boiler, with a design rating of 85,000 pounds per hour steam and a design heat input rate of 99.8 MMBtu per hour when operating firing natural gas and 95.7 MMBtu/hr when firing #2 distillate fuel oil at the Ft. Pierce facility. The applicant has requested continuous, dual-fuel operation (8,760 hours per year) for the steam boiler. PSD review is required due to the increase in nitrogen oxides (NO_x) above PSD thresholds. This project is subject to the requirements for PSD. An air quality impact analysis was required.

Total emissions of pollutants from the changes authorized by this permit will not exceed the following:

<u>Pollutant</u>	<u>Maximum Potential Emissions</u>	<u>PSD Significant Emission Rate</u>
PM/PM ₁₀ (filterable plus condensable)	6.15	25/15
CO	80.4	100
NO _x	41.91	40
VOC	2.36	40
SO ₂	21.75	40
Sulfuric Acid Mist	1.08	7

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that an air construction permit is required to perform the proposed work.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Construction Permit. The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the notice to be published as soon as possible after notification by the Department of its intended action. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax: 850/ 922-6979). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in Section 50.051, F.S., to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the final permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of thirty (30) days from the date of publication of Public Notice of Intent to Issue Air Permit. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, of the F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation is not available in this proceeding.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542, F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a

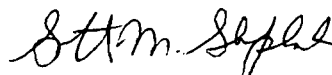
variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2), F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.


C. H. Fancy, P.E., Chief
Bureau of Air Regulation

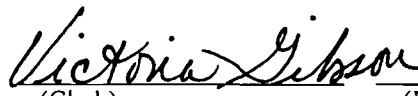
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue Air Construction Permit (including the Public Notice of Intent to Issue Air Construction Permit, Technical Evaluation and Preliminary Determination, and the Draft permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 12/24/01 to the person(s) listed:

Mr. Richard Coyle, Tropicana Products, Inc.*
Mr. Ken Kosky, P.E., Golder
Mr. Tom Tittle, DEP Southeast District
Mr. Gregg Worley, EPA
Mr. John Bunyak, NPS

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.


(Clerk) 12/24/01
(Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 1110004-004-AC, PSD-FL-303A

Tropicana Products, Inc.
St. Lucie County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Tropicana Products, Inc., for its existing citrus juice processing facility located at 6500 Glades Cutoff Road, Ft. Pierce, St. Lucie County. The applicant's mailing address is also: 6500 Glades Cutoff Road, Ft. Pierce, Florida 34208. The permit is to allow the addition of a process steam boiler, a D-Type Abco Industries Inc. boiler, with a design rating of 85,000 pounds per hour steam and a design heat input rate of 99.8 MMBtu per hour when firing natural gas and 95.7 MMBtu/hr when firing #2 distillate fuel oil at the Ft. Pierce facility. The applicant has requested continuous, dual-fuel operation (8,760 hours per year) for the steam boiler. PSD review is required due to the increase in nitrogen oxides (NO_x) above PSD thresholds. This project is subject to the requirements for PSD. An air quality impact analysis was required.

Total emissions of pollutants from the changes authorized by this permit will not exceed the following:

<u>Pollutant</u>	<u>Maximum Potential Emissions</u>	<u>PSD Significant Emission Rate</u>
PM/PM ₁₀ (filterable plus condensable)	6.15	25/15
CO	80.4	100
NO _x	41.91	40
VOC	2.36	40
SO ₂	21.75	40
Sulfuric Acid Mist	1.08	7

The Department will issue the final permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of thirty (30) days from the date of publication of this Public Notice of Intent to Issue Air Construction Permit. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 Florida Statutes (F.S.), before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code (F.A.C.).

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Protection	Dept. of Environmental Protection
Bureau of Air Regulation	Southeast District
Suite 4, 111 S. Magnolia Drive	400 North Congress Avenue
Tallahassee, Florida 32301	West Palm Beach, Florida 33401
Telephone: 850/488-0114	Telephone: 561/681-6600
Fax: 850/922-6979	

The complete project file includes the application, technical evaluations, draft permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, Title V Section, or the Department's reviewing engineer for this project, Edward J. Svec, Engineer IV, at the Bureau of Air Regulation in Tallahassee, Florida, or call 850/488-0114, for additional information. Written comments directed to the Department's reviewing engineer should be sent to the following mailing address: Dept. of Environmental Protection, Bureau of Air Regulation, Mail Station #5505, Tallahassee, Florida, 32399-2400.

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

1 APPLICANT NAME AND ADDRESS

Tropicana Products, Inc.
6500 Glades Cutoff Road
Ft. Pierce, Florida 34981

Authorized Representative: Richard Coyle, Director of Operations, Ft. Pierce Facility

2 PROJECT

The project is the installation of a process steam boiler to Tropicana's existing citrus processing facility in Ft. Pierce, St. Lucie County. The project description, emissions, and rule applicability are described in detail in Section I of the permit.

3 SOURCE IMPACT ANALYSIS

As discussed in more detail in Section I of the permit, the annual potential emissions associated with this project are: PM/PM₁₀, 6.15; SO₂, 21.75, NO_x, 41.91; CO, 80.41; VOC, 2.36; and sulfuric acid mist, 1.08 tons per year. An impact analysis was required for this project because it is subject to the requirements of PSD for these pollutants based on the NO_x emissions increase.

3.1 AIR QUALITY ANALYSIS INTRODUCTION

The proposed project will increase emissions of one regulated pollutant at a level in excess of PSD significant amounts, NO_x. PM₁₀, SO₂ and NO₂ are criteria pollutants and have national and state ambient air quality standards (AAQS), PSD increments, and significant impact levels defined for them. CO is a criteria pollutant and has only AAQS and significant impact levels defined for it. Sulfuric acid mist is a non-criteria pollutant and has no AAQS or PSD increments defined for it; therefore, only a qualitative analysis of the impacts of this pollutant was done.

This project was determined to be contemporaneous with the addition of 16 juice extractors at the facility (Permit No. 1110004-003-AC, PSD-FL-303). Therefore, the modeled impacts for the steam boiler were added to the impacts determined in the aforementioned permit for comparison to AAQS and applicable PSD increments. The applicant's initial Class II PM₁₀, SO₂ and NO₂ analyses of the project revealed no significant impacts in the area surrounding the proposed facility; therefore, full impact Class II AAQS and PSD Class II increment were not required. The applicant was asked to demonstrate compliance with the 24-hour SO₂ AAQS and when reviewed by the Department, was determined to be in compliance.

No impacts on the Everglades National Park were calculated since the project is located 180 km north of this Class I area.

Based on these required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A more detailed discussion of the required analyses follows.

3.2 ANALYSIS OF EXISTING AIR QUALITY

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. This monitoring requirement may be satisfied by using previously existing representative monitoring data, if available. An exemption to the monitoring requirement shall be granted by rule if either of the following conditions is met: the maximum predicted air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimis ambient concentration; or the existing ambient concentrations are less than a pollutant-specific de minimis ambient concentration. If preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling. No de minimis ambient concentration is provided for ozone. Instead the net emissions increase of VOC is compared to a de minimis monitoring emission rate of 100 tons per year. The table below shows maximum project air quality impacts for comparison to these de minimis levels.

MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE DE MINIMIS LEVELS				
Pollutant	Averaging Time	Maximum Predicted Impact ($\mu\text{g}/\text{m}^3$)	Impact Greater than De Minimis (Yes/No)	De Minimis Level ($\mu\text{g}/\text{m}^3$)
PM ₁₀	24-hr	1.4	NO	10
CO	8-hr	30	NO	575
NO ₂	Annual	0.8	NO	14
SO ₂	24-hour	4.8	NO	13
VOC	Annual Emission Rate	2 TPY	NO	100 TPY

As shown in the table, all regulated pollutants are predicted to be less than the de minimis levels; therefore, preconstruction monitoring is not required for these pollutants.

3.3 MODELS AND METEOROLOGICAL DATA USED IN THE AIR QUALITY ANALYSIS

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options in each modeling scenario. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project will not exceed the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) station at West Palm Beach, Florida. The 5-year period of meteorological data was from 1987 through 1991. This NWS station was selected for use in the study because it is the closest primary weather station

to the study area and is most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

Because five years of data are used in ISCST3, the highest-second-high (HSH) short-term predicted concentrations were compared with the appropriate AAQS or PSD increments as requested by the Department. For the annual averages, the highest predicted annual average was compared with the standards. For determining the project's significant impact area in the vicinity of the facility, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

3.4 SIGNIFICANT IMPACT ANALYSIS

Preliminary modeling is performed using only the proposed project's worst-case emission scenario for each pollutant and applicable averaging time. Over 700 receptors were placed along the facility's restricted property line and out to 80 km from the facility, which is located in a PSD Class II area. Modeling refinements were done, as needed, by using a polar receptor grid with a maximum spacing of 100 m along each radial and an angular spacing between radials of one or two degrees. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compares maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project were predicted in the vicinity of the facility. In the event that the maximum predicted impact of a proposed project is less than the appropriate significant impact level, a full impact analysis for that pollutant is not required. Full impact modeling is modeling that considers not only the impact of the project but also other major sources, including background concentrations, located within the vicinity of the project to determine whether all applicable AAQS or PSD increments are predicted to be met for that pollutant. Consequently, a preliminary modeling analysis, which shows an insignificant impact, is accepted as the required air quality analysis (AAQS and PSD increments) for that pollutant and no further modeling for comparison to the AAQS and PSD increments is required for that pollutant. The table below shows the results of this modeling. The radius of significant impact, if any, for each pollutant and applicable pollutant averaging time is also shown in the tables below.

MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE PSD CLASS II SIGNIFICANT IMPACT LEVELS IN THE VICINITY OF THE FACILITY					
Pollutant	Averaging Time	Maximum Predicted Impact ($\mu\text{g}/\text{m}^3$)	Significant Impact Level ($\mu\text{g}/\text{m}^3$)	Significant Impact? (Yes/No)	Radius of Significant Impact (km)
PM ₁₀	Annual	0.1	1	NO	---
	24-hr	1.4	5	NO	---
SO ₂	Annual	0.4	1	NO	---
	24-hour	4.8	5	NO	---
	3-hour	10.0	25	NO	---
CO	8-hr	30	500	NO	---
	1-hr	65	2,000	NO	---
NO ₂	Annual	0.8	1	NO	---

As shown in the tables the maximum predicted air quality impacts due to all regulated pollutant emissions from the proposed project are less than the PSD significant impact levels in the vicinity of the facility. Therefore, the applicant was not required to do full impact modeling in the vicinity of the facility. However, since maximum predicted 24-hour SO₂ impacts due to the aforementioned 16 juice extractor project (PSD-FL-303) were very close to the AAQS, the Department requested that the applicant demonstrate compliance with the 24-hour SO₂ AAQS by modeling all Tropicana sources as well as

TECHNICAL EVALUATION AND DETERMINATION

surrounding SO₂ emitting sources in a request for additional information. The applicant demonstrated compliance with AAQS to the Department.

4 BACT DETERMINATIONS

4.1 Available Information

The applicant reviewed recent BACT determinations posted in EPA's RACT/BACT/LAER Clearinghouse for use in the BACT analysis. A list of recent determinations regarding similar projects in the United States is provided in the following table.

TABLE 3A: RECENT NO_x EMISSION LIMIT PROPOSALS AND DETERMINATIONS FOR NATURAL GAS-FIRED INDUSTRIAL BOILERS, LESS THAN 100 MMBTU/HR

Project Location	Permit Date	Capacity (MMBtu/Hr)	Emission Limits		Control Equipment/Description
Shell Offshore, Inc., AL	10/25/89	48.2	4.8	lb/hr	Low NO _x Burners
Huls America, AL	8/31/90	38.9	0.075	lb/MMBtu	Low NO _x Burners
Champion International Corporation, AL	5/8/91	5.83	0.05	lb/MMBtu	Flue Gas Recirculation
Anniston Army Depot, AL	6/19/97	13.4	0.03	lb/MMBtu	Low NO _x Burners, Clean Fuel
Anniston Army Depot, AL	6/19/97	11.7	0.03	lb/MMBtu	Low NO _x Burners, Clean Fuel
Intel Corporation, AZ	4/10/94	50	--	--	Low NO _x Burners
Toma-Tek Inc., CA	3/1/89	90	3.05	lb/hr	Low NO _x Burners, Good Combustion Practices
Sunland Refinery, CA	9/24/92	12.6	0.036	lb/MMBtu	Low NO _x Burner and FGR
American Soda, LLP, Parachute Facility, CO	5/6/99	80.8	0.05	lb/MMBtu	Low NO _x Combustion System
Orange Cogeneration, L.P., FL	12/30/93	100	0.13	lb/MMBtu	Low NO _x Burners
Mid-Georgia Cogeneration, GA	4/3/96	60	0.1	lb/MMBtu	Dry Low NO _x Burner with FGR
Naturalgas Pipeline Company, IL	3/1/89	8.4	0.1	lb/MMBtu	--
Waupaca Foundry - Plant 5, IN	1/19/96	93.9	6.94	lb/hr	Low NO _x Burners
I/N Kote, IN	11/20/89	70.8	0.05	lb/MMBtu	Flue Gas Recirculation and Fuel Selection
General Electric Company, IN	9/17/89	93	0.133	lb/MMBtu	Staged Combustion Air & Low Excess Air
Toyota Motor Corporation Services of N.A., IN	8/9/96	58	0.1	lb/MMBtu	Low NO _x Burners and Fuel Selection
Transamerican Refining Corporation (TARC), LA	1/15/93	1.2	0.14	lb/hr	Good Combustion Practices
Air Liquide America Corporation, LA	2/13/98	95	0.05	lb/MMBtu	Low NO _x Burners
Indelk Energy Services of Otsego, MI	3/16/93	99	0.06	lb/MMBtu	Flue Gas Recirculation
Fulton Cogeneration Associates, NY	1/29/90	90	0.14	lb/MMBtu	Combustion Control
Kamine/Besicorp Coming L.P., NY	11/5/92	33.5	0.32	lb/MMBtu	Low NO _x Burner and FGR
Kamine/Besicorp Syracuse L.P., NY	12/10/94	33	0.035	lb/MMBtu	Induced Flue Gas Recirculation
Kamine/Besicorp Syracuse L.P., NY	12/10/94	2.5	0.12	lb/MMBtu	No Controls
Indek - Yerkes Energy Services, NY	6/24/92	99	0.2	lb/MMBtu	No Controls
CNG Transmission Corporation, WV	5/3/93	10	140	lb/MMcf	--

Tropicana Products, Inc.
Addition of a Process Steam Boiler

1110004-004-AC
PSD-FL-303A

3.2 Nitrogen Oxides (NO_x)

Discussion of NO_x Emissions

Emissions of NO_x are a result of the thermal fixation nitrogen in the combustion air (thermal NO_x) and the oxidation of nitrogen in the fuel (fuel NO_x). *Thermal NO_x* is primarily a function of peak flame temperature and available oxygen, which are factors that depend on boiler size, firing configuration, and operating practices. *Fuel NO_x* is a function of nitrogen in the fuel and the available oxygen. About 50% of the fuel nitrogen is converted to NO_x, which means that fuel NO_x emissions from firing natural gas or distillate oil is almost negligible because these fuels contain only trace amounts of fuel-bound nitrogen.

Description of Available NO_x Controls

The following technologies were identified as potentially applicable for the control of NO_x from boilers firing natural gas and distillate oil.

Low NO_x burners with Flue Gas Recirculation (LNB w/FGR): The following description is an excerpt from the July 1998 edition of Section 1.4.4 in AP-42.

“The two most prevalent combustion control techniques used to reduce NO_x emissions from natural gas-fired boilers are flue gas recirculation (FGR) and low NO_x burners. In an FGR system, a portion of the flue gas is recycled from the stack to the burner windbox. Upon entering the windbox, the recirculated gas is mixed with combustion air prior to being fed to the burner. The recycled flue gas consists of combustion products which act as inerts during combustion of the fuel/air mixture. The FGR system reduces NO_x emissions by two mechanisms. Primarily, the recirculated gas acts as a diluent to reduce combustion temperatures, thus suppressing the thermal NO_x mechanism. To a lesser extent, FGR also reduces NO_x formation by lowering the oxygen concentration in the primary flame zone. The amount of recirculated flue gas is a key operating parameter influencing NO_x emission rates for these systems. An FGR system is normally used in combination with specially designed low NO_x burners capable of sustaining a stable flame with the increased inert gas flow resulting from the use of FGR. When low NO_x burners and FGR are used in combination, these techniques are capable of reducing NO_x emissions by 60 to 90 percent.

Low NO_x burners reduce NO_x by accomplishing the combustion process in stages. Staging partially delays the combustion process, resulting in a cooler flame which suppresses thermal NO_x formation. The two most common types of low NO_x burners being applied to natural gas-fired boilers are staged air burners and staged fuel burners. NO_x emission reductions of 40 to 85 percent (relative to uncontrolled emission levels) have been observed with low NO_x burners.”

Selective Catalytic Reduction (SCR): This is an add-on control technology in which ammonia is injected into the exhaust gas stream in the presence of a catalyst bed to combine with NO_x in a reduction reaction forming nitrogen and water. For this reaction to proceed satisfactorily, the exhaust gas temperature must be maintained between approximately 450° F and 850° F. SCR is a commercially available and demonstrated control technology with numerous applications nationwide. Conventional SCR is technically feasible for this project with a control efficiency of approximately 75% to 85%.

Selective Non-Catalytic Reduction (SNCR): In the SNCR process, ammonia or urea is injected at high temperatures without a catalyst to reduce NO_x emissions to nitrogen and water vapor. The exhaust temperature must typically be maintained above 1600°F to allow the reaction to occur; otherwise uncontrolled NO_x will be emitted as well as unreacted ammonia. Also, the exhaust temperature must not exceed 2000°F or ammonia will actually be oxidized creating additional NO_x

emissions. New catalysts are available that can extend this temperature range to approximately 1000° F to 1950° F. For boilers, SNCR has achieved control efficiencies in the 25% to 75% range and is technically feasible for this project.

SCONOx™: This technology is a NOx and CO control system developed by Goal Line Environmental Technologies and distributed by ABB for large gas turbine projects. Specialized potassium carbonate catalyst beds reduce CO and NOx emissions using an oxidation-absorption-regeneration cycle. The required operating temperature range is between 300°F and 700°F, which requires a heat recovery steam generator for use with a combined cycle gas turbine. SCONOx™ can achieve a control efficiency greater than 90% and is technically feasible for this project.

Cannon Technology's Low Temperature Oxidation (LTO): This technology involves injecting ozone into a gas stream (approximately 300° F) to oxidize CO, NOx, and SO2 to carbonates, nitrates, and sulfates, which are then absorbed by a dilute nitric acid solution in a scrubber. The system was developed for steam boilers and test results show NOx emissions below 4 ppmvd at 3% oxygen for gas firing. However, only very small units (< 20 MMBtu per hour) have been tested. Because the exhaust gas will be approximately 400° F and the modified boiler is nearly ten times that of the largest tested unit with LTO, this technology was not evaluated further.

Applicant's Proposed NOx Controls

The applicant ranked the control technologies in the following order:

Rank	Technology	Control Efficiency (%)	Emissions Rate (lb/MMBtu) ^c	Annual Emissions TPY
1	LNB w/SCR ^a	92%	0.030	8.7
2	LNB w/SNCR ^b	72%	0.105	30.6
3	LNB w/FGR	60%	0.10 ^c	43.7 ^d

^a - SCR alone can achieve approximately 80% reduction.

^b - SNCR alone can achieve approximately 30% reduction.

^c - Proposed steam boiler emission rate for gas and oil firing.

^d - Based on an emission rate of 0.10 lb/MMBtu for natural gas at 99.8 MMBtu/hr for 8,760 hours.

The applicant states that SCR and SNCR would result in the following adverse impacts.

Energy Impacts: The applicant states that installation of SCR would result in energy penalties due to the pressure drop across the catalyst, energy required to operate the ammonia injection system, and possibly energy to reheat the exhaust gas. Similarly, SNCR would result in energy penalties to operate the system.

Environmental Impacts: The applicant indicates that installation of SCR would result in unreacted ammonia "slipping" past the catalyst, potential ammonia emissions from an accidental release, and solid waste disposal of the spent catalyst. Similarly, SNCR could result in urea emissions from an accidental release.

Economic Impacts: The applicant estimates that the installation of SCR would result in a capital cost of \$1.7 million, and annualized cost of \$377,460, and a cost effectiveness of \$10,794 per ton of NOx removed. The applicant estimates that the installation of SNCR would result in a lower capital cost but a much higher annualized cost, and a higher cost effectiveness based on experience.

Applicant's Proposal: Based on the estimated high capital and operating costs associated with the add on control systems, the applicant rejected both SCR and SNCR and proposes the following NOx standards based on LNB with FGR:

Oil: NOx emissions shall not exceed 0.10 lb/MMBtu of heat input

Gas: NOx emissions shall not exceed 0.055 lb/MMBtu of heat input

Department's Draft NOx BACT Determination

The Department does not necessarily endorse the applicant's cost evaluations, but generally agrees that neither SCR nor SNCR are cost effective for this project, which consists of a burner system modification to fire natural gas. It is noted that the costs of a SCONOX™ system were not estimated since it is not applied to boilers. However, costs for a comparable SCONOX™ system are typically higher than SCR and it is not expected that this technology would be cost effective or feasible for the project.

Draft NOx BACT Determination: The Department determines NOx BACT to be low-NOx burners with flue gas recirculation. The following limits represent BACT for NOx emissions.

Oil: NOx emissions shall not exceed 0.10 lb/MMBtu of heat input

Gas: NOx emissions shall not exceed 0.055 lb/MMBtu of heat input

As shown in Table 3A, this determination is consistent with recent BACT determinations for similarly sized boilers. The NOx limit for firing distillate oil was based on the proposed boiler manufacturer's guarantee, assuming that the fuel nitrogen content will be less than 0.02% by weight. Recent data on very low sulfur No. 2 distillate oil indicates a *maximum* nitrogen content of 0.015% by weight. Compliance with the emissions standards shall be demonstrated by conducting initial and annual performance tests in accordance with EPA Method 7e at permitted capacity.

3.3 Carbon Monoxide CO

Discussion of CO Emissions

Emissions of carbon monoxide (CO) will result from incomplete fuel combustion. In general, CO emissions are inversely proportional to NOx emissions. However, new advanced burner designs have also been able to lower CO emissions concurrently with reduced NOx emissions.

Applicant's Initial Proposed CO Controls

The applicant reviewed recent CO BACT determinations and noted that no add-on controls were required for similarly sized boilers. In addition, the applicant believes that the proposed emission standards are within the general range of these recent BACT determinations.

Applicant's Initial Proposal: The applicant proposed the following CO standards.

Gas/Oil: CO emissions shall not exceed 200 ppm at 3% O₂

Department's CO Determination

The Department discussed the feasibility of lower CO emissions rates for the boiler with the applicant. After additional discussions with the burner manufacturer, the applicant agreed to the following CO emissions standards that would avoid a BACT determination.

Gas/Oil: CO emissions shall not exceed 200 ppm at 3% O₂

The Department believes that a new boiler would be able to achieve a CO standard 200 ppm at 3% O₂. The requested emissions standard appears reasonable. Compliance with the emissions standards

shall be demonstrated by conducting initial and annual performance tests in accordance with EPA Method 10 at permitted capacity.

3.4 Particulate Matter (PM/PM₁₀) and Sulfur Dioxide (SO₂)

Discussion of PM/PM₁₀ and SO₂

Emissions of particulate matter (PM/PM₁₀) and sulfur dioxide (SO₂) will result from the combustion of natural gas and distillate oil. Particulate matter emissions increase with incomplete fuel combustion as well as with higher concentrations of ash, sulfur, and trace elements in the fuel. Sulfur dioxide emissions will increase with higher fuel sulfur contents. However, natural gas and very low sulfur distillate oil contain little ash, sulfur, or other contaminants.

Applicant's Proposed PM/PM₁₀ and SO₂ Controls

The applicant indicates that post-control devices are not typically applied to package boilers and would be cost prohibitive.

Applicant's Proposal: For both PM/PM₁₀ and SO₂, the applicant proposes the following fuel specifications and opacity standard.

Gas: Pipeline-quality natural gas with a maximum of 1 gr/100 cf, opacity shall not exceed 10%

Oil: No. 2 distillate oil with a maximum of 0.05% sulfur by weight, opacity shall not exceed 20%

Department's Draft PM/PM₁₀ and SO₂ BACT Determinations

The Department identifies several available control technologies for particulate matter removal including centrifugal collectors, electrostatic precipitators, fabric filters, and wet scrubbers. However, particulate emissions are estimated to be much less than 0.01 grains per dscf of exhaust gas, which is approximately the level of controlled emissions from a baghouse. Similarly, there is acid gas scrubbing equipment available to further reduce SO₂ emissions. The applicant proposes to fire pipeline-quality natural gas and very low sulfur distillate oil as the primary fuels with as a backup fuel. The Department agrees with the applicant that further control of particulate matter and sulfur dioxide emissions with any of these add-on control technologies would be cost prohibitive due to the very low uncontrolled emissions. The fuel sulfur contents proposed are clearly more stringent than the NSPS Subpart Db standard of 0.5% sulfur by weight. The specification of clean fuels constitutes a pollution prevention technique and is given favorable consideration in this case.

Draft PM/PM₁₀ and SO₂ BACT Determinations: The Department establishes the following fuel specifications as BACT for PM/PM₁₀ and SO₂.

Gas: Pipeline-quality natural gas

Oil: No. 2 distillate oil with a maximum of 0.05% sulfur by weight

The Department notes that pipeline-quality natural gas typically contains much less than 1 grain per 100 SCF of natural gas. Compliance with the fuel sulfur limit for distillate oil shall be demonstrated by an initial test and maintaining the fuel quality records provided by the vendor for each shipment. Limiting the fuel sulfur content also effectively limits the potential emissions of SAM and SO₂, so that additional emissions standards are unnecessary. In conjunction with the above fuel specifications, the Department also establishes the following standards as BACT for PM/PM₁₀.

Gas: Opacity shall not exceed 10%

Oil: Opacity shall not exceed 20%

The proposed fuels are natural gas and distillate oil containing no more than 0.05% by weight. It is expected that there will be no visible emissions plume from the stack because these fuels contain very little sulfur, ash, or other contaminants. After the initial performance test, the opacity standard will also serve as an indicator of efficient combustion and compliance with the particulate matter standards.

4 EXCESS EMISSIONS

Excess emissions for this emissions unit are specified in Section II of the permit. This permitting action does not change any authorization for excess emissions provided by other Department permits for other emissions units

5 LIMITS AND COMPLIANCE REQUIREMENTS

The permit limits the sulfur content of the distillate fuel oil and limits the heat input to the emissions units from all permitted fuels. Specific emission limits were not imposed because the potential emissions are below the PSD significance criteria. The fuel consumption limits and the compliance requirements are detailed in Section III of the permit.

6 PRELIMINARY DETERMINATION

Based on the foregoing technical evaluation of the application and additional information submitted by the applicant and other available information, the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations. The Department's preliminary determination is to issue the draft permit to allow the rebuild of the process steam boiler, subject to the terms and conditions of the draft permit.

7 FINAL DETERMINATION

(This section will be revised when a final permit is issued for this project.)

TECHNICAL EVALUATION AND DETERMINATION

DETAILS OF THIS ANALYSIS MAY BE OBTAINED BY CONTACTING:

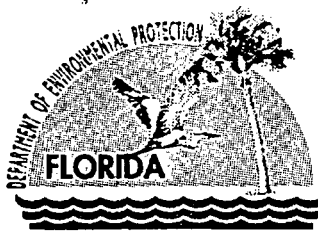
Edward J. Svec, Engineer IV
Department of Environmental Protection
Bureau of Air Regulation
Mail Station #5505
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Telephone: 850/488-0114

Recommended by: _____
C. H. Fancy, P.E., Chief
Bureau of Air Regulation

Date

Approved by: _____
Howard L. Rhodes, Director
Division of Air Resources
Management

Date



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

PERMITTEE

Tropicana Products, Inc.
6500 Glades Cutoff Road
Ft. Pierce, Florida 34981

Permit No.	1110004-004-AC, PSD-FL-303A
Project	Addition of Process Steam Boiler
SIC No.	2037
Expires:	^DRAFT

Authorized Representative:

Richard Coyle, Director of Operations

PROJECT AND LOCATION

This permit authorizes Tropicana Products Inc., Ft. Pierce Plant, to install a process steam boiler equipped with low-NOx burners and utilizing flue gas recirculation. The boiler has a physical capacity of 99.8 MMBtu per hour heat input firing natural gas and 95.7 MMBtu per hour heat input firing very low sulfur distillate fuel oil (0.05% sulfur by weight).

This facility is located at 6500 Glades Cutoff Road, Ft. Pierce, St. Lucie County. The UTM coordinates are: Zone 17; 561.0 km E and 3028.1 km N.

STATEMENT OF BASIS

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297. The above named permittee is authorized to construct the emissions units in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

APPENDICES

The attached appendix is a part of this permit:

Appendix GC General Permit Conditions

DRAFT

Howard L. Rhodes, Director
Division of Air Resources
Management

AIR CONSTRUCTION PERMIT
SECTION I. FACILITY INFORMATION

FACILITY AND PROJECT DESCRIPTION

This facility consists of an existing citrus processing facility that extracts juice from whole citrus fruit to produce single-strength and frozen concentrated juices and byproducts of juice production such as citrus oils, citrus molasses and animal feed.

The applicant proposed in this project to allow the addition of a process steam boiler, a D-Type Abco Industries Inc. boiler, with a design rating of 85,000 pounds per hour steam and a design heat input rate of 99.8 MMBtu per hour when firing natural gas and 95.7 MMBtu/hr when firing #2 distillate fuel oil at the Ft. Pierce facility. The applicant has requested continuous, dual-fuel operation (8,760 hours per year) for the steam boiler. PSD review is required due to the increase in nitrogen oxides (NO_x), above PSD thresholds. The applicant did not seek any relaxation in currently enforceable conditions in its other existing emissions units.

The emissions increases associated with this project were estimated by the applicant as follows in tons per year:

Pollutant	Net Increase¹	PSD Significance	Subject to PSD?
PM/PM ₁₀	6.15	25/15	No
SO ₂	21.75	40	No
NO _x	41.91	40	Yes
CO	80.41	100	No
VOC	2.36	40	No
SAM	1.08	7	No

¹ Potential emissions (shown as net increase) were estimated by the Department from allowable natural gas and distillate fuel oil usage and AP-42 emission factors (tables 1.3-1 and 1.3-3 for fuel oil, tables 1.4-1 and 1.4-2 for natural gas), with a heat content of 1,020 Btu/scf of natural gas and 131.1 million Btu/1,000 gallons of distillate fuel oil, given a design heat input capacity of 99.8 MMBtu/hour operating on natural gas and 95.7 MMBtu/hour operating on fuel oil, and the fuel use limits of the permit.

The proposed project is subject to preconstruction review requirements under the provisions of Chapter 403, F.S., and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. The existing facility is located in an area designated, in accordance with Rule 62-204.340, F.A.C., as attainment or unclassifiable for the criteria pollutants ozone, PM₁₀, carbon monoxide, SO₂, nitrogen dioxide and lead. This facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant exceeds 100 tons per year (TPY). At this facility potential emissions of PM/PM₁₀, SO₂, NO_x, CO and VOC exceed 100 TPY.

