

# Memorandum

# Florida Department of Environmental Protection

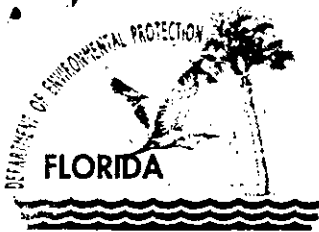
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TO: Clair Fancy, Chief – Bureau of Air Regulation  
THRU: Al Linero, Administrator – New Source Review Section *AL*  
FROM: Jeff Koerner, Project Engineer - New Source Review Section *JK*  
DATE: January 5, 2001  
SUBJECT: Atlantic Sugar Association  
Boiler No. 5 Expansion  
Project No. 0990016-004-AC  
Draft Air Permit No. PSD-FL-078A

Attached is the Draft Permit package for the expansion of Boiler No. 5 at the Atlantic Sugar Association's sugar mill located in Palm Beach County, Florida. The project is summarized in my attached P.E. Certification. I recommend your approval and signature. Day 74 of the permit time clock is February 12, 2001.

Attachments

AAL/jfk



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

Atlantic Sugar Association, Inc.  
P.O. Box 1570  
Belle Glade, FL 33430

Project No. 0990016-004-AC  
Draft Air Permit No. PSD-FL-078A  
Project: Boiler No. 5 Expansion

### PROJECT DESCRIPTION

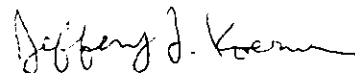
Due to the shutdown of the Talisman sugar mill and the Everglades cleanup settlement, the Atlantic Sugar predicts increased sugar processing may be necessary in the future. Boiler No. 5 is currently limited to no more than 3000 hours of operation per year (PSD Permit No. PSD-FL-078). To accommodate increased future operation, the applicant requests removal of the restriction on hours of operation and the establishment of an annual limit on heat input. The maximum allowable heat input for Boiler No. 5 would be increased from 678,000 mMBTU per year to 867,302 mMBTU per year, approximately equivalent to an increase from 3000 hours per year to 3840 hours per year. This is a 28% increase in *permitted maximum* operation and nearly an 80% increase over *actual past operation*.

The final request resulted in significant emissions of CO, NO<sub>x</sub>, PM/PM<sub>10</sub>, and VOC and required determinations for Best Available Control Technology for these pollutants. To keep the project minor with respect to SO<sub>2</sub> and avoid SO<sub>2</sub> modeling, the applicant requested a lower SO<sub>2</sub> BACT emission limiting standard when firing bagasse and a reduced annual oil firing rate. Also, the applicant proposed *increases* in the BACT emission standards for NO<sub>x</sub> and VOC emissions, but provided no technical justifications.

The attached Draft Permit includes:

- Limiting operation to the 7-month sugarcane season (October through April, other months were not modeled);
- Establishing the permitted capacity of Boiler No. 5 in terms of steam production and equivalent heat inputs based on 1-hour and 24-hour averages (as used in the modeling analysis);
- Limiting the annual steam production rate equivalent to the requested heat input of 867,302 mMBTU per year;
- Reducing the SO<sub>2</sub> BACT limit from 0.29 lb/mMBTU to 0.05 lb/mMBTU, as requested;
- Maintaining the previous BACT limits for CO and PM/PM<sub>10</sub> (good combustion practices and existing wet scrubber);
- Maintaining the previous BACT limits for NO<sub>x</sub> and VOC, rejecting requested increases (good combustion practices);
- Installing CO and O<sub>2</sub> flue gas process monitors to provide feedback to the operators of the boiler combustion efficiency so that adjustments may be made;
- Operating and maintaining the wet impingement scrubber to control emissions of PM/PM<sub>10</sub> and SO<sub>2</sub>

**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).



Jeffery F. Koerner, P.E.  
Registration No. 49441

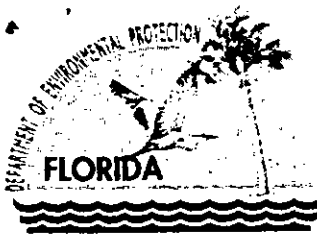
Department of Environmental Protection  
Bureau of Air Regulation, New Source Review Section

01-04-2001

Date

"More Protection, Less Process"

Printed on recycled paper.



# Department of Environmental Protection

Jeb Bush  
Governor

Marjory Stoneman Douglas Building  
3900 Commonwealth Boulevard  
Tallahassee, Florida 32399-3000

David B. Struhs  
Secretary

January 31, 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

John J. Fanjul, V.P. and General Manager  
Atlantic Sugar Association, Inc.  
P.O. Box 1570  
Belle Glade, FL 33430

Re: Atlantic Sugar Mill  
Increased Operation of Boiler No. 5  
Project No. 0990016-004-AC  
Draft Permit No. PSD-FL-078A

Dear Mr. Fanjul:

Enclosed is one copy of the Department's Intent to Issue Air Construction Permit and the proposed Draft Permit to expand operation of Boiler No. 5 at Atlantic's sugar mill located near Belle Glade in Palm Beach County, Florida. The Technical Evaluation and Preliminary Determination and the Public Notice of Intent to Issue Air Construction Permit are also included.

The Public Notice 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 of 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 Jeff Koerner in the New Source Review Section at the above letterhead address. If you have any other questions, please contact Jeff at 850/414-7268.

Sincerely,

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

CHF/jfk

Enclosures

"More Protection, Less Process"

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## INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION

*In the Matter of an  
Application for Permit by:*

Atlantic Sugar Association, Inc.  
P.O. Box 1570  
Belle Glade, FL 33430

Project No. 0990016-004-AC  
Draft Permit No. PSD-FL-078  
Boiler No. 5 Expansion  
Palm Beach County

Authorized Representative:  
John J. Fanjul, V.P. and General Manager

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.

Atlantic Sugar Association, Inc. (ASA), applied on October 26, 1999 to the Department for an air construction permit for its sugar mill located approximately 16 miles east of Belle Glade on State Road 880 in Palm Beach County, Florida. . Due to the shutdown of the Talisman sugar mill and the Everglades cleanup settlement, ASA predicts increased sugar processing may be necessary in the future. Boiler No. 5 is currently limited to no more than 3000 hours of operation per year (Permit No. PSD-FL-078). To accommodate increased future operation, ASA requests removal of the restriction on hours of operation and the specification of an annual limit on heat input. The maximum allowable heat input for Boiler No. 5 would increase from 678,000 mmBTU per year to 867,302 mmBTU per year, approximately equivalent to an increase from 3000 hours per year to 3840 hours per year. This is a 28% increase in *permitted maximum* operation and nearly an 80% increase over *actual past operation*.

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 modify the operations as requested in the application.

The Department intends to issue this air construction permit modification based on the belief that reasonable assurances have been provided to indicate that the project will not adversely impact air quality and 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 and requests for public meetings concerning the proposed permit issuance action for a period of thirty days from the date of publication of Public Notice of Intent to Issue Air Permit. Written comments and requests for public meetings 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.

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Atlantic Sugar Association  
Boiler No. 5 Expansion

Project No. 0990016-004-AC  
Draft Air Permit PSD-FL-078A

## INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION

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, 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.

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.

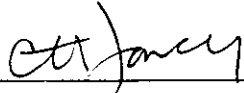
The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, and Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number 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.

**INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION**

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 package (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 2/1/01 to the persons listed:

- Mr. John J. Fanjul, Atlantic Sugar Association\*
- Mr. David Buff, Golder Associates
- Mr. Ron Blackburn, SD
- Mr. James Stormer, PBCHD
- Mr. Gregg Worley, EPA Region 4
- 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.

Charlotte Hayes  
(Clerk)

2/1/01  
(Date)

**PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION**

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Project No. 0990016-004-AC  
Draft Permit No. PSD-FL-078A  
Boiler No. 5 Modification  
Atlantic Sugar Association, Inc.  
Palm Beach County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to the Atlantic Sugar Association, Inc. to expand operation of existing Boiler No. 5. The Atlantic Sugar Association owns and operates an existing sugar mill located approximately 16 miles east of Belle Glade on State Road 880 in Palm Beach County, Florida. The applicant's Authorized Representative is John J. Fanjul, Vice President and General Manager of Atlantic Sugar Association. The mailing address is P.O. Box 1570, Belle Glade, FL 33430.

To accommodate a predicted increase in future sugar processing, the applicant requests a 28% increase in the maximum operation of existing Boiler No. 5 at the sugar mill. The final request resulted in significant emissions increases for carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM10), and volatile organic compounds (VOC). Therefore, the project is subject to the pre-construction review requirements of the Prevention of Significant Deterioration (PSD) program for these pollutants in accordance with Rule 62-212.400, F.A.C. For each affected pollutant, the Department established an emission limiting standard that represents the Best Available Control Technology (BACT). Good combustion practices were determined to be BACT for CO, NOx, and VOC. The existing wet impingement scrubber was determined to be BACT for PM/PM10 and SO2.

An air quality impact analysis for PM10, NOx and CO was conducted. Emissions from the facility will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. The maximum predicted NO2 impacts were insignificant so no PSD Class II increment consumption analysis was required for NO2. There are no increments for CO. The maximum predicted PM10 PSD Class II increments in the vicinity of the project consumed by all sources in the area, including this project, will be as follows:

<u>PSD Class II Increment Consumed (µg/m<sup>3</sup>)</u>	<u>Allowable Increment (µg/m<sup>3</sup>)</u>	<u>Percent Increment Consumed</u>
<b>PM10</b>		
24-hour 4	31	13
Annual 0.03	17	0

The maximum predicted NO2 and PM10 impacts on the PSD Class I increments in the Everglades National Park were insignificant.

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 and requests for public meetings concerning the proposed permit issuance action for a period of 30 (thirty) days from the date of publication of this Public Notice of Intent to Issue Air Construction Permit. Written comments and requests for public meetings 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.

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 of the Florida Statutes. 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

**NOTICE TO BE PUBLISHED IN THE NEWSPAPER**

those entitled to written notice under section 120.60(3) of the Florida Statutes 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), 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.

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:

Department of Environmental Protection Bureau of Air Regulation Suite 4, 111 S. Magnolia Drive Tallahassee, FL 32301 Telephone: 850/488-0114	Department of Environmental Protection South Florida District Office Suite 364, 2295 Victoria Avenue Fort Myers, FL 33901-3381 Telephone: 941/332-6975	Palm Beach County Health Department Air Pollution Control Section P.O. Box 29 (901 Evernia Street) West Palm Beach, FL 33402-0029 Telephone: 561/355-3136
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The complete project file includes the application, Technical Evaluation, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact Department's reviewing engineer for this project, Jeff Koerner, New Source Review Section, at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114 for additional information.

NOTICE TO BE PUBLISHED IN THE NEWSPAPER



TECHNICAL EVALUATION  
AND  
PRELIMINARY DETERMINATION  
(Including Draft BACT Determinations)

**Atlantic Sugar Association, Inc.**  
Atlantic Sugar Mill  
Facility I.D. No. 0090016

Project No. 0990016-004-AC  
Draft Air Permit No. PSD-FL-078A

Emissions Unit 005  
Boiler No. 5 Expansion

Palm Beach County

Department of Environmental Protection  
Division of Air Resources Management  
Bureau of Air Regulation  
New Source Review Section

January 31, 2001

*This document describes the overall project, discusses rule applicability, makes the preliminary determination of Best Available Control Technology for affected pollutants, reports the air quality impacts, and makes a preliminary determination on the requested permitting action. It contains the following sections:*

Section	Page	Description
1.0	2	Application Information
2.0	2	Facility Information
3.0	3	Proposed Project
4.0	4	Rule Applicability
5.0	5	Draft BACT Determinations
6.0	13	Air Quality Analysis
7.0	17	Conclusion

## 1.0 APPLICATION INFORMATION

### 1.1 Applicant Name and Address

Atlantic Sugar Association, Inc.  
P.O. Box 1570  
Belle Glade, FL 33430

Authorized Representative:

John J. Fanjul, V.P. and General Manager

### 1.2 Reviewing and Processing Schedule

- 10/26/99 Department received the PSD air pollution construction permit application.
- 10/28/99 Department mailed copies of the PSD application to EPA Region 4 and NPS.
- 11/09/99 Department received written comments from the Palm Beach County Health Department.
- 11/15/99 Department mailed request for additional information (No. 1).
- 11/23/99 Department received verbal comments from NPS that the proposed project did not appear to present any concerns to the Everglades National Park.
- 12/16/99 Department received additional information (No. 1) from applicant.
- 01/11/00 Department received written comments from the Palm Beach County Health Department.
- 01/11/00 Department mailed request for additional information (No. 2).
- 03/30/00 Department emailed applicant a reminder of the requirement to provide the additional information within 90 days.
- 04/06/00 Department received request from applicant for extension of time to submit additional information (granted by the Department).
- 07/11/00 Department received additional information (No. 2) from applicant. Submittal did not include the revised modeling analysis (to follow in near future).
- 08/4/00 Department mailed request for additional information (No. 3) reminding the applicant that the revised modeling analysis had not yet been submitted.
- 08/28/00 Department received written comments from the Palm Beach County Health Department.
- 11/03/00 Department received additional information (No. 3) from applicant. Submittal did not include the revised electronic modeling files for review.
- 11/29/00 Department received written comments from the Palm Beach County Health Department.
- 12/01/00 Department mailed request for additional information (No. 4) reminding the applicant that the revised electronic modeling files had not yet been submitted.
- 12/01/00 Department received revised electronic modeling files; application complete.

