

Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL USA 32653
Telephone (352) 336-5600
Fax (352) 336-6603
www.golder.com



April 30, 2007

063-7637

RECEIVED

MAY 01 2007

BUREAU OF AIR REGULATION

Florida Department of Environmental Protection
Division of Air Resources Management
2600 Blair Stone Road, MS # 5500
Tallahassee, FL 32399-2400

Attention: Mr. Jeff Koerner, P. E.

**RE: UNITED STATES SUGAR CORPORATION - CLEWISTON MILL
TEST BURN OF WOOD CHIPS**

Dear Mr. Koerner:

Please find enclosed four copies of an air construction permit application for the test burn of wood chips in Boiler No. 7 at the Clewiston Mill. The purpose of this activity is to quantify sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emissions when firing 100 percent wood chips in the boiler. Please call or e-mail me if you have any questions concerning this application.

Sincerely,

GOLDER ASSOCIATES INC.

David A. Buff, P.E., Q.E.P.
Principal Engineer

DB/all

Enclosures

cc: B. Nesbitt, USSC
P. Briggs, USSC
S. Machinski, FDEP South District

Y:\Projects\2006\0637637 USSC-Clewiston Blr7\Correspondence\T043007-637.doc

RECEIVED

MAY 01 2007

BUREAU OF AIR REGULATION

**APPLICATION FOR
AIR CONSTRUCTION PERMIT
BOILER NO. 7
WOOD CHIP TEST BURN**

**UNITED STATES SUGAR CORPORATION
CLEWISTON, FLORIDA**

**Prepared For:
United States Sugar Corporation
111 Ponce de Leon Avenue
Clewiston, Florida 33440**

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

April 2007

0637637

**DISTRIBUTION:
4 Copies – FDEP
2 Copies – U.S. Sugar
1 Copy – Golder Associates Inc.**

APPLICATION FOR AIR PERMIT – LONG FORM



Department of Environmental Protection

Division of Air Resource Management APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air permit. Also use this form to apply for an air construction permit:

- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- Where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- Where the applicant proposes to establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial/revise/renewal Title V air operation permit.

Air Construction Permit & Title V Air Operation Permit (Concurrent Processing Option) – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: United States Sugar Corporation	
2. Site Name: U.S. Sugar Clewiston Mill	
3. Facility Identification Number: 0510003	
4. Facility Location...: Street Address or Other Locator: W.C. Owens Ave. and S.R. 832 City: Clewiston County: Hendry Zip Code: 33440	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Application Contact

1. Application Contact Name: Neil Smith, Vice President & General Manager, Sugar Manufacturing	
2. Application Contact Mailing Address... Organization/Firm: United States Sugar Corporation Street Address: 111 Ponce De Leon Ave. City: Clewiston State: FL Zip Code: 33440	
3. Application Contact Telephone Numbers... Telephone: (863) 902-2703 ext. Fax: (863) 902-2729	
4. Application Contact Email Address: nsmith@ussugar.com	

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 5/1/07	3. PSD Number (if applicable):
2. Project Number(s): 0510003-043-AC	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is submitted to obtain: (Check one)

Air Construction Permit

- Air construction permit.
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

- Initial Title V air operation permit.
- Title V air operation permit revision.
- Title V air operation permit renewal.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

- Air construction permit and Title V permit revision, incorporating the proposed project.
- Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

- I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

Air construction permit application to fire wood chips for a test burn in order to test for NO_x and SO₂ emissions.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
014	Boiler No. 7	AC1A	N/A

Application Processing Fee

Check one: Attached - Amount: _____ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :	
Neil Smith, Vice President & General Manager, Sugar Manufacturing	
2. Owner/Authorized Representative Mailing Address...	
Organization/Firm: United States Sugar Corporation	
Street Address: 111 Ponce De Leon Ave.	
City: Clewiston State: FL Zip Code: 33440	
3. Owner/Authorized Representative Telephone Numbers...	
Telephone: (863) 902-2703 ext. Fax: (863) 902-2729	
4. Owner/Authorized Representative Email Address: nsmith@ussugar.com	
5. Owner/Authorized Representative Statement:	
<i>I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.</i>	
 Signature	<u>4/27/07</u> Date

APPLICATION INFORMATION

Application Responsible Official Certification

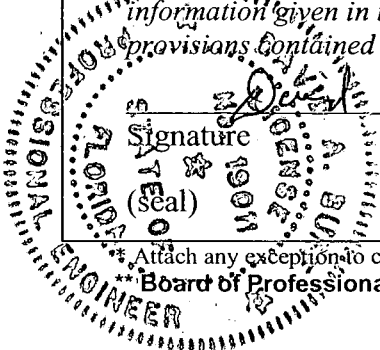
Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source.
3. Application Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
4. Application Responsible Official Telephone Numbers... Telephone: () - ext. Fax: () -
5. Application Responsible Official Email Address:
6. Application Responsible Official Certification: <i>I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.</i> _____ Signature Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: David A. Buff Registration Number: 19011
2. Professional Engineer Mailing Address... Organization/Firm: Golder Associates Inc.** Street Address: 6241 NW 23rd Street, Suite 500 City: Gainesville State: FL Zip Code: 32653
3. Professional Engineer Telephone Numbers... Telephone: (352) 336-5600 ext. 545 Fax: (352) 336-6603
4. Professional Engineer Email Address: dbuff@golder.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i> Signature: <u>David A. Buff</u> Date: <u>4/30/07</u>



*Attach any exception to certification statement.
**Board of Professional Engineers Certificate of Authorization #00001670