This facility is not within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 250 TPY for at least one criteria pollutant, the facility is also an existing Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD). The net increase, including emission increases from the contemporaneous juice extractor project at the facility, in emissions exceeds the PSD significance levels of Table 212.400-2, F.A.C. Therefore the project is subject to PSD requirements of Rule 62-212.400, F.A.C., for PM/PM₁₀, SO₂, NO_x, CO and VOC since the boiler is contemporaneous with the juice extractors project in 2000. The project is subject to a BACT determination, as discussed in the Department's Technical Evaluation and Determination.

AIR CONSTRUCTION PERMIT
SECTION I. FACILITY INFORMATION

The applicant stated that this facility is a major source of hazardous air pollutants (HAPs). This project is not subject to a case-by-case MACT determination, per Rule 62-204.800(10)(d)2, F.A.C., because it does not result in the construction or reconstruction of a major source of HAP emissions.

This project does not impose any requirements under the New Source Performance Standards, 40 CFR 60, or National Emissions Standards for Hazardous Air Pollutants, 40 CFR 61 or 63. The project is subject to the NSPS Subpart Dc for recordkeeping.

REVIEWING AND PROCESS SCHEDULE

July 18, 2001	Received permit application and fee
August 17, 2001	Department's request for additional information
September 17, 2001	Received applicant's response to Department's request
October 19, 2001	Department's second request for additional information
November 2, 2001	Received applicant's response to Department's second request
November 2, 2001	Application complete
^DRAFT	Distributed Notice of Intent to Issue and supporting documents
^DRAFT	Notice of Intent published in ^DRAFT

RELEVANT DOCUMENTS

The documents listed below are the basis of the permit. They are specifically related to this permitting action. These documents are on file with the Department.

- Permit application filed July 18, 2001 and applicant's additional information (October 30, 2001)
- Department's Technical Evaluation and Determination
- Department's Intent to Issue

AIR CONSTRUCTION PERMIT

SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

The following specific conditions apply to all emissions units at this facility addressed by this permit.

ADMINISTRATIVE

1. Regulating Agencies: All documents related to applications for permits to construct, operate or modify an emissions unit should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, phone number 850/488-0114. All documents related to reports, tests, minor modifications and notifications shall be submitted to the Department's Southeast District office at P.O. Box 15425, West Palm Beach, Florida 33416-5425, and phone number 561-681-6600.
2. General Conditions: The owner and operator is subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in Appendix GC of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes(F.S.). [Rule 62-4.160, F.A.C.]
3. Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of Chapter 403, F.S., and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-110, 62-204, 62-212, 62-213, 62-296, 62-297 and the Code of Federal Regulations Title 40, Part 60, adopted by reference in the F.A.C. regulations. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C., and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. New or Additional Conditions: Pursuant to Rule 62-4.080, F.A.C., for good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. Expiration: This air construction permit shall expire on ^DRAFT. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit. [Rules 62-210.300(1), 62-4.070(4), 62-4.080, and 62-4.210, F.A.C.]

PSD Expiration: Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. [Rules 62-4.070(4), 62-4.210(2) & (3), and 62-210.300(1)(a), F.A.C.]

BACT Determination Review: In conjunction with extension of the 18 month periods to commence or continue construction, extension of the permit expiration date, or where construction is conducted

AIR CONSTRUCTION PERMIT

SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

in two or more phases, the permittee may be required to demonstrate the adequacy of any previous determination of Best Available Control Technology (BACT) for the source. [Rules 62-4.070(4), 62-4.210(2) & (3), 62-210.300(1)(a), and 62-212.400(6)(b), F.A.C.]

7. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit must be obtained prior to the beginning of construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
8. Title V Operation Permit Required: This permit authorizes construction and/or installation of the permitted emissions unit and initial operation to determine compliance with Department rules. A revision to the Title V operation permit is required for regular operation of the permitted emissions unit. The owner or operator shall apply for a Title V operation permit at least ninety days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the Department's Southeast District office. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

EMISSION LIMITING STANDARDS

9. General Visible Emissions Standard: Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in this permit, no person shall cause, let, permit, suffer, or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20% opacity). The test method for visible emissions shall be EPA Method 9, incorporated and adopted by reference in Chapter 62-297, F.A.C. Test procedures shall meet all applicable requirements of Chapter 62-297, F.A.C. [Rule 62-296.320(4)(b)1, F.A.C.]
10. Unconfined Emissions of Particulate Matter: [Rule 62-296.320(4)(c), F.A.C.]
 - (a) No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity, including vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling; without taking reasonable precautions to prevent such emissions.
 - (b) Any permit issued to a facility with emissions of unconfined particulate matter shall specify the reasonable precautions to be taken by that facility to control the emissions of unconfined particulate matter.
 - (c) Reasonable precautions for this facility include the following:
 - Paving and maintenance of roads, parking areas and yards.
 - Removal of particulate matter from roads and other paved areas under the control of the owner or operator of the facility to prevent reentrainment, and from buildings or work areas to prevent particulate from becoming airborne.
 - Landscaping or planting of vegetation.
 - Limiting access to plant property by unnecessary vehicles.

AIR CONSTRUCTION PERMIT

SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

(d) In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

11. General Pollutant Emission Limiting Standards: [Rule 62-296.320(1)(a)&(2), F.A.C.]

- (a) No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department.
- (b) No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

[Note: An objectionable odor is defined in Rule 62-210.200(198), F.A.C., as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance.]

OPERATIONAL REQUIREMENTS

- 12. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by hazard of fire, wind or by other cause, the permittee shall immediately notify the Department's Southeast District office. The notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with Department rules. [Rule 62-4.130, F.A.C.]
- 13. Circumvention: No person shall circumvent any air pollution control device or allow the emission of air pollutants without the applicable air pollution control device operating properly. [Rule 62-210.650, F.A.C.]
- 14. Excess Emissions: This permit does not change any authorization for excess emissions provided by other Department permits for other emissions units. The following excess emissions provisions of state rule apply to this emissions unit (emissions unit 008) as specified below.
 - (a) Excess emissions resulting from start-up and shutdown are permitted for the emissions unit 008 providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24 hour period.
 - (b) Excess emissions resulting from malfunction of this emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration.
 - (c) Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during start-up, shutdown, or malfunction shall be prohibited.

AIR CONSTRUCTION PERMIT
SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

[Rules 62-210.700(1), (4) and (5), F.A.C.]

COMPLIANCE MONITORING AND TESTING REQUIREMENTS

15. Determination of Process Variables: [Rule 62-297.310(5), F.A.C.]

- (a) Required Equipment. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
- (b) Accuracy of Equipment. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

16. Required Stack Sampling Facilities: Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must meet any Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E. Sampling facilities shall also conform to the requirements of Rule 62-297.310(6), F.A.C. [Rule 62-297.310(6), F.A.C.]

17. Test Notification: The owner or operator shall notify the Department's Southeast District office at least 15 days prior to the date on which each formal compliance test is to begin. Notification shall include the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9., F.A.C.]

18. Compliance Test: A single compliance test shall be required annually to ensure the emission unit's compliance with permit conditions. The test shall be performed in the manner described in this permit as follows: EPA Method 7e shall be used to test NO_x for the initial compliance test as well as the annual compliance test. EPA Method 10 shall be used to test CO for the initial compliance test as well as the annual compliance test.

REPORTING AND RECORD KEEPING REQUIREMENTS

19. Duration of Record Keeping: Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least five years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule. [Rules 62-4.160(14)(a)&(b) and 62-213.440(1)(b)2.b., F.A.C.]

AIR CONSTRUCTION PERMIT

SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

20. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the applicable information listed in Rule 62-297.310(8)(c), F.A.C. [Rule 62-297.310(8), F.A.C.]
21. Excess Emissions Report: In case of excess emissions resulting from malfunction, the owner or operator shall notify the Department within one working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. A full written report on the malfunctions shall be submitted in a quarterly report if requested by the Department. [Rules 62-4.130 and 62-210.700(6), F.A.C.]
22. Annual Operating Report for Air Pollutant Emitting Facility: The Annual Operating Report for Air Pollutant Emitting Facility shall be completed each year and shall be submitted to the Department's Southeast District office by March 1 of the following year. [Rule 62-210.370(3), F.A.C.]

AIR CONSTRUCTION PERMIT
SECTION III. EMISSIONS UNITS SPECIFIC CONDITIONS

The following specific conditions apply to the following emissions units after construction.

EMISSIONS UNIT NO.	EMISSIONS UNIT DESCRIPTION
008	Process Steam Boiler

[Note: This emissions unit is a process steam boiler that is installed to serve as a source of steam to meet citrus processing needs. This boiler is limited to one of a physical capacity of 99.8 MMBtu/hour firing natural gas and 95.7 MMBtu/hour firing very low sulfur distillate fuel oil (0.05% sulfur by weight). This emissions unit is subject to the requirements of the state rules as indicated in this permit. This emissions unit is subject to a determination of Best Available Control Technology pursuant to Rule 62-296.406, F.A.C. The fuel authorized by this permit is consistent with that BACT determination. This emissions unit is subject to regulation under the New Source Performance Standards of 40 CFR 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.]

STATE RULE REQUIREMENTS

OPERATIONAL REQUIREMENTS

1. Hours of Operation: This emissions unit may operate up to 8,760 hours/year. [Rules 62-4.070(3) and 62-210.200, F.A.C., and limitation on potential to emit]
2. Design Heat Input Capacity Limited: The design heat input capacity of this emissions unit shall be limited to a maximum of 99.8 MMBtu per hour firing natural gas and 95.7 MMBtu per hour firing distillate fuel oil, based on the physical design and characteristics of the steam generation unit. [Rules 62-4.070(3) and 62-210.200, F.A.C., and limitation on potential to emit]
3. Fuel Consumption Limited: This emission unit shall be fired with natural gas and distillate fuel oil with a maximum sulfur content of 0.05 percent, by weight. Natural gas consumption by this emissions unit shall not exceed 857 million standard cubic feet in any consecutive 12-month period. Distillate fuel oil consumption by this emissions unit shall not exceed 6,392 thousand gallons in any consecutive 12-month period. [Rules 62-4.070(3), 62-210.200 and 62-296.406, F.A.C., BACT for small boilers, and limitation on potential to emit]
4. Visible Emissions Limited: Visible emissions from this emissions unit shall not exceed 20/10 percent opacity for oil/gas operation except for periods of startup/shutdown or malfunction. [Rule 62-296.406(1), F.A.C.]
5. NOx Emissions Limited: NOx emissions from this emissions unit shall not exceed 0.10 lb/MMBtu for oil operation and 0.055 lb/MMBtu for gas operation. Compliance shall be determined using EPA Method 7e, as described in 40 CFR 60 Appendix A.
6. CO Emissions Limited: CO emissions from this emissions unit shall not 200 ppm @ 3% O₂ for oil and/or gas firing. Compliance shall be determined using EPA Method 10, as described in 40 CFR 60 Appendix A.

COMPLIANCE MONITORING AND TESTING REQUIREMENTS

7. Fuel Sulfur Content Tests: The owner or operator shall determine the sulfur content of each delivery of distillate fuel oil received for these emissions units using ASTM D4057-88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, and one of the following test methods for

Tropicana Products, Inc.
 Addition of a Process Steam Boiler

1110004-004-AC
 PSD-FL-303A

AIR CONSTRUCTION PERMIT

SECTION III. EMISSIONS UNITS SPECIFIC CONDITIONS

sulfur in petroleum products: ASTM D129-91, ASTM D1552-90, ASTM D2622-94, or ASTM D4294-90. A more recent version of these methods may be used. The owner or operator may comply with this requirement by receiving records from the fuel supplier that indicate the sulfur content of the distillate fuel oil delivered complies with the sulfur limit of specific condition 3 of this section. [Rules 62-4.070(3) and 62-297.440, F.A.C.]

8. Visible Emission Tests Required: The owner or operator shall demonstrate compliance with the visible emissions limit for this emissions unit upon initial installation and annually using EPA Method 9, as described in 40 CFR 60 Appendix A. [Rules 62-4.070(3) and 62-297.310, F.A.C.]

REPORTING AND RECORD KEEPING REQUIREMENTS

9. Fuel Sulfur Content Records: The owner or operator shall maintain records of sulfur content of each delivery of distillate fuel oil received for these emissions units, made pursuant to the requirements of specific condition 5 of this section. [Rule 62-4.070(3), F.A.C.]
10. Distillate Fuel Oil Consumption Records: The owner or operator shall make and maintain monthly records of natural gas and distillate fuel oil consumption for this emissions unit. From the monthly records of consumption of all permitted fuels, the owner or operator shall make records of the consecutive 12-month fuel consumption to demonstrate compliance with the fuel consumption limits of specific condition 3 of this section. All of these records shall be completed within ten days of the end of each month. [Rule 62-4.070(3), F.A.C.]
11. Records of Design Heat Input Capacity: The owner or operator shall maintain records of the design heat input capacity provided by the boiler's manufacturer or vendor to demonstrate compliance with condition 2 of this section. Such records shall be received prior to installation of this emissions unit, and shall be retained for each such emissions unit installed at the facility for a period of five years from the date of installation. [Rule 62-4.070(3), F.A.C.]
10. Pursuant to 40 CFR 60.48c NSPS Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units), the permittee is required to maintain daily records of the amount of natural gas combusted. Since none of the emission limits in Subpart Dc are applicable to this boiler when firing natural gas (the primary fuel for this boiler), it has been determined by the Department that keeping records for natural gas usage on a monthly rather than daily basis is adequate for the purpose of verifying the periods that only natural gas is burned in this unit. [Rule 62-296.810, F.A.C.; 40 CFR 60.48c(g) and (i)]
11. The permittee shall maintain a (daily) record of the quantity of fuel oil used for each day of operation. [Rule 62-204.800(7)(b)4., F.A.C.; 40 CFR 60.48c(g) and 40 CFR 60.48c(i)]
12. The permittee shall submit the following written notifications to the Air Compliance Section of the Southeast District Office of the Department:
 - a. A notification of the date construction (or reconstruction as defined under 60.15) of the boiler is commenced, postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.
 - b. A notification of the anticipated date of initial startup of the boiler, postmarked not more than 60 days nor less than 30 days prior to such date.
 - c. A notification of the actual date of initial startup of the boiler, postmarked within 15 days after such date.

AIR CONSTRUCTION PERMIT

SECTION III. EMISSIONS UNITS SPECIFIC CONDITIONS

- d. A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in 60.14 (e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional relevant information subsequent to this notice. [Rule 62-204.800(7)(b)4., F.A.C.; 40 CFR 60.7(a) and 40 CFR 60.48c(a)]
13. The permittee shall submit quarterly reports of the fuel oil supplier sulfur content certification records required by Condition 11 for any calendar quarter during which fuel oil is fired. In addition to the above, the quarterly report shall include a certified statement signed by the owner or operator of the facility that the records of the fuel supplier certifications submitted represent all of the fuel combusted during the quarter. The quarterly reports shall be submitted to the Air Compliance Section of the Southeast District Office of the Department within 30 days of the end of the quarter being reported. [Rule 62-204.800(7)(b)4., F.A.C.; 40 CFR 60.48c(e)(11)]

APPENDIX GC
GENERAL PERMIT CONDITIONS [RULE 62-4.160, F.A.C.]

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
- (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.



APPENDIX GC
GENERAL PERMIT CONDITIONS [RULE 62-4.160, F.A.C.]

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology (X);
 - (b) Determination of Prevention of Significant Deterioration (); and
 - (c) Compliance with New Source Performance Standards ().
- G.14 The permittee shall comply with the following:
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements;
 - 2. The person responsible for performing the sampling or measurements;
 - 3. The dates analyses were performed;
 - 4. The person responsible for performing the analyses;
 - 5. The analytical techniques or methods used; and
 - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

Florida Department of
Environmental Protection

Memorandum

TO: Clair Fancy
THRU: Scott M. Sheplak 
FROM: Edward J. Svec 
DATE: December 21, 2001
SUBJECT: Tropicana Products, Inc.
1110004-004-AC, PSD-FL-303A

Attached for approval and signature is the intent to issue for Tropicana Products, Inc.. This project allows the addition of dual fuel boiler at Tropicana's existing Ft. Pierce facility. BACT is applicable to this project because the nitrogen oxides emissions exceed the significant emissions increase of 40 tons per year. Case-by-case MACT is not applicable to this project.

I recommend your approval and signature.

December 21, 2001 is day 40 of the 90 day timeclock.

Attachments

/es



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

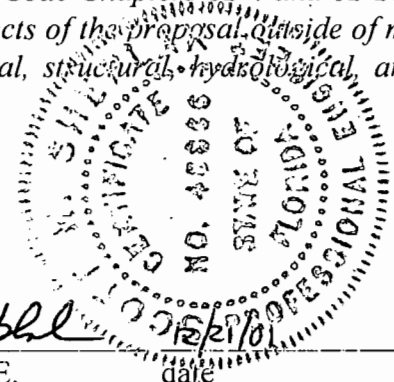
P.E. Certification Statement

Permittee:
Tropicana Products, Inc.

Permit No.: 1110004-004-AC

Project type: Air Construction Permit for a Process Steam Boiler

I HEREBY CERTIFY that the engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including but not limited to the electrical, mechanical, structural, hydrological, and geological features).


Scott M. Sheplak

Scott M. Sheplak, P.E.

Registration Number: 48866

Permitting Authority:

Department of Environmental Protection

Bureau of Air Regulation

111 South Magnolia Drive, Suite 4

Tallahassee, Florida 32301

Telephone: 850/921-9532

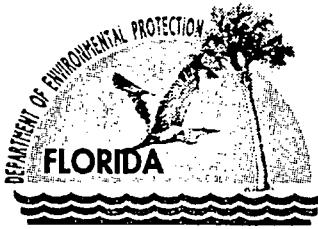
Fax: 850/922-6979

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<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Received by (Please Print Clearly)	B. Date of Delivery 07-24-99
1. Article Addressed to: Mr. Richard Coyle Director of Operations Tropicana Products, Inc. 6500 Glades Cutoff Road Ft. Pierce, FL 34981	C. Signature X	<input type="checkbox"/> Agent <input type="checkbox"/> Addressee
2. Article Number (Copy from service label) 7000 2870 0000 7028 2522	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
PS Form 3811, July 1999	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes
Domestic Return Receipt		02395-99-M-1789

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Postage \$ _____ Certified Fee _____ Return Receipt Fee (Endorsement Required) _____ Restricted Delivery Fee (Endorsement Required) _____ Total Postage & Fees \$ _____	Postmark Here
Sent To: Richard Coyle Street, Apt. No., or PO Box No. 6500 Glades Cutoff Road City, State, ZIP+4 Ft. Pierce, FL 34981	
PS Form 3800, May 2000 See Reverse for Instructions	



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

October 19, 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Richard Coyle
Director of Operations
Tropicana Products, Inc.
6500 Glades Cutoff Road
Ft. Pierce, Florida 34981

Re: Request for Additional Information
DEP File No. 1110004-004-AC, PSD-FL-303A
Addition of Process Steam Boiler

Dear Mr. Coyle:

On September 17, 2001, the Department received your response to our request for additional information dated August 17, 2001. The Department further received the modeling input and output files discussed in this response on October 10, 2001. The application is incomplete. Based on your output files and the SO₂ 24-hour background value of 34 ug/m³ in the Technical Evaluation and Preliminary Determination for PSD-FL-303, the predicted maximum project impact is 261 ug/m³, which is still predicted to violate the SO₂ 24-hour ambient air quality standard (AAQS) of 260 ug/m³. Please recommend means for reducing SO₂ impacts either from this project or the previous project in order to reduce maximum impacts below the AAQS. In order to continue processing your application, the Department will need the additional information requested. Should your response require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

The Department will resume processing your application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Material changes to the application should also be accompanied by a new certification statement by the authorized representative or responsible official. Permit applicants are advised that Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days. If there are any questions, please call Cleve Holladay (meteorologist) at 850/921-8986.

Sincerely,

Cleve Holladay, Meteorologist
New Source Review Section

/ch

cc: Mr. Gregg Worley, EPA
Mr. John Bunyak, NPS
Mr. Isidore Goldman, P.E., DEP SE District
Mr. Ken Kosky, P.E., Golder Associates

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Telephone (352) 336-5600
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September 17, 2001

Mr. C. H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED
SEP 20 2001
Bureau of Air Monitoring
& Mobile Sources

0137568

Attention: Mr. Joseph Kahn, P.E.

RE: TROPICANA PRODUCTS, INC., FORT PIERCE PROCESSING FACILITY,
PROCESS STEAM BOILER
DEP FILE NO. 110004-004-AC, PSD-FL-303A
ADDITIONAL INFORMATION

Dear Joe:

This correspondence provides the information requested in the Department's August 17, 2001 letter. The information is supplied in the same order as requested.

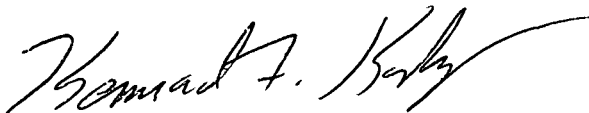
1. **Air Quality Impact Analysis:** An ambient air quality impacts analysis (AAQS) was performed for sulfur dioxide (SO₂) for the 24-hour averaging time. The process steam boiler emissions were added to the previously submitted model runs from permit number 1110004-003-AC, PSD-FL-303. The previous highest second-highest (HSH) concentration was determined to be 224.3 µg/m³, and 246.3 µg/m³ with the added background concentration. With the inclusion of the process steam boiler, the HSH impact was determined to be 227.1 µg/m³, and 249.1 µg/m³ with the added background concentration. The modeling output files will be set to Mr. Holladay.
2. **Manufacturer Guarantees:** The manufacturer of the boiler, ABCO Industries, Inc. have provided the attached letter with the guarantees for the NO_x and CO emission rates provided in the application.
3. **Flue Gas Recirculation (FGR), Operating Range, Turndown and Burner Design:** The FGR system is operated when firing oil and natural gas firing. It recirculates 5 percent of the flue gas to reduce flame temperature and meet the proposed NO_x emission rate of 0.1 lb NO_x/MMBtu. Steam atomization will also be used for oil firing. The operating range for the boiler is from 25 percent load to 100 percent load (see manufacturer's letter). The design turndown ratio is 10 to 1 for gas firing and 8 to 1 for oil firing. The burner system will be supplied by COEN Company, Inc. The COEN package is their QLN burner assembly including flame safety system, windbox mounted forced draft fan and fully metered combustion controls.

4. **Sulfuric Acid Mist Emission Factor for Natural Gas:** The emission factor for sulfuric acid mist for natural gas firing was listed in Table 1-1 is 3.6×10^{-4} lb/MMBtu. This emission factor is not correct and should have been 2.15×10^{-4} lb/MMBtu. This emission factor is based on 5 percent conversion of SO₂ to sulfuric acid mist. The calculation is as follows: 1 grain sulfur/100 scf x scf/1,020 Btu x lb/7,000 grains x 10⁶/MM x 0.05 x 98/32 = 2.15×10^{-4} lb/MMBtu. The mass emission rates are 0.0214 lb/hr and 0.094 tons/year. Table 1-1 (attached) has been corrected to reflect this change.
5. **Heat Input:** The maximum rated heat input for the boiler at 100 percent load is 99.8 MMBtu/hr when firing natural gas and 95.7 MMBtu/hr when firing oil, both based on high heating value. This maximum heat input is associated with the maximum rating of the boiler of 85,000-lb/hr steam flow. Performance data sheets are attached. Since the maximum heat input is not greater than 100 MMBtu/hr the NSPS in Subpart Db is not applicable.

Your expeditious review of the additional information would be appreciated. Please call if you have any questions.

Sincerely,

GOLDER ASSOCIATES INC.



Kennard F. Kosky, P.E.
Principal
Professional Engineer No. 14996



KFK/lsh

Enclosures

cc: Richard Coyle, Tropicana Products, Inc.
Douglas Foster, Tropicana Products, Inc.

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E. Suss ✓
C. Halladay ✓
J. Goldman, SE District ✓
D. Stanley, EPA ✓
G. Bunyah, NPS ✓

Table 1-1 Rev. 1. Future Maximum Emissions from the Process Steam Boiler, Tropicana Products, Inc.

Regulated Pollutant	Natural Gas Combustion						No. 2 Fuel Oil Combustion						Maximum Annual Emissions Due to Any Combination ^d (TPY)
	Emission Factor (lb/10 ⁶ scf)	Emission Factor (lb/MMBtu)	Ref.	Activity Factor ^a (MMBtu/hr)	Hourly Emissions (lb/hr)	Annual Emissions ^b (TPY)	Emission Factor (lb/1000 gal)	Emission Factor (lb/MMBtu)	Ref.	Activity Factor ^a (MMBtu/hr)	Hourly Emissions (lb/hr)	Annual Emissions ^c (TPY)	
Particulate Matter (PM)	1.9	1.86E-03	1	99.8	0.19	0.81	--	0.015	5	95.7	1.40	6.15	6.15
Particulate Matter (PM ₁₀)	1.9	1.86E-03	1	99.8	0.19	0.81	--	0.015	5	95.7	1.40	6.15	6.15
Sulfur dioxide (SO ₂)	1 grains S/100 scf		2	99.8	0.28	1.22	0.05% sulfur	0.0519	2	95.7	4.97	21.75	21.75
Nitrogen oxides (NO _x)	--	0.055	3	99.8	5.49	24.03	--	0.10	3	95.7	9.57	41.91	41.91
Carbon monoxide (CO)	--	0.18	3	99.8	18.4	80.4	--	0.18	3	95.7	17.4	76.3	80.4
VOC	5.5	0.01	1	99.8	0.54	2.36	--	0.001	5	95.7	0.14	0.61	2.36
Sulfuric acid mist (SAM)	--	2.15E-04	4	99.8	0.0215	0.0940	--	0.0026	6	95.7	0.25	1.08	1.08
Lead (Pb)	--	4.90E-07	1	99.8	4.89E-05	2.14E-04	--	9.00E-06	5	95.7	8.61E-04	3.77E-03	3.77E-03
Mercury (Hg)	2.6E-04	2.55E-07	1	99.8	2.54E-05	1.11E-04	--	3.00E-06	5	95.7	2.87E-04	1.26E-03	1.26E-03
Fluorides (Fl)	Neg	--	--	--	--	--	--	Neg	--	--	--	--	--

References:

- Factors for natural gas combustion from AP-42, Tables 1.4-1, 1.4-2 and 1.4-4 (7/98). Factors were converted to lb/MMBtu by dividing by 1.020 Btu/scf.
- Basis (grains S/100 scf-gas) = 1 and 0.05%S-diesel; typical maximum sulfur content for pipeline natural gas and distillate fuel oil.
- Proposed emission limits based on emission guarantees from vendor. CO limit is 200 ppm at 3% O₂ (ABCO Industries, Inc., 2001)
- Based on similar derivation of sulfuric acid mist from AP-42 for fuel oil. 5% of SO₂ becomes SO₃ then take into account the ratio of sulfuric acid mist and gaseous sulfate molecular weights (98/80).
- Factors for No. 2 fuel oil combustion, AP-42 Table 1.3-1, 1.3-3, and 1.3-10 (9/98). A heating value of 136,000 Btu/gal and a maximum sulfur content of 0.05% were used for the No. 2 fuel oil.
- The emission factor for SO₃ emissions from a No. 2 fuel fired boiler with low NO_x burners (5.7S lb/10³ gal where S is the sulfur content) was multiplied by the ratio of sulfuric acid mist and gaseous sulfate molecular weights (98/80).

Footnotes:

- ^a The proposed maximum permitted heat input rate is 99.8 MMBtu/hr for natural gas and 95.7 MMBtu/hr for fuel oil.
- ^b Based on maximum proposed operation of 8,760 hours on natural gas.
- ^c Based on maximum proposed operation of 8,760 hours on fuel oil.
- ^d Maximum emissions predicted for either natural gas combustion only, No. 2 fuel oil combustion only, or a combination of No. 2 fuel oil and natural gas combustion.

Sample Calculations:

Hourly Emissions = Emission Factor x Activity Factor

Annual Emissions = Hourly Emissions x hours of operation (hrs/yr) / 2,000 (lb/ton)

Annual Emissions due to firing both fuels = Annual Emissions due to fuel oil + [(Hourly emissions due to natural gas x (8,760 hrs/yr - 2,880 hrs/yr) / 2,000 (lb/ton)]

Neg = Negligible Concentration



To : Mr. Ken Kmac
Tropicana Products, Inc.

From : Vasu Devan
Date : 9/10/2001

Ph : 941 742 3246
Fax: 941 749 3953

Page 1 of 1

CC: Mr. E. Gorman / Golder Associates

Fax : 352 336 6603

Dear Ken:

Sub: Emission guarantees for the D-type package boiler supplied to Tropicana Products
(ABCO job# 201006).

Based on the unit being operated to the conditions specified in our proposal and with the specified fuels, we guarantee that the following emission parameters will be met.

1. $\text{NO}_x = 0.055 \text{ lb/mmBtu}$ on Natural gas firing.
 $\text{NO}_x = 0.1 \text{ lb/mmBtu}$ on #2 Oil firing
2. $\text{CO} = 0.18 \text{ lb/mmBtu}$ on Natural gas firing.
 $\text{CO} = 0.18 \text{ lb/mmBtu}$ on #2 Oil firing

NOTES:

1. Guarantees are from 25 to 100%MCR only.

If you need any additional information / clarification, please call us.