## 2.0 EXISTING FACILITY INFORMATION

### 2.1 Location and Description

Atlantic Sugar Association, Inc. operates an existing sugar mill located approximately 16 miles east of Belle Glade on State Road 880 in western Palm Beach County, Florida. The coordinates are: UTM Zone 17, 552.9 km E and 2945.2 km N; and Latitude 26° 37' 43", Longitude 80° 28' 07". Sugarcane is harvested from nearby fields and transported to the mill by truck. In the mill, sugarcane is cut into small pieces and passed through a series of presses to squeeze juice from the cane. The cane juice undergoes clarification, separation, evaporation, and crystallization to produce raw, unrefined sugar. The fibrous byproduct remaining from the sugarcane is called bagasse and is burned as boiler fuel to provide steam

and heat for the mill operation. Atlantic Sugar operates five bagasse boilers to meet the steam requirements of the mill. A wet impingement scrubber controls particulate matter emissions from each boiler. The final product is raw sugar, which is trucked off site.

**2.2 Standard Industrial Classification Codes (SIC)**

Industry Group No.	20	Food and Kindred Products
Industry No.	2061	Raw Cane Sugar Processing

**2.3 Regulatory Categories**

**Power Plant Siting:** The existing facility is not subject to Power Plant Site Certification.

**Title III – HAP:** Based on a recent industry report to EPA, the existing facility is believed to be a major source of hazardous air pollutants (HAP).

**Title IV - Acid Rain:** The existing facility is not subject to the acid rain provisions.

**Title V – Major Source:** The existing facility is a “major” source of air pollution with respect to Title V of the Clean Air Act because emission of at least one regulated air pollutant exceeds 100 tons per year (TPY). Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), or volatile organic compounds (VOC).

**PSD Major Source:** The existing facility is a “major facility” with respect to the Prevention of Significant Deterioration (PSD) of Air Quality program because emission of at least one regulated pollutant is greater than 250 tons per year. Pursuant to Rule 62-212.400, F.A.C., each modification to a PSD major source requires a PSD review and determination of the Best Available Control Technology (BACT) for any emissions increases are greater than the Significant Emissions Rates specified in Table 62-212.400-2, F.A.C.

**NSPS Sources:** The applicant indicates that Boiler No. 5 was constructed and operational prior to the NSPS Subpart Db applicability date of June 19, 1984. No other emissions units were identified as being subject

**3.0 PROPOSED PROJECT**

**3.1 Project Description**

The applicant, Atlantic Sugar Association, Inc., requests the following changes in order to expand the operation of Boiler No. 5 (Emissions Unit No. 005).

- The applicant requests an increase in the allowable heat input for Boiler No. 5 from 678,000 mmBTU per year to 867,302 mmBTU per year and removal of the restriction on hours of operation (3000 hour per year). However, operation will be limited to the seven months of October through April.
- The applicant requests retaining the current CO limit of 6.5 lb/mmBTU based on good combustion practices.
- The applicant requests an increase in the NOx emission limit from 0.16 to 0.25 lb/mmBTU to provide a “reasonable margin of safety for compliance” based on good combustion practices.
- The applicant requests retaining the current PM limit of 0.15 lb/mmBTU based on the existing wet impingement scrubber.
- The applicant requests establishing a visible emissions standard of 30% opacity except for up to 40% opacity for two minutes per hour.

- The applicant requests decreasing the current SO<sub>2</sub> limit from 0.3 lb/mmBTU to 0.05 lb/mmBTU when firing bagasse based on performance test results. The applicant also requests maintaining the fuel oil sulfur content at 1.0% sulfur by weight and reducing the maximum annual oil firing from 500,000 to 200,000 gallons per year. This combination would limit the increase in SO<sub>2</sub> emissions to below the Significant Emissions Rate of 40 tons per year and a BACT determination is no longer required for SO<sub>2</sub>.
- The applicant requests increasing the current VOC limit from 0.25 to 0.50 lb/mmBTU to provide an additional “margin of safety for compliance” based on “good combustion practices”.

Based on the requests, the applicant believes PSD only applies to CO, NO<sub>x</sub>, PM, PM<sub>10</sub>, and VOC for the project.

### 3.2 Project Emissions

**Table 3.2** This table summarizes PSD applicability based on the applicant’s requests.

Pollutant	Proposed Project Net Emissions Increase (TPY)	Significant Emissions Rate (Tons Per Year)	Significant? (Table 212.400-2)	Subject To BACT?
CO*	2753 (1245)	100	Yes	Yes
NO <sub>x</sub>	75	40	Yes	Yes
PM	36	25	Yes	Yes
PM <sub>10</sub>	34	15	Yes	Yes
SAM	2	7	No	No
SO <sub>2</sub>	37	40	No	No
VOC	116	40	Yes	Yes
Lead	0.09	0.60	No	No
Mercury	7.28 E <sup>-03</sup>	0.10	No	No
Beryllium	2.78 E <sup>-06</sup>	4.0 E <sup>-04</sup>	No	No

Note: Table is based on applicant’s November 3rd submittal.

\* Carbon monoxide emissions increase from 0.27 to 6.5 lb/mmBTU based on construction permit conditions. However, this change was the result of a change in the measurement method and not an actual increase in emissions. The increase in actual emissions from the proposed project is shown in parentheses.

Therefore, the proposed project is subject to PSD review and Best Available Control Technology (BACT) determinations for CO, NO<sub>x</sub>, PM, PM<sub>10</sub>, and VOC.

## 4.0 **RULE APPLICABILITY**

### 4.1 PSD Review

The existing facility is considered a PSD major source and is located in an area that is currently in attainment, or designated as unclassifiable, for all air pollutants subject to a National Ambient Air Quality Standard (AAQS). As such, each new project is subject to an applicability review for the Prevention of Significant Deterioration (PSD) of Air Quality in accordance with Rule 62-212.400, F.A.C. If the net emissions increases from the proposed project exceed the Significant Emissions Rates established in Table 62-212.400-2, F.A.C., the project is subject to the PSD preconstruction review requirements, which consist of two parts. The first part requires the Department to establish the Best Available Control Technology (BACT) for each project pollutant exceeding the Significant Emissions Rate. The second

part requires an Air Quality Analysis consisting of: an air dispersion modeling analysis to estimate the resulting ambient air pollutant concentrations; a comparison of modeled concentrations from the project with National Ambient Air Quality Standards and PSD Increments; an analysis of the air quality impacts from proposed project upon soils, vegetation, wildlife, and visibility; and an evaluation of the air quality impacts resulting from associated commercial, residential, and industrial growth related to the proposed project.

The net emissions increases from this project will exceed the Significant Emissions Rates for emissions of carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM10), and volatile organic compounds (VOC). Therefore, the Department must establish emissions standards that represent BACT determinations for each affected pollutant. The Air Quality Analysis must demonstrate that the emissions impacts from the proposed project, as conditioned by the permit, will not cause or contribute to a violation of any ambient air quality standard or PSD increment.

#### 4.2 State Regulations

The project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the Florida Administrative Code (F.A.C.). This project is subject to the following state rules and regulations of the Florida Administrative Code.

<u>Citation</u>	<u>Description</u>
Chapter 62-4	Permitting Requirements
Chapter 62-204	Ambient Air Quality Protection and Standards, PSD Increments, and Federal Regulations Adopted by Reference
Chapter 62-210	Required Permits, Public Notice and Comments, Reports, Stack Height Policy, Circumvention, Excess Emissions, Forms and Instructions,
Chapter 62-212	Preconstruction Review, PSD Requirements, and BACT Determinations
Chapter 62-213	Operation Permits for Major Sources of Air Pollution
Chapter 62-296	Emission Limiting Standards
Chapter 62-297	Test Requirements, Test Methods, Supplementary Test Procedures, Capture Efficiency Test Procedures, Continuous Emissions Monitoring Specifications, and Alternate Sampling Procedures

#### 4.3 Federal Regulations

This project is also subject to the applicable federal provisions regarding air quality as established by the EPA in the Code of Federal Regulations (CFR) and summarized below.

<u>Citation</u>	<u>Description</u>
40 CFR 52.21	Prevention of Significant Deterioration
40 CFR 52.166	Prevention of Significant Deterioration

### 5.0 DRAFT BACT DETERMINATIONS FOR BOILER NO. 5 (EU-005)

Based on the applicant's request, the Department will perform PSD applicability and preconstruction reviews for the following criteria pollutants: carbon monoxide (CO), nitrogen oxides (NOx), particulate matter

(PM/PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), and volatile organic compounds (VOC). The review focuses on firing the primary fuel, bagasse. A discussion of firing fuel oil, wood chips, and rice hulls follows in a separate section.

The Department reviewed EPA's RACT/BACT/LAER Clearinghouse database, but was unable to find recent BACT determinations for bagasse boilers in states other than Florida. There is a facility in California, Thermo Electron's Delano Energy Company, Inc., listed as a biomass boiler firing primarily bagasse. The Palm Beach County Health Department provided the EPA permit for this project. However, the units are fluidized bed biomass boilers (315 – 400 mmBTU per hour) firing wood chips, nut shells, furniture manufacturing scraps, etc. The Department questions the similarity between these units and Atlantic's Boiler No. 5, traveling grate boiler. However, the unit does include a baghouse and the Department will evaluate this technology to control particulate matter emissions.

**5.1 Carbon Monoxide (CO)**

CO emissions result from the incomplete combustion of bagasse, wood chips, rice hulls, and fuel oil. CO emissions are related to the flame temperature and tend to be inversely proportional to NO<sub>x</sub> emissions. Lower flame temperatures reduce NO<sub>x</sub> emissions, but typically increase CO and VOC emissions. The high moisture content of bagasse (approximately 55% by weight) appears to lower the flame temperature and inhibit complete combustion.

**Applicant's Proposal**

The applicant identified an oxidation catalyst as a potential add-on control device. However, this option was considered technically infeasible for a bagasse boiler due to low gas temperatures, high moisture, heavy particulate loading, and the presence of sulfur compounds in the flue gas. The applicant proposed an emission standard of 6.5 pounds per mmBTU based on "good combustion practices", as established in the current air operation permit.

**Department's Review and Determination**

The proposed project results in a net CO emission increase of more than 1000 tons per year. In Florida, the Department has made the following CO BACT determinations for bagasse-fired boilers:

Unit	Date Built	Boiler Type	mmBTU/hr	Heat Release mmBTU/hr-ft <sup>3</sup>	CO Standard lb/mmBTU
Osceola Farms No. 3	1961	Inclined Grate	292	No Info.	3.5
Osceola Farms No. 6	1981	Traveling Grate	379	32,661	6.5
Atlantic Sugar No. 5	1982	Traveling Grate	253	26,520	6.5
U.S. Sugar Clewiston No. 4	1985	Traveling Grate	707	33,278	6.5
Osceola Cogeneration Plant	1993	Spreader Stoker	760	18,500	0.35
Okeelanta Cogeneration Plant	1993	Spreader Stoker	715	17,912	0.35
U.S. Sugar Clewiston No. 7	1995	Traveling Grate	740	16,427	0.70

Newer boiler designs for the Okeelanta Cogeneration Plant, Osceola Cogeneration Plant, and U.S. Sugar's Clewiston Boiler No. 7 result in much lower CO emissions. This is primarily due to more even furnace temperatures and longer combustion gas residence times. The designed heat release rate of a boiler is a measure of the combustion gas residence time, with a lower heat release rate providing a longer residence time. As shown, the older boilers have heat release rates nearly twice that of the newer units. Osceola's Boiler No. 3 is actually a converted cell type boiler and the design heat release rate is unknown. The

above table illustrates that high CO emissions from most bagasse boilers are inherent to the original, older boiler design.

The Department notes that the original PSD permit limit for Atlantic Sugar's Boiler No. 5 was 0.27 lb/mmBTU based on EPA Method 3. In the mid-1990s, performance testing with the more accurate EPA Method 10 indicated much higher CO emissions than previously thought. This was the result of a change in the method of measurement and not related to any physical modifications or changes in the method of operation.

As indicated for several other projects involving bagasse boilers, the Department is aware of five possible control methods for reducing CO emissions: Good combustion design, direct flame oxidation, catalytic oxidation, flue gas recirculation, and good combustion practices. The following is a summary of the feasibility of these methods.