Best regards,

Vasu Devan

BOILER PREDICTED PERFORMANCE SUMMARY PROJECT TROPICAN

FUEL - OIL Remarks:

date : 05-24-01

Boiler load - %	100	75	50	25
boiler duty - MM Btu/h	84.29	63.22	42.14	21.07
amb temp - F	80	80	80	80
rel hum - %	60	60	60	60
excess air %	15	15	15	35
flue gas recir %	5	5	5	5
fuel input (hhv)-MM Btu/h	95.68	71.51	47.6	24.08
Ht rel rate-Btu/ft3h (HHV)	56618	42315	28164	14249
Ht rel rate-Btu/ft2h-(HHV)	98970	73968	49232	24908
steam flow - lb/h	85000	63750	42500	21250
process steam - lb/h	0	0	0	0
steam press - psig	175	175	175	175
steam temp - F	377	377	377	377
feed wat temp - F	240	240	240	240
water temp lvg eco - F	301	292	284	285
blow down %	2	2	2	2
boiler exit gas temp -F	518	472	429	400
eco exit gas temp - F	298	280	265	257
air flow -lb/h	82307	61514	40943	24317
flue gas to stack -lb/h	87142	65128	43348	25534
flue gas thro' boiler-lb/h	91500	68385	45516	26811
stack flue gas vol-acfm	27971	20423	13324	7759
Flue Gas Analysis, Losses, Efficiency - %				
dry gas loss	4.4	4.05	3.75	4.2
air moisture	.11	.1	.1	.11
fuel moisture	6.7	6.65	6.61	6.59
casing loss	.3	.4	.6	1.2
unacc/margin	.4	.4	.4	.4
efficiency - % lhv	94.12	94.45	94.6	93.49
efficiency - % hhv	88.09	88.4	88.54	87.5
furnace back pr-in wc	6.	3.35	1.49	.52
% vol co2	11.57	11.57	11.57	9.93
h2o	12.29	12.29	12.29	10.84
n2	73.63	73.63	73.63	74.2
o2	2.51	2.51	2.51	5.03
so2

FUEL analysis: OIL -% weight

carbon=87.
 hydrogen=13.
 sulfur=.
 oxygen=.
 deg API=32
 LHV -Btu/lb=18463
 HHV -Btu/lb=19727

HEATING SURFACE - ft2:

furnace (proj. area)- 966
 evaporator (screen + convection) - 4851
 superheater (total) - 0
 economizer - 8504
 Furnace length - ft =26. width =6.5 height =10. volume -ft3 =1690

Above performance is only predicted. For guarantees see elsewhere. At loads below 50 %, due to poorer gas/steam side flow distribution and variations in excess air, PCR rates, steam/gas temperatures may vary from those shown above. V.Ganapathy

MAY-24-2001 15:51 FROM:

TO: 941 749 3953

P.003/003

BOILER PREDICTED PERFORMANCE SUMMARY PROJECT TROPICAN

FUEL - GAS Remarks:

date : 05-24-01

Boiler load - %	100	75	50	25
boiler duty - MM Btu/h	84.29	63.22	42.14	21.07
amb temp - F	80	80	80	80
rel hum - %	60	60	60	60
excess air %	15	15	15	35
flue gas recir %	5	5	5	5
fuel input (hvh)-MM Btu/h	99.77	74.58	49.64	25.13
Ht rel rate-Btu/ft3h (HHV)	59037	44128	29374	14867
Ht rel rate-Btu/ft2h-(HHV)	103198	77138	51346	25988
steam flow - lb/h	85000	63750	42500	21250
process steam - lb/h	0	0	0	0
steam press - psig	175	175	175	175
steam temp - F	377	377	377	377
feed wat temp - F	240	240	240	240
water temp lvg eco - F	300	292	285	286
blow down %	2	2	2	2
boiler exit gas temp -F	506	463	425	399
eco exit gas temp - F	296	280	266	257
air flow -lb/h	83868	62689	41728	24793
flue gas to stack -lb/h	88066	65827	43817	25851
flue gas thro' boiler-lb/h	92470	69118	46008	27143
stack flue gas vol-acfm	29356	21466	14017	8131

Flue Gas Analysis, Losses, Efficiency - %

dry gas loss	4.05	3.74	3.48	3.93
air moisture	.11	.1	.09	.11
fuel moisture	10.66	10.59	10.53	10.49
casing loss	.3	.4	.6	1.2
unacc/margin	.4	.4	.4	.4
efficiency - % lhv	93.64	93.96	94.1	92.96
efficiency - % rhv	84.48	84.77	84.9	83.87
furnace back pr-in wc	6.44	3.59	1.59	.55
% vol co2	8.29	8.29	8.29	7.15
h2o	18.17	18.17	18.17	15.96
n2	71.07	71.07	71.07	71.94
o2	2.46	2.46	2.46	4.96
so2

FUEL analysis: GAS- % volume

methane= 97
ethane= 2
propane= 1
LHV -Btu/lb=21439
HHV -Btu/lb=23764

HEATING SURFACE - ft2:

furnace (proj. area)- 966
evaporator (screen + convection) - 4851
superheater (total) - 0
economizer - 8504
Furnace length - ft =26. width =6.5 height =10. volume -ft3 =1690

Above performance is only predicted. For guarantees see elsewhere. At loads below 50 %, due to poorer gas/steam side flow distribution and variations in excess air, PGR rates, steam/gas temperatures may vary from those shown above. V. Ganapathy

Memorandum

Florida Department of Environmental Protection

To: Al Linero
From: JK Joe Kahn
Date: August 20, 2001
Re: Tropicana Ft. Pierce
Application for Addition of Process Steam Boiler
1110004-004-AC, PSD-FL-303A

This project involves the addition of a process steam boiler of less than 100 mmBtu/hr capacity at an existing citrus juice processing plant, that will fire either natural gas or 0.05% sulfur distillate fuel oil, with no synthetic limitations on fuel consumption. The application states that this boiler is part of the previous PSD permitting project for expansion of the plant, so it is being treated as modification of that permit. The application was received on July 18, 2001 and a request for additional information was sent on August 17th. Letters requesting comment from EPA and NPS/FWS were sent on July 20th. No comments have been received to date.

As part of the previous permitting action, it appears that BACT review is required for NO_x, CO, PM/PM₁₀, SO₂, and VOC emissions. The applicant proposed BACT to be:

Pollutant	Limit	Comment
NO _x	0.055 lb/mmBtu	Gas firing
NO _x	0.10 lb/mmBtu	Oil firing
CO	200 ppm @3% O ₂ (0.18 lb/mmBtu)	Gas or oil firing
PM/PM ₁₀	VE limit of 10% opacity	Gas firing
PM/PM ₁₀	VE limit of 20% opacity	Oil firing
SO ₂	Work practice, fuel quality	Gas or oil firing
VOC	No proposed BACT	

The major issues noted in the request for additional information were the need for a complete ambient air impacts analysis for SO₂ for the 24 hour averaging time, and supporting information for the NO_x control, emission rates and heat input capacity of the boiler.

Status: Awaiting additional information.



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

July 20, 2001

Mr. Gregg Worley, Chief
Air, Radiation Technology Branch
Preconstruction/HAP Section
U.S. EPA, Region 4
61 Forsyth Street
Atlanta, Georgia 30303

RE: Tropicana Products, Inc.
Fort Pierce Facility *303A*
DEP File No. 1110004-004-AC, PSD-FL-*322*

Dear Mr. Worley:

Enclosed for your review and comment is an application for a PSD source submitted by Tropicana Products, Inc.. The proposed project is a new steam boiler at the company's existing facility in Ft. Pierce, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/922-6979. If you have any questions, please contact Joe Kahn, review engineer, at 850/921-9509.

Sincerely,

Patricia Adams
Joe Al Linero, P.E.
Administrator
New Source Review Section

AAL/pa
Enclosure
cc: Joe Kahn ✓

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JUL 23 2001
Bureau of Air Monitoring
& Mobile Sources

Best Available Copy



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

July 20, 2001

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS – Air Quality Division
Post Office Box 25287
Denver, Colorado 80225

RE: Tropicana Products, Inc.
Fort Pierce Facility ^{303A}
DEP File No. 1110004-004-AC, PSD-FL-322

RECEIVED
JUL 25 '01
Bureau of Air Management
Tallahassee, Florida

Dear Mr. Bunyak:

Enclosed for your review and comment is an application for a PSD source submitted by Tropicana Products, Inc.. The proposed project is a new steam boiler at the company's existing facility in Ft. Pierce, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/922-6979. If you have any questions, please contact Joe Kahn, review engineer, at 850/921-9509.

Sincerely,

Patty Adams
for Al Linero, P.E.
Administrator
New Source Review Section

AAL/pa
Enclosure
cc: Joe Kahn ✓

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Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603

July 16, 2001

Florida Department of Environmental Protection
Bureau of Air Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Attention: Mr. A. A. Linero, P.E., New Source Review Section

RE: TROPICANA PRODUCTS, INC. ~~303~~
DEP FILE NO. 1110004-003-AC (PSD-FL-~~303~~) 303A

Dear Al:

Attached please find four copies of a permit application for a new steam boiler to be located at Tropicana Products, Inc.'s Fort Pierce Facility. The permit application for this boiler is being submitted as a PSD permit application since the emissions from the new boiler would be contemporaneous with the potential associated with the new juice extractors. The boiler will utilize the latest NO_x combustion controls with natural gas as the primary fuel. When firing oil, the boiler will utilize 0.05-percent sulfur distillate oil. This boiler will be used primarily in lieu of two older boilers, which have much higher emissions using natural gas and residual oil. However, the older boilers will be used as backup and no netting has been assumed.

The impacts of the boiler have been determined to be less than the PSD significant impact levels for both natural gas and distillate oil.

An expeditious review would be appreciated. Please call if you have any questions.

Sincerely,

GOLDER ASSOCIATES INC.



Kennard F. Kosky, P.E.
Principal

KFK/jkw

cc: Joesph Kahn P.E., FDEP
Richard Coyle, Tropicana Products, Inc.
Douglas Foster, Tropicana Products, Inc.
Scott Davis, Tropicana Products, Inc.

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J. Baldman, SED
Gregg Worley, EPA
Optim Bevanah, NPS



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JUL 18 2001

BUREAU OF AIR REGULATION



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

July 20, 2001

Mr. Gregg Worley, Chief
Air, Radiation Technology Branch
Preconstruction/HAP Section
U.S. EPA, Region 4
61 Forsyth Street
Atlanta, Georgia 30303

RE: Tropicana Products, Inc.
Fort Pierce Facility
DEP File No. 1110004-004-AC, PSD-FL-322

Dear Mr. Worley:

Enclosed for your review and comment is an application for a PSD source submitted by Tropicana Products, Inc.. The proposed project is a new steam boiler at the company's existing facility in Ft. Pierce, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/922-6979. If you have any questions, please contact Joe Kahn, review engineer, at 850/921-9509.

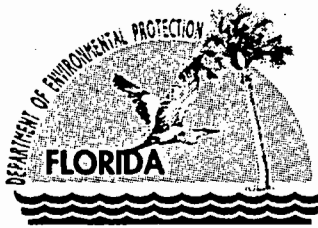
Sincerely,

Al Linero, P.E.
Administrator
New Source Review Section

AAL/pa
Enclosure
cc: Joe Kahn

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Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

July 20, 2001

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS – Air Quality Division
Post Office Box 25287
Denver, Colorado 80225

RE: Tropicana Products, Inc.
Fort Pierce Facility
DEP File No. 1110004-004-AC, PSD-FL-322

Dear Mr. Bunyak:

Enclosed for your review and comment is an application for a PSD source submitted by Tropicana Products, Inc.. The proposed project is a new steam boiler at the company's existing facility in Ft. Pierce, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/922-6979. If you have any questions, please contact Joe Kahn, review engineer, at 850/921-9509.

Sincerely,

Patty Adams
for Al Linero, P.E.
Administrator
New Source Review Section

AAL/pa
Enclosure
cc: Joe Kahn

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JUL 18 2001

BUREAU OF AIR REGULATION

**APPLICATION FOR AIR PERMIT
INSTALLATION OF A PROCESS STEAM
BOILER FOR TROPICANA PRODUCTS, INC.
FORT PIERCE CITRUS PROCESSING PLANT**

FORT PIERCE, FLORIDA

Prepared For:

**Tropicana Products, Inc.
6500 Glades Cutoff Road
Fort Pierce, Florida 34981**

Prepared By:

**Golder Associates Inc.
6241 NW 23rd Street, Suite 500
Gainesville, Florida 32653-1500**

**June 2001
0137568**

**DISTRIBUTION:
4 Copies - FDEP
2 Copies - Tropicana Products, Inc.
1 Copy - Golder Associates Inc.**

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PART I

**APPLICATION FOR AIR PERMIT
LONG FORM**



Department of Environmental Protection

Division of Air Resources Management

APPLICATION FOR AIR PERMIT - TITLE V SOURCE

See Instructions for Form No. 62-210.900(1)

I. APPLICATION INFORMATION

Identification of Facility

1. Facility Owner/Company Name: Tropicana Products, Inc.	
2. Site Name: Ft. Pierce Citrus Processing Plant	
3. Facility Identification Number: 1110004 [] Unknown	
4. Facility Location: Street Address or Other Locator: 6500 Glades Cutoff Road City: Ft. Pierce County: St. Lucie Zip Code: 34981	
5. Relocatable Facility? [] Yes [X] No	6. Existing Permitted Facility? [X] Yes [] No

Application Contact

1. Name and Title of Application Contact: Douglas E. Foster, Manager Environmental Affairs	
2. Application Contact Mailing Address: Organization/Firm: Tropicana Products, Inc. Street Address: 1001 13th Avenue, East City: Bradenton State: FL Zip Code: 34208	
3. Application Contact Telephone Numbers: Telephone: (941) 742 - 2748 Fax: (941) 742 - 3768	

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	<i>7-18-01</i>
2. Permit Number:	<i>1110004-004-AC</i>
3. PSD Number (if applicable):	<i>PSD-FL-322</i>
4. Siting Number (if applicable):	

Purpose of Application

Air Operation Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

- Initial Title V air operation permit for an existing facility which is classified as a Title V source.
- Initial Title V air operation permit for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.
Current construction permit number: _____
- Title V air operation permit revision to address one or more newly constructed or modified emissions units addressed in this application.
Current construction permit number: _____
Operation permit number to be revised: _____
- Title V air operation permit revision or administrative correction to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. (Also check Air Construction Permit Application below.)
Operation permit number to be revised/corrected: _____
- Title V air operation permit revision for reasons other than construction or modification of an emissions unit. Give reason for the revision; e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.
Operation permit number to be revised: _____
Reason for revision: _____

Air Construction Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

- Air construction permit to construct or modify one or more emissions units.
- Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.
- Air construction permit for one or more existing, but unpermitted, emissions units.

DESIGNATION OF DOCUMENT SIGNATORY

I, Brock H. Leach, hereby certify that I am the President and Chief Executive Officer of Tropicana Products, Inc., ("Tropicana") and as such I am authorized to designate employees to prepare and sign documents and to certify on behalf of said company the accuracy and completeness of information in such documents.

Pursuant to the power vested in me, I hereby designate the person listed below to prepare and sign documents for submission to federal, state and local government agencies having jurisdiction over environmental, safety and utilities matters, including but not limited to, the United States Environmental Protection Agency, the United States Department of Labor, Occupational Safety and Health, the Florida Department of Environmental Protection, the South Florida Water Management District, and the County of St. Lucie, State of Florida, pertinent to the operation of the Tropicana plant located in Ft. Pierce, Florida.

This designation is effective until revoked in writing.

Designated Signatory

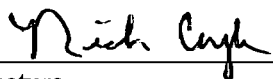
Richard A. Coyle
Director, Ft. Pierce Operations
6500 Glades Cut-Off Road
Ft. Pierce, FL 34981

MLL 

Brock H. Leach
President and CEO

Dated: 9/27/00

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official: Richard Coyle, Director of Operators
2. Owner/Authorized Representative or Responsible Official Mailing Address: Organization/Firm: Tropicana Products, Inc. Street Address: 6500 Glades Cutoff Road City: Ft. Pierce State: FL Zip Code: 34981
3. Owner/Authorized Representative or Responsible Official Telephone Numbers: Telephone: (561) 465 - 2030 Fax: (561) 465 - 2855
4. Owner/Authorized Representative or Responsible Official Statement: <i>I, the undersigned, am the owner or authorized representative*(check here [X], if so) or the responsible official (check here [], if so) of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.</i> <p style="text-align: center;"> _____ Signature</p> <p style="text-align: right;"><u>7-11-01</u> _____ Date</p>

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

1. Professional Engineer Name: Kennard F. Kosky Registration Number: 14996
2. Professional Engineer Mailing Address: Organization/Firm: Golder Associates Inc. Street Address: 6241 NW 23rd Street, Suite 500 City: Gainesville State: FL Zip Code: 32653-1500
3. Professional Engineer Telephone Numbers: Telephone: (352) 336 - 5600 Fax: (352) 336 - 6603

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [], if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

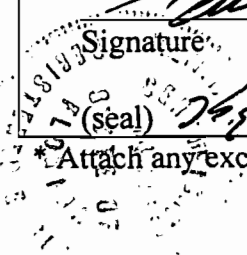
If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

[Handwritten Signature]

Signature

7/12/2001

Date



Attach any exception to certification statement.

Scope of Application

Emissions Unit ID	Description of Emissions Unit	Permit Type	Processing Fee
	Process Steam Boiler	AC1D	

Application Processing Fee

Check one: Attached - Amount: \$: 7,500 Not Applicable

Construction/Modification Information

1. Description of Proposed Project or Alterations:

This application is for a PSD permit for the addition of one 85,000 lb/hr (nominal steam rating) steam boiler to the existing facility. The unit is capable of firing either natural gas or No. 2 fuel oil. The unit includes a low NO_x burner and uses 5% flue gas recirculation (FGR).

2. Projected or Actual Date of Commencement of Construction: 1 September 2001

3. Projected Date of Completion of Construction: 1 March 2002

Application Comment

See Attachment Part II.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates: Zone: 17 East (km): 561.0 North (km): 3028.1			
2. Facility Latitude/Longitude: Latitude (DD/MM/SS): 27 / 22 / 35 Longitude (DD/MM/SS): 80 / 23 / 36			
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 20	6. Facility SIC(s): 2033
7. Facility Comment (limit to 500 characters): Citrus Processing Plant - consists of two peel dryers with associated evaporators, two pellet mills and coolers, two process steam boilers, a package boiler and associated insignificant emission units. An air construction permit (1110004-003-AC) and Prevention of Significant Deterioration (PSD) approval (PSD-FL-303) were obtained on March 26, 2001 for the addition of 16 juice extractors.			

Facility Contact

1. Name and Title of Facility Contact: Scott Davis, Environmental Operations Manager			
2. Facility Contact Mailing Address: Organization/Firm: Tropicana Products, Inc. Street Address: 6500 Glades Cutoff Road City: Ft. Pierce State: FL Zip Code: 34981			
3. Facility Contact Telephone Numbers: Telephone: (561) 465 - 2030 Fax: (561) 465 - 2855			

Facility Regulatory Classifications

Check all that apply:

1. <input type="checkbox"/> Small Business Stationary Source?	<input type="checkbox"/> Unknown
2. <input checked="" type="checkbox"/> Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)?	
3. <input type="checkbox"/> Synthetic Minor Source of Pollutants Other than HAPs?	
4. <input checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)?	
5. <input type="checkbox"/> Synthetic Minor Source of HAPs?	
6. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS?	
7. <input type="checkbox"/> One or More Emission Units Subject to NESHAP?	
8. <input type="checkbox"/> Title V Source by EPA Designation?	
9. Facility Regulatory Classifications Comment (limit to 200 characters):	
<p>NSPS Subpart Dc applies to the process steam boiler.</p>	

List of Applicable Regulations

<p>Facility emissions covered under existing Title V permit, no additional facility applicable requirements as a result of the proposed change.</p>	
<p>See Attachment Part II.</p>	

B. FACILITY POLLUTANTS

List of Pollutants Emitted

1. Pollutant Emitted	2. Pollutant Classif.	3. Requested Emissions Cap		4. Basis for Emissions Cap	5. Pollutant Comment
		lb/hour	tons/year		

C. FACILITY SUPPLEMENTAL INFORMATION

Supplemental Requirements

1. Area Map Showing Facility Location: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
2. Facility Plot Plan: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
3. Process Flow Diagram(s): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
4. Precautions to Prevent Emissions of Unconfined Particulate Matter: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
5. Fugitive Emissions Identification: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
6. Supplemental Information for Construction Permit Application: <input checked="" type="checkbox"/> Attached, Document ID: Part II _____ <input type="checkbox"/> Not Applicable
7. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

8. List of Proposed Insignificant Activities: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. List of Equipment/Activities Regulated under Title VI: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Equipment/Activities On site but Not Required to be Individually Listed <input checked="" type="checkbox"/> Not Applicable
10. Alternative Methods of Operation: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
11. Alternative Modes of Operation (Emissions Trading): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
12. Identification of Additional Applicable Requirements: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
13. Risk Management Plan Verification: <input type="checkbox"/> Plan previously submitted to Chemical Emergency Preparedness and Prevention Office (CEPPO). Verification of submittal attached (Document ID: _____) or previously submitted to DEP (Date and DEP Office: _____) <input type="checkbox"/> Plan to be submitted to CEPPO (Date required: _____) <input checked="" type="checkbox"/> Not Applicable
14. Compliance Report and Plan: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
15. Compliance Certification (Hard-copy Required): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)**

Emissions Unit Description and Status

<p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input checked="" type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).</p> <p><input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.</p> <p><input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.</p>			
<p>2. Regulated or Unregulated Emissions Unit? (Check one)</p> <p><input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.</p> <p><input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.</p>			
<p>3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):</p> <p>85,000 lb/hr (Steam) Boiler</p>			
<p>4. Emissions Unit Identification Number: <input type="checkbox"/> No ID</p> <p>ID: <input checked="" type="checkbox"/> ID Unknown</p>			
<p>5. Emissions Unit Status Code:</p> <p>C</p>	<p>6. Initial Startup Date:</p> <p>Aug-01</p>	<p>7. Emissions Unit Major Group SIC Code:</p> <p>49</p>	<p>8. Acid Rain Unit?</p> <p><input type="checkbox"/></p>
<p>9. Emissions Unit Comment: (Limit to 500 Characters)</p> <p>The boiler will fire natural gas and no. 2 distillate fuel oil (backup) and is subject to 40 CFR 60 Subpart Dc.</p>			

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

Low NOx Burner – Gas/Oil
 5% Flue Gas Recirculation (FGR) – Gas/Oil

2. Control Device or Method Code(s): 024

Emissions Unit Details

1. Package Unit:		
Manufacturer:	ABCO Industries, Inc.	Model Number: D-Type
2. Generator Nameplate Rating:		MW
3. Incinerator Information:		
	Dwell Temperature:	°F
	Dwell Time:	seconds
	Incinerator Afterburner Temperature:	°F

**B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)**

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	99.8 mmBtu/hr	
2. Maximum Incineration Rate:	lb/hr	tons/day
3. Maximum Process or Throughput Rate:		
4. Maximum Production Rate:		
5. Requested Maximum Operating Schedule:	24 hours/day	7 days/week
	52 weeks/year	8,760 hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters):	<p>Maximum heat input will be up to 99.8 MMBtu/hr for natural gas and 95.7 MMBtu/hr for distillate fuel oil. Maximum operation is requested for both natural gas and fuel oil operation.</p>	

**C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)**

List of Applicable Regulations

See Attachment TF-EU1-C	

**ATTACHMENT TF-EU1-C
APPLICABLE REQUIREMENTS LISTING**

EMISSION UNIT: Process Steam Boiler

FDEP Rules:

Stationary Sources-General:

- 62-210.650 - Circumvention
- 62-210.700(1) - Excess Emissions; malfunction; 2-hrs/24-hrs
- 62-210.700(2) - Excess Emissions; FFFSG; startup/shutdown
- 62-210.700(3) - Excess Emissions; FFFSG; soot blowing/load change
- 62-210.700(4) - Excess Emissions; Excludes poor maintenance
- 62-210.700(6) - Excess Emissions; reporting

Stationary Sources-Emission Monitoring:

- 62-297.310(1) - Test Runs-Mass Emission
- 62-297.310(2)(b) - Operating Rate
- 62-297.310(3) - Calculation of Emission
- 62-297.310(4)(a)1. - Applicable Test Procedures; Sampling time
- 62-297.310(4)(b) - Sample Volume
- 62-297.310(4)(c) - Required Flow Rate Range-PM
- 62-297.310(4)(d) - Calibration
- 62-297.310(4)(e) - EPA Method 5
- 62-297.310(5) - Determination of Process Variables
- 62-297.310(6)(a) - Permanent Test Facilities - general
- 62-297.310(6)(c) - Sampling Ports
- 62-297.310(6)(d) - Work Platforms
- 62-297.310(6)(e) - Access
- 62-297.310(6)(f) - Electrical Power
- 62-297.310(6)(g) - Equipment Support
- 62-297.310(7)(a)1. - Renewal
- 62-297.310(7)(a)3. - Permit Renewal Test Required
- 62-297.310(7)(a)4.b. - Annual Test
- 62-297.310(7)(a)5. - PM exemption if < 400 hrs/yr
- 62-297.310(7)(a)9. - FDEP Notification - 15 days
- 62-297.310(8) - Test Reports

Stationary Sources - BACT Steam Generators < 250 mmBtu/hr

- 62-296.406(2) - Particulate Matter
- 62-296.406(3) - Sulfur Dioxide

Federal Rules:

NSPS General:

- 40 CFR 60.7(b) - Notification and Recordkeeping (startup/shutdown/malfunction)
- 40 CFR 60.7(f) - Notification and Recordkeeping (maintain records)

- 40 CFR 60.8(c) - Performance Tests (representative conditions)
- 40 CFR 60.8(e) - Performance Tests (test facilities required)
- 40 CFR 60.8(f) - Performance Tests (test runs)
- 40 CFR 60.11(a) - Compliance (ref. S.60.8 Subpart; other than opacity)
- 40 CFR 60.11(b) - Compliance (opacity determined EPA Method 9)
- 40 CFR 60.11(c) - Compliance (opacity; excludes startup/shutdown/malfunction)
- 40 CFR 60.11(d) - Compliance (maintain air pollution control equipment)
- 40 CFR 60.11(f) - Compliance (opacity; ref. S.60.8)
- 40 CFR 60.12 - Circumvention

NSPS Subpart Dc:

- 40 CFR 60.42c(d) - SO₂ Fuel Oil Combustion Limits
- 40 CFR 60.42c(h) - Fuel Oil Sulfur Content Certification
- 40 CFR 60.43c(c) - Opacity Limits
- 40 CFR 60.43c(d) - Opacity Limits during startup, shutdown, or malfunction
- 40 CFR 60.44c(g) - Demonstration of compliance with fuel oil sulfur limits
- 40 CFR 60.45c(a)(7) - Method 9 testing
- 40 CFR 60.46c(d)(2) - Fuel sampling
- 40 CFR 60.48c(a) - Notification requirements
- 40 CFR 60.48c(d) - Report submittal
- 40 CFR 60.48c(e)(11) - Fuel oil supplier certification requirements
- 40 CFR 60.48c(f)(1) - Fuel oil supplier certification information
- 40 CFR 60.48c(g) - Fuel combustion records

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram?		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): Exhausts through a single stack.			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: V	6. Stack Height: 60 feet	7. Exit Diameter: 2.75 feet	
8. Exit Temperature: 298 °F	9. Actual Volumetric Flow Rate: 29,325 acfm	10. Water Vapor: 6.7 %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates: Zone: East (km): North (km):			
14. Emission Point Comment (limit to 200 characters): Stack parameters shown for natural gas firing. See Attachment II			

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Natural Gas < 100 MMBtu/hr		
2. Source Classification Code (SCC): 1-02-006-02		3. SCC Units: Million cubic feet burned
4. Maximum Hourly Rate: 0.098	5. Maximum Annual Rate: 857	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 1020
10. Segment Comment (limit to 200 characters): Maximum hourly based on 1,020 Btu/cf (HHV) for the process steam boiler. Maximum annual based on 8,760 hr/yr.		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Distillate (No. 2) Fuel Oil		
2. Source Classification Code (SCC): 1-02-005-02		3. SCC Units: 1,000 Gallons Burned
4. Maximum Hourly Rate: 0.730	5. Maximum Annual Rate: 6,392	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.05	8. Maximum % Ash:	9. Million Btu per SCC Unit: 131.1
10. Segment Comment (limit to 200 characters): Million Btu per SCC unit = 131.1; based on 6.83 lb/gal; HHV 19,200 Btu/lb, ISO conditions, Maximum annual rate based on a maximum of 8,760 hours of oil firing per year.		

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control:
3. Potential Emissions: 1.4 lb/hour 6.2 tons/year	4. Synthetically Limited? []
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year	
6. Emission Factor: Reference: Vendor; Golder 2001	7. Emissions Method Code: 2
8. Calculation of Emissions (limit to 600 characters): See Attachment Part II.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Lb/hr and TPY based on oil firing 8,760 hr/yr.	

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: VE < 20% Opacity	4. Equivalent Allowable Emissions: 1.4 lb/hour 6.2 tons/year
5. Method of Compliance (limit to 60 characters): EPA Method 9	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Oil firing; 8,760 hr/yr. See Attachment Part II.	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 1.4 lb/hour		4. Synthetically Limited? [] 6.2 tons/year	
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year			
6. Emission Factor: Reference: Vendor; Golder 2001		7. Emissions Method Code: 2	
8. Calculation of Emissions (limit to 600 characters): See Attachment Part II.			
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Lb/hr and TPY based on oil firing 8,760 hr/yr.			

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER		2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: VE < 10% Opacity		4. Equivalent Allowable Emissions: 0.2 lb/hour 0.8 tons/year	
5. Method of Compliance (limit to 60 characters): EPA Method 9			
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Gas firing; 8,760 hr/yr. See Attachment Part II.			

**G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)**

Potential/Fugitive Emissions

1. Pollutant Emitted: SO₂		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 5.0 lb/hour 21.8 tons/year		4. Synthetically Limited? <input type="checkbox"/>	
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year			
6. Emission Factor: Reference: Vendor; Golder 2001		7. Emissions Method Code: 2	
8. Calculation of Emissions (limit to 600 characters): See Attachment Part II.			
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Lb/hr and TPY based on oil firing 8,760 hr/yr.			

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER		2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 0.05% Sulfur Oil maximum		4. Equivalent Allowable Emissions: 5.0 lb/hour 21.8 tons/year	
5. Method of Compliance (limit to 60 characters): Fuel Sampling			
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Oil firing; 8,760 hr/yr. Maximum sulfur content is 0.05% sulfur. See Attachment Part II.			

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: SO₂	2. Total Percent Efficiency of Control:
3. Potential Emissions: 5.0 lb/hour	4. Synthetically Limited? [] 21.8 tons/year
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year	
6. Emission Factor: Reference: Vendor; Golder 2001	7. Emissions Method Code: 2
8. Calculation of Emissions (limit to 600 characters): See Attachment Part II.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Lb/hr and TPY based on oil firing 8,760 hr/yr.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: See Comment	4. Equivalent Allowable Emissions: 0.3 lb/hour 1.2 tons/year
5. Method of Compliance (limit to 60 characters): Pipeline Natural Gas	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Pipeline natural gas, 1 g/100 cf, 8,760 hr/yr, See Attachment Part II.	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: NO_x	2. Total Percent Efficiency of Control:	
3. Potential Emissions: 9.6 lb/hour	41.9 tons/year	4. Synthetically Limited? []
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year		
6. Emission Factor: Reference: Vendor; Golder 2001		7. Emissions Method Code: 2
8. Calculation of Emissions (limit to 600 characters): See Attachment Part II.		
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Lb/hr and TPY based on oil firing 8,760 hr/yr.		

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 0.10 lb/MMBtu	9.6 lb/hour	41.9 tons/year
5. Method of Compliance (limit to 60 characters): Manufacturer Certification		
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Annual allowable emissions based on Oil firing; 8,760 hr/yr. See Attachment Part II.		

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: NO_x	2. Total Percent Efficiency of Control:
3. Potential Emissions: 9.6 lb/hour 41.9 tons/year	4. Synthetically Limited? []
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year	
6. Emission Factor: Reference: Vendor; Golder 2001	7. Emissions Method Code: 2
8. Calculation of Emissions (limit to 600 characters): See Attachment Part II.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Lb/hr and TPY based on oil firing 8,760 hr/yr.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.055 lb/MMBtu	4. Equivalent Allowable Emissions: 5.5 lb/hour 24.0 tons/year
5. Method of Compliance (limit to 60 characters): Manufacturer Certification	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Annual allowable emissions based on natural gas firing; 8,760 hr/yr. See Attachment Part II.	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:
3. Potential Emissions: 18.4 lb/hour 80.4 tons/year	4. Synthetically Limited? []
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year	
6. Emission Factor: Reference: Vendor; Golder 2001	7. Emissions Method Code: 2
8. Calculation of Emissions (limit to 600 characters): 200 ppm at 3% O₂. See Attachment Part II.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Lb/hr and TPY based on maximum natural gas firing of 8,760 hr/yr.	

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 200 ppm at 3% O₂	4. Equivalent Allowable Emissions: 17.4 lb/hour 76.3 tons/year
5. Method of Compliance (limit to 60 characters): Manufacturer Certification	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Oil firing; 8,760 hr/yr. See Attachment Part II.	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:	
3. Potential Emissions: 18.4 lb/hour	80.4 tons/year	4. Synthetically Limited? <input type="checkbox"/>
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year		
6. Emission Factor: Reference: Vendor; Golder 2001		7. Emissions Method Code: 2
8. Calculation of Emissions (limit to 600 characters): 200 ppm at 3% O₂. See Attachment Part II.		
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Lb/hr and TPY based on maximum natural gas firing of 8,760 hr/yr.		

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: 200 ppm at 3% O₂	18.4 lb/hour	80.4 tons/year
4. Equivalent Allowable Emissions:		
5. Method of Compliance (limit to 60 characters): Manufacturer Certification		
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Natural gas firing; 8,760 hr/yr. See Attachment Part II.		

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM₁₀	2. Total Percent Efficiency of Control:
3. Potential Emissions: 1.4 lb/hour 6.2 tons/year	4. Synthetically Limited? []
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year	
6. Emission Factor: Reference: Vendor; Golder 2001	7. Emissions Method Code: 2
8. Calculation of Emissions (limit to 600 characters): See Attachment Part II.	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Lb/hr and TPY based on oil firing 8,760 hr/yr.	

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: VE < 20% Opacity	4. Equivalent Allowable Emissions: 1.4 lb/hour 6.2 tons/year
5. Method of Compliance (limit to 60 characters): EPA Method 9	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Oil firing; 8,760 hr/yr. See Attachment Part II.	

**G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)**

Potential/Fugitive Emissions

1. Pollutant Emitted: PM₁₀		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 1.4 lb/hour 6.2 tons/year		4. Synthetically Limited? <input type="checkbox"/>	
5. Range of Estimated Fugitive Emissions: [] 1 [] 2 [] 3 _____ to _____ tons/year			
6. Emission Factor: Reference: Vendor; Golder 2001		7. Emissions Method Code: 2	
8. Calculation of Emissions (limit to 600 characters): See Attachment Part II.			
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Lb/hr and TPY based on oil firing 8,760 hr/yr.			

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER		2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units: VE < 10% Opacity		4. Equivalent Allowable Emissions: 0.2 lb/hour 0.8 tons/year	
5. Method of Compliance (limit to 60 characters): EPA Method 9			
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Natural gas firing; 8,760 hr/yr. See Attachment Part II.			

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE20	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Requested Allowable Opacity: Normal Conditions: 20 % Exceptional Conditions: 100 % Maximum Period of Excess Opacity Allowed: 60 min/hour	
4. Method of Compliance: Annual VE Test EPA Method 9	
5. Visible Emissions Comment (limit to 200 characters): VE of 20% proposed for distillate oil firing. VE of 10% proposed for natural gas firing. Excess opacity based on Rule 62-210-700.	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)**Supplemental Requirements**

1. Process Flow Diagram [] Attached, Document ID: _____ [X] Not Applicable [] Waiver Requested
2. Fuel Analysis or Specification [] Attached, Document ID: _____ [X] Not Applicable [] Waiver Requested
3. Detailed Description of Control Equipment [] Attached, Document ID: _____ [X] Not Applicable [] Waiver Requested
4. Description of Stack Sampling Facilities [] Attached, Document ID: _____ [X] Not Applicable [] Waiver Requested
5. Compliance Test Report [] Attached, Document ID: _____ [] Previously submitted, Date: _____ [X] Not Applicable
6. Procedures for Startup and Shutdown [] Attached, Document ID: _____ [X] Not Applicable [] Waiver Requested
7. Operation and Maintenance Plan [] Attached, Document ID: _____ [X] Not Applicable [] Waiver Requested
8. Supplemental Information for Construction Permit Application [X] Attached, Document ID: Part II [] Not Applicable
9. Other Information Required by Rule or Statute [] Attached, Document ID: _____ [X] Not Applicable
10. Supplemental Requirements Comment: See Part II

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
12. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
13. Identification of Additional Applicable Requirements <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
14. Compliance Assurance Monitoring Plan <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
15. Acid Rain Part Application (Hard-copy Required) <input type="checkbox"/> Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID: _____ <input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID: _____ <input type="checkbox"/> Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

PART II
SUPPORTING INFORMATION

1.0 INTRODUCTION

Tropicana Products, Inc. (Tropicana) is proposing to install and operate one steam boiler at the existing Fort Pierce Citrus Processing Plant. The steam boiler will be fired primarily with pipeline quality natural gas, and distillate fuel oil will be used as a backup. Emissions will be controlled by a low NO_x burner and 5% flue gas recirculation.

1.1 EXISTING FACILITY AND PROPOSED PROCESS STEAM BOILER

The Tropicana facility is located at 6500 Glades Cutoff Road, Fort Pierce, Florida. The facility is a citrus processing complex that includes juice extracting, processing, packaging, warehousing, and distribution. Fruit is graded and carried to an extractor room where the juice is removed and pumped to either carton filling, glass filling, plastic filling, block freezing, aseptic storage or to evaporators for concentrate production.

The plant contains two process steam boilers, two citrus peel dryers with waste heat evaporators, two pellet mills and coolers, one package boiler, fifty juice extractors (16 additional extractors planned for 2002), and various unregulated and insignificant emission units (e.g. storage tanks).

The steam boiler will have a nominal steam rating of 85,000 pounds (lb) of steam per hour. The maximum heat input for the boiler will be 99.8 million British thermal units per hour (MMBtu/hr-HHV) when firing natural gas. The primary fuel will be pipeline-quality natural gas with No. 2 fuel oil used as a backup fuel. The fuel oil will contain a maximum of 0.05 percent sulfur. Design drawings of the proposed steam boiler are available in Appendix A.

1.2 PROCESS STEAM BOILER EMISSION ESTIMATION

The estimated hourly and annual criteria pollutant emissions from the steam boiler are provided in Table 1-1. The boiler emissions are based on a heat input rate of 99.8 MMBtu/hr with a maximum fuel usage of 856,848,235 standard cubic feet per year of pipeline quality

natural gas and 95.7 MMBtu/hr with a maximum fuel usage of 6,391,508 gallons per year of No. 2 fuel oil with 0.05-percent sulfur.

The steam boiler emissions are based on 8,760 hours per year of operation when firing natural gas. Up to 8,760 hours per year of distillate fuel oil firing is being proposed as the back-up fuel requirements.

The operation of the boiler is proposed to be limited by the equivalent heat input of operating 8,760 hr/yr on natural gas of 874,250 MMBtu/yr (99.8 MMBtu/hr times 8,760 hr/yr). Distillate oil usage is proposed as a backup fuel up to an equivalent of 8,760 hr/yr or 838,350 MMBtu/yr (95.7 MMBtu/hr times 8,760 hr/yr).

The stack will be located above the boiler room building. Parameters for the steam boiler stack are presented in Table 1-2.

Table 1-1. Future Maximum Emissions from the Process Steam Boiler, Tropicana Products, Inc.

Regulated Pollutant	Natural Gas Combustion						No. 2 Fuel Oil Combustion						Maximum Annual Emissions Due to Any Combination ^d (TPY)
	Emission Factor (lb/10 ⁶ scf)	Emission Factor (lb/MMBtu)	Ref.	Activity Factor ^a (MMBtu/hr)	Hourly Emissions (lb/hr)	Annual Emissions ^b (TPY)	Emission Factor (lb/1000 gal)	Emission Factor (lb/MMBtu)	Ref.	Activity Factor ^a (MMBtu/hr)	Hourly Emissions (lb/hr)	Annual Emissions ^c (TPY)	
Particulate Matter (PM)	1.9	1.86E-03	1	99.8	0.19	0.81	--	0.015	5	95.7	1.40	6.15	6.15
Particulate Matter (PM ₁₀)	1.9	1.86E-03	1	99.8	0.19	0.81	--	0.015	5	95.7	1.40	6.15	6.15
Sulfur dioxide (SO ₂)	1	grains S/100 scf	2	99.8	0.28	1.22	0.05% sulfur	0.0519	2	95.7	4.97	21.75	21.75
Nitrogen oxides (NO _x)	--	0.055	3	99.8	5.49	24.03	--	0.10	3	95.7	9.57	41.91	41.91
Carbon monoxide (CO)	--	0.18	3	99.8	18.4	80.4	--	0.18	3	95.7	17.4	76.3	80.4
VOC	5.5	0.01	1	99.8	0.54	2.36	--	0.001	5	95.7	0.14	0.61	2.36
Sulfuric acid mist (SAM)	--	3.60E-05	4	99.8	3.59E-03	0.02	--	0.0026	6	95.7	0.25	1.08	1.08
Lead (Pb)	--	4.90E-07	1	99.8	4.89E-05	2.14E-04	--	9.00E-06	5	95.7	8.61E-04	3.77E-03	3.77E-03
Mercury (Hg)	2.6E-04	2.55E-07	1	99.8	2.54E-05	1.11E-04	--	3.00E-06	5	95.7	2.87E-04	1.26E-03	1.26E-03
Fluorides (Fl)	Neg	--	--	--	--	--	--	Neg	--	--	--	--	--

References:

- Factors for natural gas combustion from AP-42, Tables 1.4-1, 1.4-2 and 1.4-4 (7/98). Factors were converted to lb/MMBtu by dividing by 1,020 Btu/scf.
- Basis (grains S/100 scf-gas) = 1 and 0.05% S-diesel; typical maximum sulfur content for pipeline natural gas and distillate fuel oil.
- Proposed emission limits based on emission guarantees from vendor. CO limit is 200 ppm at 3% O₂ (ABCO Industries, Inc., 2001)
- Based on similar derivation of sulfuric acid mist from AP-42 for fuel oil. 5% of SO₂ becomes SO₃, then take into account the ratio of sulfuric acid mist and gaseous sulfate molecular weights (98/80).
- Factors for No. 2 fuel oil combustion, AP-42 Table 1.3-1, 1.3-3, and 1.3-10 (9/98). A heating value of 136,000 Btu/gal and a maximum sulfur content of 0.05% were used for the No. 2 fuel oil.
- The emission factor for SO₃ emissions from a No. 2 fuel fired boiler with low NO_x burners (5.7S lb/10³ gal where S is the sulfur content) was multiplied by the ratio of sulfuric acid mist and gaseous sulfate molecular weights (98/80).

Footnotes:

- ^a The proposed maximum permitted heat input rate is 99.8 MMBtu/hr for natural gas and 95.7 MMBtu/hr for fuel oil.
- ^b Based on maximum proposed operation of 8,760 hours on natural gas.
- ^c Based on maximum proposed operation of 8,760 hours on fuel oil.
- ^d Maximum emissions predicted for either natural gas combustion only, No. 2 fuel oil combustion only, or a combination of No. 2 fuel oil and natural gas combustion.

Sample Calculations:

Hourly Emissions = Emission Factor x Activity Factor

Annual Emissions = Hourly Emissions x hours of operation (hrs/yr) / 2,000 (lb/ton)

Annual Emissions due to firing both fuels = Annual Emissions due to fuel oil + [(Hourly emissions due to natural gas x (8,760 hrs/yr - 2,880 hrs/yr) / 2,000 (lb/ton)]

Neg = Negligible Concentration

Table 1-2. Summary of Stack Parameters for the Process Steam Boiler, Tropicana Products, Inc.

	Steam Production Rate (lb/hr)	Stack Height (ft)	Stack Diameter (ft)	Gas Firing Parameters			Oil Firing Parameters		
				Flow Rate (acfm)	Velocity (ft/s)	Temperature (deg F)	Flow Rate (acfm)	Velocity (ft/s)	Temperature (deg F)
Process Steam Boiler	85,000	60	2.75	29,325	82	296.0	27,962	78	298.0

Notes: acfm = actual cubic feet per minute
 deg F = degrees Fahrenheit
 ft = feet
 ft/s = feet per second

2.0 AIR QUALITY REVIEW REQUIREMENTS

Federal and state air regulatory requirements for a major modification to an existing major source of air pollution are discussed in Sections 2.1 to 2.4. The applicability of these regulations to the new steam boiler is presented in Section 2.5. These regulations must be satisfied before the proposed project can be approved.

2.1 NATIONAL AND STATE AAQS

The existing applicable national and Florida AAQS are presented in Table 2-1. Primary national AAQS were promulgated to protect the public health, and secondary national AAQS were promulgated to protect the public welfare from any known or anticipated adverse effects associated with the presence of pollutants in the ambient air. Areas of the country in violation of AAQS are designated as nonattainment areas, and new sources to be located in or near these areas may be subject to more stringent air permitting requirements.

Florida has adopted state AAQS in Rule 62-204.240. These standards are the same as the national AAQS, except in the case of SO₂. For SO₂, Florida has adopted the former 24-hr secondary standard of 260 µg/m³, and former annual average secondary standard of 60 µg/m³.

2.2 PSD REQUIREMENTS

2.2.1 GENERAL REQUIREMENTS

Under Federal and State of Florida PSD review requirements, all major new or modified sources of air pollutants regulated under the Clean Air Act (CAA) must be reviewed and a pre-construction permit issued. Florida's State Implementation Plan (SIP), which contains PSD regulations, has been approved by EPA; therefore, PSD approval authority has been granted to the FDEP.

A "major facility" is defined as any one of 28 named source categories that have the potential to emit 100 TPY or more or any other stationary facility that has the potential to emit 250 TPY or more of any pollutant regulated under CAA. "Potential to emit" means the capability, at

maximum design capacity, to emit a pollutant after the application of control equipment. Once a new source is determined to be a "major facility" for a particular pollutant, any pollutant emitted in amounts greater than the PSD significant emission rates is subject to PSD review. For an existing source for which a modification is proposed, the modification is subject to PSD review if the net increase in emissions due to the modification is greater than the PSD significant emission rates. The PSD significant emission rates are shown in Table 2-2.

The EPA class designation and allowable PSD increments are presented in Table 2-1. The magnitude of the allowable increment depends on the classification of the area in which a new source (or modification) will be located or have an impact. Three classifications are designated based on criteria established in the Clean Air Act Amendments. Congress promulgated areas as Class I (international parks, national wilderness areas, and memorial parks larger than 5,000 acres and national parks larger than 6,000 acres) or as Class II (all areas not designated as Class I). No Class III areas, which would be allowed greater deterioration than Class II areas, were designated. The State of Florida has adopted the EPA class designations and allowable PSD increments for SO₂, PM₁₀, and NO₂ increments.

PSD review is used to determine whether significant air quality deterioration will result from the new or modified facility. Federal PSD requirements are contained in 40 CFR 52.21, Prevention of Significant Deterioration of Air Quality. The State of Florida has adopted the federal PSD regulations by reference (Rule 62-212.400, F.A.C.). Major facilities and major modifications are required to undergo the following analysis related to PSD for each pollutant emitted in significant amounts:

1. Control technology review,
2. Source impact analysis,
3. Air quality analysis (monitoring),
4. Source information, and
5. Additional impact analyses.

In addition to these analyses, a new facility also must be reviewed with respect to Good Engineering Practice (GEP) stack height regulations. Discussions concerning each of these requirements are presented in the following sections.

2.2.2 CONTROL TECHNOLOGY REVIEW

The control technology review requirements of the federal and state PSD regulations require that all applicable federal and state emission-limiting standards be met, and that BACT be applied to control emissions from the source. The BACT requirements are applicable to all regulated pollutants for which the increase in emissions from the facility exceeds the significant emission rate (see Table 2-2).

BACT is defined in 40 CFR 52.21 (b)(12), as:

An emissions limitation (including a visible emission standard) based on the maximum degree of reduction of each pollutant subject to regulation under the Act which would be emitted by any proposed major stationary source of major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts, and other costs, determination is achievable through application of production processes and available methods, systems, and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant, which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60 and 61. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular part of a source or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice, or operation and shall provide for compliance by means, which achieve equivalent results.

BACT was promulgated within the framework of the PSD requirements in the 1977 amendments of the CAA [Public Law 95-95; Part C, Section 165(a)(4)]. The primary purpose of BACT is to optimize consumption of PSD air quality increments and thereby enlarge the potential for future economic growth without significantly degrading air quality (EPA, 1978;

1980). Guidelines for the evaluation of BACT can be found in EPA's *Guidelines for Determining Best Available Control Technology (BACT)* (EPA, 1978) and in the *PSD Workshop Manual* (EPA, 1980). These guidelines were promulgated by EPA to provide a consistent approach to BACT and to ensure that the impacts of alternative emission control systems are measured by the same set of parameters. In addition, through implementation of these guidelines, BACT in one area may not be identical to BACT in another area. According to EPA (1980), "BACT analyses for the same types of emissions unit and the same pollutants in different locations or situations may determine that different control strategies should be applied to the different sites, depending on site-specific factors. Therefore, BACT analyses must be conducted on a case-by-case basis."

The BACT requirements are intended to ensure that the control systems incorporated in the design of a proposed facility reflect the latest in control technologies used in a particular industry and take into consideration existing and future air quality in the vicinity of the proposed facility. BACT must, as a minimum, demonstrate compliance with new source performance standards (NSPS) for a source (if applicable). An evaluation of the air pollution control techniques and systems, including a cost-benefit analysis of alternative control technologies capable of achieving a higher degree of emission reduction than the proposed control technology, is required. The cost-benefit analysis required the documentation of the materials, energy, and economic penalties associated with the proposed and alternative control systems, as well as the environmental benefits derived from these systems. A decision on BACT is to be based on sound judgement, balancing environmental benefits with energy, economic, and other impacts (EPA, 1978).

2.2.3 SOURCE IMPACT ANALYSIS

A source impact analysis must be performed for a proposed major source or major modification subject to PSD review, and for each pollutant for which the increase in emissions exceeds the PSD significant emission rate (Table 2-2). The PSD regulations specifically provide for the use of atmospheric dispersion models in performing impact analyses, estimating baseline and future air quality levels, and determining compliance with AAQS and allowable PSD increments.

Designated EPA models normally must be used in performing the impact analysis. Specific applications for other than EPA-approved models require EPA's consultation and prior approval. Guidance for the use and application of dispersion models is presented in the EPA publication *Guideline on Air Quality Models* (EPA, 1980).

To address compliance with AAQS and PSD Class II increments, a source impact analysis must be performed for the criteria pollutants. However, this analysis is not required for a specific pollutant if the net increase in impacts as a result of the new source or modification is below significant impact levels, as presented in Table 2-1. The significant impact levels are threshold levels that are used to determine the level of air impact analyses needed for the project. If the new or modified source's impacts are predicted to be less than significant, then the source's impacts are assumed not to have a significant adverse affect on air quality and additional modeling with other sources is not required. However, if the source's impacts are predicted to be greater than the significant impact levels, additional modeling with other sources is required to demonstrate compliance AAQS and PSD increments.

EPA has proposed significant impact levels for Class I areas as follows:

SO ₂	3-hour	1 $\mu\text{g}/\text{m}^3$
	24-hour	0.2 $\mu\text{g}/\text{m}^3$
	Annual	0.1 $\mu\text{g}/\text{m}^3$
PM ₁₀	24-hour	0.3 $\mu\text{g}/\text{m}^3$
	Annual	0.2 $\mu\text{g}/\text{m}^3$
NO ₂	Annual	0.1 $\mu\text{g}/\text{m}^3$

Although these levels have not been officially promulgated as part of the PSD review process and may not be binding for states in performing PSD review, the proposed levels serve as a guideline in assessing a source's impact in a Class I area. The EPA action to incorporate Class I significant impact levels in the PSD process is part of implementing NSR provisions of the 1990 CAA Amendments. Because the process of developing the regulations will be lengthy, EPA

believes that the proposed rules concerning the significant impact levels is appropriate in order to assist states in implementing the PSD permit process.

Various lengths of record for meteorological data can be used for impact analysis. A 5-year period is normally used with corresponding evaluation of highest, second-highest short-term concentrations for comparison to AAQS or PSD increments. The meteorological data are selected base on an evaluation of measured weather data from a nearby weather station that represents weather conditions at the project site. The criteria used in this evaluation include determining the distance of the project site to the weather station; comparing topographical and land use features between the locations; and determining availability of necessary weather parameters.

The term "highest, second-highest" (HSH) refers to the highest of the second-highest concentrations at all receptors (i.e., the highest concentration at each receptor is discarded). The second-highest concentration is important because short-term AAQS specify that the standard should not be exceeded at any location more than once a year. If fewer than 5 years of meteorological data are used in the modeling analysis, the highest concentration at each receptor normally must be used for comparison to air quality standards.

The term "baseline concentration" evolves from federal and state PSD regulations and refers to a concentration level corresponding to a specified baseline date and certain additional baseline sources. By definition, in the PSD regulations as amended August 7, 1980, baseline concentration means the ambient concentration level that exists in the baseline area at the time of the applicable baseline date. A baseline concentration is determined for each pollutant for which a baseline date is established and includes:

The actual emissions representative of facilities in existence on the applicable baseline date; and

1. The allowable emissions of major stationary facilities that commenced construction before January 6, 1975, for SO₂ and PM(TSP) concentrations, or February 8, 1988, for NO₂ concentrations, but that were not in operation by the applicable baseline date.

The following emissions are not included in the baseline concentration and therefore affect PSD increment consumption:

1. Actual emissions from any major stationary facility on which construction commenced after January 6, 1975, for SO₂ and PM(TSP) concentrations, and after February 8, 1988, for NO₂ concentrations; and
2. Actual emission increases and decreases at any stationary facility occurring after the baseline date.

In reference to the baseline concentration, the term "baseline date" actually includes three different dates:

1. The major facility baseline date, which is January 6, 1975, in the cases of SO₂ and PM(TSP), and February 8, 1988, in the case of NO₂.
2. The minor facility baseline date, which is the earliest date after the trigger date on which a major stationary facility or major modification subject to PSD regulations submits a complete PSD application.
3. The trigger date, which is August 7, 1977, for SO₂ and PM (TSP), and February 8, 1988, for NO₂.

2.2.4 AIR QUALITY MONITORING REQUIREMENTS

In accordance with requirements of 40 CFR 52.21(m), any application for a PSD permit must contain an analysis of continuous ambient air quality data in the area affected by the proposed major stationary facility or major modification. For a new major facility, the affected pollutants are those that the facility potentially would emit in significant amounts. For a major

modification, the pollutants are those for which the net emissions increase exceeds the significant emission rate (see Table 2-2).

Ambient air monitoring for a period of up to 1 year generally is appropriate to satisfy the PSD monitoring requirements. A minimum of 4 months of data is required. Existing data from the vicinity of the proposed source may be used if the data meet certain quality assurance requirements; otherwise, additional data may need to be gathered. Guidance in designing a PSD monitoring network is provided in EPA's *Ambient Monitoring Guidelines for Prevention of Significant Deterioration* (EPA, 1987a).

The regulations include an exemption that excludes or limits the pollutants for which an air quality analysis must be conducted. This exemption states that Florida DEP may exempt a proposed major stationary facility or major modification from the monitoring requirements with respect to a particular pollutant if the emissions increase of the pollutant from the facility or modification would cause, in any area, air quality impacts less than the *de minimis* levels presented in Table 2-2.

2.2.5 SOURCE INFORMATION/GOOD ENGINEERING PRACTICE STACK HEIGHT

Source information must be provided to adequately describe the proposed project. The information required for this project is presented in Table 1-2.

The 1977 CAA Amendments require that the degree of emission limitation required for control of any pollutant not be affected by a stack height that exceeds GEP or any other dispersion technique. On July 8, 1985, EPA promulgated final stack height regulations (EPA, 1985a). The Florida DEP has adopted identical regulations (Rule 62-210.550, F.A.C.). GEP stack height is defined as the highest of:

1. 65 meters (m); or
2. A height established by applying the formula:

$$H_g = H + 1.5L$$

2.3 NONATTAINMENT RULES

Based on the current nonattainment provisions, all major new facilities and modifications to existing major facilities located in a nonattainment area must undergo nonattainment review. A new major facility is required to undergo this review if the proposed pieces of equipment have the potential to emit 100 TPY or more of the nonattainment pollutant.

2.4 EMISSION STANDARDS

2.4.1 NEW SOURCE PERFORMANCE STANDARDS

The NSPS are a set of national emission standards that apply to specific categories of new sources. As stated in the CAA Amendments of 1977, these standards "shall reflect the degree of emission limitation and the percentage reduction achievable through application of the best technological system of continuous emission reduction the Administrator determines has been adequately demonstrated." The steam boiler will be subject to NSPS Subpart Dc, New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units.

2.4.2 FLORIDA RULES

FDEP regulations for fossil fuel steam generators with less than 250 MMBtu/hr of heat input are covered in Rule 62-296.406. These rules require that "new" fossil fuel steam generators meet a visible emissions limit of 20 percent opacity, except for either one six-minute period per hour during which opacity does not exceed 27 percent, or one two-minute period per hour during which opacity does not exceed 40 percent. PM and SO₂ emissions from small boilers are subject to BACT as determined by the Department.

2.5 PSD APPLICABILITY

2.5.1 AREA CLASSIFICATION

The project site is located in St. Lucie County, which has been designated by EPA and FDEP as an attainment or maintenance area for all criteria pollutants. St. Lucie County and surrounding counties are designated as PSD Class II areas for SO₂, PM₁₀, and NO₂. As a result, the new

source review will follow PSD regulations pertaining to such designations, 62-212.400(2)(d)2.a. F.A.C.

2.5.2 PSD REVIEW

Pollutant Applicability

The existing Tropicana facility is considered to be a major by having potential emissions greater than 250 tons/year of any air pollutant regulated under the Clean Air Act (Rule 62-212.400(2)(d)2.a. F.A.C. Therefore, PSD review is required for any pollutant for which the increase in emissions due to the modification is greater than the PSD significant emission rates.

The project itself has potential emissions greater than the PSD thresholds for nitrogen oxides (NO_x) only. However, the facility has applied for an air construction permit in October 2000 for the addition of 16 juice extractors to the existing 50 extractors. The project is contemporaneous with the proposed addition of extractors. PSD analysis is being conducted for all of the criteria pollutants: particulate matter (PM), particulate matter less than 10 microns on diameter (PM₁₀), sulfur dioxide (SO₂), NO_x, carbon monoxide (CO), and volatile organic compounds (VOC).

Source Impact Analysis

A source impact analysis was performed for PM₁₀, NO_x, SO₂ and CO emissions resulting from the proposed project (refer to Section 4.0). As shown in Table 2-4, the predicted increases in impacts due to the proposed steam boiler are predicted to be below the significant impact levels for PM₁₀, NO_x, and CO. As a result, a modeling analysis incorporating the impacts from other sources is not required for these pollutants.

Emission Standards

The process steam boiler is subject to 40 CFR 60, Subpart Dc, the federal NSPS for small boilers. According to the rule, a boiler with less than 100 MMBtu/hr may emit no more than 0.5 pounds/MMBtu of SO₂, or the boiler must burn fuel oil with a maximum sulfur content of 0.50 percent. In addition, the boiler will be subject to a 20-percent opacity limitation, except up to 6 minutes per hour, where the opacity must not exceed 27 percent. The steam boiler will comply

with these requirements by testing the fuel oil sulfur content and performing an annual EPA Method 9 test for opacity.

Ambient Monitoring

In accordance with requirements of 40 CFR 52.21(m) and Rule 62-212.400(5)(f), F.A.C., any application for a PSD permit must contain an analysis of continuous ambient air quality data in the area affected by the proposed major stationary facility or major modification. For a new major facility, the affected pollutants are those that the facility potentially would emit in significant amounts. For a major modification, the pollutants are those for which the net emissions increase exceeds the significant emission rate.

Ambient air monitoring for a period of up to 1 year is generally appropriate to satisfy the PSD monitoring requirements. A minimum of 4 months of data is required. Existing data from the vicinity of the proposed source may be used if the data meet certain quality assurance requirements; otherwise, additional data may need to be gathered. Guidance in designing a PSD monitoring network is provided in EPA's *Ambient Monitoring Guidelines for Prevention of Significant Deterioration* (EPA, 1987a).

If the net increase in impacts of a pollutant is less than the applicable *de minimis* monitoring concentration, then an exemption from submittal of pre-construction ambient monitoring data may be obtained [40 CFR 52.21(i)(8)]. In addition, if EPA has not established an acceptable ambient monitoring method for the pollutant, monitoring is not required.

Pre-construction monitoring data for SO₂, PM₁₀, NO_x, and CO may be exempted for this project because, as shown in Table 2-4 and in Section 4.0, the proposed modification's impacts are predicted to be below the applicable *de minimis* monitoring concentrations.

GEP Stack Height Impact Analysis

The steam boiler stack will be 60 ft high. This stack height does not exceed the *de minimis* good engineering practice (GEP) stack height of 65 meters (213 ft).

2.5.3 NONATTAINMENT REVIEW

The project site is located in St. Lucie County, which is classified as an attainment or maintenance area for all criteria pollutants. Therefore, nonattainment requirements are not applicable.

Table 2-1. National and State AAQS, Allowable PSD Increments, and Significant Impact Levels ($\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Time	AAQS			PSD Increments		Significant Impact Levels ^d
		National Primary Standard	National Secondary Standard	State of Florida	Class I	Class II	
Particulate Matter ^a (PM ₁₀)	Annual Arithmetic Mean	50	50	50	4	17	1
	24-Hour Maximum ^b	150 ^b	150 ^b	150 ^b	8	30	5
Sulfur Dioxide	Annual Arithmetic Mean	80	NA	60	2	20	1
	24-Hour Maximum ^c	365 ^b	NA	260 ^b	5	91	5
	3-Hour Maximum ^b	NA	1,300 ^b	1,300 ^b	25	512	25
Carbon Monoxide	8-Hour Maximum ^b	10,000 ^b	10,000 ^b	10,000 ^b	NA	NA	500
	1-Hour Maximum ^b	40,000 ^b	40,000 ^b	40,000 ^b	NA	NA	2,000
Nitrogen Dioxide	Annual Arithmetic Mean	100	100	100	2.5	25	1
Ozone ^a	1-Hour Maximum	235 ^c	235 ^c	235 ^c	NA	NA	NA
	1-Hour Maximum	235	235	NA	NA	NA	NA
Lead	Calendar Quarter Arithmetic Mean	1.5	1.5	1.5	NA	NA	NA

Note: NA = Not applicable, i.e., no standard exists.

PM₁₀ = particulate matter with aerodynamic diameter less than or equal to 10 micrometers.

^a On July 18, 1997, EPA promulgated revised AAQS for particulate matter and ozone. For particulate matter, PM_{2.5} standards were introduced with a 24-hour standard of 65 $\mu\text{g}/\text{m}^3$ (3-year average of 98th percentile) and an annual standard of 15 $\mu\text{g}/\text{m}^3$ (3-year average at community monitors). Implementation of these standards are many years away. The ozone standard was modified to be 0.08 ppm for 8-hour average; achieved when 3-year average of 99th percentile is 0.08 ppm or less. FDEP has not yet adopted these standards.