*Good Combustion Design:* As previously discussed, the high CO emissions from Atlantic Sugar's Boiler No. 5 are inherent to the original, older boiler design. In a 1992 operation permit renewal, the Department's South District Office increased the CO emissions limit for this boiler from 0.27 lb/mmBTU to 6.5 lb/mmBTU. This was consistent with other permit modifications made during this same time period to reflect a change in the measurement of CO emissions from EPA Method 3 to EPA Method 10. During these modifications, the Department examined the possibilities of modifying the boiler furnace volume and/or combustion air feed system. The Department concluded that such modifications would be costly, impractical, and result in unknown reductions, if any. The Department believes the high CO emissions to be a function of the older design for Boiler No. 5 and is unaware of any practical combustion modifications that have been demonstrated for bagasse boilers to achieve substantial reductions.

*Direct Flame Oxidation:* This technology has been applied to other industries and is capable of more than 98% control efficiencies. Substantial amounts of supplemental fuel would be required due to the existing low exhaust gas temperature and high volumetric flow rates. Placing the direct flame burner after the scrubber would require even more fuel to reheat the exhaust gas to complete oxidation. Additional fuel combustion results in additional criteria pollutant emissions. It does not appear practical to burn more fuel to reduce CO emissions given the already high emissions of other pollutants.

*Catalytic Oxidation:* This control option requires a noble metal catalyst grid and an operating temperature of at least 500°F to achieve control efficiencies of 90% or greater. Typically, catalytic oxidation for combustion sources has been limited to clean exhaust gas streams such as natural gas-fired boilers or combustion turbines. An oxidation catalyst for this project would be prone to fouling due to the heavy particulate loading from the boiler exhaust and poisoning by sulfur compounds from the firing of bagasse and fuel oil. Installation after the wet scrubber is not feasible because the temperature would be too low for catalytic oxidation to occur or again, large amounts of supplemental fuel would be required to reheat the exhaust gas. Therefore, the Department does not believe this option is technically feasible for this project.

*Flue Gas Recirculation (FGR):* This control technique recirculates a portion of the exhaust gas stream back into the combustion zone for further oxidation. For some combustion sources, FGR may result in control efficiencies of perhaps 15% to 40%. However, FGR is very specific to the combustion source and the Department is unaware of any application to a bagasse boiler. During the modification review process for Boiler No. 4 at U.S. Sugar's Clewiston Mill in 1995, the applicant obtained an estimate of nearly a million dollars to modify the boiler for FGR with no known result in CO reduction. At this time, the Department does not believe this control option to be a demonstrated technology for bagasse boilers.

*Good Combustion Practice:* The remaining control option is to use "good combustion practices" (GCPs) to operate, monitor, and maintain the combustion process in order to minimize CO emissions. The

original construction permit for this boiler included installation and operation of a flue gas oxygen meter as an indicator of good combustion.

At this time, the Department is unable to identify any practical add-on control options for the reduction of CO emissions for the bagasse-fired boiler. Therefore, the Department will specify “good combustion practices” (GCPs) as BACT for CO emissions to include:

- Maintenance, operational, and training requirements to define “good combustion practices”;
- Testing of the boiler thermal efficiency;
- Installation and operation of flue gas process monitors for the CO and O<sub>2</sub> contents; and
- A testing program to establish appropriate operating ranges for the CO and O<sub>2</sub> contents.

The boiler thermal efficiency is a critical indicator of performance as well as maintenance. The test will demonstrate that the boiler is being adequately maintained at a thermal efficiency near the industry standard of 55%. The oxygen process monitor will serve as an indicator of the excess air being supplied. In combination, the CO and O<sub>2</sub> process monitors will provide an overall indicator of the efficiency of the combustion process, which will allow the boiler operator to make appropriate adjustments.

According to the Department’s ARMS database, CO emission limits for bagasse boilers range from 0.35 lb/mmBTU to approximately 7.0 lb/mmBTU. The Department was unable to find any lower CO emissions standards for a bagasse boiler in EPA’s RACT/BACT/LAER Clearinghouse. The applicant provided a summary of 24 test results based on EPA Method 10 indicating minimum, maximum, and average CO emissions of 0.8, 7.3, and 3.2 lb/mmBTU, respectively. Based on these test results and previous BACT determinations for bagasse boilers, the Department establishes the following CO emission standard as BACT based on good combustion practices.

*Carbon monoxide emissions shall not exceed 6.5 pounds per mmBTU of heat input or 1659.5 pounds per hour when firing carbonaceous fuel based on a 3-hour test average as determined by EPA Method 10. Emissions performance testing for CO and NO<sub>x</sub> shall be conducted concurrently.*

Compliance will be demonstrated by conducting an annual stack test when firing bagasse only. The Department believes the CO standard can be achieved with “good combustion practices” while allowing an adequate margin to minimize NO<sub>x</sub> emissions.

## 5.2 Nitrogen Oxides (NO<sub>x</sub>)

NO<sub>x</sub> emissions are formed from the oxidation of nitrogen present in the combustion air and fuels. NO<sub>x</sub> emissions are a function of the flame temperature, which is typically low for a bagasse boiler due to the high moisture content of bagasse (approximately 55% by weight). The Department established a limit of 0.9 lb/mmBTU of heat input for carbonaceous fuel burning facilities as Reasonably Available Control Technology for major sources located in nonattainment areas, pursuant to Rule 62-296.570, F.A.C.

### **Applicant’s Proposal**

The applicant did not identify any control options as technically feasible to reduce NO<sub>x</sub> emissions from a bagasse boiler. In fact, the applicant requested an increase in the current NO<sub>x</sub> standard from 0.16 to 0.25 pounds per mmBTU based on “good combustion practices” to provide a “margin of safety for compliance”.

### **Department’s Review and Determination**

The Department is aware of the following NO<sub>x</sub> control technologies.

*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<sub>x</sub> in a reduction reaction forming nitrogen and water. For this reaction to proceed satisfactorily, the exhaust gas temperature must



be maintained between 450° F and 850°F. SCR is a commercially available option capable of 90% control efficiencies, but has never been applied to a bagasse boiler. Particulate loading prior to the wet scrubber would likely cause catalyst fouling and results in marginal effectiveness and maintenance problems. The reduced exhaust gas temperature after the wet scrubber is too low to complete the reduction reaction. Sulfur in the fuel oil would also poison the catalyst, degrading the performance over time. SCR does not appear to be a viable option for this project.

*Selective Non-Catalytic Reduction (SNCR):* In the SNCR process, ammonia or urea is injected at high temperatures without a catalyst to reduce NOx emissions to nitrogen and water vapor. However, the exhaust temperature must be maintained above 1600°F to allow the reaction to occur, otherwise uncontrolled NOx will be emitted as well as unreacted ammonia. In addition, the exhaust temperature must not exceed 2000°F or ammonia will actually be oxidized creating additional NOx emissions. The Okeelanta and Osceola biomass cogeneration plants use SNCR with urea injection for NOx control. However, the furnace temperatures of these boilers are much higher than Clewiston Boiler No. 5. SNCR is not technically feasible for this project because the exhaust gas temperature is too low.

There are other emerging NOx controls such as Non-Selective Catalytic Reduction (NSCR) and SCONOx™, but these systems are typically used in internal combustion applications and do not appear to be transferable to bagasse-fired boilers. Again, NOx emissions are directly related to the boiler combustion design. Decreasing the flame temperature could further reduce NOx emissions, but probably at the expense of increasing CO and VOC emissions. As indicated above, two large biomass cogeneration plants have CO emissions nearly 20 times lower due to the much higher furnace temperatures. However, the furnace temperatures are so high that the elevated NOx emissions are controlled with urea injection (SNCR). At this time, the Department is unaware of any feasible control technology to reduce NOx emissions from bagasse boilers other than good combustion practices (GCP).

According to the Department's ARMS database, NOx emission limits for bagasse boilers range from 0.16 lb/mmBTU to 0.45 lb/mmBTU of heat input. The most recent NOx BACT determination for a bagasse boiler was 0.20 lb/mmBTU for Boiler No. 4 at U.S. Sugar's Clewiston mill in 1999. This determination was based on data compiled for 33 test runs for Clewiston Boiler No. 4. The NOx BACT standard for Atlantic Sugar's Boiler No. 5 is 0.16 lb/mmBTU, as established in the original 1981 PSD permit. The applicant provided a summary of 24 test runs for Boiler No. 5 indicating minimum, maximum, and average NOx emissions of 0.08, 0.31, and 0.14 lb/mmBTU, respectively. However, there is no other information provided regarding whether or not good combustion practices were being employed to minimize NOx emissions. The applicant provided no other information to justify an increase in the original BACT limit established for Boiler No. 5. The Department believes that Boiler No. 5 is capable of complying with the original NOx BACT standard based on the following:

- NOx test data for 1995, 1997, 1998 (January), and 1998 (December) indicates NOx emissions of 0.12, 0.09, 0.13, and 0.12 lb/mmBTU, respectively for 3-run averages. The highest of the recent 3-run averages is only 80% of the current standard.
- CO test data for 1995, 1997, 1998 (January), and 1998 (December) indicates CO emissions of 0.9, 6.2, 2.1, and 4.9 lb/mmBTU, respectively for 3-run averages. This indicates that the CO BACT standard of 6.5 lb/mmBTU provides an adequate margin in which to minimize NOx emissions to comply with the current NOx BACT standard.
- The Draft Permit specifies a performance testing program to adequately define "good combustion practices".
- The installation and operation of CO and O<sub>2</sub> flue gas monitors will provide feedback to the boiler operators in order to make the necessary adjustments to optimize the combustion process.

In addition, Boiler No. 5 has been in compliance with the NO<sub>x</sub> BACT standard as established in the previous PSD permit. Relaxing this standard after years of operation would be inappropriate. Therefore, the original NO<sub>x</sub> emissions standard will be retained as follows:

*Nitrogen oxide emissions shall not exceed 0.16 pounds per mmBTU of heat input and 40.8 pounds per hour when firing carbonaceous fuel based on a 3-hour test average as determined by EPA Method 7 or 7E. Emissions performance testing for CO and NO<sub>x</sub> shall be conducted concurrently.*

Compliance will be demonstrated by conducting annual stack tests. The Department believes the NO<sub>x</sub> standard can be achieved with "good combustion practices" while allowing an adequate margin to minimize CO and VOC emissions.

**Note:** Retaining the current NO<sub>x</sub> BACT standard results in a net NO<sub>x</sub> emissions increase of only 37 tons per year, which is below the Significant emissions Rate for the requested project.

### 5.3 Particulate Matter (PM/PM<sub>10</sub>)

Emissions of particulate matter result from incomplete combustion of the fuels and ash residue. Based on reasonably available controls, the Department established a standard for particulate matter by rule of 0.20 lb/mmBTU of heat input from new carbonaceous fuel burning equipment greater than 30 mmBTU per hour (Rule 62-296.410, F.A.C.)

#### **Applicant's Proposal**

The applicant requests retaining the current particulate matter BACT limit of 0.15 lb/mmBTU based on the existing wet impingement scrubber and establishing a visible emissions standard of 30% opacity except for up to 40% opacity for two minutes per hour. The following parameters will be monitored to ensure proper operation of the wet scrubber:

- Pressure drop (optimum range is 6 to 11 inches of water column)
- Spray nozzle water pressure (minimum of 35 psig on upper 14 and 60 psig on lower 24 nozzles)
- Scrubber flow rate (minimum is 550 gpm with an alarm system)

The applicant rejected an Electrostatic Precipitator (ESP) because the estimated cost of \$5430/ton of additional particulate removed was not cost effective. The applicant believes that a baghouse is not technically feasible for the existing bagasse-fired boiler due heavy fly ash loading from the boiler, the presence of sulfur compounds in the exhaust gas, the high moisture content of the exhaust gas, and the potential for fire damage due to the carryover of hot fly ash.

#### **Department's Review and Determination**

The Department's review of EPA's RACT/BACT/LAER Clearinghouse database indicates that an ESP was specified as BACT for U.S. Sugar's Clewiston Mill Boiler No. 7, a new bagasse boiler. The particulate matter emission limit is 0.03 pounds per mmBTU of heat input. However, Boiler No. 5 is an existing bagasse boiler with an existing control device previously established as BACT in a federally enforceable PSD permit. This fact is taken into consideration by allowing the use of past actual emissions in determining the cost effectiveness for new control options. The applicant's revised economic analysis indicated a cost effectiveness of \$5430 per ton of additional particulate removed and a capital cost of \$1.8 million. In addition, the Palm Beach County Health Department provided information that indicating that a cyclone/baghouse combination was technically feasible for a bagasse boiler. However, it was expected that the costs would be slightly higher. At this time, the Department believes that the addition of an ESP or a cyclone/baghouse combination is not cost effective for the requested increase in operation.