^b Short-term maximum concentrations are not to be exceeded more than once per year except for the PM₁₀ AAQS (these do not apply to significant impact levels). The PM₁₀ 24-hour AAQS is attained when the expected number of days per year with a 24-hour concentration above 150 $\mu\text{g}/\text{m}^3$ is equal to or less than 1. For modeling purposes, compliance is based on the sixth highest 24-hour average value over a 5-year period.

^c Achieved when the expected number of days per year with concentrations above the standard is fewer than 1.

^d Maximum concentrations.

Sources: Federal Register, Vol. 43, No. 118, June 19, 1978. 40 CFR 50. 40 CFR 52.21. Rule 62-204, F.A.C.

Table 2-2. PSD Significant Emission Rates and *De Minimis* Monitoring Concentrations

Pollutant	Regulated Under	Significant Emission Rate (TPY)	<i>De Minimis</i> Monitoring Concentration ^a (µg/m ³)
Sulfur Dioxide	NAAQS, NSPS	40	13, 24-hour
Particulate Matter [PM(TSP)]	NSPS	25	10, 24-hour
Particulate Matter (PM ₁₀)	NAAQS	15	10, 24-hour
Nitrogen Dioxide	NAAQS, NSPS	40	14, annual
Carbon Monoxide	NAAQS, NSPS	100	575, 8-hour
Volatile Organic Compounds (Ozone)	NAAQS, NSPS	40	100 TPY ^b
Lead	NAAQS	0.6	0.1, 3-month
Sulfuric Acid Mist	NSPS	7	NM
Total Fluorides	NSPS	3	0.25, 24-hour
Total Reduced Sulfur	NSPS	10	10, 1-hour
Reduced Sulfur Compounds	NSPS	10	10, 1-hour
Hydrogen Sulfide	NSPS	10	0.2, 1-hour
Mercury	NESHAP	0.1	0.25, 24-hour
MWC Organics	NSPS	3.5x10 ⁻⁶	NM
MWC Metals	NSPS	15	NM
MWC Acid Gases	NSPS	40	NM
MSW Landfill Gases	NSPS	50	NM

Note: Ambient monitoring requirements for any pollutant may be exempted if the impact of the increase in emissions is below *de minimis* monitoring concentrations.

NAAQS = National Ambient Air Quality Standards.

NM = No ambient measurement method established; therefore, no *de minimis* concentration has been established.

NSPS = New Source Performance Standards.

NESHAP = National Emission Standards for Hazardous Air Pollutants.

µg/m³ = micrograms per cubic meter.

MWC = Municipal waste combustor.

MSW = Municipal solid waste.

^a Short-term concentrations are not to be exceeded.

^b No *de minimis* concentration; an increase in VOC emissions of 100 TPY or more will require monitoring analysis for ozone.

^c Any emission rate of these pollutants.

Sources: 40 CFR 52.21. Rule 62-212.400, F.A.C.

Table 2-3. Net Emissions Increase from the Tropicana Steam Boiler Addition

Pollutant	Net Increase in Emissions ^a (TPY)	PSD Significant Rate (TPY)
Particulate Matter (PM)	6.15	25
Particulate Matter (PM ₁₀)	6.15	15
Sulfur Dioxide	21.75	40
Nitrogen Oxides	41.91	40
Carbon Monoxide	80.41	100
Volatile Organic Compounds	2.36	40
Sulfuric Acid Mist	1.08	7
Lead	3.77E-03	0.6
Mercury	1.26E-03	0.1
Fluorides	--	3

^a The net increase is based on either 8,760 hours of operation on #2 fuel oil or 8,760 hours of operation on natural gas, both at 100% load.

Table 2-4. Impacts of the New Steam Boiler Compared to Class II Significant Impact Levels and Ambient Monitoring *De Minimis* Levels

Pollutant	Averaging Time	Maximum Concentration ^a ($\mu\text{g}/\text{m}^3$)	EPA Class II Significant Impact Levels ($\mu\text{g}/\text{m}^3$)	<i>De Minimis</i> Monitoring Concentration ($\mu\text{g}/\text{m}^3$)	Ambient Monitoring Review Applies?
Sulfur Dioxide	Annual	0.43	1	NA	NA
	24-hour	4.80	5	13	No
	3-hour	10.1	25	NA	NA
Particulate Matter (PM_{10})	Annual	0.12	1	NA	NA
	24-hour	1.35	5	10	No
Nitrogen Oxides	Annual	0.85	1	14	No
Carbon Monoxide	8-hour	29	500	575	No
	1-hour	65	2,000	NA	NA

^a Highest concentration from significant impact analysis (See Section 4.0).

Note: NA = Not Applicable

3.0 CONTROL TECHNOLOGY REVIEW

3.1 APPLICABILITY

The PSD regulations require new major stationary sources to undergo a control technology review for each pollutant that may potentially be emitted above significant emission rates. For the proposed steam boiler, the control technology review requirements have been conducted for emissions of SO₂, PM₁₀, NO_x, and CO (see Sections 2.4.2 and 2.5.2). BACT review for SO₂ and PM₁₀ emissions is required pursuant to Florida Rule 62-296 F.A.C. Also, BACT review for NO_x and CO was conducted due to contemporaneous emission increases of these pollutants with the addition of 16 juice extractors.

This section presents the proposed BACT for these pollutants. The approach to the BACT analysis is based on the regulatory definitions of BACT, as well as EPA's current policy guidelines requiring a top-down approach. A BACT determination requires an analysis of the economic, environmental, and energy impacts of the proposed and alternative control technologies [see 40 CFR 52.21(b)(12)]. The analysis must, by definition, be specific to the project (i.e., case-by-case). As described in Section 2.2.2, BACT is determined on a case-by-case basis after taking into account the specific energy, environmental and economic impacts and other costs of the project.

Maximum emissions for the steam boiler are based on operating 8,760 hours per year at 99.8 MMBtu/hr heat input for natural gas firing and 95.7 MMBtu/hr heat input for fuel oil firing. Emissions will be controlled by the use of the low-NO_x burners (LNB) and 5% flue gas recirculation (FGR), and by burning very low sulfur No. 2 distillate fuel oil (i.e., 0.05% sulfur or less). Vendor quotes guaranteed a NO_x emission rate of 0.055 lb/MMBtu for natural gas using LNB and 0.10 lb/MMBtu for fuel oil firing with the LNB and FGR system. These technologies result in the best available control technology considering economic, environmental, and energy impacts.

3.2 BACT DETERMINATION FOR SO₂ EMISSIONS

The proposed BACT for SO₂ emissions from the steam boiler is based on burning No. 2 distillate fuel oil with a sulfur content of 0.05% or less. As part of the BACT analysis, a review of previous SO₂ BACT determinations for small industrial boilers listed in the RACT/BACT/LAER

Clearinghouse on EPA's webpage was performed. Summaries of BACT determinations for both fuel oil- and natural gas-fired boilers from this review are presented in Tables 3-1 and 3-2, respectively. From this review, it is evident that SO₂ BACT determinations for small industrial boilers have typically been fuel specifications and good combustion practices.

Since the level of SO₂ emissions is directly related to the amount of sulfur in the fuel, a low sulfur-containing fuel can be used to meet the SO₂ limitation specified by the NSPS regulations for small industrial boilers. Tropicana proposes to use natural gas and 0.05 percent sulfur fuel oil for the operations of the steam boiler and to limit the annual fuel oil usage to 6,391,508 gallons per year. These conditions result in a maximum of 21.8 TPY of SO₂ emissions when operating on fuel oil only. There is no other technology that could achieve lower SO₂ emissions. Therefore, the proposed BACT for SO₂ emissions is to use natural gas and No. 2 fuel oil with a maximum sulfur content of 0.05 percent and limit fuel oil usage to 6,391,508 gallons per year. The resulting emissions are comparable to the emissions resulting from other BACT determinations, and are consistent with previous BACT determinations.

3.3 BACT DETERMINATION FOR PM₁₀ EMISSIONS

Maximum PM₁₀ emissions from the steam boiler are estimated to be 6.15 TPY. These maximum emissions are due to fuel oil firing only. Tropicana proposes to use natural gas and No. 2 fuel oil with a maximum sulfur content of 0.05 percent. Both of these fuels are clean burning fuels and result in very low PM₁₀ emissions.

As part of the BACT analysis, a review of previous PM/PM₁₀ BACT determinations for small industrial boilers listed in the RACT/BACT/LAER Clearinghouse on EPA's webpage was performed. Summaries of BACT determinations for both fuel oil- and natural gas-fired boilers from this review are presented in Tables 3-3 and 3-4, respectively.

From the review of previous BACT determination, it is evident that PM/PM₁₀ BACT determinations for both oil-fired and natural gas-fired boilers have typically been fuel specifications and good design and operating practices. Proposed maximum PM₁₀ emissions from the steam boiler are 0.015 lb/MMBtu when firing No. 2 fuel oil and 0.002 lb/MMBtu for natural gas. These factors are based on the 1998 revisions of AP-42 Tables 1.3.1 and 1.4.2.

The emission limits from the determinations for fuel oil-fired small industrial boilers range from 0.03 lb/MMBtu to 0.08 lb/MMBtu. The proposed BACT for the steam boiler would result in emissions below this range for fuel oil firing. The emission limits from the determinations for natural gas-fired small industrial boilers range from 0.003 lb/MMBtu to 0.20 lb/MMBtu. The proposed BACT for the steam boiler would result in emissions below this range for natural gas firing.

It would not be economical to install any add-on control equipment to decrease PM₁₀ emissions any further than what is achievable through burning clean fuels (i.e., natural gas and No. 2 fuel oil with a maximum sulfur content of 0.05%). Therefore, clean fuels are proposed as BACT for PM₁₀ emissions.

3.4 BACT DETERMINATION FOR NO_x EMISSIONS

3.4.1 IDENTIFICATION OF NO_x CONTROL TECHNOLOGIES FOR SMALL INDUSTRIAL BOILERS

In this section, the control technologies capable of reducing NO_x emissions produced by small industrial boilers will be evaluated relative to their potential application as BACT for the operation of the steam boiler. All potentially applicable control technologies for stationary external combustion boilers are reviewed. The technologies can be separated into two major groups:

1. Reducing pollutant emissions by boiler modification (i.e., low excess air burner design), and
2. Converting NO_x in the exhaust gas by add-on flue gas treatment devices.

The discussion of each potential NO_x control technology includes a description of the technology and the potential NO_x emission reduction if the technology is concluded to be technically feasible.

Technologies Involving Boiler Modification

Stationary source NO_x emission control technologies originally were developed for use on large, field-erected electric utility boilers since these boilers are the major source of NO_x emissions. As the NO_x control technologies progress and improve, their applications also are extended to smaller industrial and commercial boilers of less than 500 MMBtu/hr heat input. For the steam

boiler, the following boiler modification techniques for controlling NO_x formation are applicable: low excess air (LEA) combustion process, low nitrogen oxides (NO_x) burner design, and flue gas recirculation.

Low Excess Air Combustion Process

Formation of NO_x in combustion processes is a result of both oxidation of fuel-bound nitrogen and thermal oxidation of molecular nitrogen in the incoming air. The latter oxidation process occurs at a higher temperature condition than the standard fuel-combustion process. Typically, thermal oxidation accounts for more than 50 percent of NO_x formation in an oil-fired combustion process since the concentration of fuel-bound nitrogen is so small. The principal mechanism of NO_x formation from natural gas combustion is also thermal oxidation. Thus, controlling the amount of excess air will have a significant effect on the NO_x thermal oxidation process.

A low excess air (LEA) combustion process can be achieved either by an oxygen sensor and control feedback process or by the burner design. In standard boilers, reduction of the excess air level usually is accomplished by installing a flue gas oxygen sensory unit that provides feedback to an inlet air automatic controller that regulates the excess air at the desired level. The LEA combustion process, by modifying the boiler inlet air condition, can achieve a maximum of 25 percent NO_x reduction.

In modern boilers, the LEA combustion process is engineered as an integral part of the burner design, which allows a minimum air-to-fuel ratio in the thermal combustion zone. The LEA burner design can achieve better excess air reduction than the LEA system with a flue gas oxygen sensor and control feedback mechanism.

Low NO_x Burner Design

Low NO_x burner design can directly incorporate advanced and higher efficiency combustion techniques that result in low NO_x formation. There are two standard low NO_x burner designs: LEA (single-staging) burners and multi-staging combustion burners.

The LEA (single-staging) burners are designed to operate at the lowest level of excess air by way of an efficient combustion process supported by an optimal air-to-fuel mixture. Compared to the operation of conventional burners (in the range of 3 to 6 percent of flue gas oxygen concentration), the LEA burners are capable of operating at stack gas oxygen concentrations of 0.5 to 1.5 percent. LEA burners were reported to achieve 45 percent reduction in NO_x formation over the conventional burner when burning distillate oil. LEA burners typically are applied in single-burner systems because of the difficulty in maintaining equal air distribution in multiple-burner systems.

The multi-staging low NO_x burners are designed with advanced staged-combustion principles to reduce both fuel NO_x and thermal NO_x . The staged-combustion process allows the overall combustion to be carried out in two separate combustion zones. In the air staging combustion process, the burner design allows 70 percent of stoichiometric air to burn in a fuel-rich, primary combustion zone. Some heat generated by this incomplete combustion is transferred to the boiler tubes. The combustion process is primary combustion zone. Because of the heat transfer within the primary combustion zone, the peak combustion temperature is lowered.

The fuel NO_x formation is reduced as a result of the oxygen-starved condition in the fuel-rich primary combustion zone causing the total fixed nitrogen compounds (such as ammonia, hydrogen cyanide, and hydromonoxide) to form inert molecular nitrogen. The thermal NO_x formation also is reduced because the lowered peak temperature in the secondary burnout zone does not provide a sufficient temperature for thermal oxidation of the triple-bond molecular nitrogen. Overall, the multi-staging combustion burners can achieve 30 to 65 percent NO_x emission reduction over conventional burners.

Both LEA (single-staging) and multi-staging low NO_x burners usually are designed with internal flue gas recirculation in order to enhance NO_x emission reduction. In internal flue gas recirculation, combustion air within the burner is recirculated.

Flue Gas Recirculation

Flue gas recirculation (FGR) involves recycling a portion of the flue gas from the exhaust gas stream to the windbox of the boiler. Usually, the recycled flue gas is mixed with the inlet

combustion air at the windbox before being introduced into the combustion chamber. In FGR, the recycled flue gas mainly serves as a dilutant to lower the overall peak combustion temperature. The heat sink effect occurs in FGR because the particulates in the recycled flue gas absorb some heat from the combustion process. These effects result in reductions of thermal NO_x and have negligible change in fuel NO_x. Therefore, FGR is applied only to low nitrogen-content fuel, such as natural gas or distillate oil.

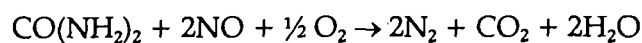
FGR typically can reduce thermal NO_x by 55 to 65 percent based on 10 to 15 percent flue gas recirculation rates, respectively (Coen, 1991). The recirculation rates are limited to below 15 percent for oil-fired boilers because of burner flame instability and emissions of unburned combustibles. An application of FGR usually requires a low NO_x burner that can be either a LEA burner or a multi-stage low NO_x burner. Actual FGR efficiency depends on the boiler type and burner design.

Technologies Involving Exhaust Gas Treatment

In addition to boiler modification technologies, NO_x emissions can be lowered by NO_x reduction reactions by injecting reducing agents (i.e., ammonia or urea) into the flue gas stream. Also, an add-on device can be inserted into the flue gas ductwork to facilitate the NO_x reduction process. A variety of reaction conditions is required depending on the type of reducing agent and catalyst used. For the steam boiler, the following add-on NO_x control devices have been identified: the NO_xOUT selective non-catalytic reduction (SNCR) process, selective catalytic reduction (SCR) with ammonia injection, SCONO_xTM, and Cannon Technology's Low-Temperature Oxidation (LTO).

NO_xOUT SNCR Process

The NO_xOUT process originated from the initial research by the Electric Power Research Institute (EPRI) in 1976 on the use of urea to reduce NO_x. EPRI licensed the proprietary process to Fuel Tech, Inc., for commercialization. In the NO_xOUT process, aqueous urea is injected into the flue gas stream within the boiler, ideally within a temperature range of 1,600° F to 1,900° F. In the presence of oxygen, the following reaction occurs:



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The amount of urea required is most cost-effective when the treatment rate is 0.5 to 2 moles of urea per mole of NO_x . In addition to the original EPRI urea patents, Fuel Tech offers a number of catalysts capable of expanding the effective temperature range of the reaction to between 1,000° F and 1,950° F. Advantages of the system are as follows:

1. Low capital and operating costs as a result of using urea injection, and
2. The proprietary catalysts used are nontoxic and nonhazardous, thus eliminating potential disposal problems.

Disadvantages of the system are as follows:

1. Formation of ammonia from excess urea treatment rates and/or improper use of reagent catalysts, and
2. SO_3 , if present, will react with ammonia created from the urea to form ammonium bisulfate, potentially plugging the cold end equipment downstream.

There have been several commercial applications of the NO_x OUT process. These applications have been in California, Louisiana, Tennessee, Texas, and Florida (Osceola and Okeelanta cogeneration facilities). The reductions in NO_x emissions have ranged from 25 percent to 75 percent.

Selective Catalytic Reduction with Ammonia Injection

Engelhard Corporation's discovery in 1957 that ammonia reacts selectively with NO_x in the presence of a catalyst and excess oxygen has led to the commercialization of selective catalytic reduction (SCR) technology for industrial boilers of various sizes. The technology has been well developed and applied in Japan, especially for control of emissions from gas-, oil-, and coal-fired utility boilers. It has been applied domestically on gas turbines, engine generators and natural gas-fired industrial boilers.

SCR catalysts consist of two types: metal oxides and zeolite. In the metal oxides catalytic system, either vanadium or titanium is embedded into a ceramic matrix structure; the zeolite catalysts are ceramic molecular sieves extruded into modules of honeycomb shape. The all-ceramic zeolite catalysts are durable and less susceptible to catalyst masking or poisoning than the noble metal/ceramic base catalysts. All catalysts exhibit advantages and disadvantages in terms of

exhaust gas temperatures, ammonia/NO_x ratio, and optimum exhaust gas oxygen concentrations. A common disadvantage for all catalyst systems is the narrow window of temperature between 600° F and 900° F within which the NO_x reduction process takes place (Schorr, 1989; Steuler, 1990; Engelhard, 1990; Johnson-Matthey, 1990). Operating outside this temperature range results in catastrophic harm to the catalyst system. Chemical poisoning occurs at lower temperature conditions, while thermal degradation occurs at higher temperature. Reactivity can only be restored through catalyst replacement.

Catalysts are subject to loss of activity over time. Since the catalyst is the most costly component of the SCR system, applications require servicing and cleaning of catalyst surface every 2,000 to 3,000 hours of operation. The cleaning normally consists of blowing the catalyst surfaces with a compressed air gun or water jet. Most catalyst suppliers guarantee a catalyst of 3 years, assuming certain operating conditions. SCR is capable of potentially achieving 70 to 90 percent NO_x reduction.

SCONO_xTM

This technology was developed by Goal Line Environmental Technologies and distributed by ABB to control NO_x and CO emissions from large gas turbines. CO and NO_x emissions are reduced through the use of specialized potassium carbonate catalyst beds using an oxidation-absorption-regeneration cycle. The required temperature range for use of this system is between 300°F and 700°F, and requires a heat recover steam generator for use with a combined cycle gas turbine. SCONO_xTM can achieve a control efficiency greater than 90% but is not feasible for this steam boiler.

Cannon Technology's Low Temperature Oxidation (LTO)

This technology involves injecting ozone into the gas stream at a temperature of approximately 300°F. This injection is done to oxidize CO, NO_x, and SO₂ to carbonates, nitrates, and sulfates, which are then absorbed by a dilute nitric acid solution in a scrubber. The system was developed for steam boilers. Test results show NO_x emissions below 4 ppmvd at 3% oxygen for gas firing. Only units less than 20 MMBtu/hr have been tested with this process. Because the

unit operates at 5 times that of the largest unit tested with LTO, this technology was not considered for any further analysis.

3.4.2 SUMMARY OF TECHNICALLY FEASIBLE NO_x CONTROL METHODS

All of the control methods described thus far are considered to be technically feasible. This section examines these control technologies. First, they are ranked according to their total removal effectiveness. Each alternative is then examined with regard to technical issues, environmental effects, energy requirements and impacts, and economic impacts.

This discussion also reviews previous BACT determinations for small industrial fired boilers. Summaries of previous BACT determinations for oil-fired and natural gas-fired small industrial boilers are presented in Tables 3-5 and 3-6, respectively. This information was obtained from the RACT/BACT/LAER Clearinghouse on EPA's website. The types of control equipment from the previous determinations consist of low NO_x Burners, FGR and good combustion practices. The emission limits for the oil-fired boilers range from 0.10 lb/MMBtu to 0.40 lb/MMBtu. The emission limits for the natural gas-fired boilers range from 0.03 lb/MMBtu to 0.32 lb/MMBtu. Tropicana's proposed NO_x emission limits for the steam boiler of 0.055 lb/MMBtu for natural gas and 0.10 lb/MMBtu for fuel oil are within the low portion of the BACT emission limit ranges previously issued. Feasible control technologies for the project are SCR, SNCR, and LNB with FGR.

Ranking of Feasible NO_x Control Methods

The top-down BACT approach requires the ranking of the NO_x emission control alternatives in terms of achievable emission level. Only control options that result in a greater degree of emission reduction than the proposed control technology need to be considered. For the steam boiler, the proposed control technology is a low-NO_x burner with 5% FGR. The potentially more effective options, in order of removal effectiveness, are as follows: first the application of SCR to the boiler modified with low-NO_x burner and FGR; and second, SNCR with low-NO_x burner and FGR. The BACT top-down hierarchy of the feasible control scenarios is presented in Table 3-7. A baseline condition must be established for BACT ranking and economic analysis purposes. The baseline for the proposed steam boiler is the emission rate of 0.10 lb/MMBtu which is guaranteed by the vendor.

Analysis of SCR

Technical Issues

Technical Issues involved in the use of SCR are the narrowing operating temperature range, the potential damage to the catalyst and downstream equipment, and the ammonium bisulfate formation. For the proposed project, a stack gas reheat system would be required to heat the exhaust gases up to the operating temperature of the SCR. This is required since the boiler is of a standard design. Indeed, the boiler exit temperatures, i.e. before the economizer, are < 600 °F and only about 300 °F after the economizer.

The use of ammonia as a reagent for the NO_x reduction reactions may allow excess ammonia to form ammonia bisulfate compounds when firing oil. These compounds can cause damage to metal ductwork downstream. Cleaning consists of blowing the catalyst surfaces with a compressed air gun and vacuuming any soot.

Currently, there is no documented information concerning SCR application on industrial boilers of a similar size and source category as the proposed steam boiler. No other oil-fired or natural gas-fired boilers of a similar capacity undergoing BACT review have been required to use SCR (refer to Table 3-5 and to Table 3-6).

Environmental Effects

The add-on SCR technology will pose other potential adverse environmental impacts, such as accidental spill and release of ammonia, slippage of ammonia by built-in design, and solid waste disposal for the spent catalyst. These issues are described briefly in the following discussion.

The SCR system requires the use of ammonia as reagent to convert to NO_x to molecular nitrogen and water. The main environmental impact centers on the issue of delivery, handling, and storage of ammonia, which poses inherent safety and health risks in the event of accidental releases. The current practice is to use an aqueous ammonia system (normally between 25 to 29 percent ammonia concentration) at installations locations used in populated areas. However, such practice increases the complexity, the size, and the cost of the ammonia system.

Furthermore, ammonia slippage is a normal occurrence during operation of SCR control equipment. NO_x abatement system suppliers generally report an ammonia slippage level of 10 ppm or less.

Energy Requirements and Impacts

The add-on technology of SCR imposes further energy penalties. The additional energy requirements are caused by a power loss as a result of additional back pressure from the SCR, electrical requirements for heating the ammonia solution and operating the injection system, and additional energy necessary for heating the ammonia solution and operating the injection system, and additional energy necessary for heating the exhaust gases from the steam boiler from 300°F up to the SCR operating range of 700°F.

Economic Analysis

This section includes the total capital investment (TCI) and the annualized cost (AC) for SCR applied to the proposed steam boiler. All cost values are calculated from vendor quotes or standard costing procedures based on the Office of Air Quality Planning and Standards (OAQPS) Control Cost Manual, Fifth Edition (OAQPS, 1996).

In this costing procedure, the basic equipment cost is the basis for other itemized costs that are calculated as fractional costs of the basic equipment cost. The capital cost estimates, the annualized cost estimates, and the cost effectiveness for SCR-natural gas operation are presented in Table 3-8 and Table 3-9 for SCR-fuel oil operation. The basic equipment cost for the SCR was obtained from a vendor for a previous BACT review for Boiler No. 16 at Okeelanta Corporation South Bay Facility and proportioned based on performance as described in *Air Pollution Control: A Design Approach*, Cooper, 1994.

For SCR applied to the proposed steam boiler, with low-NO_x burners and natural gas operation, the TCI is \$1.7 million; the annualized cost is \$377,460 and the cost effectiveness is \$10,794 per ton of NO_x removed. For SCR applied to the proposed steam boiler, with low-NO_x burners and fuel oil operation, the TCI is \$1.7 million; the annualized cost is \$377,460 and the cost effectiveness is \$11,256 per ton of NO_x removed.

Analysis of SNCR

Technical Issues

The SNCR process operates best at temperatures of 1,000°F to 1,950°F. The exhaust temperature of the proposed steam boiler is approximately 600°F and only 300 °F exiting the economizer. Significant modifications to the boiler would have been made to evaluate as injectors can be used to inject the reagent at the proper temperature in the furnace. Given the size of the boiler, SNCR is not feasible.

3.4.3 NO_x BACT SUMMARY AND CONCLUSION

The BACT analysis for NO_x control has identified two feasible control alternatives that achieve greater reduction than low-NO_x burners with FGR alone: ceramic-based SCR and SNCR. This section will consider the overall environmental, energy, and economic impacts of each alternative and eliminate those with adverse impacts. The control alternative not eliminated will be selected as BACT.

Comparison of Technical Issues

Compared to the two alternatives, the low NO_x burner design with FGR is the most reliable option overall for small industrial boiler applications. Add-on control technology such as SCR and SNCR are not appropriate for the proposed boiler.

Comparison of Environmental Effects

The add-on control technology options pose the potential for adverse environmental impacts. SCR poses the potential for toxic impacts as a result of ammonia handling and storage, and ammonia slip. Similarly, SNCR could result in urea emissions from an accidental release. Therefore, the boiler modification process involving both LNB and FGR is the least adverse NO_x control technology for the proposed steam boiler in regard to the environmental effects.

Comparisons of Energy Impacts

The options involving add-on control technology require additional fuel and energy. The low-NO_x burner option does not require additional fuel or electricity to operate. The amount of heat required to convert the gas stream to a temperature appropriate for SCR use is roughly 7.6

MMBtu/hr or 8% of the energy of the boiler. Emission increases from the higher energy requirement are 1.7 TPY SO₂, 3.3 TPY NO_x, 6.1 TPY CO, and 0.50 TPY PM₁₀ fuel oil operation and 0.1 TPY SO₂, 3.3 TPY NO_x, 6.1 TPY CO, and 0.1 TPY PM₁₀ for natural gas operation. While a heat exchanger could be added to reduce this, it would complicate the system. Therefore, the boiler modification process using the LNB/FGR option is the best NO_x control technology with regard to energy impacts.

Comparison of Economic Analysis

The add-on control technology options involve significant TCI and high cost effectiveness for removal of NO_x. The most cost-effective application of the SCR option is \$10,794 per ton of NO_x removal, which is comparable to the cost of adding an SNCR system. The high cost effectiveness of these options deems the add-on control technology options economically infeasible. Therefore, the LNB/FGR option is the best NO_x control technology with regard to economic impacts.

Conclusion

The NO_x top-down BACT analysis in terms of environmental impacts, energy impacts, and economical impacts for the proposed steam boiler is summarized in Table 3-10. The analysis has included two add-on control technologies. The main reasons for eliminating both SCR and SNCR are their technical feasibility and high cost effectiveness. This is consistent with previous BACT determinations for NO_x emissions from small industrial boilers. There are no existing small industrial boilers that have been required to use SCR or SNCR for NO_x control (refer to Tables 3-5 and 3-6). By eliminating both add-on control technology options, the LNB with FGR option is concluded to be BACT for NO_x emissions from the proposed steam boiler.

3.5 BACT DETERMINATION FOR CO EMISSIONS

Maximum CO emissions from the proposed steam boiler are estimated to be 80.4 TPY. Tropicana proposes to use good combustion practices to control CO emissions.

As part of the BACT analysis, a review of previous CO BACT determinations for industrial boilers listed in the RACT/BACT/LAER Clearinghouse on EPA's website was performed. Summaries of the BACT determinations for both fuel oil- and natural gas-fired boilers from this

review are presented in Tables 3-11 and 3-12, respectively. The CO emission limits for fuel oil-fired boilers range from 0.03 lb/MMBtu to 0.09 lb/MMBtu. The CO emission limits for natural gas-fired boilers range from 0.02 lb/MMBtu to 0.20 lb/MMBtu. This rather large range of emissions is due to differences in boiler design and operation. From the review of previous BACT determinations, it is evident that CO BACT determinations for both oil-fired and natural gas-fired industrial boilers have typically been good combustion practices and boiler design.

Proposed maximum CO emissions from the proposed steam boiler are 200 ppm at 3% O₂ for both fuel oil and natural gas firing. The emission limits are within the range of previous determinations, and are based on vendor information. No other gas/oil fired boilers have been required to use add-on control for CO emissions. Tropicana proposes to use good combustion practices to control CO emissions from the steam boiler. This level of control is consistent with previous determinations. As seen in the comparison between Tables 3-6 and 3-12, it is noted that in the past, NO_x emission limits have been generally higher than CO emission limits, i.e. the 90 MMBtu/hr boiler at Fulton Cogeneration Associates, permitted in 1990. However, present day standards suggest that the trend is moving towards a lower NO_x emission limit on most equipment, i.e. the 80.8 MMBtu/hr boiler at American Soda Ash, LLP, Parachute Facility, permitted in 1999.