At this time, the Department concurs with the applicant that the existing wet spray impingement scrubber represents BACT for the proposed modification and establishes the following emissions standard.

*Particulate matter emissions shall not exceed 0.15 pounds per mmBTU of heat input from firing bagasse or 0.10 pounds per mmBTU from firing fuel oil. Compliance when firing both fuels shall be determined by prorating the emissions standards based on the heat input from each fuel.*

The standard will also serve as a surrogate for PM<sub>10</sub> emissions, which are estimated to be 93% of the total particulate matter emitted. Compliance with the standard shall be determined by annual testing. The permit requires monitoring of the scrubber liquid flow rate, the scrubber pressure drop, and the spray nozzle pressures to ensure proper operation of the control device.

#### 5.4 Sulfur Dioxide (SO<sub>2</sub>)

SO<sub>2</sub> emissions result from the combustion of fuels containing sulfur. For many combustion sources, nearly all of the fuel sulfur is converted to SO<sub>2</sub>. However, based on industry tests, SO<sub>2</sub> emissions for firing bagasse are more than 90% lower than the predicted maximum emission rates. This significant difference is likely the result of adsorption of the SO<sub>2</sub> onto alkaline fly ash particulate generated from the combustion of bagasse, which is then removed by the wet scrubber. Early PSD permits for the sugar industry recognized this control mechanism and required monitoring of the scrubber water pH levels as an indicator of the alkaline ash.

##### **Applicant's Proposal**

The applicant requests decreasing the current SO<sub>2</sub> limit from 0.3 lb/mmBTU to 0.05 lb/mmBTU when firing bagasse. The new limit is based on previous industry tests showing inherent control by adsorption of SO<sub>2</sub> onto alkaline fly ash particles with removal in the wet scrubber. The applicant requests maintaining the fuel oil sulfur content at 1.0% sulfur by weight and reducing the maximum annual oil firing from 500,000 to 200,000 gallons per year. This combination would limit the net increase in SO<sub>2</sub> emissions to below the Significant Emissions Rate. As a result, Boiler No. 5 would no longer be significant for SO<sub>2</sub>.

##### **Department's Review and Determination**

The Department notes that Boiler No. 5 has not fired any fuel oil in several years. The proposed lower SO<sub>2</sub> emission standard for bagasse firing can be met without additional controls and is more representative of the actual emissions from this unit. Subject to the requested new limits, the Department agrees that Boiler No. 5 would no longer be significant for SO<sub>2</sub>. Initial performance testing will be required to demonstrate compliance with the lower emissions standard and prior to renewal of any operating permit. Any proposed changes to the wet scrubbing system or allowable fuels shall require a new evaluation of the SO<sub>2</sub> emissions.

#### 5.5 Volatile Organic Compounds (VOC)

VOC emissions result from incomplete combustion of the fuels. Typically, VOC emissions are proportional to CO emissions and inversely proportional to NO<sub>x</sub> emissions. The Department established a limit of 5.0 lb/mmBTU of heat input for carbonaceous fuel burning facilities as Reasonably Available Control Technology for major sources located in non-attainment areas, pursuant to Rule 62-296.570, F.A.C.

##### **Applicant's Proposal**

The applicant did not identify any add-on control options that were technically feasible for the control of VOC emissions from a bagasse boiler. The applicant requests to increase the current VOC BACT

standard from 0.25 to 0.50 lb/mmBTU based on “good combustion practices” to provide additional “margin of safety for compliance”. The applicant notes that test data indicates actual VOC emissions have been “very close” to the current limit of 0.25 lb/mmBTU.

**Department’s Review and Determination**

The requested increase in potential operation of Boiler No. 5 and relaxation of the VOC limit will result in a net increase of more than 100 tons of VOC per year. The Department is not aware of any VOC BACT determinations for bagasse boilers in any other states. According to the Department’s ARMS database, VOC limits for bagasse boilers range from 0.25 lb/mmBTU to 1.5 lb/mmBTU.

Add-on control options similar to those discussed previously for the control of CO emissions could be effective for the control of VOC emissions. However, they do not appear to be practical or technically feasible for application to a bagasse boiler, again due to high particulate loading, high moisture content, low exhaust temperatures after the wet scrubber, and the presence of sulfur compounds in the exhaust gas. The remaining option is “good combustion practices” (GCPs) to minimize emissions. The applicant provided actual VOC test data for 1997, 1998 (January), and 1998 (December) indicating VOC emissions of 0.23, 0.21, and 0.01 lb/mmBTU, respectively for 3-run averages. The highest 3-run average is approximately 92% of the current VOC BACT standard.

The applicant provided no technical justification as to why a higher VOC standard was necessary. In addition, Boiler No. 5 has been in compliance with the VOC BACT standard as established in the previous PSD permit. Relaxing this standard after years of operation would be inappropriate. Therefore, the original VOC emissions standard will be retained as follows:

*Emissions of regulated volatile organic compounds shall not exceed 0.25 pounds per mmBTU and 63.8 pounds per hour when firing carbonaceous fuel based on a 3-run test average as determined by EPA Methods 18 and 25A, modified to include a means of sample dilution.*

Compliance will be demonstrated by conducting an annual performance test.

**5.6 Summary of Emissions Standards**

The standards identified in the following table (or the equivalents) are included in the specific conditions of the draft permit.

<b>EU 005 – Mill Boiler No.5</b>		
Pollutant	Fuel / Controls	Emission Standard
<i>BACT Emissions Standards</i>		
CO	Carbonaceous Fuels, Good Combustion Practices	6.5 lb/mmBTU
NOx	Carbonaceous Fuels, Good Combustion Practices	0.16 lb/mmBTU
PM/PM10	Carbonaceous Fuels, Good Combustion Practices	0.15 lb/mmBTU
	Fuel Oil, Good Combustion Practices	0.10 lb/mmBTU
VOC	Carbonaceous Fuels, Good Combustion Practices	0.25 lb/mmBTU, as propane
<i>PSD Synthetic Minor Standards</i>		
SO2	Carbonaceous Fuels, Alkaline Fly Ash and Wet Scrubber	0.05 lb/mmBTU
	Fuel Oil, Fuel Sulfur Specification	1.0% sulfur by weight

**5.7 Revised Annual Emissions and PSD Applicability**

The following table presents the maximum potential emissions from the project as conditioned by the proposed Draft Permit.

**Table 5.7** This table summarizes PSD applicability based on the Draft Permit.

Pollutant	Past Actuals (TPY)	Future Potentials (TPY)	Net Emissions Increase (TPY)	Significant Emissions Rate (Tons Per Year)	Significant? (Table 212.400-2)	BACT Required?
CO*	1573.41	2818.73	1245.32	100	Yes	Yes
NOx	34.86	71.63	36.78	40	No	No
PM	29.05	65.05	36.00	25	Yes	Yes
PM10	26.63	60.71	34.08	15	Yes	Yes
SAM	0.03	2.27	2.24	7	No	No
SO2	0.48	36.98	36.5	40	No	No
VOC	36.31	108.41	72.10	40	Yes	Yes
Lead	0.11	0.19	0.09	0.60	No	No
Mercury	0.01	0.02	0.01	0.10	No	No
Beryllium	Negligible	2.78 E <sup>-06</sup>	2.78 E <sup>-06</sup>	4.0 E <sup>-04</sup>	No	No

Therefore, the proposed project is subject to new PSD review and Best Available Control Technology (BACT) determinations for CO, PM/PM10, and VOC.

**6.0 AIR QUALITY IMPACT ANALYSIS**

**6.1 Introduction**

The applicant predicts the proposed project will increase PM10, NOx, CO and VOC emissions at levels in excess of PSD significant amounts. PM10 and NOx 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. Potential emissions increases for VOC are above the 100 TPY ambient impact analysis threshold for the pollutant ozone. The applicant presented the potential VOC emissions increases to the Department, and discussed options available to predict potential impacts associated with the emissions and formation of ozone, since no stationary point source models are available and approved for use in predicting ozone impacts. Based on the available information, the Department has determined that the use of a regional model that incorporates the complex chemical mechanisms for predicting ozone formation is not applicable to this project.

The air quality impact analyses required by the PSD regulations for this project include:

- An analysis of existing air quality for PM10, CO and VOC;
- A significant impact analysis for PM10, NO2, CO and VOC;
- A PSD increment analysis for PM10;
- An Ambient Air Quality Standards (AAQS) analysis for PM10 and CO;
- An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The significant impact, PSD increment, and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA and department guidelines. Good Engineering Practice (GEP) stack height means the greater of: (1) 65 m (213 ft) or (2) the maximum nearby building height plus 1.5 times the building height or width, whichever is less. The boiler stacks

will all be raised to 65 m (213 ft). These stacks will not exceed the GEP stack height regulations. However, these stacks will still be less than the corresponding GEP stack heights; therefore, the potential for building downwash to occur was considered in the modeling analysis for these stacks.

Based on the 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 discussion of the required analyses follows.

**6.2 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.

<b>MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE DE MINIMIS LEVELS</b>				
<b>Pollutant</b>	<b>Averaging Time</b>	<b>Maximum Predicted Impact (µg/m<sup>3</sup>)</b>	<b>Impact Greater than De Minimis? (Yes/No)</b>	<b>De Minimis Level (µg/m<sup>3</sup>)</b>
PM <sub>10</sub>	24-hr	6	NO	10
CO	8-hr	1028	YES	575
NO <sub>2</sub>	Annual	0.7	NO	14
VOC	Annual Emission Rate	116 TPY	YES	100 TPY

As shown in the table NO<sub>2</sub> and PM<sub>10</sub> emissions are predicted to be less than the de minimis levels; therefore, preconstruction monitoring is not required for these pollutants. However, CO and VOC impacts from the project are predicted to be greater than the de minimis levels; therefore, the applicant is not exempt from preconstruction monitoring for these pollutants. The applicant may instead satisfy the preconstruction monitoring requirement using previously existing representative data. Previously existing representative monitoring data does exist from CO and ozone monitors either in the local Belle Glade area or the urbanized West Palm Beach area to the east of the project. In addition PM<sub>10</sub> data has been collected in the Belle Glade area. These data are appropriate for fulfilling the monitoring requirement for

these pollutants, and/or to establish background concentrations for use in the PM<sub>10</sub> and CO AAQS analyses. The background concentrations for these pollutants are shown in the table below.

<b>BACKGROUND CONCENTRATIONS FOR USE IN AAQS ANALYSES</b>		
<b>Pollutant</b>	<b>Averaging Time</b>	<b>Background Concentration (µg/m<sup>3</sup>)</b>
PM <sub>10</sub>	Annual	26
	24-hour	52
CO	8-hour	3,444
	1-hour	6,222

**6.3 Models and Meteorological Data Used in Significant Impact, PSD Increment and AAQS Analyses**

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project and other existing major facilities. 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. For the annual averages, the highest predicted yearly average was compared with the standards. For determining the project's significant impact area in the vicinity of the facility, and for determining if there are significant impacts occur from the project on any PSD Class I area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

**6.4 Significant Impact Analysis**

Preliminary modeling is conducted using only the proposed project's worst-case emission scenario for each pollutant and applicable averaging time. Over 1000 receptors were placed along the facility's restricted property line and out to 50 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. Fifty-one receptors were placed in the Everglades National Park (ENP) PSD Class I area. 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 a PSD Class II area in the vicinity of the facility or in any PSD Class I area. 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 tables below show 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.

<b>MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE PSD CLASS II SIGNIFICANT IMPACT LEVELS IN THE VICINITY OF THE FACILITY</b>					
<b>Pollutant</b>	<b>Averaging Time</b>	<b>Maximum Predicted Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Significant Impact Level (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Significant Impact? (Yes/No)</b>	<b>Radius of Significant Impact (km)</b>
PM <sub>10</sub>	Annual	0.3	1	NO	----
	24-hr	6	5	YES	4.5
CO	8-hr	1,028	500	YES	6
	1-hr	2,746	2,000	YES	6
NO <sub>2</sub>	Annual	0.7	1	NO	----

<b>MAXIMUM PROJECT IMPACTS IN THE ENP FOR COMPARISON TO THE PSD CLASS I SIGNIFICANT IMPACT LEVELS</b>				
<b>Pollutant</b>	<b>Averaging Time</b>	<b>Maximum Predicted Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Significant Impact Level (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Significant Impact? (Yes/No)</b>
PM <sub>10</sub>	Annual	0.001	0.2	NO
	24-hr	0.09	0.3	NO
NO <sub>2</sub>	Annual	0.003	0.1	NO

As shown in the tables, the maximum predicted air quality impacts due to PM<sub>10</sub>, and CO emissions from the proposed project are greater than the PSD significant impact levels in the vicinity of the facility. No predicted ambient impacts are greater than the PSD Class I impact levels for the Everglades National Park (ENP). Therefore, the applicant was required to do full impact PM<sub>10</sub> and CO modeling in the vicinity of the facility, within the applicable significant impact area, to determine the impacts of the project along with all other sources in the vicinity of the facility. The significant impact area is based upon the predicted radius of significant impact. The applicant was not required to do any further PSD Class I increment analyses in the ENP.