Table 3-1. BACT Determinations for SO₂ Emissions for Fuel Oil-Fired Industrial Boilers, Less Than 100 MMBtu/hr

Company	State	RBLIC ID	Permit Date	Throughput	Emission Limits As Provided In LAER/BACT Clearinghouse	Control Equipment/Description	Percent Efficiency
U.S. Navy Base, Northern Division	CT	CT-0009	2/7/90	98 MMBtu/hr	0.53 lb/MMBtu	Fuel Spec: 0.5% S OIL	50
Mansfield Training School	CT	CT-0011	9/14/89	4.8 MMBtu/hr	1.097 lb/MMBtu	Fuel Spec: Fuel Limitation	--
Mansfield Training School	CT	CT-0011	9/14/89	2.9 MMBtu/hr	1.097 lb/MMBtu	Fuel Spec: Fuel Limitation	--
Mansfield Training School	CT	CT-0011	9/14/89	2.9 MMBtu/hr	1.097 lb/MMBtu	Fuel Spec: Fuel Limitation	--
Mansfield Training School	CT	CT-0011	9/14/89	2.2 MMBtu/hr	1.167 lb/MMBtu	Fuel Spec: Fuel Limitation	--
New England Furniture	CT	CT-0081	3/15/88	15.2 MMBtu/hr	0.523 lb/MMBtu	See Notes	--
Mid-Georgia Cogeneration	GA	GA-0063	4/3/96	60 MMBtu/hr	-- --	Fuel Spec: Very Low Sulfur in Fuel	--
Hadson Power II	VA	VA-0165	11/22/89	81.58 MMBtu/hr	0.31 lb/MMBtu	Combustion	--

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, 2001

Table 3-2. BACT Determinations for SO₂ Emissions for Natural Gas-Fired Industrial Boilers, Less Than 100 MMBtu/hr

Company	State	RBLC ID	Permit Date	Heat Input	Emissions		Control Equipment/Description
					As Provided In LAER/BACT Clearinghouse	Converted to lb/MMBtu ^a	
Anniston Army Depot	AL	AL-0139	6/19/97	13.4 MMBtu/hr	0.016 lb/hr	0.0012	Clean Fuel
Anniston Army Depot	AL	AL-0140	6/19/97	11.7 MMBtu/hr	0.014 lb/hr	0.0012	Clean Fuel
Intel Corporation	AZ	AZ-0022	4/10/94	50 MMBtu/hr	-- --	--	Fuel Spec: Natural Gas Primary, .055 Wt. % Sulfur Fuel Oil Backup Only
Orange Cogeneration, L.P.	FL	FL-0068	12/30/93	100 MMBtu/hr	0.003 lb/MMBtu	0.003	Fuel Spec: Low Sulfur Fuel, Gas Fired
Waupaca Foundry - Plant 5	IN	IN-0068	1/19/96	93.9 MMBtu/hr	0.0558 lb/hr	0.0006	--
Transamerican Refining Corporation	LA	LA-0085	1/15/93	1.2 MMBtu/hr	0.001 lb/hr	0.0008	Good Combustion Practices
Fulton Cogeneration Associates	NY	NY-0039	1/29/90	90 MMBtu/hr	0.3 % Sulfur Fuel	--	Fuel Spec: Low Sulfur Fuel

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, 2001

Footnotes:

^a To convert from lb/hr, the emission limit was divided by the heat input rate.

Table 3-4. BACT Determinations for PM/PM₁₀ Emissions for Natural Gas-Fired Industrial Boilers, Less Than 100 MMBtu/hr

Company	State	RBLC ID	Permit Date	Throughput	Emissions		Control Equipment/Description
					As Provided In LAER/BACT Clearinghouse	Converted to lb/MMBtu ^a	
Intel Corporation	AZ	AZ-0022	4/10/94	50 MMBtu/hr	--	--	Fuel Spec: Natural Gas Primary, .055 wt % Sulfur Fuel Oil Backup Only
Mid-Georgia Cogeneration	GA	GA-0063	4/3/96	60 MMBtu/hr	0.005 lb/MMBtu	0.005	Complete Combustion
Nucor Steel	IN	IN-0034	11/30/93	7.3 MMBtu/hr	3 lb/MMcf	0.003	Fuel Spec: Natural Gas Firing
Nucor Steel	IN	IN-0034	11/30/93	34 MMBtu/hr	3 lb/MMcf	0.003	Fuel Spec: Natural Gas Firing
Waupaca Foundry - Plant 5	IN	IN-0068	1/19/96	93.9 MMBtu/hr	1.29 lb/hr	0.014	--
Toyota Motor Corporation Services of N.A.	IN	IN-0069	8/9/96	58 MMBtu/hr	0.2 lb/MMBtu	0.2	Low NOx Burners & Fuel Spec: Use of Natural Gas as Fuel
Transamerican Refining Corporation (TARC)	LA	LA-0085	1/15/93	1.2 MMBtu/hr	0.008 lb/hr	0.007	Good Combustion Practices Good Design, Proper Operating Practices, and use Clean Natural Gas as Fuel
Air Liquide America Corporation	LA	LA-0112	2/13/98	95 MMBtu/hr	0.01 lb/MMBtu	0.01	Natural Gas as Fuel
Indeck Energy Company	NY	NY-0066	5/12/93	-- MMBtu/hr	0.005 lb/MMBtu	0.005	No Controls
Indek - Yerkes Energy Services	NY	NY-0077	6/24/92	99 MMBtu/hr	0.1 lb/MMBtu	0.1	No Controls
Kamine/Besicorp Corning L.P.	NY	NY-0048	11/5/92	33.5 MMBtu/hr	0.0051 lb/MMBtu	0.0051	Combustion Control
Kamine/Besicorp Syracuse L.P.	NY	NY-0072	12/10/94	33 MMBtu/hr	0.01 lb/MMBtu	0.01	Fuel Spec: Sulfur Content Not to Exceed 0.15% by Weight
Kamine/Besicorp Syracuse L.P.	NY	NY-0072	12/10/94	2.5 MMBtu/hr	0.01 lb/MMBtu	0.01	Fuel Spec: Sulfur Content Not to Exceed 0.15% by Weight
Fulton Cogeneration Associates	NY	NY-0039	1/29/90	90 MMBtu/hr	0.014 lb/MMBtu	0.014	Combustion Control
					AVERAGE	0.03	
					MAXIMUM	0.2	
					MINIMUM	0.003	

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, 2001

Footnotes:

^a To convert from lb/hr, the emission limit was divided by the throughput rate. To convert from lb/MMcf, the emission limit was divided by 1,020 MMcf/MMBtu.

Table 3-3. BACT Determinations for PM/PM₁₀ Emissions for Fuel Oil-Fired Industrial Boilers, Less Than 100 MMBtu/hr

Company	State	RBLC ID	Permit Date	Throughput	Emissions	
					As Provided In LAER/BACT Clearinghouse	Control Equipment/Description
U.S. Navy Base, Northern Division	CT	CT-0009	2/7/90	98 MMBtu/hr	0.05 lb/MMBtu	Good Combustion Practices
Mansfield Training School	CT	CT-0011	9/14/89	4.8 MMBtu/hr	0.048 lb/MMBtu	Fuel Spec: Fuel Limitation
Mansfield Training School	CT	CT-0011	9/14/89	2.9 MMBtu/hr	0.048 lb/MMBtu	Fuel Spec: Fuel Limitation
Mansfield Training School	CT	CT-0011	9/14/89	2.9 MMBtu/hr	0.048 lb/MMBtu	Fuel Spec: Fuel Limitation
Mansfield Training School	CT	CT-0011	9/14/89	2.2 MMBtu/hr	0.051 lb/MMBtu	Fuel Spec: Fuel Limitation
New England Furniture	CT	CT-0081	3/15/88	15.2 MMBtu/hr	0.047 lb/MMBtu	--
Mid-Georgia Cogeneration	GA	GA-0063	4/3/96	60 MMBtu/hr	0.028 lb/MMBtu	Complete Combustion
Hadson Power II	VA	VA-0165	11/22/89	81.58 MMBtu/hr	0.03 lb/MMBtu	Combustion Control
Hadson Power II	VA	VA-0165	11/22/89	81.58 MMBtu/hr	0.04 lb/MMBtu	Combustion Control
Kes Chateaugay Project	NY	NY-0055	12/19/94	5 MMBtu/hr	0.03 lb/MMBtu	No Controls
				AVERAGE	0.04	
				MAXIMUM	0.05	
				MINIMUM	0.028	

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, 2001

Table 3-5. BACT Determinations for NO_x Emissions for Fuel Oil-Fired Industrial Boilers, Less Than 100 MMBtu/hr

Company	State	RBLC ID	Permit Date	Throughput	Emissions		Control Equipment/Description	% Efficiency
					As Provided In	LAER/BACT Clearinghouse		
U.S. Navy Base, Northern Division	CT	CT-0009	2/7/90	98 MMBtu/hr	0.2 lb/MMBtu		Low NOx Burners	33
Mansfield Training School	CT	CT-0011	9/14/89	4.8 MMBtu/hr	0.379 lb/MMBtu		Fuel Spec: Fuel Limitation	--
Mansfield Training School	CT	CT-0011	9/14/89	2.9 MMBtu/hr	0.379 lb/MMBtu		Fuel Spec: Fuel Limitation	--
Mansfield Training School	CT	CT-0011	9/14/89	2.9 MMBtu/hr	0.379 lb/MMBtu		Fuel Spec: Fuel Limitation	--
Mansfield Training School	CT	CT-0011	9/14/89	2.2 MMBtu/hr	0.404 lb/MMBtu		Fuel Spec: Fuel Limitation	--
New England Furniture	CT	CT-0081	3/15/88	15.2 MMBtu/hr	0.367 lb/MMBtu		--	--
Mid-Georgia Cogeneration	GA	GA-0063	4/3/96	60 MMBtu/hr	0.15 lb/MMBtu		Dry Low Nox Burner with FGR	--
KES Chateaugay Project	NY	NY-0055	12/19/94	5 MMBtu/hr	0.2 lb/MMBtu		No Controls	--
Hadson Power II	VA	VA-0165	11/22/89	81.58 MMBtu/hr	0.1 lb/MMBtu		Combustion	--
Appleton Paper, Inc.	WI	WI-0065	1/12/93	200000 lbs steam/hr	0.1 lb/MMBtu		Low NOx Burners and Flue Gas Reinductor	75
					AVERAGE	0.27		
					MAXIMUM	0.40		
					MINIMUM	0.10		

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, 2001

Table 3-6. BACT Determinations for NO_x Emissions for Natural Gas-Fired Industrial Boilers, Less Than 100 MMBtu/hr

Company	State	RBLC ID	Permit Date	Throughput	Emission Limits		Control Equipment/Description	% Efficiency
					As Provided In LAER/BACT Clearinghouse	Converted to lb/MMBtu ^a		
Shell Offshore, Inc.	AL	AL-0045	10/25/89	48.2 MMBtu/hr	4.8 lb/hr	0.100	Low NO _x Burners	50
Huls America	AL	AL-0052	8/31/90	38.9 MMBtu/hr	0.075 lb/MMBtu	0.075	Low NO _x Burners	--
Champion International Corporation	AL	AL-0066	5/8/91	5.83 MMBtu/hr	0.05 lb/MMBtu	0.05	Flue Gas Recirculation	--
Anniston Army Depot	AL	AL-0139	6/19/97	13.4 MMBtu/hr	0.03 lb/MMBtu	0.03	Low NO _x Burners, Clean Fuel	79
Anniston Army Depot	AL	AL-0140	6/19/97	11.7 MMBtu/hr	0.03 lb/MMBtu	0.03	Low NO _x Burners, Clean Fuel	79
Intel Corporation	AZ	AZ-0022	4/10/94	50 MMBtu/hr	-- --	--	Low NO _x Burners	--
Toma-Tek Inc.	CA	CA-0408	3/1/89	90 MMBtu/hr	3.05 lb/hr	0.034	Low NO _x Burners, Good Combustion Practices	--
Sunland Refinery	CA	CA-0513	9/24/92	12.6 MMBtu/hr	0.036 lb/MMBtu	0.036	Low NO _x Burner and FGR	--
American Soda, LLP, Parachute Facility	CO	CO-0040	5/6/99	80.8 MMBtu/hr	0.05 lb/MMBtu	0.05	Low NO _x Combustion System	--
Orange Cogeneration, L.P.	FL	FL-0068	12/30/93	100 MMBtu/hr	0.13 lb/MMBtu	0.13	Low NO _x Burners	--
Mid-Georgia Cogeneration	GA	GA-0063	4/3/96	60 MMBtu/hr	0.1 lb/MMBtu	0.1	Dry Low NO _x Burner with FGR	--
Naturalgas Pipeline Company	IL	IL-0043	3/1/89	8.4 MMBtu/hr	0.1 lb/MMBtu	0.1	--	--
Waupaca Foundry - Plant 5	IN	IN-0068	1/19/96	93.9 MMBtu/hr	6.94 lb/hr	0.074	Low NO _x Burners	--
I/N Kote	IN	IN-0039	11/20/89	70.8 MMBtu/hr	0.05 lb/MMBtu	0.05	Flue Gas Recirculation and Fuel Selection	--
General Electric Company	IN	IN-0043	9/17/89	93 MMBtu/hr	0.133 lb/MMBtu	0.133	Staged Combustion Air & Low Excess Air	--
Toyota Motor Corporation Services of N.A.	IN	IN-0069	8/9/96	58 MMBtu/hr	0.1 lb/MMBtu	0.1	Low NO _x Burners and Fuel Selection	--
Transamerican Refining Corporation (TARC)	LA	LA-0085	1/15/93	1.2 MMBtu/hr	0.14 lb/hr	0.117	Good Combustion Practices	--
Air Liquide America Corporation	LA	LA-0112	2/13/98	95 MMBtu/hr	0.05 lb/MMBtu	0.05	Low NO _x Burners	--
Indelk Energy Services of Otsego	MI	MI-0228	3/16/93	99 MMBtu/hr	0.06 lb/MMBtu	0.06	Flue Gas Recirculation	40
Fulton Cogeneration Associates	NY	NY-0039	1/29/90	90 MMBtu/hr	0.14 lb/MMBtu	0.14	Combustion Control	--
Kamine/Besicorp Corning L.P.	NY	NY-0048	11/5/92	33.5 MMBtu/hr	0.32 lb/MMBtu	0.32	Low NO _x Burner and FGR	--
Kamine/Besicorp Syracuse L.P.	NY	NY-0072	12/10/94	33 MMBtu/hr	0.035 lb/MMBtu	0.035	Induced Flue Gas Recirculation	70.9
Kamine/Besicorp Syracuse L.P.	NY	NY-0072	12/10/94	2.5 MMBtu/hr	0.12 lb/MMBtu	0.12	No Controls	--
Indek - Yerkes Energy Services	NY	NY-0077	6/24/92	99 MMBtu/hr	0.2 lb/MMBtu	0.2	No Controls	--
CNG Transmission Corporation	WV	WV-0011	5/3/93	10 MMBtu/hr	140 lb/MMcf	0.137	--	--
					AVERAGE	0.09		
					MAXIMUM	0.32		
					MINIMUM	0.03		

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, 2001

FGR = Flue Gas Recirculation

Footnotes:

^a To convert from lb/hr, the emission limit was divided by the throughput rate. To convert from lb/MMcf, the emission limit was divided by 1,020 MMcf/MMBtu.

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d Industrial Boilers, Less Than 100 MMBtu/hr

Permit Date	Throughput	Emission Limits		Control Equipment/Description	% Efficiency
		As Provided In LAER/BACT Clearinghouse	Converted to lb/MMBtu ^a		
10/25/89	48.2 MMBtu/hr	4.8 lb/hr	0.100	Low NOx Burners	50
8/31/90	38.9 MMBtu/hr	0.075 lb/MMBtu	0.075	Low NOx Burners	--
5/8/91	5.83 MMBtu/hr	0.05 lb/MMBtu	0.05	Flue Gas Recirculation	--
6/19/97	13.4 MMBtu/hr	0.03 lb/MMBtu	0.03	Low NOx Burners, Clean Fuel	79
6/19/97	11.7 MMBtu/hr	0.03 lb/MMBtu	0.03	Low NOx Burners, Clean Fuel	79
4/10/94	50 MMBtu/hr	-- --	--	Low NOx Burners	--
3/1/89	90 MMBtu/hr	3.05 lb/hr	0.034	Low NOx Burners, Good Combustion Practices	--
9/24/92	12.6 MMBtu/hr	0.036 lb/MMBtu	0.036	Low NOx Burner and FGR	--
5/6/99	80.8 MMBtu/hr	0.05 lb/MMBtu	0.05	Low NOx Combustion System	--
12/30/93	100 MMBtu/hr	0.13 lb/MMBtu	0.13	Low NOx Burners	--
4/3/96	60 MMBtu/hr	0.1 lb/MMBtu	0.1	Dry Low NOx Burner with FGR	--
3/1/89	8.4 MMBtu/hr	0.1 lb/MMBtu	0.1	--	--
1/19/96	93.9 MMBtu/hr	6.94 lb/hr	0.074	Low NOx Burners	--
11/20/89	70.8 MMBtu/hr	0.05 lb/MMBtu	0.05	Flue Gas Recirculation and Fuel Selection	--
9/17/89	93 MMBtu/hr	0.133 lb/MMBtu	0.133	Staged Combustion Air & Low Excess Air	--
8/9/96	58 MMBtu/hr	0.1 lb/MMBtu	0.1	Low NOx Burners and Fuel Selection	--
1/15/93	1.2 MMBtu/hr	0.14 lb/hr	0.117	Good Combustion Practices	--
2/13/98	95 MMBtu/hr	0.05 lb/MMBtu	0.05	Low NOx Burners	--
3/16/93	99 MMBtu/hr	0.06 lb/MMBtu	0.06	Flue Gas Recirculation	40
1/29/90	90 MMBtu/hr	0.14 lb/MMBtu	0.14	Combustion Control	--
11/5/92	33.5 MMBtu/hr	0.32 lb/MMBtu	0.32	Low NOx Burner and FGR	--
12/10/94	33 MMBtu/hr	0.035 lb/MMBtu	0.035	Induced Flue Gas Recirculation	70.9
12/10/94	2.5 MMBtu/hr	0.12 lb/MMBtu	0.12	No Controls	--
6/24/92	99 MMBtu/hr	0.2 lb/MMBtu	0.2	No Controls	--
5/3/93	10 MMBtu/hr	140 lb/MMcf	0.137	--	--

AVERAGE	0.09
MAXIMUM	0.32
MINIMUM	0.03

Table 3-7. BACT "Top-down" Hierarchy of NO_x Reduction Methods for Proposed Steam Boiler

Top-Down Ranking	Technology	Control Effectiveness (%)	Emission Level (lb/MMBtu)	Annual Emissions (TPY)
Fuel Oil				
First	Low-NO _x burner with SCR	92 ^a	0.030	8.4
Second	Low-NO _x burner with SNCR	72 ^b	0.105	29.3
Third	Low-NO _x burner with FGR	60	0.10 ^c	41.9
Natural Gas				
Top-Down Ranking	Technology	Control Effectiveness (%)	Emission Level (lb/MMBtu)	Annual Emissions (TPY)
First	Low-NO _x burner with SCR	92 ^a	0.030	8.7
Second	Low-NO _x burner with SNCR	72 ^b	0.105	30.6
Third	Low-NO _x burner with FGR	60	0.10 ^c	43.7

Footnotes:

- ^a SCR alone can achieve 80 percent reduction.
^b SNCR alone can achieve 30 percent reduction.
^c Proposed steam boiler emission rate for gas and oil firing.

Table 3-8. Cost Effectiveness of SCR, Tropicana Proposed Steam Boiler (Natural Gas Operation)

Cost Items	Cost Factors ^a	Cost (\$)
DIRECT CAPITAL COSTS (DCC):		
Purchased Equipment Cost (PEC)		
SCR Basic Process	Vendor quote ^{b,c}	850,000
Ammonia System	See note "d"	36,560
Auxiliary Equipment (Reheat)	10% of equipment cost	85,000
Emissions Monitoring	15% of equipment cost	85,000
Structure Support	8% of equipment cost	68,000
Freight	5% of equipment cost	42,500
Taxes	Florida sales tax, 6%	<u>51,000</u>
Total PEC:		1,218,060
Direct Installation	30% of PEC	365,418
Total DCC:		1,583,478
INDIRECT CAPITAL COSTS (ICC):		
Engineering	10% of PEC	158,348
Construction and field expenses	5% of PEC	79,174
Contractor Fees	10% of PEC	158,348
Startup	2% of PEC	31,670
Performance test	1% of PEC	15,835
Contingencies	3% of PEC	<u>47,504</u>
Total ICC:		490,878
TOTAL CAPITAL INVESTMENT (TCI):	DCC + ICC	1,708,938
DIRECT OPERATING COSTS (DOC):		
(1) Operating Labor		
Operator	0.5 hr/shift, \$16/hr, 8760 hrs/yr	8,760
Supervisor	15% of operator cost	1,314
(2) Maintenance	Vendor quote	10,000
(3) Variable O&M ^f	99.8 MMBtu/hr; 8,760 hr/yr	22,196
(4) Catalyst Replacement and disposal ^f	99.8 MMBtu/hr; 8,760 hr/yr; 3 yr	<u>12,119</u>
Total DOC:		54,389
INDIRECT OPERATING COSTS (IOC):		
Overhead	60% of oper. labor & maintenanc	12,044
Property Taxes	1% of total capital investment	17,089
Insurance	1% of total capital investment	17,089
Administration	2% of total capital investment	<u>34,179</u>
Total IOC:		80,402
CAPITAL RECOVERY COSTS (CRC):	CRF of 0.142 times TCI (10 yrs)	242,669
ANNUALIZED COSTS (AC):	DOC + IOC + CRC	377,460
BASELINE NO _x EMISSIONS (TPY) :	0.10 lb/MMBtu, 99.8 MMBtu/hr;	43.7
MAXIMUM NO _x EMISSIONS (TPY) :	80% reduction	8.7
REDUCTION IN NO _x EMISSIONS (TPY):		35.0
COST EFFECTIVENESS:	\$ per ton of NO _x Removed	<u>10,794</u>

Footnotes:

^a Unless otherwise specified, factors and cost estimates reflect OAQPS Cost Manual, Section 3, Fifth edition. Cost estimates have been converted from 1988 dollars to 1999 dollars by a ratio of CE Cost Indexes (1988: 342.5, 1999: 400).

^b Calculated from BACT analysis performed on Okeelanta Corporation, South Bay Modification of Boiler No. 16 employing a ratio of lb/MMBtu of the two units to generate a conservative SCR basic process cost.
Source: Formula 2.15: *Air Pollution Control - A Design Approach*. Cooper, 1994.

^c Vendor quote from 1991 quote for SCR system for Okeelanta Boiler No. 16. Quote has been converted from 1991 dollars to 1999 dollars by a ratio of CE Cost Indexes (1991: 361.3, 1999: 400)

^d Ammonia vendor's quotation for LaRoche Industries, Inc. for a 3,000-gallon anhydrous ammonia tank, an ammonia evaporator, and a dual-valve pressure regulator. Quote was converted to 1999 dollars from 1991 dollars by a ratio of CE Cost Indexes (1991: 361.3 and 1999: 400).

^e Includes cost of ammonia, electricity and steam.

^f Based on cost equation and factors from the EPA document titled "New Source Performance Standards, Subpart Db - Technical Support for Proposed Revisions to NO_x Standard" (6/97). See Appendix B for equation and factors.

Table 3-9. Cost Effectiveness of SCR, Tropicana Proposed Steam Boiler (Fuel Oil Operation)

Cost Items	Cost Factors ^a	Cost (\$)
DIRECT CAPITAL COSTS (DCC):		
Purchased Equipment Cost (PEC)		
SCR Basic Process	Vendor quote ^{b,c}	850,000
Ammonia System	See note "d"	36,560
Auxiliary Equipment (Reheat)	10% of equipment cost	85,000
Emissions Monitoring	15% of equipment cost	85,000
Structure Support	8% of equipment cost	68,000
Freight	5% of equipment cost	42,500
Taxes	Florida sales tax, 6%	51,000
Total PEC:		1,218,060
Direct Installation	30% of PEC	365,418
Total DCC:		1,583,478
INDIRECT CAPITAL COSTS (ICC):		
Engineering	10% of PEC	158,348
Construction and field expenses	5% of PEC	79,174
Contractor Fees	10% of PEC	158,348
Startup	2% of PEC	31,670
Performance test	1% of PEC	15,835
Contingencies	3% of PEC	47,504
Total DCC:		490,878
TOTAL CAPITAL INVESTMENT (TCI):	DCC + ICC	1,708,938
DIRECT OPERATING COSTS (DOC):		
(1) Operating Labor		
Operator	0.5 hr/shift, \$16/hr, 8760 hrs/yr	8,760
Supervisor	15% of operator cost	1,314
(2) Maintenance	Vendor quote	10,000
(3) Variable O&M ^{e,f}	99.8 MMBtu/hr; 8,760 hr/yr	22,196
(4) Catalyst Replacement and disposal ^f	99.8 MMBtu/hr; 8,760 hr/yr; 3 year life	12,119
Total DOC:		54,389
INDIRECT OPERATING COSTS (IOC):		
Overhead	60% of oper. labor & maintenance	12,044
Property Taxes	1% of total capital investment	17,089
Insurance	1% of total capital investment	17,089
Administration	2% of total capital investment	34,179
Total IOC:		80,402
CAPITAL RECOVERY COSTS (CRC):	CRF of 0.142 times TCI (10 yrs @ 7%)	242,669
ANNUALIZED COSTS (AC):	DOC + IOC + CRC	377,460
BASELINE NO_x EMISSIONS (TPY):	0.10 lb/MMBtu, 95.7 MMBtu/hr; 8,760 hr/yr (fuel oil)	41.9
MAXIMUM NO_x EMISSIONS (TPY):	80% reduction	8.4
REDUCTION IN NO_x EMISSIONS (TPY):		33.5
COST EFFECTIVENESS:	\$ per ton of NO_x Removed	11,256

Footnotes:

^a Unless otherwise specified, factors and cost estimates reflect OAQPS Cost Manual, Section 3, Fifth edition. Cost estimates have been converted from 1988 dollars to 1999 dollars by a ratio of CE Cost Indexes (1988: 342.5, 1999: 400).

^b Calculated from BACT analysis performed on Okeelanta Corporation, South Bay Modification of Boiler No. 16 employing a ratio of lb/MMBtu of the two units to generate a conservative SCR basic process cost.
Source: Formula 2.15: *Air Pollution Control - A Design Approach*, Cooper, 1994.

^c Vendor quote from 1991 quote for SCR system for Okeelanta Boiler No. 16. Quote has been converted from 1991 dollars to 1999 dollars by a ratio of CE Cost Indexes (1991: 361.3, 1999: 400)

^d Ammonia vendor's quotation for LaRoche Industries, Inc. for a 3,000-gallon anhydrous ammonia tank, an ammonia evaporator, and a dual-valve pressure regulator. Quote was converted to 1999 dollars from 1991 dollars by a ratio of CE Cost Indexes (1991: 361.3 and 1999: 400).

^e Includes cost of ammonia, electricity and steam.

^f Based on cost equation and factors from the EPA document titled "New Source Performance Standards, Subpart Db - Technical

Table 3-10. Summary of Top-Down BACT Impact Analysis Results for NO_x

Control Alternative	Total Emission Reduction (TPY)	Technical Feasibility	Potential Environmental Impacts		Energy Impacts		Economic Impacts	
			Toxic Air Impact?	Adverse Environmental Impacts?	Incremental Increase Over Baseline?		Annualized Cost (\$)	Cost Effectiveness (\$/ton)
					Fuel	Electricity		
Fuel Oil								
Low-NO _x burner with SCR	33.5	Yes	Yes	Yes	Yes	Yes	377,460	11,256
Low-NO _x burner with SNCR	12.6	No	No	Yes	Yes	Yes	--	--
Low-NO _x burner with FGR	--	Yes	No	No	No	No	--	--
Natural Gas								
Low-NO _x burner with SCR	35.0	Yes	Yes	Yes	Yes	Yes	377,460	10,794
Low-NO _x burner with SNCR	13.1	No	No	Yes	Yes	Yes	--	--
Low-NO _x burner with FGR	--	Yes	No	No	No	No	--	--

Table 3-11. BACT Determinations for CO Emissions for Fuel Oil-Fired Boilers, Less Than 100 MMBtu/hr

Company	State	RBLC ID	Permit Date	Throughput	Emissions		Control Equipment/ Description
					As Provided In LAER/BACT Clearinghouse		
U.S. Navy Base, Northern Division	CT	CT-0009	2/7/90	98	MMBtu/hr	0.03 lb/MMBtu	Good Combustion Practices
Mansfield Training School	CT	CT-0011	9/14/89	4.8	MMBtu/hr	0.034 lb/MMBtu	Fuel Spec: Fuel Limitation
Mansfield Training School	CT	CT-0011	9/14/89	2.9	MMBtu/hr	0.034 lb/MMBtu	Fuel Spec: Fuel Limitation
Mansfield Training School	CT	CT-0011	9/14/89	2.9	MMBtu/hr	0.034 lb/MMBtu	Fuel Spec: Fuel Limitation
Mansfield Training School	CT	CT-0011	9/14/89	2.2	MMBtu/hr	0.037 lb/MMBtu	Fuel Spec: Fuel Limitation
New England Furniture	CT	CT-0081	3/15/88	15.2	MMBtu/hr	0.033 lb/MMBtu	--
Mid-Georgia Cogeneration	GA	GA-0063	4/3/96	60	MMBtu/hr	0.09 lb/MMBtu	Complete Combustion
Kes Chateaugay Project	NY	NY-0055	12/19/94	5	MMBtu/hr	0.036 lb/MMBtu	No Controls
Hadson Power II	VA	VA-0165	11/22/89	81.58	MMBtu/hr	0.082 lb/MMBtu	Combustion Control
					AVERAGE	0.05	
					MAXIMU	0.09	
					MINIMUM	0.03	

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, 2001

Table 3-12. BACT Determinations for CO Emissions for Natural Gas-Fired Boilers, Less Than 100 MMBtu/hr

Company	State	RBLC ID	Permit Date	Throughput	Emissions		Control Equipment/Description
					As Provided In LAER/ BACT Clearinghouse	Converted to lb/MMBtu ^a	
Champion International	AL	AL-0066	5/8/91	5.83 MMBtu/hr	0.09 lb/MMBtu	0.09	Good Combustion Practices
Quincy Soybean Company of Arkansas	AR	AR-0019	3/4/97	68 MMBtu/hr	10.6 lb/hr	0.156	Good Combustion Practices
American Soda, LLP, Parachute Facility	CO	CO-0040	5/6/99	80.8 MMBtu/hr	0.09 lb/MMBtu	0.09	Good Combustion Practices
Mid-Georgia Cogeneration	GA	GA-0063	4/3/96	60 MMBtu/hr	0.05 lb/MMBtu	0.05	Complete Combustion
Naturalgas Pipeline Company	IL	IL-0043	3/1/89	8.4 MMBtu/hr	0.02 lb/MMBtu	0.02	--
Nucor Steel	IN	IN-0034	11/30/93	7.3 MMBtu/hr	20 lb/MMcf	0.020	--
Nucor Steel	IN	IN-0034	11/30/93	34 MMBtu/hr	35 lb/MMcf	0.034	--
Waupaca Foundry - Plant 5	IN	IN-0068	1/19/96	93.9 MMBtu/hr	19.2 lb/hr	0.204	Low NOx Burner
Transamerican Refining Corporation (TARC)	LA	LA-0085	1/15/93	1.2 MMBtu/hr	0.03 lb/hr	0.025	Good Operating Practice Good Design, Proper Operating Practices and 2% Excess O ₂
Air Liquide America Corporation	LA	LA-0112	2/13/98	95 MMBtu/hr	0.06 lb/MMBtu	0.06	Combustion Control
Fulton Cogeneration Associates	NY	NY-0039	1/29/90	90 MMBtu/hr	0.035 lb/MMBtu	0.035	No Controls
Kamine/Besicorp Syracuse L.P.	NY	NY-0072	12/10/94	33 MMBtu/hr	0.038 lb/MMBtu	0.038	No Controls
Kamine/Besicorp Syracuse L.P.	NY	NY-0072	12/10/94	2.5 MMBtu/hr	0.152 lb/MMBtu	0.152	No Controls
Indek - Yerkes Energy Services	NY	NY-0077	6/24/92	99 MMBtu/hr	0.038 lb/MMBtu	0.038	No Controls
CNG Transmission Corporation	WV	WV-0011	5/3/93	10 MMBtu/hr	35 lb/MMcf	0.034	--
					AVERAGE	0.07	
					MAXIMUM	0.20	
					MINIMUM	0.02	

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, 2001

Footnotes:

^a To convert from lb/hr, the emission limit was divided by the throughput rate. To convert from lb/MMcf, the emission limit was divided by 1,020 MMcf/MMBtu.