**6.5 Procedure for Performing PSD Increments and AAQS Analyses**

For the PSD Class II increment and AAQS analyses, receptor grids normally are based on the size of the significant impact area for each pollutant. As shown in the previous section, the sizes of the significant impact areas for the required PM<sub>10</sub>, and CO analyses were 4.5 and 6 km, respectively.

**6.6 PSD Increment Analysis**

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant. The results of the required PSD Class II increment analyses presented in the table below show that all of the maximum predicted impacts are less than the allowable Class II increments.



PSD CLASS II INCREMENT ANALYSIS				
Pollutant	Averaging Time	Maximum Predicted Impact ( $\mu\text{g}/\text{m}^3$ )	Impact Greater than Allowable Increment? (Yes/No)	Allowable Increment ( $\mu\text{g}/\text{m}^3$ )
PM <sub>10</sub>	Annual	0.03	No	17
	24-hr	4	No	31

6.7 AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding a “background” concentration to the maximum-modeled concentration. This “background” concentration takes into account all sources of a particular pollutant that are not explicitly modeled. The results of the AAQS analysis are summarized in the table below. As shown in this table, emissions from the proposed facility are not expected to cause or significantly contribute to a violation of any AAQS.

AMBIENT AIR QUALITY IMPACTS						
Pollutant	Averaging Time	Major Sources Impact ( $\mu\text{g}/\text{m}^3$ )	Background Concentration ( $\mu\text{g}/\text{m}^3$ )	Total Impact ( $\mu\text{g}/\text{m}^3$ )	Total Impact Greater than AAQS	Florida AAQS ( $\mu\text{g}/\text{m}^3$ )
PM <sub>10</sub>	Annual	5	26	31	NO	50
	24-hr	61	52	113	NO	150
CO	8-hr	3,769	3,444	7,213	NO	10,000
	1-hr	13,788	6,222	20,010	NO	40,000

6.8 Additional Impacts Analysis

**Impacts On Soils, Vegetation, Wildlife, and Visibility**

The maximum ground-level concentrations predicted to occur due to PM<sub>10</sub>, NO<sub>x</sub> and CO emissions as a result of the proposed project, including all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area. An air quality related values (AQRV) analysis was done by the applicant for the Class I area. No significant impacts on this area are expected. A regional haze analysis using the long-range transport model CALPUFF was done for the ENP Class I area. This analysis showed no significant impact on visibility in this area.

**Growth-Related Air Quality Impacts**

There will be no growth associated with this project because no new equipment is being installed.

**7.0 CONCLUSION**

Based on a technical review of the complete PSD application, reasonable assurances provided by the applicant, the draft BACT determinations, and the conditions specified in the Draft Permit, the Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations. Jeff Koerner, P.E., is the permitting engineer responsible for reviewing the application, recommending the BACT determination, and drafting the permit. Cleve Holladay is the project meteorologist responsible for reviewing and validating the Air Quality Analysis for this project.

# DRAFT PERMIT

## PERMITTEE

Atlantic Sugar Association, Inc.  
P.O. Box 1570  
Belle Glade, FL 33430

*Authorized Representative:*

John J. Fanjul, V.P. and General Manager

<b>Permit No.</b>	0990016-004-AC
<b>PSD No.</b>	PSD-FL-078A
<b>Project:</b>	Boiler No 5 Expansion
<b>SIC No.</b>	2061
<b>Expires:</b>	April 1, 2002

## PROJECT AND LOCATION

This permit authorizes the Atlantic Sugar Association, Inc. to expand operation of Boiler No. 5. The modification removes the previous operational restriction of 3000 hours per year and establishes limits based on steam production rates and seasonal operation.

This facility is located approximately 16 miles east of Belle Glade on State Road 880 in Palm Beach County, Florida. The coordinates are: UTM Zone 17, 552.9 km E and 2945.2 km N; and Latitude - 26° 37' 43", Longitude - 80° 28' 07".

## STATEMENT OF BASIS

This air construction permit modification is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permit establishes emissions standards based on a determination of Best Available Control Technology in accordance with Rule 62-212.400, F.A.C., the Prevention of Significant Deterioration (PSD) of Air Quality. The above named permittee is authorized to modify and operate the emissions unit 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.

## APPENDICES

The attached appendices are a part of this permit:

Appendix A	Terminology, Definitions, and Citation Format
Appendix BD	Summary of BACT Determinations
Appendix ES	Emissions Summary
Appendix FC	Fuel Characteristics
Appendix GC	General Permit Conditions
Appendix GCP	Good Combustion Practices Plan

Executed in Tallahassee, Florida.

(DRAFT)

\_\_\_\_\_  
Howard L. Rhodes, Director  
Division of Air Resources Management

\_\_\_\_\_  
(Date)

**AIR CONSTRUCTION PERMIT MODIFICATION  
SECTION I. FACILITY INFORMATION (DRAFT)**

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**FACILITY DESCRIPTION**

Atlantic Sugar Association, Inc. operates an existing sugar mill located approximately 16 miles east of Belle Glade on State Road 880 in western Palm Beach County, Florida. Sugarcane is harvested from nearby fields and transported to the mill by truck. In the mill, sugarcane is cut into small pieces and passed through a series of presses to squeeze the juice from the cane. The cane juice undergoes clarification, separation, evaporation, and crystallization to produce raw, unrefined sugar. The fibrous byproduct remaining from the sugarcane is called bagasse and is burned as boiler fuel to provide steam and heat for the mill operation. Atlantic Sugar operates five bagasse boilers to meet the steam requirements of the mill. Wet impingement scrubbers control particulate matter emissions from each boiler. The final product is raw sugar, which is trucked off site.

**PROJECT DESCRIPTION**

This permit modification authorizes expanded operation of following emissions unit:

EU No.	Emissions Unit Description
005	Sugar Mill Boiler No. 5: Bagasse boiler with a maximum hourly steam production rate of 130,000 lb/hour

**REGULATORY CLASSIFICATION**

Title III: The facility is a major source of hazardous air pollutants (HAPs).

Title IV: The facility is not subject to the Title IV acid rain provisions of the Clean Air Act.

Title V: Because potential emissions of at least one regulated air pollutant exceeds 100 tons per year, the facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.

PSD: Because potential emissions are greater than 250 tons per year for at least one regulated air pollutant, the facility is a major source of air pollution in accordance with Rule 62-212.400, F.A.C., the Prevention of Significant Deterioration (PSD) of Air Quality. Modifications to PSD major sources require a PSD applicability review. Projects resulting in net emissions increases greater than the Significant Emissions Rates specified in Table 62-212.400-2, F.A.C. must employ the Best Available Control Technology (BACT), as determined by the Department. For this project, emissions increases of CO, NO<sub>x</sub>, PM/PM<sub>10</sub>, and VOC are significant and subject to the BACT standards specified in this permit.

NSPS: The permittee did not identify any emissions units subject to a New Source Performance Standard (NSPS) of 40 CFR 60.

**RELEVANT DOCUMENTS**

The documents listed below are on file with the Department and form the basis of the permitting action.

- Application received on 10/26/99 (including all subsequent additional information);
- National Park Service's comments dated 11/23/99;
- EPA Region 4's comments dated (DRAFT);
- Comments from the Palm Beach County Health Department's received on 01/11/00, 08/28/00, and 11/29/00; and
- Notice of Intent to issue Permit package mailed on (DRAFT).

**AIR CONSTRUCTION PERMIT MODIFICATION**  
**SECTION II. ADMINISTRATIVE PERMITTING REQUIREMENTS (DRAFT)**

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1. Permitting Authorities: All documents related to applications for permits to construct or modify this emissions unit shall 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. Copies shall also be submitted to each Compliance Authority.
2. Compliance Authorities: All documents related to reports, tests, and notifications shall be submitted to the Air Pollution Control Section of the Palm Beach County Health Department at P.O. Box 29 in West Palm Beach, Florida 33402-0029 and phone number 561/355-3136. Copies of all documents shall also be submitted to the South District Office, Florida Department of Environmental Protection at 2295 Victoria Avenue, Suite 364 in Fort Myers, Florida 33902-2549 and phone number 941/332-6975.
3. Definitions: The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code and specifically, Rule 62-210.200, F.A.C.
4. General Conditions: The owner and operator are subject to and shall operate under the attached General Conditions listed in *Appendix GC* of this permit. General conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
5. 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, of the Florida Statutes (F.S.); Chapters 62-4, 62-110, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and Title 40, Part 60 of the Code of Federal Regulations (CFR) adopted by reference in Chapter 62-204, F.A.C. 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.]
6. 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.]
7. Expiration: For good cause, the permittee may request that this construction permit be extended. Such a request shall be submitted at least 60 days before the expiration of the permit to the Department's Bureau of Air Regulation. [Rules 62-210.300(1), 62-4.080, and 62-4.210, F.A.C.]
8. 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.]
9. Title V Operation Permit Required: This permit authorizes modification of the permitted emissions unit and initial operation to determine compliance with Department rules. A Title V operation permit is required for routine operation of the permitted emissions units. The permittee shall apply for and obtain a Title V operation permit in accordance with Chapter 62-213, F.A.C. 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 Bureau of Air Regulation with copies to the Compliance Authorities. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

**AIR CONSTRUCTION PERMIT MODIFICATION  
SECTION III. EMISSIONS UNITS SPECIFIC CONDITIONS (DRAFT)**

**SUBSECTION A. EU 005 - MILL BOILER NO. 5**

This portion of the permit addresses the following emissions unit.

EU No.	Emissions Unit Description
005	<b>Sugar Mill Boiler No. 5</b> is a traveling grate boiler (with economizer) with maximum hourly steam production rate of 130,000 pounds per hour and a maximum hourly heat input of rate of 255.3 mmBTU per hour. The boiler fires bagasse as the primary fuel and fuel oil, wood chips, and rice hulls as supplemental fuels. The boiler has two fuel oil burners, each with a maximum designed firing rate of 235 gallons per hour. However, the total fuel oil firing rate is restricted to 168 gallons per hour by permit. A Type D Joy Turbulaire wet impingement scrubber controls particulate matter emissions. Pollutant emissions exit the 5.5 feet diameter scrubber stack that is 90 feet above ground level with a volumetric flow rate of 90,000 acfm at 150°F.

*Note: The above description is based upon information provided in the application and is for informational purposes only.*

**APPLICABLE STANDARDS AND REGULATIONS**

1. **BACT Determinations:** Pursuant to Rule 62-212.400, F.A.C., Boiler No. 5 is subject to Best Available Control Technology (BACT) determinations for carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM<sub>10</sub>), and volatile organic compounds (VOC). In addition, this emissions unit is subject to Rule 62-296.410, F.A.C. which regulates visible emissions and particulate matter emissions from carbonaceous fuel fired equipment.

**PERFORMANCE RESTRICTIONS**

2. **Hours of Operation:** Boiler No. 5 shall operate only during the 7-month sugarcane crop season defined as October 1<sup>st</sup> through April 30<sup>th</sup>. Operation of Boiler No. 5 is further restricted by Specific Condition No. 3 based on steam production. [Rule 62-210.200, F.A.C., Definitions - PTE]
3. **Permitted Capacity**
  - a. Boiler No. 5 shall not exceed a 1-hour steam production rate of 130,000 pounds of steam per hour (equivalent to a maximum heat input rate of 255.3 mmBTU per hour). When firing any combination of wood chips, Boiler No. 5 shall not exceed a 1-hour steam production rate of 100,000 pounds of steam per hour (equivalent to a maximum heat input rate of 195.0 mmBTU per hour).
  - b. Boiler No. 5 shall not exceed a 24-hour steam production rate of 115,000 pounds of steam per hour (equivalent to a maximum heat input rate of 225.8 mmBTU per hour).
  - c. Boiler No. 5 shall not exceed a total steam production rate of 441,717,000 pounds of steam during any consecutive 7 months (equivalent to 867,302 mmBTU per 7-month sugarcane crop season).

Steam production is based on: design steam conditions of 550° F, 250 psig, and an enthalpy of 1290 BTU/lb of steam; nominal feedwater conditions of 240° F, 400 psig, and enthalpy of 210 BTU/lb of feedwater; a net enthalpy of 1080 BTU/lb of steam; and a boiler thermal efficiency of 55%. Any changes to these parameters shall require prior approval of the New Source Review Section and may require a permit modification. The steam production limits define the permitted capacity of this boiler and are the basis of the limits on the maximum heat input and fuel firing rates. Any requested changes to the steam production rates, heat input rates, or fuel firing rates shall require a PSD review and permit modification. [Rule 62-210.200, F.A.C., Definitions - PTE]

**AIR CONSTRUCTION PERMIT MODIFICATION**  
**SECTION III. EMISSIONS UNITS SPECIFIC CONDITIONS (DRAFT)**

**SUBSECTION A. EU 005 - MILL BOILER NO. 5**

4. Allowable Fuels: Boiler No. 5 is authorized to fire the following types and amounts of fuels:
- a. *Primary Fuel*: Bagasse shall be fired as the primary fuel. Untreated wood chips and rice hulls may supplement bagasse firing. No more than 120,458 tons of total wet carbonaceous fuel shall be fired during any consecutive 7 months. Of this total, no more than 2200 tons of wood chips and rice hulls (combined) shall be fired during any consecutive 7 months. If oil is fired, the limit on total carbonaceous fuel shall be prorated based on the heat input from each fuel.
  - b. *Auxiliary Fuel*: As an auxiliary fuel, Boiler No. 5 may fire No. 6 fuel oil (or a superior grade), which shall contain no more than 1.0% sulfur by weight. Boiler No.5 shall fire no more than 168.0 gallons per hour and no more than 200,000 gallons during any consecutive 7 months. The permittee shall install, calibrate, operate, and maintain fuel oil flow meters with integrators or continuous recording equipment. The sulfur content of the fuel oil shall be determined by ASTM Methods D-129, D-1552, D-2622, or D-4294.

Fuel consumption is also restricted by the limits on steam production as established in Specific Condition No. 3 of this subsection. The monitoring and record keeping requirements of this permit shall determine compliance with the fuel consumption limits.

[Applicant Request, Rule 62-210.200 (Definitions - PTE) and Rule 62-212.400 (BACT), F.A.C.]

5. Operating Procedures: The Best Available Control Technology (BACT) determinations established by this permit rely on "good combustion practices" to minimize CO, NO<sub>x</sub>, PM/PM<sub>10</sub>, and VOC emissions. Therefore, all boiler operators and supervisors shall be properly trained to operate and maintain the bagasse boiler and pollution control equipment in accordance with the guidelines and procedures established by each equipment manufacturer. The training shall include all "good combustion practices" including those specified in *Appendix GCP* of this permit. [Applicant Request; Rule 62-4.070(3); Rule 62-212.400 (BACT), F.A.C.]
6. Modification: Prior to initiating any physical changes to, or changes in the method of operation of Boiler No. 5, the permittee shall request approval from the Department's Bureau of Air Regulation. Such changes would include, but not be limited to: replacement or addition of burners; modification of the combustion air system; replacement of the furnace grate; replacement of the steam drum; re-tubing the boiler; altering the design steam conditions; adding a fuel not previously authorized; changes to the wet scrubber system; or replacing portions of the stack. Based on a review of the available information, the Department may determine that the proposed project is minor in nature or represents a substantial modification (triggers NSPS applicability, a PSD applicability review, a MACT determination, etc.). In either case, an air construction permit may be required before construction is commenced. [Rule 62-210.300(1)(a), F.A.C.]

**CONTROL EQUIPMENT AND TECHNIQUES**

7. Wet Scrubber: The permittee shall install, operate, and maintain a Type D Joy Turbulaire wet impingement scrubber to control emissions of particulate matter. The control efficiency of this device is approximately 93%. The wet scrubbing system shall be equipped with the following monitoring equipment.
- a. A *weir box* shall be installed to indicate overflow to the wet scrubber system, ensuring that constant make-up water is provided to the wet scrubber.
  - b. A *site glass* shall be installed and marked to indicate whether the liquid level is above or below the lip of the scrubber skirt, ensuring that the annular throttling gap is being properly maintained.

**AIR CONSTRUCTION PERMIT MODIFICATION**  
**SECTION III. EMISSIONS UNITS SPECIFIC CONDITIONS (DRAFT)**

**SUBSECTION A. EU 005 - MILL BOILER NO. 5**

- c. A *manometer* (or equivalent) shall be installed to measure the scrubber pressure drop in inches of water column. The pressure drop across the scrubber shall be maintained within the following ranges:

Steam Production Rate 1-Hour Average	Minimum Scrubber Pressure Drop
< 110,000 lb/hour	6 inches water column
110,000 to 115,000 lb/hour	7 inches water column
115,000* to 125,000 lb/hour	8 inches water column
125,000* to 130,000 lb/hour	10 inches water column

- d. *Pressure gages* shall be installed to monitor the water supply pressure to the scrubber nozzles. Based on a 1-hour average, the upper ring of 14 spray nozzles shall be maintained above 35 psig and the lower ring of 24 spray nozzles shall be maintained above 60 psig. Spray nozzles shall be equipped with quick release connections and shall be inspected daily.
- e. A *flow meter* shall be installed to measure the water flow rate through the scrubber. The total flow rate shall be maintained above 550 gallons per minute, based on a 1-hour average. If the pressure differential drops below 550 gallons per minute, an alarm shall warn the operator.
- f. The *scrubber water pH* shall be measured and recorded at least once per day. The pH shall be maintained between 6 to 8.5.

The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations and within the optimum operating ranges indicated above. Should any monitored parameter fall outside the specified operating range, the permittee shall investigate the cause and take corrective action to regain operation within the specified range. Excluding scrubber water pH, the permittee shall begin reading and recording all monitored parameters at 30-minute intervals until successive readings indicate the unit has regained operation within the specified optimum range. For scrubber water pH, the permittee shall begin measuring and recording the scrubber water pH at 8-hour intervals until successive readings indicate the unit has regained operation within the specified optimum range. Operation outside of the specified operating range for any monitored parameter is not a violation of this permit, in and of itself. However, continued operation outside of the specified operating range for any monitored parameter without corrective action may be considered circumvention of the air pollution control equipment. [Applicant Request; Rule 62-4.070(3); Rule 62-212.400 (BACT), F.A.C.]

8. Good Combustion Practices: The boiler operators shall use the "good combustion practices (GCPs)" defined in *Appendix GCP* to minimize emissions of CO, NO<sub>x</sub>, PM/PM<sub>10</sub>, and VOC from Boiler No. 5. As a critical part of the GCPs, the permittee shall install, calibrate, operate, and maintain process monitors to indicate the oxygen and carbon monoxide contents of the exhaust flue gas from the boiler before October 15, 2001. Readouts of these process monitors shall be provided in the boiler control room. It is noted that the monitored flue gas carbon monoxide content is for the purpose of determining efficient combustion and may not be representative of the actual CO emissions from the stack.

In addition to the initial CO and NO<sub>x</sub> compliance testing required by this permit, the permittee shall conduct concurrent CO and NO<sub>x</sub> testing in accordance with EPA Methods 10 and 7/7E for at least twelve (12) additional 1-hour runs. The additional tests shall be completed before December 15, 2001. Testing shall be conducted when the boiler is firing only bagasse and six (6) runs may occur with the boiler operating below 90% of permitted capacity. The permittee shall provide a 15-day advance notice of the proposed test schedule. During each run, the operators shall observe and record the CO and O<sub>2</sub> contents of

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the exhaust flue gas from the process monitors at 5-minute intervals. After each run, the operators shall record the hourly steam production rate from the strip chart recorder and the steam integrator. A complete report summarizing the test methods, recorded parameters, boiler operation and adjustments, problems during testing, and final results shall be submitted to the Permitting and Compliance Authorities within 60 days of completing the required testing. For each run, the report shall summarize the recorded process parameters, the calculated heat input, and the emissions of CO and NO<sub>x</sub>. The report shall define the relationships between flue gas oxygen content, flue gas carbon monoxide content, the overall combustion efficiency, and emissions of CO and NO<sub>x</sub>. The report shall also contain a recommendation by the permittee of an acceptable operating range for the oxygen and carbon monoxide flue gas contents that represents adherence to GCPs. Based on the available information, the Department shall determine additional GCPs including the optimum operating ranges for CO and O<sub>2</sub> flue gas concentrations. This specific condition and *Appendix GCP* shall be revised to reflect the final GCPs with appropriate monitoring. The Department shall make these revisions as a minor permit amendment. Thereafter, any changes to the GCPs shall be processed as a permit modification to include a Public Notice. GCPs shall be included in the Title V operating permit. [Applicant Request; Rule 62-4.070(3); Rule 62-212.400 (BACT), F.A.C.]

**EMISSION LIMITING STANDARDS**

*{Permitting Note: Mass emission limits are based on the 1-hour maximum permitted capacity for Boiler No. 5}*

9. CO Standard: Carbon monoxide emissions shall not exceed 6.5 pounds per mmBTU of heat input and 1659.5 pounds per hour when firing carbonaceous fuel based on a 3-hour test average as determined by EPA Method 10. Emissions performance testing for CO and NO<sub>x</sub> shall be conducted concurrently. [Applicant Request; Rule 62-212.400 (BACT), F.A.C.; 40 CFR 60, Appendix A]
10. NO<sub>x</sub> Standard: Nitrogen oxide emissions shall not exceed 0.16 pounds per mmBTU of heat input or 40.8 pounds per hour when firing carbonaceous fuel based on a 3-hour test average as determined by EPA Method 7 or 7E. Emissions performance testing for CO and NO<sub>x</sub> shall be conducted concurrently. [Rule 62-212.400 (BACT), F.A.C.; Previous PSD Permit No. PSD-FL-078; 40 CFR 60, Appendix A]
11. PM/PM<sub>10</sub> Standard: Particulate matter emissions shall not exceed 0.15 pounds per mmBTU of heat input and 38.3 pounds per hour when firing carbonaceous fuel based on a 3-run test average as determined by EPA Method 5. Particulate matter emissions shall not exceed 0.10 pounds per mmBTU of heat input and 2.52 pounds per hour when firing fuel oil based on a 3-run test average as determined by EPA Method 5. Compliance when firing both fuels shall be determined by prorating the emissions standards based on the heat input from each fuel. [Applicant Request; Rules 62-296.410(2)(b)2. and 62-212.400 (BACT), F.A.C.; 40 CFR 60, Appendix A]
12. SO<sub>2</sub> Standard: Emissions of sulfur dioxide shall not exceed 0.05 pounds per mmBTU of heat input and 12.8 pounds per hour when firing carbonaceous fuel based on a 3-run test average as determined by EPA Methods 6 or 6C. During each SO<sub>2</sub> performance test, the permittee shall sample and analyze the bagasse fuel for sulfur content. The sulfur content shall be used to calculate the potential uncontrolled SO<sub>2</sub> emissions as well as the control efficiency during the test. This information shall be submitted with each test report. Emissions of SO<sub>2</sub> from fuel oil firing are limited by the sulfur content restrictions specified by this permit. [Applicant Request; Rule 62-212.400 (BACT), F.A.C.; 40 CFR 60, Appendix A]
13. Visible Emissions Standard
  - a. *Boiler No. 5*: Visible emissions from the scrubber stack shall not exceed 20% opacity based on a 6-minute average except for one 2-minute period per hour of up to 40% opacity, as determined by DEP Method 9. The minimum observation period for demonstrating compliance with the standard shall be



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sixty (60) minutes and observations shall exclude any combined water vapor. [Rules 62-296.410(2)(b)1., 62-297.310(4)(a)2., and 62-212.400 (BACT), F.A.C.]

- b. *Bagasse Handling System*: Visible emissions from the bagasse handling system shall not exceed 10 percent opacity based on a 6-minute average, as determined by EPA Method 9. The minimum observation period for demonstrating compliance with the standard shall be thirty (30) minutes. This standard shall not apply during periods of excessive winds (18 miles per hour or greater) provided that reasonable precautions to control fugitive emissions have been taken, such as covering conveyers, installing windbreaks, and minimizing the height of drop points. The company shall maintain an anemometer (or equivalent device) to record the wind speed at the plant site. [Rule 62-212.400 (BACT), F.A.C.]
14. VOC Standard: Emissions of regulated volatile organic compounds shall not exceed 0.25 pounds per mmBTU and 63.8 pounds per hour when firing carbonaceous fuel based on a 3-run test average as determined by EPA Methods 18 and 25A, modified to include a means of sample dilution. The sample shall not be diluted below the minimum detection limit for the flame ionization detector. Total VOC emissions shall be determined by EPA Method 25A and reported in terms of pounds per mmBTU and pounds per hour, as propane. EPA Method 18 shall be used to determine emissions of methane, which shall be reported in terms of pounds per mmBTU and pounds per hour, as propane. Emissions of regulated VOC shall be defined as the difference between the total VOC emissions and methane emissions, reported in terms of pounds per mmBTU and pounds per hour, as propane. [Applicant Request; Rule 62-212.400 (BACT), F.A.C.; 40 CFR 60, Appendix A; and ASP No. 96-H-01]

**EXCESS EMISSIONS**

15. Excess Emissions Allowed: Providing the permittee adheres to best operational practices to minimize the amount and duration of excess emissions, visible emissions during startup and shutdown shall not exceed 40% opacity for up to 2.0 hours in any 24-hour period. Visible emissions shall not include combined water vapor. Because emissions of other pollutants are determined only during scheduled performance tests, the compliance status of other pollutants is typically unknown. However, the requirements to monitor and maintain critical control parameters as specified in this permit shall remain in effect at all times and shall also be used to determine adherence to "best operational practices to minimize the amount and duration of excess emissions". If excess emissions occur due to malfunction, the owner or operator shall notify the Compliance Authority within one (1) 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. [Rule 62-210.700(1) and (6), F.A.C.]