4.0 AIR QUALITY IMPACT ANALYSIS

For the proposed project, the net emissions changes are greater than the PSD significant emission rate for NO_x. Also, the proposed project is contemporaneous with the addition of 16 juice extractors over the next two years. As a result, the impacts of all criteria pollutants are analyzed. The following section presents the air modeling approach, including methods and assumptions, and summaries of maximum pollutant concentrations predicted for comparison to PSD Class II significant impact levels.

4.1 AIR MODELING ANALYSIS APPROACH

4.1.1 MODEL SELECTIONS

Significant Impact Analysis

The ISCST3 dispersion model (Version 10100) was used to evaluate the pollutant impacts due to the proposed steam boiler alone. This model is currently available on the EPA's Internet web site, Support Center for Regulatory Air Models (SCRAM), within the Technical Transfer Network (TTN). A listing of ISCST3 model features is presented in Table 4-1. The ISCST3 model is designed to calculate hourly concentrations based on hourly meteorological data (i.e., wind direction, wind speed, atmospheric stability, ambient temperature, and mixing heights). The ISCST3 model is applicable to sources located in either flat or rolling terrain where terrain heights do not exceed stack heights. These areas are referred to as simple terrain. The model can also be applied in areas where the terrain exceeds the stack heights. These areas are referred to as complex terrain.

Since the terrain surrounding the Tropicana facility is flat, the modeling analysis assumed that all receptors were at the base elevation of the facility (i.e., flat terrain assumption in ISCST3).

In this analysis, the EPA regulatory default options were used to predict all maximum impacts. The ISCST3 model can run in the rural or urban land use mode, which affects stability dispersion coefficients, wind speed profiles, and mixing heights. Land use can be characterized based on a scheme recommended by EPA (Auer, 1978). If more than 50 percent of the land use within a 3-km radius circle around a project is classified as industrial or commercial, or high-density residential, then the urban option should be selected. Otherwise, the rural option is appropriate. Based on reviews of aerial and U.S. Geological Survey (USGS) topographical maps

and a site visit, the land use within a 3-km (1.9-mile) radius of the Tropicana site is considered to be rural (i.e., very little heavy industrial, light-moderate industrial, commercial, or compact residential land use categories). Therefore, the rural mode was used in the air dispersion model to predict impacts from the Tropicana site.

The ISCST3 model was used to predict maximum pollutant concentrations for averaging the annual and 24-hour, 8-hour, 3-hour, and 1-hour averaging periods. The predicted concentrations were then compared to applicable significant impact levels (SILs).

4.1.2 SIGNIFICANT IMPACT ANALYSIS

Site Vicinity

A significant impact analysis is performed for all criteria pollutants. For each pollutant, a significant impact analysis is performed to determine a project's maximum air quality impact and the distance at which the project's impacts are below SIL. If the project's maximum impacts are less than the SIL, no additional modeling with other sources is needed and the impact analysis is complete. However, if the project's impacts are predicted to be greater than the SIL for a particular pollutant, then additional, more detailed modeling analyses are required for that pollutant. The additional analyses include AAQS and PSD increment analyses. Both of these detailed analyses require that the cumulative air quality impacts from other facilities that are in the vicinity of the proposed project's plant be addressed in the impact evaluation.

4.1.3 PSD CLASS I APPLICABILITY

The nearest Class I area to the site is the Everglades National Park (ENP), located about 180 km (113 miles) south southwest of the Tropicana Fort Pierce Plant site. Given the great distance, a PSD Class I analysis was not performed.

4.1.4 METEOROLOGICAL DATA

Significant Impact Analysis

Meteorological data used in the ISCST3 model to determine air quality impacts consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) office located at the Palm Beach International Airport (PBI). Concentrations were predicted using 5 years of hourly

meteorological data from 1987 through 1991. The NWS office in West Palm Beach is the closest primary weather station to the study area with meteorological data representative of the project site. The PBI station meteorological data have been approved by the FDEP and used for numerous air modeling studies submitted as part of air construction permits approved for sources located in Palm Beach County.

In the ISCST3 model, the wind speeds are adjusted from the height at which they are measured (i.e., anemometer height) to the height of each stack considered in the analysis. In this analysis, an anemometer height of 33 ft is used for the modeling analysis.

The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling height. The wind speed, cloud cover, and cloud ceiling values were used in the ISCST3 meteorological preprocessor program to determine atmospheric stability using the Turner stability scheme. Based on the temperature measurements at morning and afternoon, mixing heights were calculated from the radiosonde data at Ruskin using the Holzworth approach (Holzworth, 1972). Hourly mixing heights were derived from the morning and afternoon mixing heights using the interpolation method developed by EPA (Holzworth, 1972). The hourly surface data and mixing heights were used to develop a sequential, hourly meteorological data set (i.e., wind direction, wind speed, temperature, stability, and mixing heights). Because the observed hourly wind directions at the NWS stations are classified into one of thirty-six 10-degree sectors, the wind directions were randomized within each sector to account for the expected variability in air flow. These calculations were performed using the EPA RAMMET meteorological preprocessor program.

4.1.5 BUILDING DOWNWASH EFFECTS FOR TROPICANA PLANT

Based on the building dimensions associated with buildings and structures at the Fort Pierce Plant, the proposed steam boiler will comply with the good engineering practice (GEP) stack height regulations. However, the stack is less than GEP height. Therefore, the potential for building downwash to occur was considered in the air modeling analysis for the steam boiler.

Generally, a stack is considered to be within the influence of a building if it is within the lesser of 5 times L, where L is the lesser dimension of the building height or projected width. The

ISCST3 model uses two procedures to address the effects of building downwash. For both methods, the direction-specific building dimensions are input for H_b and L_b for 36 radial directions, with each direction representing a 10-degree sector. The H_b is the building height and L_b is the lesser of the building height or projected width. For short stacks (i.e., physical stack height is less than $H_b + 0.5 L_b$), the Schulman and Scire (1980) method is used. The features of the Schulman and Scire method are as follows:

1. Reduced plume rise as a result of initial plume dilution,
2. Enhanced plume spread as a linear function of the effective plume height, and
3. Specification of building dimensions as a function of wind direction.

For cases where the physical stack height is greater than $H_b + 0.5 L_b$, but less than GEP, the Huber-Snyder (1976) method is used. Both downwash algorithms affect stacks that are within the influence of a building, without regard for the actual distance the stack or stack's plume from the building. See Appendix B for BPIP input, output, and summary files.

4.1.6 RECEPTOR LOCATIONS

For predicting maximum concentrations in the vicinity of the Fort Pierce Plant, an array of discrete and polar receptors was used. The modeling origin used in the analysis was the northwest corner of the feed mill building. The number of discrete receptors was 49; all of these receptors are located along the property line of the facility. Property line receptors are all 100 m or less between receptors. A polar grid was employed at distances of 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 15.0, and 20.0 km. This grid has 36 radials extending out from the origin with these distances.

4.2 AIR MODELING RESULTS

4.2.1 SIGNIFICANT IMPACT ANALYSIS

Site Vicinity

The scenarios modeled for the steam boiler by itself, as the project, were: natural gas and fuel oil operation for baseload, 75% load, and 50% load. A generic emission rate was used in the model of 10 g/s and calculations were performed to determine maximum impacts for the appropriate pollutants and averaging times. The predicted maximum SO_2 , PM_{10} , NO_x , and CO concentrations for all loads and fuels are presented in Table 4-2. Based upon the screening

analyses, the proposed project was determined to not have a significant impact for any of the modeled pollutants for any scenario. Therefore, no additional detailed modeling analyses are required for these pollutants. Maximum impacts were determined to be within 100 meter spacing from the closest receptor. The ISCST3 input and summary file can be found in Appendix C.

Table 4-1. Major Features of the ISCST3 Model, Version 10100

Model Features
<ul style="list-style-type: none">• Polar or Cartesian coordinate systems for receptor locations• Rural or one of three urban options which affect wind speed profile exponent, dispersion rates, and mixing height calculations• Plume rise due to momentum and buoyancy as a function of downwind distance for stack emissions (Briggs, 1969, 1971, 1972, and 1975; Bowers, et al., 1979).• Procedures suggested by Huber and Snyder (1976); Huber (1977); and Schulman and Scire (1980) for evaluating building wake effects• Procedures suggested by Briggs (1974) for evaluating stack-tip downwash• Separation of multiple emission sources• Consideration of the effects of gravitational settling and dry deposition on ambient particulate concentrations• Capability of simulating point, line, volume, area, and open pit sources• Capability to calculate dry and wet deposition, including both gaseous and particulate precipitation scavenging for wet deposition• Variation of wind speed with height (wind speed-profile exponent law)• Concentration estimates for 1-hour to annual average times• Terrain-adjustment procedures for elevated terrain including a terrain truncation algorithm for ISCST3; a built-in algorithm for predicting concentrations in complex terrain• Consideration of time-dependent exponential decay of pollutants• The method of Pasquill (1976) to account for buoyancy-induced dispersion• A regulatory default option to set various model options and parameters to EPA recommended values (see text for regulatory options used)• Procedure for calm-wind processing including setting wind speeds less than 1 m/s to 1 m/s.

Note: ISCST = Industrial Source Complex Short-Term Model.
Source: EPA, 2000.

5.0 REFERENCES

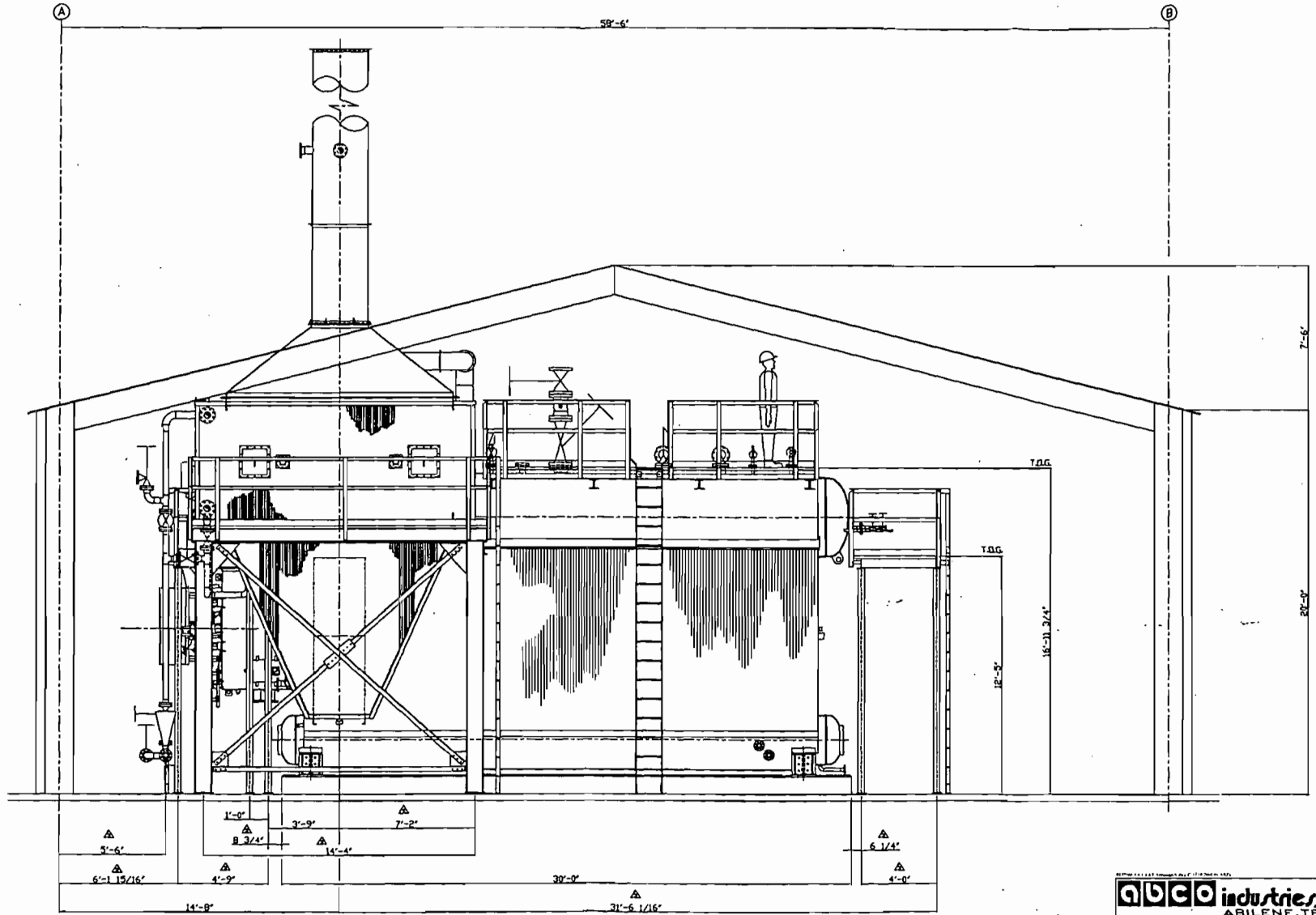
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APPENDIX A

ABCO INDUSTRIES, INC.

CLASS D-TYPE BOILER DESIGN DRAWINGS



ELEVATION VIEW

ABC industries, inc.
 ABILENE, TEXAS

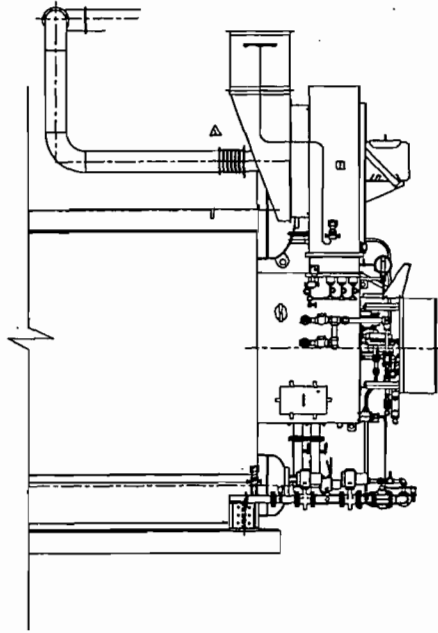
THIS DRAWING AND DESIGN ARE THE PROPERTY OF ABC INDUSTRIES, INC. THEY ARE LOANED TO YOU ON THE CONDITION THAT THEY ARE NOT TO BE COPIED IN PART, IN WHOLE, OR FOR ANY PURPOSE DETRIMENTAL TO ABC INDUSTRIES, INC.

REVISIONS				BY	APPROV	DESCRIPTION
NO.	DATE	DOCUMENT NO.		BY	APPROV	DESCRIPTION
1	05/21/01			KF	RRD	ADDED FOR DUCT
2	07/05/01			RRD	RV	GENERAL REVISION
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

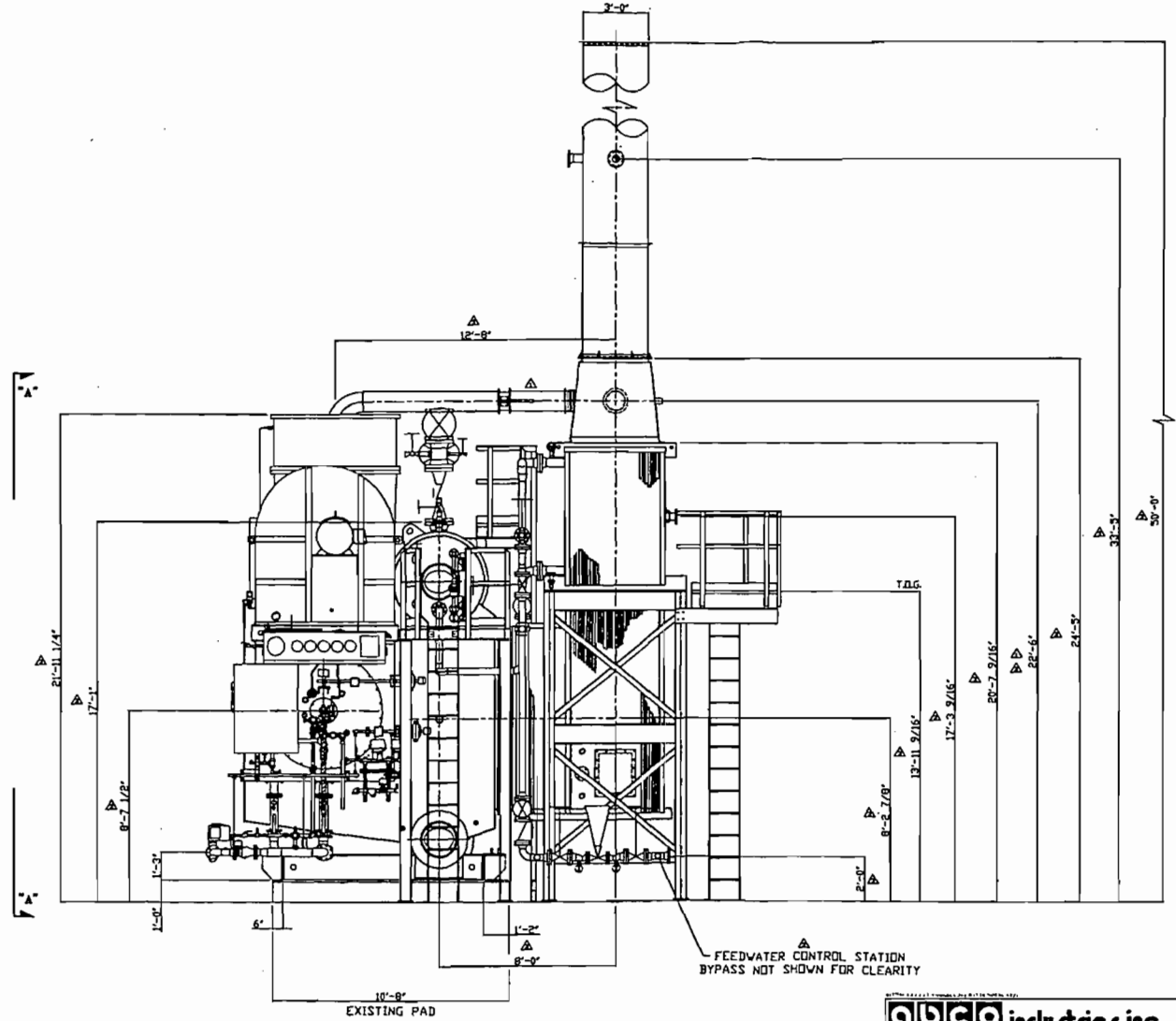
CUSTOMER: TROPICANA PRODUCTS, INC.
 P.O. BOX 1182
 FORT WORTH, TEXAS

SCALE: 3/8" = 1' 0" DRAWN BY: KF
 DATE: 05/15/01 APPR. BY: RRD

DRAWING NUMBER: D-201006-0-03
 REV: 2



SECTION "A"-A



END VIEW

REVISIONS				
NO.	DATE	DOCUMENT NO.	BY	APPR.
1	05/26/01	ADDED FOR DUCT	KP	RRD
2	07/25/01	GENERAL REVISION	RRD	KV
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

ABCO industries inc.
ABILENE, TEXAS

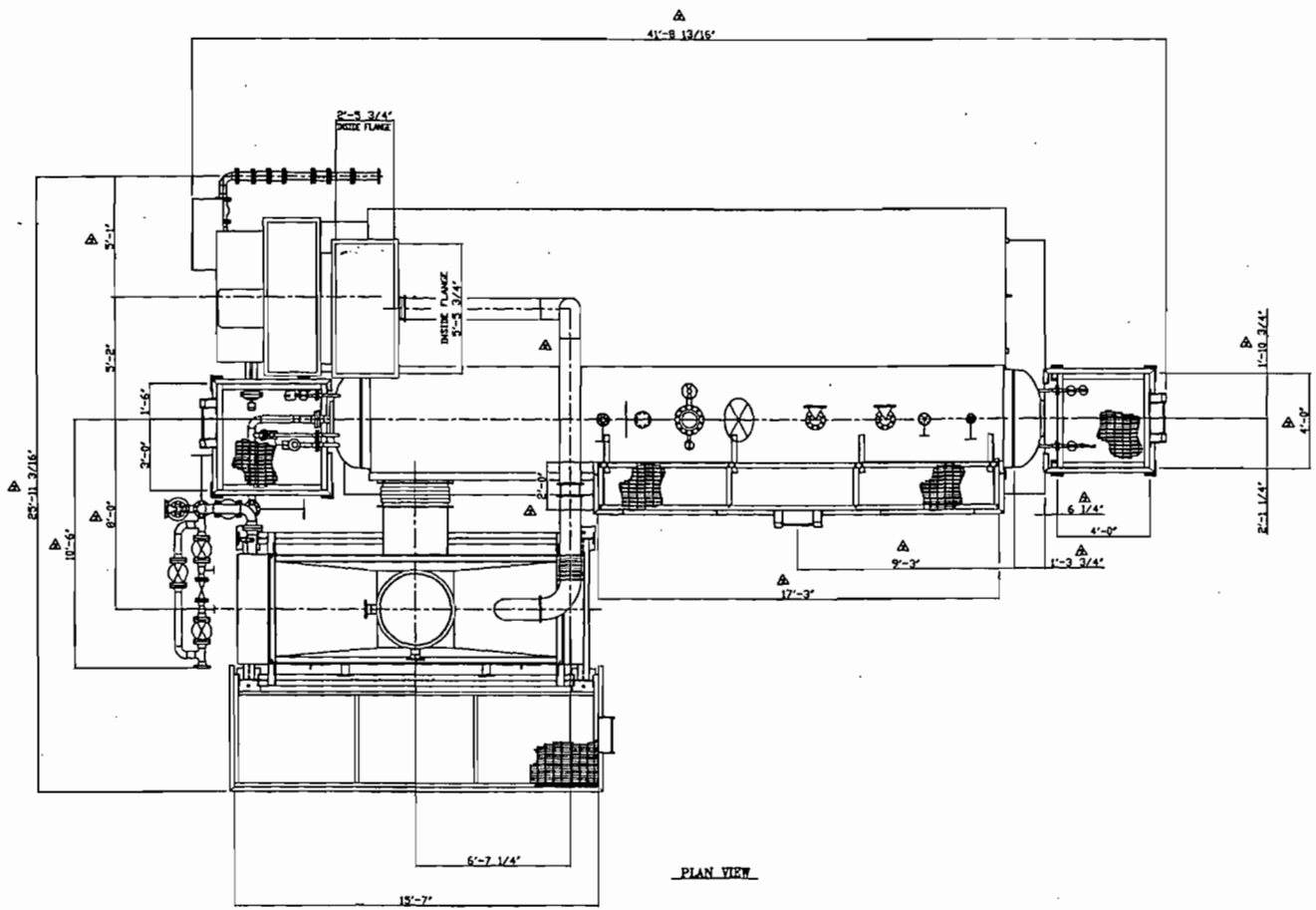
THIS DRAWING AND DESIGN ARE THE PROPERTY OF ABCO INDUSTRIES, INC. THEY ARE LOANED TO THE ENGINEER THAT THEY ARE ACT TO BE COPIED IN WHOLE OR IN PART FOR ANY PURPOSE DETRIMENTAL TO ABCO INDUSTRIES, INC.

SYSTEM GENERAL ARRANGEMENT (END)

P.O. No. - 1883
TROPICANA PRODUCTS, INC.
FORT PENCE, FLORIDA

SCALE: 3/8"=1' 0" DRAWN BY: KP DATE: 05/14/01

APPR. BY: RRD DRAWING NUMBER: D-201006-0-02



PLAN VIEW

ABGO industries, inc.
 ABILENE, TEXAS

THIS DRAWING AND DESIGN ARE THE PROPERTY OF ABGO INDUSTRIES, INC. THEY ARE LOANED TO YOU ON THE CONDITION THAT THEY ARE NOT TO BE COPIED IN PART, IN WHOLE, OR FOR ANY PURPOSES OUTSIDE OF ABGO INDUSTRIES, INC.

SYSTEM GENERAL ARRANGEMENT (PLAN)

CUSTOMER: TROPICANA PRODUCTS, INC.
 FORT PIERCE, FLORIDA

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	05/13/01	GENERAL REVISION	KF
2	05/21/01	ADDED FOR SCALE	KF
3	07/05/01	GENERAL REVISION	RRD
4	-	-	-
5	-	-	-
6	-	-	-

SCALE: 3/8"=1' 0"

DATE: 04/18/01

DRAWN BY: RRD
 APPR. BY: MV

DRAWING NUMBER: D-201005-0-01
 REV: 3

APPENDIX B

**TROPICANA PRODUCTS, INC.
FORT PIERCE, FL**

BPIP INPUT AND OUTPUT FILES

'BPIP-Fort Pierce New Steam Boiler: Tropicana 5/25/2001'

'ST'

'FEET' 0.3048

'UTMN' 0.0

7

'Concrete Tank Farm' 1 0.0

6 29.0

-262 -472

-262 -200

46 -200

46 -386

-110 -386

-110 -472

'Feed Warehouse Left' 1 0.0

4 37.0

-102 128

-102 410

0 410

0 128

'Feed Warehouse Right' 1 0.0

4 37.0

16 128

16 318

118 318

118 128

'WIP Warehouse' 1 0.0

12 39.0

-720 -140

-720 -50

-762 -50

-762 90

-720 90

-720 144

-314 144

-314 62

-262 62

-262 22

-334 22

-334 -140

'Boiler Room' 1 0.0

10 29.0

200 24

200 40

172 40

172 56

200 56

200 98

220 98

220 84

300 84

300 24

'Feed Mill' 1 0.0

8 35.0

0 -122

0 0

200 0

200 -122

110 -122

110 -146

54 -146

54 -122

'Extracting' 1 0.0

10 43.0

100 -324

100 -176

340 -176

340 -200

260 -200

260 -224

236 -224

236 -340

160 -340

160 -324

7

'001' 0.0 95.0 74.0 -70.0

'004' 0.0 95.0 102.0 -70.0

'002' 0.0 60.0 210.0 52.0

'003'	0.0	60.0	216.0	38.0SB_App_B.bpp
'006'	0.0	60.0	222.0	56.0
'007'	0.0	55.0	50.0	0.0
'SB'	0.0	60.0	216.0	49.0

7/10/01 10:

DATE : 05/25/01
 TIME : 15:11:42
 BPIP-Fort Pierce New Steam Boiler: Tropicana 5/25/2001

BPIP (Dated: 95086)

=====
 BPIP PROCESSING INFORMATION:
 =====

The ST flag has been set for processing for an ISCST2 run.

Inputs entered in FEET will be converted to meters using
 a conversion factor of 0.3048. Output will be in meters.

UTMP is set to UTMN. The input is assumed to be in a local
 X-Y coordinate system as opposed to a UTM coordinate system.
 True North is in the positive Y direction.

Plant north is set to 0.00 degrees with respect to True North.

BPIP-Fort Pierce New Steam Boiler: Tropicana 5/25/2001

PRELIMINARY* GEP STACK HEIGHT RESULTS TABLE
 (Output Units: meters)

Stack Name	Stack Height	Stack-Building Base Elevation Differences	GEP** EQN1	Preliminary* GEP Stack Height Value
001	28.96	0.00	32.77	65.00
004	28.96	0.00	32.77	65.00
002	18.29	0.00	28.19	65.00
003	18.29	0.00	32.77	65.00
006	18.29	0.00	28.19	65.00
007	16.76	0.00	32.77	65.00
SB	18.29	0.00	28.19	65.00

* Results are based on Determinants 1 & 2 on pages 1 & 2 of the GEP Technical Support Document. Determinant 3 may be investigated for additional stack height credit. Final values result after Determinant 3 has been taken into consideration.

** Results were derived from Equation 1 on page 6 of GEP Technical Support Document. Values have been adjusted for any stack-building base elevation differences.

Note: Criteria for determining stack heights for modeling emission limitations for a source can be found in Table 3.1 of the GEP Technical Support Document.