**REPORTING AND RECORD KEEPING REQUIREMENTS**

16. Daily Operational Records: To demonstrate compliance with the performance requirements of this permit, the permittee shall record the following information for Boiler No. 5.
- a. *Startup and Shutdown*: The permittee shall record the time and date the boiler undergoes startup, shutdown, or malfunction. The permittee shall also log the time when the boiler achieves normal operation after startup or regains normal operation after malfunction.
- b. *Steam Parameters*: The steam pressure (psig), steam temperature (°F), and steam production rate (pounds per hour) shall be continuously monitored and recorded with a chart recorder.
- c. *Combustion Parameters*: After completing installation, the permittee shall record the oxygen and carbon monoxide contents of the boiler flue at least once per hour of operation.

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- d. *Wet Scrubber Parameters:* The permittee shall record the following information at least once during each 4-hour period of operation: adequate weir box overflow (yes or no); scrubber liquid level in site glass is within marked range (yes or no); pressure drop across wet scrubber (inches of water column); scrubber spray nozzle pressures (psig); and wet scrubber liquid flow rate (gpm). The scrubber pH shall be measured and recorded at least once per day.
- e. *Oil Firing:* Prior to firing any oil, the permittee shall record the oil flow meter integrator reading. The permittee shall observe and record the oil flow rate (gph, instantaneous) and the oil flow meter integrator readings at least at 4-hour intervals of oil firing. At the end of each recorded interval, the permittee shall calculate and record the average hourly oil firing rate for the interval (gph).
- f. *Oil Delivery:* For each fuel oil delivery, the permittee shall record and retain the following: the date; the gallons of fuel delivered; and a fuel oil analysis, including the heat content (mmBTU per gallon), the density (pounds per gallon), the sulfur content (percent by weight), and the name of the test methods used. A certified analysis supplied by the fuel oil vendor is acceptable.
- g. *Monitoring Equipment:* In accordance with the manufacturer's recommendations, the permittee shall install, calibrate, operate, and maintain all monitoring equipment including steam flow meters, steam integrators, strip chart recorders, pressure gages, manometers, scrubber water flow meters, fuel oil flow meters, and all other monitoring devices used to demonstrate compliance with the conditions of this permit. Each device shall be calibrated at least annually. All calibrations and repairs shall be recorded as part of the Daily Operational Records.
- h. *Daily Summary:* For each day of operation, the permittee shall calculate and record the following by the end of the next workday.
- Hours of Operation: total hours per day;
  - Steam Production Rate: total pounds per day, pounds per hour of operation (24-hour average), and pounds per hour (maximum during the day);
  - Wood Chip and Rice Hull Deliveries: tons of wood chips and rice hulls delivered to mill; and
  - Oil Firing Rate: total gallons of oil fired per day.

Alternatively, the permittee may install automated monitoring equipment to satisfy a monitoring requirement. All records shall indicate the date and time the information was recorded, and in the case of manual recordings, the name of the person who recorded the information. For data that indicates operation outside of the specified permitted levels of the above parameters, the permittee shall record a summary of the incident and any corrective actions taken to regain proper operation, if any. [Rules 62-212.400 (BACT) and 62-4.070(3), F.A.C.]

17. Monthly Operations Summary: By the tenth day of each month, the permittee shall calculate and record the following information for the previous month of operation.
- *Hours of Operation:* total hours per month;
  - *Steam Production Rate:* pounds per month and pounds per consecutive 7 months;
  - *Heat Input:* mmBTU per month and mmBTU per consecutive 7 months;
  - *Wet Bagasse Firing Rate:* tons per month and tons per consecutive 7 months;
  - *Wet Wood Chip Firing Rate\*:* tons per month and tons per consecutive 7 months;
  - *Wet Rice Hull Firing Rate\*:* tons per month and tons per consecutive 7 months; and
  - *Oil Firing Rate:* gallons per month and gallons per consecutive 12 months.

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- \* For the purpose of these records, it shall be assumed that wood chips and rice hulls are fired during the month delivered. The permittee shall not build up excess stockpiles of wood chips or rice hulls.

All records shall indicate the date and time the information was recorded, and in the case of manual recordings, the name of the person who recorded the information. If recorded data indicates operation in excess of the specified permit limits for steam production or oil firing, then the permittee shall submit a written notification and summary to the Compliance Authorities within three (3) calendar days of recording the data. [Rules 62-212.400 (BACT) and 62-4.070(3), F.A.C.]

**PERFORMANCE TESTING REQUIREMENTS**

18. Performance Test Methods: Compliance tests shall be performed in accordance with the following reference methods as described in 40 CFR 60, Appendix A, and adopted by reference in Chapter 62-204.800, F.A.C.

- (a) *EPA Method 5*, Determination of Particulate Emissions from Stationary Sources;
- (b) *EPA Method 6 or 6C*, Determination of Sulfur Dioxide Emissions from Stationary Sources;
- (c) *EPA Method 7 or 7E*, Determination of Nitrogen Oxide Emissions from Stationary Sources;
- (d) *DEP Method 9*, Visual Determination of the Opacity of Emissions from Stationary Sources;
- (e) *EPA Method 10*, Determination of Carbon Monoxide Emissions from Stationary Sources;
- (f) *EPA Methods 18 and 25A*, Determination of Volatile Organic Concentrations;
- (g) *ASME Boiler Efficiency Short Form Method*, Boiler Thermal Efficiency Test Method; and
- (h) *ASTM Methods D-129, D-1552, D-2622, or D-4294*, Determination of Fuel Oil Sulfur Contents.

No other test methods may be used for compliance testing unless prior DEP approval is received, in writing, from the DEP Administrator of the Emissions Monitoring Section in accordance with an alternate sampling procedure pursuant to Rule 62-297.620, F.A.C.

19. Initial Tests Required: Initial compliance with the emission standards specified in this permit shall be determined within 60 days after startup of this unit for the 2000/2001 crop season. Initial tests shall be conducted for CO, NO<sub>x</sub>, PM, SO<sub>2</sub>, VOC, visible emissions, and the boiler thermal efficiency. The permittee shall also sample and analyze the fuel oil from the tank that supplies Boiler No. 5 and report the sulfur content. [Rule 62-297.310(7)(a)1., F.A.C.]

20. Annual Performance Tests: During each federal fiscal year, the permittee shall conduct annual performance tests for CO, NO<sub>x</sub>, PM, VOC, and visible emissions to demonstrate compliance with the standards specified in this permit. If the initial test or the test prior to permit renewal of the boiler thermal efficiency indicates an efficiency of less than 50%, the permittee shall begin conducting annual thermal efficiency tests. If routine maintenance and repair of the boiler result in regaining a thermal efficiency of at least 55%, subsequent thermal efficiency testing is only required during the federal fiscal year prior to renewal. The federal fiscal year is defined as October 1<sup>st</sup> through September 30<sup>th</sup>. The permittee shall also sample and analyze the fuel oil from the tank that supplies Boiler No. 5 and report the sulfur content. [Rules 62-212.400 (BACT), 62-4.070(3), 62-296.570(4)(a)3., and 62-297.310(7)(a)4., F.A.C.]

21. Tests Prior to Renewal: During the federal fiscal year prior to renewal of the air operation permit, the permittee shall conduct performance tests for CO, NO<sub>x</sub>, PM, SO<sub>2</sub>, VOC, visible emissions, and the boiler thermal efficiency to demonstrate compliance with the standards and conditions specified in this permit. The federal fiscal year is defined as October 1<sup>st</sup> through September 30<sup>th</sup>. The permittee shall also sample

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and analyze the fuel oil from the tank that supplies Boiler No. 5 and report the sulfur content. [Rules 62-212.400 (BACT), 62-4.070(3), F.A.C.]

22. Tests After Substantial Modifications: All performance tests required for initial startup shall also be conducted after any substantial modification and appropriate shake-down period of the boiler or air pollution control equipment. Shakedown periods shall not exceed 90 days after re-starting the unit. Tests shall be conducted within 60 days of establishing normal operations. [Rule 62-297.310(7)(a)4., F.A.C.]

23. General Testing Conditions

- a. All required emission performance tests shall be conducted when firing only carbonaceous fuel.
- b. For all initial tests, Boiler No. 5 shall be tested between 117,000 and 130,000 pounds of steam per hour for the 3-run test average. Otherwise, the Department shall modify this PSD permit to reflect the lower actual capacity of the unit.
- c. For all required annual tests, Boiler No. 5 shall be tested between 117,000 and 130,000 pounds of steam per hour (90% to 100% of permitted maximum operation) for the 3-run test average. If it is impractical to conduct annual tests within this range, an emissions unit may be tested at less than the minimum steam production rate. In this case, subsequent steam production is limited to 110 percent of the tested rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity.
- d. For all required tests conducted prior to renewal of the operation permit, Boiler No. 5 shall be tested between 117,000 and 130,000 pounds of steam per hour for the 3-run test average. If it is impractical to conduct tests within this range, an emissions unit may be tested at less than the minimum steam production rate. In this case, subsequent steam production is limited to 110 percent of the tested rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. The Department shall include any restrictions on steam production imposed by this testing condition as a specific limit in the renewed operation permit. This operational limit shall be in addition to the defined maximum steam production limits of the PSD permit. If the unit is tested and regains authority to operate at the permitted capacity, the permittee shall submit an application for a revised operation permit.
- e. At 15-minute intervals during each test run, the permittee shall monitor and record the scrubber pressure drop (inches of water column), the scrubber water spray nozzle pressures (psig), the scrubber water flow rate (gpm), the flue gas oxygen content (percent O<sub>2</sub>), and the flue gas carbon monoxide content (percent CO). For each test run, the permittee shall also record the scrubber water pH, the steam production rate (lb/hour), the average steam temperature (° F), the average steam pressure (psig), the feed water flow rate (gpm), the average feed water temperature (° F), the average feed water pressure (psig), the oil flow rate (gph), and the calculated heat input (mmBTU per hour).

[Rules 62-297.310(2) and Rule 62-297.310(5), F.A.C.]

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**SUBSECTION B. ALL EMISSIONS UNITS - COMMON CONDITIONS**

**EMISSION LIMITING AND PERFORMANCE STANDARDS**

1. General Visible Emissions Standard: Unless otherwise specified 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 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.]
2. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]
3. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants that cause or contribute to an objectionable odor. An objectionable odor is defined 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. [Rules 62-296.320(2) and 62-210.200(203), F.A.C.]
4. 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 district office and, if applicable, appropriate local program. 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.]
5. 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.]
6. Excess Emissions Prohibited: 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 startup, shutdown, or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

*{Permitting Note: Excess emission provisions can not be used to vary any NSPS requirement from any subpart of 40 CFR 60.}*

**COMPLIANCE MONITORING AND TESTING REQUIREMENTS**

7. Test Methods: The appropriate test methods are specified in the permit, Chapter 62-297, F.A.C., and 40 CFR 60, Appendix A. Test procedures and methods shall meet all applicable requirements of Rule 62-297.310(4), F.A.C. The following test methods may also be required as part of these tests.
  - a. *EPA Method 1*, "Sample and Velocity Traverses for Stationary Sources".
  - b. *EPA Method 2*, "Determination of Stack Gas Velocity and Volumetric Flow Rate".
  - c. *EPA Method 3*, "Gas Analysis for Carbon Dioxide, Oxygen, Excess Air, and Dry Molecular Weight".
  - d. *EPA Method 4*, "Determination of Moisture Content in Stack Gases".
8. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process

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variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

9. Calculation of Emission Rate: The indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]
10. 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.
11. 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.]
12. Test Notification: The permittee shall notify the Compliance Authority in writing at least 30 days prior to initial performance tests for NSPS sources and at least 15 days prior to any other required tests. 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. and 40 CFR 60.7, 60.8]
13. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the facility to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions units and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

**REPORTING AND RECORD KEEPING REQUIREMENTS**

14. Records: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to DEP representatives upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2., F.A.C.]

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**SUBSECTION B. ALL EMISSIONS UNITS - COMMON CONDITIONS**

15. 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.]
16. Excess Emissions Report: If excess emissions occur, the owner or operator shall notify the Department within one (1) 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. [Rule 62-4.130, F.A.C.]
17. Excess Emissions Report - Malfunctions: In case of excess emissions resulting from malfunctions, each owner or operator shall notify the Department or the appropriate local program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report if requested by the Department. [Rule 62-210.700(6), F.A.C.]
18. 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 Compliance Authority by March 1 of the following year. [Rule 62-210.370(3), F.A.C.]

SECTION IV.

APPENDIX A - TERMINOLOGY

**ABBREVIATIONS AND ACRONYMS**

<b>BACT</b>	-	Best Available Control Technology
<b>DARM</b>	-	Division of Air Resource Management
<b>EPA</b>	-	United States Environmental Protection Agency
<b>DEP</b>	-	State of Florida, Department of Environmental Protection
<b>°F</b>	-	Degrees Fahrenheit
<b>F.A.C.</b>	-	Florida Administrative Code
<b>F.S.</b>	-	Florida Statute
<b>SOA</b>	-	Specific Operating Agreement
<b>UTM</b>	-	Universal Transverse Mercator

**RULE CITATIONS**

*The following examples illustrate the methods used in this permit to abbreviate and cite the references of rules, regulations, permit numbers, and identification numbers.*

Florida Administrative Code (F.A.C.) Rules:

*Example:* [Rule 62-213.205, F.A.C.]

*Where:* 62 - refers to Title 62 of the Florida Administrative Code (F.A.C.)  
62-213 - refers to Chapter 62-213, F.A.C.  
62-213.205 - refers to Rule 62-213.205, F.A.C.

Facility Identification (ID) Number:

*Example:* Facility ID No. 099-0001

*Where:* 099 - 3 digit number indicates that the facility is located in Palm Beach County  
0221 - 4 digit number assigned by state database identifies specific facility

New Permit Numbers:

*Example:* Permit No. 099-2222-001-AC or 099-2222-001-AV

*Where:* AC - identifies permit as an Air Construction Permit  
AV - identifies permit as a Title V Major Source Air Operation Permit  
099 - 3 digit number indicates that the facility is located in Palm Beach County  
2222 - 4 digit number identifies a specific facility  
001 - 3 digit sequential number identifies a specific permit project

Old Permit Numbers:

*Example:* Permit No. AC50-123456 or AO50-123456

*Where:* AC - identifies permit as an Air Construction Permit  
AO - identifies permit as an Air Operation Permit  
123456 - 6 digit sequential number identifies a specific permit project



## SECTION IV.

## APPENDIX FC - FUEL CHARACTERISTICS AND FIRING RATES

Table A. Boiler No. 5 Fuel Characteristics

Parameter	Fuel Type			
	Bagasse	Wood Chips	Rice Hulls	Fuel Oil
Heat Content	7.2 mmBTU/ton, wet (3600 BTU/lb, wet)	10.0 mmBTU/ton, wet (5000 BTU/lb, wet)	12.4 mmBTU/ton, wet (6200 BTU/lb, wet)	150 mmBTU/1000 gal (150,000 BTU/gallon)
Moisture Content	50% by wt.	50% by wt.	< 25% by wt.	NA
Sulfur Content	< 0.1 – 0.4% S by wt.	0.02 - 0.002%	< 0.002%	1.0% S by wt., max. (8.1 lb oil/gallon)

Table B. Boiler No. 5 Fuel Firing Rates (130,000 lb/hour Steam, 1-Hour Average)

Fuel Option	Primary Fuel	Supplemental Fuel	Total Heat Input
Bagasse Only	255.3 mmBTU/hr (35.5 TPH bagasse)	NA	255.3 mmBTU/hr
Bagasse and Oil	230.3 mmBTU/hr (32.0 TPH bagasse)	25.2 mmBTU/hr (168.0 GPH oil)	255.3 mmBTU/hr*
Wood Chips	195.0 mmBTU/hr (19.5 TPH Wood Chips)	NA (Limited to 100,000 lb/hr of steam when firing wood chips or 195.0 mmBTU/hr)	195.0 mmBTU/hr
Rice Hulls	193.3 mmBTU/hr (26.8 TPH bagasse)	62.0 mmBTU/hr (5.0 TPH Rice Hulls)	255.3 mmBTU/hr

Table C. Boiler No. 5 Fuel Firing Rates (115,000 lb/hour Steam, 24-Hour Average)

Fuel Option	Primary Fuel	Supplemental Fuel	Total Heat Input
Bagasse Only	225.8 mmBTU/hr (31.4 TPH bagasse)	0	225.8 mmBTU/hr
Bagasse and Oil	200.6 mmBTU/hr (27.9 TPH bagasse)	25.2 mmBTU/hr (168.0 GPH oil)	225.8 mmBTU/hr*
Wood Chips	195.0 mmBTU/hr (19.5 TPH wood Chips)	NA (Limited to 100,000 lb/hr of steam when firing wood chips or 195.0 mmBTU/hr)	195.0 mmBTU/hr
Rice Hulls	163.8 mmBTU/hr (22.8 TPH bagasse)	62.0 mmBTU/hr (5.0 TPH Rice Hulls)	225.8 mmBTU/hr

## SECTION IV.

### APPENDIX GC - CONSTRUCTION PERMIT GENERAL CONDITIONS

- 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.

**SECTION IV.**

**APPENDIX GC - CONSTRUCTION PERMIT GENERAL CONDITIONS**

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.

## SECTION IV.

### APPENDIX GCP - GOOD COMBUSTION PRACTICES

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#### Purpose of GCP Plan

The determination of Best Available Control Technology for CO, NOx, and VOC emissions from Boiler No. 5 (EU-005) relied on "good combustion practices". The purpose of this document is to summarize the operational, maintenance, and monitoring procedures that will lead to the minimization of CO and VOC emissions and the optimization of NOx emissions, consistent with good combustion practices.

#### Off Season Equipment Preparation

Prior to each harvest season, the following activities shall be performed.

1. Inspect, clean, and perform routine maintenance for the boiler proper, its air duct work, air heaters and scrubber.
2. Inspect and repair all refractory and boiler casing where needed.
3. Remove loose scale removed from outside of boiler tubes and remove loose scale, sand and other debris from boiler.
4. Inspect, clean, and check the boiler grate for proper mechanical operation.
5. Inspect and repair all fans and fan drives as needed.
6. Inspect and repair all pumps and pump drives as needed.
7. Inspect and clean all oil burners, related oil piping, atomizing steam and air registers.
8. Identify and mark the skirt level of the scrubber on the outside to provide a permanent reference.
9. Inspect, repair, and calibrate all instruments for boiler operation and control as required. Information is recorded by the instrument shop in its repair log.

#### Training

Prior to each harvest season, an instructional program shall be developed and presented to all boiler operators and boiler room supervisors regarding the following items:

- Efficient combustion: minimizing CO and VOC emissions while reducing NOx emissions;
- Reducing startup emissions;
- Proper wet scrubber operation; and
- Record keeping required by the air permit.

The senior most experienced boiler supervisor shall instruct other boiler room supervisors, boiler operators, and other appropriate personnel in proper boiler and scrubber operations. The training will impress upon supervisors and operators the importance of proper boiler operation in order to minimize emissions.

#### Good Combustion Practices - Operation

Emissions of carbon monoxide (CO), particulate matter (PM/PM<sub>10</sub>), and volatile organic compounds (VOC) shall be minimized by ensuring efficient combustion through the proper application of Good Combustion Practices (GCPs). To provide reasonable assurance that GCPs are being employed, the boiler operator shall:

1. Maintain the steam production rate at the optimal rate by controlling feed of bagasse fuel into the boiler. Sufficient combustion air shall be maintained to promote good combustion.
2. Periodically view the stack plume to visually confirm that good combustion is taking place. If an abnormal plume is observed, the operator shall immediately take corrective action. The boiler operator will log the

SECTION IV.

APPENDIX GCP - GOOD COMBUSTION PRACTICES

occurrence and duration of all such events in the boiler operation log, along with the corrective action taken. These records will be kept for a period of at least two years.

3. Examine the boiler grates at least twice per shift for proper fuel distribution and make appropriate adjustments. Unusual observations shall be logged.
4. Perform a walk-around inspection of the boiler once per day shift to check and repair the following: Fans, pumps, casing, ducting, scrubber, and monitoring equipment.
5. Inspect the burners once per shift and clean as necessary.

These actions may be performed by the operator or other personnel under the operator's supervision. The information collected shall be reported to the boiler operator.

4. Process monitors shall be installed to monitor the oxygen (O<sub>2</sub>) content and the carbon monoxide (CO) content of the boiler flue gas. The instrument readout will be located in the boiler control room to provide real time data to the boiler operator. The boiler operators will be instructed in the use of the O<sub>2</sub> and CO flue gas process monitors for combustion control and to ensure sufficient excess air levels. The boiler operators shall periodically observe each process monitor and adjust the boiler operation, consistent with good combustion practices. The specific conditions of this permit require additional CO testing after installation of the process monitors. This portion of the GCPs will be revised based on the test results.

*Note: Emissions of nitrogen oxides (NO<sub>x</sub>) shall be optimized by the proper application of Good Combustion Practices (GCP). However, the same operating practices that result in efficient combustion (higher furnace temperatures and excess air rates) may raise NO<sub>x</sub> levels.*

**SECTION IV.**

**APPENDIX ES - EMISSIONS STANDARDS SUMMARY**

**Emissions Unit No. 9 - Sugar Mill Boiler No. 5**

Pollutant	Fuel	Controls	Emission Standards	Emission Factors	Capacity Factor	Potential Emissions (TPY)	
CO	Carbonaceous Fuel	Good Combustion Practices	6.5 lb/mmBTU	NA	867,302 mmBTU/year <sup>c</sup>	2818.7	2818.7
	Fuel Oil	Good Combustion Practices	NA	0.033 lb/mmBTU <sup>a</sup>	NA	NA	
NOx	Carbonaceous Fuel	Good Combustion Practices	0.16 lb/mmBTU	NA	837,302 <sup>e</sup>	67.0	71.7
	Fuel Oil	Good Combustion Practices	NA	0.31 lb/mmBTU <sup>a</sup>	30,000 <sup>d</sup>	4.7	
PM	Carbonaceous Fuel	Wet Scrubber Good Combustion Practices	0.15 lb/mmBTU	NA	867,302 mmBTU/year <sup>c</sup>	65.0	65.0
	Fuel Oil	Wet Scrubber Good Combustion Practices	0.10 lb/mmBTU	NA	NA	NA	
PM10	Carbonaceous Fuel	Wet Scrubber Good Combustion Practices	0.14 lb/mmBTU	NA	867,302 mmBTU/year <sup>c</sup>	65.0	60.7
	Fuel Oil	Wet Scrubber Good Combustion Practices	0.10 lb/mmBTU	NA	NA	NA	
SO2	Carbonaceous Fuel	Low SC W/Wet Scrubber	0.05 lb/mmBTU	NA	837,302 <sup>e</sup>	20.9	37.1
	Fuel Oil	Restricted SC and Firing	1.0% Sulfur by wt.	1.08 lb/mmBTU <sup>b</sup>	30,000 <sup>d</sup>	16.2	
VOC	Carbonaceous Fuel	Good Combustion Practices	0.25 lb/mmBTU	NA	867,302 mmBTU/year <sup>c</sup>	108.4	108.4
	Fuel Oil	Good Combustion Practices	NA	0.0019 lb/mmBTU <sup>a</sup>	NA	NA	
Visible Emissions	Boiler No. 5 Stack All Fuels	Wet Scrubber Good Combustion Practices	≤ 20% opacity, except for up to 40% for 2 min.		NA	NA	NA
	Bagasse Conveyor	Reasonable Precautions	≤ 10% opacity, unless winds are > 18 mph		NA	NA	NA

Notes:

- |  |   |
|--|---|
| a. AP-42, Section 1.3, Fuel Oil Combustion   | d. Based on 200,000 gallons/year of oil and fuel oil characteristics                      |
| b. Fuel oil characteristics: 1.0% S by wt., 8.1 lb fuel/gallon oil, 150,000 BTU/gallon oil | e. Difference between 867,302 mmBTU/year (total) and 30,000 mmBTU/year (oil)              |
| c. Maximum steam production rate of 441,717,000 lb/year based on this heat input           | f. Steam production limits and heat input equivalents are based on 7-month rolling total. |

**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. John J. Fanjul  
 V.P. and General Manager  
 Atlantic Sugar Association, Inc.  
 PO Box 1570  
 Belle Glade, FL 33430

2. Article Number (Copy from service label)  
 7099 3400 0000 1449 4277

**COMPLETE THIS SECTION ON DELIVERY**

A. Received by (Please Print Clearly) **S. RODRIGUEZ** B. Date of Delivery **2-3-01**

C. Signature *X S. Rodriguez*  Agent  Addressee

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

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

4. Restricted Delivery? (Extra Fee)  Yes

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**Mr. John J. Fanjul**

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Name (Please Print Clearly) (to be completed by mailer)  
**Mr. John J. Fanjul**  
 Street, Apt. No., or PO Box No.  
**PO Box 1570**  
 City, State, ZIP+4  
**Belle Glade, FL 33430**