BPIP (Dated: 95086)

DATE : 05/25/01
 TIME : 15:11:42

BPIP-Fort Pierce New Steam Boiler: Tropicana 5/25/2001

BPIP output is in meters

SO BUILDHGT 001	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT 001	10.67	10.67	10.67	10.67	13.11	13.11
SO BUILDHGT 001	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT 001	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT 001	10.67	10.67	10.67	10.67	13.11	13.11
SO BUILDHGT 001	13.11	13.11	13.11	13.11	13.11	10.67
SO BUILDWID 001	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID 001	55.79	49.65	44.50	51.55	67.41	75.64
SO BUILDWID 001	67.67	70.60	71.39	70.00	66.49	60.96
SO BUILDWID 001	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID 001	55.79	49.65	44.50	51.55	67.41	75.64

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7/10/01 10:

SO BUILDWID 001	81.58	85.03	85.91	84.17	79.87	60.96
SO BUILDHGT 004	13.11	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT 004	10.67	10.67	10.67	10.67	13.11	13.11
SO BUILDHGT 004	13.11	13.11	10.67	10.67	10.67	10.67
SO BUILDHGT 004	13.11	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT 004	10.67	10.67	10.67	10.67	13.11	13.11
SO BUILDHGT 004	13.11	13.11	13.11	13.11	13.11	13.11
SO BUILDWID 004	73.31	70.00	71.39	70.60	67.67	62.68
SO BUILDWID 004	55.79	49.65	44.50	51.55	67.41	75.64
SO BUILDWID 004	81.58	85.03	71.39	70.00	66.49	60.96
SO BUILDWID 004	73.31	70.00	71.39	70.60	67.67	62.68
SO BUILDWID 004	55.79	49.65	44.50	51.55	67.41	75.64
SO BUILDWID 004	81.58	85.03	85.91	84.17	79.87	73.15
SO BUILDHGT 002	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT 002	10.67	10.67	8.84	8.84	11.28	11.28
SO BUILDHGT 002	11.28	11.28	11.28	11.28	10.67	10.67
SO BUILDHGT 002	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT 002	10.67	10.67	8.84	8.84	8.84	8.84
SO BUILDHGT 002	8.84	8.84	10.67	10.67	10.67	10.67
SO BUILDWID 002	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID 002	55.79	49.65	22.56	23.30	65.05	65.70
SO BUILDWID 002	64.35	61.04	55.88	49.02	99.20	60.96
SO BUILDWID 002	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID 002	55.79	49.65	22.56	23.30	27.61	31.12
SO BUILDWID 002	35.35	38.51	85.91	91.75	99.20	60.96
SO BUILDHGT 003	13.11	13.11	13.11	10.67	10.67	10.67
SO BUILDHGT 003	10.67	10.67	8.84	8.84	11.28	11.28
SO BUILDHGT 003	11.28	11.28	11.28	11.28	10.67	10.67
SO BUILDHGT 003	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT 003	10.67	10.67	8.84	8.84	8.84	8.84
SO BUILDHGT 003	8.84	8.84	13.11	13.11	13.11	13.11
SO BUILDWID 003	73.31	71.24	67.01	70.60	67.67	62.68
SO BUILDWID 003	55.79	49.65	22.56	23.30	65.05	65.70
SO BUILDWID 003	64.35	61.04	55.88	49.02	99.20	60.96
SO BUILDWID 003	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID 003	55.79	49.65	22.56	23.30	27.61	31.12
SO BUILDWID 003	35.35	38.51	85.91	84.17	79.87	73.15
SO BUILDHGT 006	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT 006	10.67	10.67	8.84	11.28	11.28	11.28
SO BUILDHGT 006	11.28	11.28	11.28	11.28	10.67	10.67
SO BUILDHGT 006	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT 006	10.67	10.67	8.84	8.84	8.84	8.84
SO BUILDHGT 006	8.84	8.84	10.67	10.67	10.67	10.67
SO BUILDWID 006	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID 006	55.79	49.65	22.56	90.05	65.05	65.70
SO BUILDWID 006	64.35	61.04	55.88	49.02	99.20	103.63
SO BUILDWID 006	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID 006	55.79	49.65	22.56	23.30	27.61	31.12
SO BUILDWID 006	35.35	38.51	85.91	91.75	99.20	103.63
SO BUILDHGT 007	10.67	11.28	11.28	10.67	10.67	10.67
SO BUILDHGT 007	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT 007	11.28	11.28	11.28	11.28	11.28	11.28
SO BUILDHGT 007	11.28	11.28	11.28	10.67	10.67	10.67
SO BUILDHGT 007	10.67	10.67	10.67	10.67	10.67	13.11
SO BUILDHGT 007	13.11	13.11	13.11	13.11	13.11	10.67
SO BUILDWID 007	66.49	92.41	101.05	70.60	67.67	62.68
SO BUILDWID 007	55.79	49.65	44.50	51.55	57.04	62.68
SO BUILDWID 007	85.83	79.07	69.90	49.02	40.67	31.09
SO BUILDWID 007	40.67	49.02	55.88	70.60	67.67	62.68
SO BUILDWID 007	55.79	49.65	44.50	51.55	57.04	75.64
SO BUILDWID 007	81.58	85.03	85.91	84.17	79.87	60.96
SO BUILDHGT SB	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT SB	10.67	10.67	8.84	8.84	11.28	11.28
SO BUILDHGT SB	11.28	11.28	11.28	11.28	10.67	10.67
SO BUILDHGT SB	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT SB	10.67	10.67	8.84	8.84	8.84	8.84

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SO BUILDHGT SB	8.84	8.84	10.67	10.67	10.67	10.67
SO BUILDWID SB	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID SB	55.79	49.65	22.56	23.30	65.05	65.70
SO BUILDWID SB	64.35	61.04	55.88	49.02	99.20	60.96
SO BUILDWID SB	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID SB	55.79	49.65	22.56	23.30	27.61	31.12
SO BUILDWID SB	35.35	38.51	85.91	91.75	99.20	60.96

7/10/01 1

APPENDIX C

TROPICANA PRODUCTS, INC.

FORT PIERCE, FL

ISCST3 INPUT AND SUMMARY FILES

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ISCSB03R RELEASE 00285

7/10/01 10:46AM

ISCSST3 OUTPUT FILE NUMBER 1 :GENSIG.087
 ISCSST3 OUTPUT FILE NUMBER 2 :GENSIG.088
 ISCSST3 OUTPUT FILE NUMBER 3 :GENSIG.089
 ISCSST3 OUTPUT FILE NUMBER 4 :GENSIG.090
 ISCSST3 OUTPUT FILE NUMBER 5 :GENSIG.091

First title for last output file is: 1987 Tropicana Fort Pierce Plant SIG ANALYSIS for New Steam Boiler 05/25/01
 Second title for last output file is: Palm Beach/Palm Beach Met Data, 1987-91, 10 g/s

AVERAGING TIME	YEAR	CONC (ug/m3)	DIRECTION (degree)	DISTANCE (m)	PERIOD ENDING (YYMMDDHH)

SOURCE GROUP ID: BASENG					
Annual					
	1987	5.596	305.0	576.8	87123124
	1988	4.771	305.0	576.8	88123124
	1989	5.758	305.0	576.8	89123124
	1990	6.653	305.0	576.8	90123124
	1991	6.271	305.0	576.8	91123124
HIGH 24-Hour					
	1987	64.416	130.	400.	87101324
	1988	70.700	347.7	340.3	88012024
	1989	63.976	340.	400.	89060924
	1990	71.649	332.5	374.2	90101024
	1991	73.700	350.	400.	91030224
HIGH 8-Hour					
	1987	116.404	55.0	472.1	87062716
	1988	115.900	340.	400.	88112716
	1989	109.964	140.	400.	89121408
	1990	96.902	160.	400.	90011316
	1991	123.039	340.	400.	91021916
HIGH 3-Hour					
	1987	153.411	34.3	403.9	87011018
	1988	154.350	350.	400.	88040418
	1989	152.344	340.	400.	89060918
	1990	153.479	350.	400.	90021618
	1991	153.610	34.3	403.9	91030912
HIGH 1-Hour					
	1987	181.775	300.	1000.	87070906
	1988	208.368	130.	600.	88030107
	1989	199.008	232.3	678.5	89111207
	1990	241.130	30.	600.	90071416
	1991	178.078	125.6	310.4	91101614
SOURCE GROUP ID: BASEFO					
Annual					
	1987	5.796	305.0	576.8	87123124
	1988	4.938	305.0	576.8	88123124
	1989	5.958	305.0	576.8	89123124
	1990	6.890	305.0	576.8	90123124
	1991	6.492	305.0	576.8	91123124
HIGH 24-Hour					
	1987	66.867	130.	400.	87101324
	1988	73.637	347.7	340.3	88012024
	1989	65.919	340.	400.	89060924
	1990	76.452	332.5	374.2	90101024
	1991	76.156	350.	400.	91030224
HIGH 8-Hour					
	1987	118.944	55.0	472.1	87062716
	1988	119.274	340.	400.	88112716
	1989	115.829	140.	400.	89121408
	1990	100.419	140.	400.	90102708
	1991	126.368	340.	400.	91021916
HIGH 3-Hour					
	1987	159.661	34.3	403.9	87011018
	1988	160.091	350.	400.	88040418
	1989	157.411	340.	400.	89060918
	1990	158.368	350.	400.	90021618
	1991	158.692	347.7	340.3	91011115
HIGH 1-Hour					
	1987	185.525	144.0	313.6	87101316
	1988	207.584	130.	600.	88030107
	1989	199.623	232.3	678.5	89111207
	1990	241.713	30.	600.	90071416
	1991	185.257	125.6	310.4	91101614
SOURCE GROUP ID: LD75NG					
Annual					

	1987	7.548	305.0	576.8	87123124
	1988	6.333	305.0	576.8	88123124
	1989	7.939	311.6	498.5	89123124
	1990	9.020	311.6	498.5	90123124
	1991	8.355	305.0	576.8	91123124
HIGH 24-Hour	1987	85.882	130.	400.	87101324
	1988	97.870	144.0	313.6	88020924
	1989	81.145	340.	400.	89060924
	1990	98.197	332.5	374.2	90101024
	1991	95.098	350.	400.	91030224
HIGH 8-Hour	1987	140.514	108.5	338.1	87040916
	1988	144.752	340.	400.	88112716
	1989	161.429	140.	400.	89121408
	1990	148.417	332.5	374.2	90021608
	1991	159.006	350.	400.	91120308
HIGH 3-Hour	1987	209.817	34.3	403.9	87011018
	1988	204.899	350.	400.	88040418
	1989	206.913	144.0	313.6	89120312
	1990	207.321	140.	400.	90102703
	1991	208.438	144.0	313.6	91110812
HIGH 1-Hour	1987	282.954	130.	800.	87042806
	1988	253.888	20.	1000.	88060706
	1989	288.182	40.	600.	89043011
	1990	261.950	34.3	403.9	90071416
	1991	376.045	198.8	442.2	91122611
SOURCE GROUP ID: LD75FO					
Annual	1987	7.556	305.0	576.8	87123124
	1988	6.339	305.0	576.8	88123124
	1989	7.948	311.6	498.5	89123124
	1990	9.030	311.6	498.5	90123124
	1991	8.364	305.0	576.8	91123124
HIGH 24-Hour	1987	85.976	130.	400.	87101324
	1988	98.052	144.0	313.6	88020924
	1989	81.217	340.	400.	89060924
	1990	98.283	332.5	374.2	90101024
	1991	95.189	350.	400.	91030224
HIGH 8-Hour	1987	140.702	108.5	338.1	87040916
	1988	144.871	340.	400.	88112716
	1989	161.669	140.	400.	89121408
	1990	148.593	332.5	374.2	90021608
	1991	159.182	350.	400.	91120308
HIGH 3-Hour	1987	210.065	34.3	403.9	87011018
	1988	205.114	350.	400.	88040418
	1989	207.202	144.0	313.6	89120312
	1990	207.600	140.	400.	90102703
	1991	208.800	144.0	313.6	91110812
HIGH 1-Hour	1987	282.948	130.	800.	87042806
	1988	253.859	20.	1000.	88060706
	1989	288.203	40.	600.	89043011
	1990	262.125	34.3	403.9	90071416
	1991	376.037	198.8	442.2	91122611
SOURCE GROUP ID: LD50NG					
Annual	1987	11.034	311.6	498.5	87123124
	1988	10.989	144.0	313.6	88123124
	1989	12.697	320.6	429.3	89123124
	1990	13.308	311.6	498.5	90123124
	1991	11.868	311.6	498.5	91123124
HIGH 24-Hour	1987	121.898	125.6	310.4	87101324
	1988	157.440	144.0	313.6	88020924
	1989	121.281	125.6	310.4	89122424
	1990	128.992	332.5	374.2	90101024
	1991	123.677	350.	400.	91030224
HIGH 8-Hour	1987	212.710	125.6	310.4	87111208
	1988	224.142	144.0	313.6	88020916
	1989	234.296	140.	400.	89121408
	1990	226.163	332.5	374.2	90021608

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HIGH 3-Hour	1991	219.772	144.0	313.6	91112608
	1987	314.232	144.0	313.6	87122921
	1988	316.952	144.0	313.6	88020915
	1989	297.818	144.0	313.6	89120312
	1990	303.426	150.	400.	90121403
HIGH 1-Hour	1991	324.247	144.0	313.6	91110812
	1987	527.438	120.	400.	87031307
	1988	429.730	350.	800.	88060806
	1989	447.465	130.	400.	89111807
	1990	455.945	30.	600.	90071415
SOURCE GROUP ID: LD50FO Annual	1991	402.288	340.	400.	91112207
	1987	10.833	311.6	498.5	87123124
	1988	10.497	144.0	313.6	88123124
	1989	12.445	320.6	429.3	89123124
	1990	13.072	311.6	498.5	90123124
HIGH 24-Hour	1991	11.664	311.6	498.5	91123124
	1987	118.957	332.5	374.2	87022724
	1988	152.603	144.0	313.6	88020924
	1989	117.307	125.6	310.4	89122424
	1990	126.869	332.5	374.2	90101024
HIGH 8-Hour	1991	121.393	350.	400.	91030224
	1987	205.975	125.6	310.4	87111208
	1988	217.456	144.0	313.6	88020916
	1989	228.376	140.	400.	89121408
	1990	220.930	332.5	374.2	90021608
HIGH 3-Hour	1991	212.976	144.0	313.6	91112608
	1987	305.488	144.0	313.6	87122921
	1988	307.872	144.0	313.6	88020915
	1989	290.562	125.6	310.4	89042112
	1990	293.104	150.	400.	90121403
HIGH 1-Hour	1991	315.345	144.0	313.6	91110812
	1987	527.313	120.	400.	87031307
	1988	423.896	60.	600.	88022807
	1989	445.115	130.	400.	89111807
	1990	454.563	30.	600.	90071415
1991	398.455	340.	400.	91112207	
All receptor computations reported with respect to a user-specified origin					
GRID	0.00	0.00			
DISCRETE	0.00	0.00			

CO STARTING\Tropicana\to Janet\Gensig_App_C.i87
 CO TITLEONE 1987 Tropicana Fort Pierce Plant SIG ANALYSIS for New Steam Boiler 05/25/01
 CO TITLETWO Palm Beach/Palm Beach Met Data, 1987-91, 10 g/s
 CO MODELOPT CONC RURAL DFAULT NOCMPL
 CO AVERTIME PERIOD 24 8 3 1
 CO POLLUTID GEN
 CO DCAYCOEF .000000
 CO RUNORNOT RUN
 CO FINISHED

SO STARTING

** TROPICANA ORIGIN IS NW CORNER OF FEED MILL
 SO LOCATION ORGN POINT 0.0 0.0 .0
 SO SRCPARAM ORGN 0.0 0.0 0.0 0.0 0.0

** TROPICANA SOURCE ID DESCRIPTION

 ** BASENG NATURAL GAS OPERATION AT BASELOAD
 ** BASEFO FUEL OIL OPERATION AT BASELOAD
 ** LD75NG NATURAL GAS OPERATION AT 75% LOAD
 ** LD75FO FUEL OIL OPERATION AT 75% LOAD
 ** LD50NG NATURAL GAS OPERATION AT 50% LOAD
 ** LD50FO FUEL OIL OPERATION AT 50% LOAD

** STACK LOCATIONS

SO LOCATION	BASENG	POINT	65.8	14.8	0.
SO LOCATION	BASEFO	POINT	65.8	14.8	0.
SO LOCATION	LD75NG	POINT	65.8	14.8	0.
SO LOCATION	LD75FO	POINT	65.8	14.8	0.
SO LOCATION	LD50NG	POINT	65.8	14.8	0.
SO LOCATION	LD50FO	POINT	65.8	14.8	0.

** TROPICANA SOURCES

SO SRCPARAM	BASENG	10.0	18.29	419.8	25.08	0.84
SO SRCPARAM	BASEFO	10.0	18.29	420.9	23.92	0.84
SO SRCPARAM	LD75NG	10.0	18.29	410.9	18.35	0.84
SO SRCPARAM	LD75FO	10.0	18.29	410.9	18.32	0.84
SO SRCPARAM	LD50NG	10.0	18.29	403.2	11.41	0.84
SO SRCPARAM	LD50FO	10.0	18.29	402.6	11.95	0.84

SO BUILDHGT	BASENG	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT	BASENG	10.67	10.67	8.84	8.84	11.28	11.28
SO BUILDHGT	BASENG	11.28	11.28	11.28	11.28	10.67	10.67
SO BUILDHGT	BASENG	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT	BASENG	10.67	10.67	8.84	8.84	8.84	8.84
SO BUILDHGT	BASENG	8.84	8.84	10.67	10.67	10.67	10.67
SO BUILDWID	BASENG	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID	BASENG	55.79	49.65	22.56	23.30	65.05	65.70
SO BUILDWID	BASENG	64.35	61.04	55.88	49.02	99.20	60.96
SO BUILDWID	BASENG	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID	BASENG	55.79	49.65	22.56	23.30	27.61	31.12
SO BUILDWID	BASENG	35.35	38.51	85.91	91.75	99.20	60.96

SO BUILDHGT	BASEFO	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT	BASEFO	10.67	10.67	8.84	8.84	11.28	11.28
SO BUILDHGT	BASEFO	11.28	11.28	11.28	11.28	10.67	10.67
SO BUILDHGT	BASEFO	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT	BASEFO	10.67	10.67	8.84	8.84	8.84	8.84
SO BUILDHGT	BASEFO	8.84	8.84	10.67	10.67	10.67	10.67
SO BUILDWID	BASEFO	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID	BASEFO	55.79	49.65	22.56	23.30	65.05	65.70
SO BUILDWID	BASEFO	64.35	61.04	55.88	49.02	99.20	60.96
SO BUILDWID	BASEFO	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID	BASEFO	55.79	49.65	22.56	23.30	27.61	31.12
SO BUILDWID	BASEFO	35.35	38.51	85.91	91.75	99.20	60.96

SO BUILDHGT	LD75NG	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT	LD75NG	10.67	10.67	8.84	8.84	11.28	11.28
SO BUILDHGT	LD75NG	11.28	11.28	11.28	11.28	10.67	10.67
SO BUILDHGT	LD75NG	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT	LD75NG	10.67	10.67	8.84	8.84	8.84	8.84
SO BUILDHGT	LD75NG	8.84	8.84	10.67	10.67	10.67	10.67
SO BUILDWID	LD75NG	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID	LD75NG	55.79	49.65	22.56	23.30	65.05	65.70
SO BUILDWID	LD75NG	64.35	61.04	55.88	49.02	99.20	60.96
SO BUILDWID	LD75NG	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID	LD75NG	55.79	49.65	22.56	23.30	27.61	31.12
SO BUILDWID	LD75NG	35.35	38.51	85.91	91.75	99.20	60.96

SO BUILDHGT LD75FO	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT LD75FO	10.67	10.67	8.84	8.84	11.28	11.28
SO BUILDHGT LD75FO	11.28	11.28	11.28	11.28	10.67	10.67
SO BUILDHGT LD75FO	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT LD75FO	10.67	10.67	8.84	8.84	8.84	8.84
SO BUILDHGT LD75FO	8.84	8.84	10.67	10.67	10.67	10.67
SO BUILDWID LD75FO	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID LD75FO	55.79	49.65	22.56	23.30	65.05	65.70
SO BUILDWID LD75FO	64.35	61.04	55.88	49.02	99.20	60.96
SO BUILDWID LD75FO	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID LD75FO	55.79	49.65	22.56	23.30	27.61	31.12
SO BUILDWID LD75FO	35.35	38.51	85.91	91.75	99.20	60.96

SO BUILDHGT LD50NG	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT LD50NG	10.67	10.67	8.84	8.84	11.28	11.28
SO BUILDHGT LD50NG	11.28	11.28	11.28	11.28	10.67	10.67
SO BUILDHGT LD50NG	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT LD50NG	10.67	10.67	8.84	8.84	8.84	8.84
SO BUILDHGT LD50NG	8.84	8.84	10.67	10.67	10.67	10.67
SO BUILDWID LD50NG	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID LD50NG	55.79	49.65	22.56	23.30	65.05	65.70
SO BUILDWID LD50NG	64.35	61.04	55.88	49.02	99.20	60.96
SO BUILDWID LD50NG	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID LD50NG	55.79	49.65	22.56	23.30	27.61	31.12
SO BUILDWID LD50NG	35.35	38.51	85.91	91.75	99.20	60.96

SO BUILDHGT LD50FO	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT LD50FO	10.67	10.67	8.84	8.84	11.28	11.28
SO BUILDHGT LD50FO	11.28	11.28	11.28	11.28	10.67	10.67
SO BUILDHGT LD50FO	10.67	10.67	10.67	10.67	10.67	10.67
SO BUILDHGT LD50FO	10.67	10.67	8.84	8.84	8.84	8.84
SO BUILDHGT LD50FO	8.84	8.84	10.67	10.67	10.67	10.67
SO BUILDWID LD50FO	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID LD50FO	55.79	49.65	22.56	23.30	65.05	65.70
SO BUILDWID LD50FO	64.35	61.04	55.88	49.02	99.20	60.96
SO BUILDWID LD50FO	66.49	70.00	71.39	70.60	67.67	62.68
SO BUILDWID LD50FO	55.79	49.65	22.56	23.30	27.61	31.12
SO BUILDWID LD50FO	35.35	38.51	85.91	91.75	99.20	60.96

SO EMISUNIT .100000E+07 (GRAMS/SEC) (MICROGRAMS/CUBIC-METER)

SO SRCGROUP BASENG BASENG

SO SRCGROUP BASEFO BASEFO

SO SRCGROUP LD75NG LD75NG

SO SRCGROUP LD75FO LD75FO

SO SRCGROUP LD50NG LD50NG

SO SRCGROUP LD50FO LD50FO

SO FINISHED

RE STARTING

RE GRIDPOLR POL STA

RE GRIDPOLR POL ORIG 0.0 0.0

RE GRIDPOLR POL DIST 1500 2000 2500 3000 3500 4000 5000

RE GRIDPOLR POL DIST 6000 7000 8000 9000 10000 15000 20000

RE GRIDPOLR POL GDIR 36. 10 10.00

RE GRIDPOLR POL END

** FENCELINE RECEPTORS AT 100-M INTERVALS

RE DISCCART	-1331.7	-399.9
RE DISCCART	-1231.7	-401.4
RE DISCCART	-1131.7	-402.9
RE DISCCART	-1031.7	-404.4
RE DISCCART	-931.7	-405.9
RE DISCCART	-831.7	-407.0
RE DISCCART	-731.7	-405.1
RE DISCCART	-631.8	-403.3
RE DISCCART	-536.7	-415.1
RE DISCCART	-438.3	-406.1
RE DISCCART	-338.3	-404.6
RE DISCCART	-242.8	-416.7
RE DISCCART	-142.8	-418.5
RE DISCCART	-42.8	-420.3
RE DISCCART	47.8	-400.0
RE DISCCART	116.0	-326.9
RE DISCCART	184.2	-253.8
RE DISCCART	252.4	-180.6
RE DISCCART	320.6	-107.5
RE DISCCART	388.8	-34.4
RE DISCCART	457.0	38.8

RE DISCCART	488.1	106.0	ensig_App_C.i87
RE DISCCART	428.3	180.0	
RE DISCCART	386.6	270.9	
RE DISCCART	327.4	334.2	
RE DISCCART	227.4	333.8	
RE DISCCART	127.4	333.3	
RE DISCCART	27.4	332.9	
RE DISCCART	-72.6	332.5	
RE DISCCART	-172.6	332.0	
RE DISCCART	-272.6	331.6	
RE DISCCART	-372.6	331.1	
RE DISCCART	-472.6	330.7	
RE DISCCART	-572.6	330.2	
RE DISCCART	-672.6	329.8	
RE DISCCART	-772.6	329.4	
RE DISCCART	-872.6	328.9	
RE DISCCART	-972.6	328.5	
RE DISCCART	-1072.6	328.0	
RE DISCCART	-1172.6	327.6	
RE DISCCART	-1272.6	327.1	
RE DISCCART	-1318.1	266.8	
RE DISCCART	-1347.6	171.2	
RE DISCCART	-1377.0	75.7	
RE DISCCART	-1406.5	-19.9	
RE DISCCART	-1425.5	-117.1	
RE DISCCART	-1427.2	-217.1	
RE DISCCART	-1425.5	-317.1	
RE DISCCART	-1366.3	-389.7	

** PROPERTY BOUNDARY RECEPTORS WITH ADDITION OFF-SITE RECEPTORS AT
 ** 1500,2000,2500,and 3000 M, CENTERED ON ORGN

RE DISCPOLR ORGN	400.	10
RE DISCPOLR ORGN	600.	10
RE DISCPOLR ORGN	800.	10
RE DISCPOLR ORGN	1000.	10
RE DISCPOLR ORGN	1200.	10
RE DISCPOLR ORGN	1400.	10
RE DISCPOLR ORGN	400.	20
RE DISCPOLR ORGN	600.	20
RE DISCPOLR ORGN	800.	20
RE DISCPOLR ORGN	1000.	20
RE DISCPOLR ORGN	1200.	20
RE DISCPOLR ORGN	1400.	20
RE DISCPOLR ORGN	400.	30
RE DISCPOLR ORGN	600.	30
RE DISCPOLR ORGN	800.	30
RE DISCPOLR ORGN	1000.	30
RE DISCPOLR ORGN	1200.	30
RE DISCPOLR ORGN	1400.	30
RE DISCPOLR ORGN	600.	40
RE DISCPOLR ORGN	800.	40
RE DISCPOLR ORGN	1000.	40
RE DISCPOLR ORGN	1200.	40
RE DISCPOLR ORGN	1400.	40
RE DISCPOLR ORGN	600.	50
RE DISCPOLR ORGN	800.	50
RE DISCPOLR ORGN	1000.	50
RE DISCPOLR ORGN	1200.	50
RE DISCPOLR ORGN	1400.	50
RE DISCPOLR ORGN	600.	60
RE DISCPOLR ORGN	800.	60
RE DISCPOLR ORGN	1000.	60
RE DISCPOLR ORGN	1200.	60
RE DISCPOLR ORGN	1400.	60
RE DISCPOLR ORGN	600.	70
RE DISCPOLR ORGN	800.	70
RE DISCPOLR ORGN	1000.	70
RE DISCPOLR ORGN	1200.	70
RE DISCPOLR ORGN	1400.	70
RE DISCPOLR ORGN	600.	80
RE DISCPOLR ORGN	800.	80
RE DISCPOLR ORGN	1000.	80
RE DISCPOLR ORGN	1200.	80
RE DISCPOLR ORGN	1400.	80
RE DISCPOLR ORGN	600.	90
RE DISCPOLR ORGN	800.	90
RE DISCPOLR ORGN	1000.	90
RE DISCPOLR ORGN	1200.	90

RE DISCPOLR ORGN	1400.	90g_App_C.i87
RE DISCPOLR ORGN	400.	100
RE DISCPOLR ORGN	600.	100
RE DISCPOLR ORGN	800.	100
RE DISCPOLR ORGN	1000.	100
RE DISCPOLR ORGN	1200.	100
RE DISCPOLR ORGN	1400.	100
RE DISCPOLR ORGN	400.	110
RE DISCPOLR ORGN	600.	110
RE DISCPOLR ORGN	800.	110
RE DISCPOLR ORGN	1000.	110
RE DISCPOLR ORGN	1200.	110
RE DISCPOLR ORGN	1400.	110
RE DISCPOLR ORGN	400.	120
RE DISCPOLR ORGN	600.	120
RE DISCPOLR ORGN	800.	120
RE DISCPOLR ORGN	1000.	120
RE DISCPOLR ORGN	1200.	120
RE DISCPOLR ORGN	1400.	120
RE DISCPOLR ORGN	400.	130
RE DISCPOLR ORGN	600.	130
RE DISCPOLR ORGN	800.	130
RE DISCPOLR ORGN	1000.	130
RE DISCPOLR ORGN	1200.	130
RE DISCPOLR ORGN	1400.	130
RE DISCPOLR ORGN	400.	140
RE DISCPOLR ORGN	600.	140
RE DISCPOLR ORGN	800.	140
RE DISCPOLR ORGN	1000.	140
RE DISCPOLR ORGN	1200.	140
RE DISCPOLR ORGN	1400.	140
RE DISCPOLR ORGN	400.	150
RE DISCPOLR ORGN	600.	150
RE DISCPOLR ORGN	800.	150
RE DISCPOLR ORGN	1000.	150
RE DISCPOLR ORGN	1200.	150
RE DISCPOLR ORGN	1400.	150
RE DISCPOLR ORGN	400.	160
RE DISCPOLR ORGN	600.	160
RE DISCPOLR ORGN	800.	160
RE DISCPOLR ORGN	1000.	160
RE DISCPOLR ORGN	1200.	160
RE DISCPOLR ORGN	1400.	160
RE DISCPOLR ORGN	400.	170
RE DISCPOLR ORGN	600.	170
RE DISCPOLR ORGN	800.	170
RE DISCPOLR ORGN	1000.	170
RE DISCPOLR ORGN	1200.	170
RE DISCPOLR ORGN	1400.	170
RE DISCPOLR ORGN	600.	180
RE DISCPOLR ORGN	800.	180
RE DISCPOLR ORGN	1000.	180
RE DISCPOLR ORGN	1200.	180
RE DISCPOLR ORGN	1400.	180
RE DISCPOLR ORGN	600.	190
RE DISCPOLR ORGN	800.	190
RE DISCPOLR ORGN	1000.	190
RE DISCPOLR ORGN	1200.	190
RE DISCPOLR ORGN	1400.	190
RE DISCPOLR ORGN	600.	200
RE DISCPOLR ORGN	800.	200
RE DISCPOLR ORGN	1000.	200
RE DISCPOLR ORGN	1200.	200
RE DISCPOLR ORGN	1400.	200
RE DISCPOLR ORGN	600.	210
RE DISCPOLR ORGN	800.	210
RE DISCPOLR ORGN	1000.	210
RE DISCPOLR ORGN	1200.	210
RE DISCPOLR ORGN	1400.	210
RE DISCPOLR ORGN	600.	220
RE DISCPOLR ORGN	800.	220
RE DISCPOLR ORGN	1000.	220
RE DISCPOLR ORGN	1200.	220
RE DISCPOLR ORGN	1400.	220
RE DISCPOLR ORGN	800.	230
RE DISCPOLR ORGN	1000.	230
RE DISCPOLR ORGN	1200.	230
RE DISCPOLR ORGN	1400.	230

RE DISCPOLR ORGN	1000.	240g_App_C.i87
RE DISCPOLR ORGN	1200.	240
RE DISCPOLR ORGN	1400.	240
RE DISCPOLR ORGN	1200.	250
RE DISCPOLR ORGN	1400.	250
RE DISCPOLR ORGN	1400.	280
RE DISCPOLR ORGN	1000.	290
RE DISCPOLR ORGN	1200.	290
RE DISCPOLR ORGN	1400.	290
RE DISCPOLR ORGN	800.	300
RE DISCPOLR ORGN	1000.	300
RE DISCPOLR ORGN	1200.	300
RE DISCPOLR ORGN	1400.	300
RE DISCPOLR ORGN	600.	310
RE DISCPOLR ORGN	800.	310
RE DISCPOLR ORGN	1000.	310
RE DISCPOLR ORGN	1200.	310
RE DISCPOLR ORGN	1400.	310
RE DISCPOLR ORGN	600.	320
RE DISCPOLR ORGN	800.	320
RE DISCPOLR ORGN	1000.	320
RE DISCPOLR ORGN	1200.	320
RE DISCPOLR ORGN	1400.	320
RE DISCPOLR ORGN	400.	330
RE DISCPOLR ORGN	600.	330
RE DISCPOLR ORGN	800.	330
RE DISCPOLR ORGN	1000.	330
RE DISCPOLR ORGN	1200.	330
RE DISCPOLR ORGN	1400.	330
RE DISCPOLR ORGN	400.	340
RE DISCPOLR ORGN	600.	340
RE DISCPOLR ORGN	800.	340
RE DISCPOLR ORGN	1000.	340
RE DISCPOLR ORGN	1200.	340
RE DISCPOLR ORGN	1400.	340
RE DISCPOLR ORGN	400.	350
RE DISCPOLR ORGN	600.	350
RE DISCPOLR ORGN	800.	350
RE DISCPOLR ORGN	1000.	350
RE DISCPOLR ORGN	1200.	350
RE DISCPOLR ORGN	1400.	350
RE DISCPOLR ORGN	400.	360
RE DISCPOLR ORGN	600.	360
RE DISCPOLR ORGN	800.	360
RE DISCPOLR ORGN	1000.	360
RE DISCPOLR ORGN	1200.	360
RE DISCPOLR ORGN	1400.	360

RE FINISHED

ME STARTING

ME INPUTFIL P:\MET\PBIPB187.MET

ME ANEMHGT 33 FEET

ME SURFDATA 12844 1987 WEST-PALM-BCH

ME UAIRDATA 12844 1987 WEST-PALM-BCH

ME FINISHED

OU STARTING

OU RECTABLE ALLAVE FIRST

OU FINISHED