FACILITY INFORMATION

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone 17 East (km) 506.1 North (km) 2956.9		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 26 / 44 / 06 Longitude (DD/MM/SS) 80 / 56 / 19	
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 20	6. Facility SIC(s): 2061 2062
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: Neil Smith, Vice President & General Manager, Sugar Manufacturing
2. Facility Contact Mailing Address... Organization/Firm: United States Sugar Corporation Street Address: 111 Ponce De Leon Ave. City: Clewiston State: FL Zip Code: 33440
3. Facility Contact Telephone Numbers: Telephone: (863) 902-2703 ext. Fax: (863) 902-2729
4. Facility Contact Email Address: nsmith@ussugar.com

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I. that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: () - ext. Fax: () -
4. Facility Primary Responsible Official Email Address:

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. <input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2. <input type="checkbox"/> Synthetic Non-Title V Source	
3. <input checked="" type="checkbox"/> Title V Source	
4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. <input checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. <input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
Ammonia – NH ₃	B	No
Carbon Monoxide – CO	A	No
Nitrogen Oxides - NO _x	A	No
Particulate Matter Total – PM	A	No
Particulate Matter – PM ₁₀	A	No
Sulfur Dioxide – SO ₂	A	No
Sulfuric Acid Mist – SAM	A	No
Volatile Organic Compounds – VOC	A	No
Total Hazardous Air Pollutants – HAPs	A	No
Acetaldehyde – H001	A	No
Chlorine – H038	A	No
p-Cresol – H052	A	No
Dibenzofuran – H058	A	No
Formaldehyde – H095	A	No
Hydrochloric Acid – H106	A	No
Benzene – H107	A	No
Manganese Compounds – H113	A	No
Mercury – H114	B	No
Naphthalene – H132	A	No
Phenol – H144	A	No
Polycyclic Organic Matter – H151	A	No
Styrene – H163	A	No
Toluene – H169	A	No

FACILITY INFORMATION

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility Wide Cap [Y or N]? (all units)	3. Emissions Unit ID No.s Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: 5/2005 - TV Renewal
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: 5/2005 - TV Renewal
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: 5/2005 - TV Renewal

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (existing permitted facility)
2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL): <input checked="" type="checkbox"/> Attached, Document ID: See Attachment A
3. Rule Applicability Analysis: <input checked="" type="checkbox"/> Attached, Document ID: See Attachment A
4. List of Exempt Emissions Units (Rule 62-210.300(3), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

FACILITY INFORMATION

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (no exempt units at facility)
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Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities (Required for initial/renewal applications only): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (revision application)
2. Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (revision application with no change in applicable requirements)
3. Compliance Report and Plan (Required for all initial/revision/renewal applications): <input type="checkbox"/> Attached, Document ID: _____ Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.
4. List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Equipment/Activities On site but Not Required to be Individually Listed <input type="checkbox"/> Not Applicable
5. Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) : <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
6. Requested Changes to Current Title V Air Operation Permit: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

Additional Requirements Comment

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EMISSIONS UNIT INFORMATION

Section [1]

Boiler No. 7

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application - Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [1]

Boiler No. 7

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

Boiler No. 7

3. Emissions Unit Identification Number: 014

4. Emissions Unit Status Code:
A

5. Commence Construction Date:

6. Initial Startup Date:

7. Emissions Unit Major Group SIC Code:
20

8. Acid Rain Unit?
 Yes
 No

9. Package Unit:
Manufacturer:

Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:

Spreader-stoker vibrating-gate boiler fired by carbonaceous fuel and distillate fuel oil (Grades No. 1 and 2) with a maximum sulfur content of 0.05 percent by weight. Fuel oil can include facility-generated, on-specification used oil.

EMISSIONS UNIT INFORMATION

Section [1]

Boiler No. 7

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

**Electrostatic Precipitator
Wet Sand Separator**

2. Control Device or Method Code(s): **010, 099**

ATTACHMENT A

ATTACHMENT A
TEST BURN OF WOOD CHIPS IN BOILER NO. 7

1.0 INTRODUCTION

United States Sugar Corporation (U.S. Sugar) owns and operates a sugar mill and sugar refinery located in Clewiston, Hendry County, Florida. U.S. Sugar is applying to the Florida Department of Environmental Protection (FDEP), in a separate application, to burn wood chips in Boiler No. 7 at its sugar mill. U.S. Sugar desires to burn wood chips in Boiler No. 7 (EU 014) when bagasse is not available, in order to reduce the amount of fuel oil fired in the boiler. U.S. Sugar is requesting the authorization to conduct a test burn while burning 100 percent wood chips in Boiler No. 7, in order to quantify sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emissions when firing wood chips, which may increase in comparison to burning bagasse.

Boiler No. 7 is permitted for a maximum steam production rate of 350,000 pounds per hour (lb/hr) based on a maximum heat input rate of 812 million British thermal units per hour (MMBtu/hr). The maximum permitted 24-hour average steam production rate is 300,000 lb/hr, based on a 24-hour average heat input rate of 712 MMBtu/hr. Boiler No. 7 is permitted to burn bagasse and No. 2 fuel oil. The boiler has a wet sand separator to remove sand and particulate from the flue gas prior to the induced draft fan, and an electrostatic precipitator (ESP) for particulate matter (PM) control.

Boiler No. 8 at the Clewiston Mill is already permitted to burn wood chips as a supplemental fuel.

2.0 TEST BURN PROGRAM

A 14-day test burn period is requested for testing the burning of wood chips in Boiler No. 7, and in order to conduct stack testing for NO_x and SO₂ emissions. The 14-day period will allow the boiler to be stabilized on wood chips and time to conduct the stack testing. The test burn period is planned for the end of May and/or the beginning of June 2007.

During the test burn period, wood chips with an estimated average heating value of 4,500 British thermal units per pound (Btu/lb) will be burned at a maximum hourly rate of 90.2 tons per hour (TPH), based on a maximum hourly heat input rate to Boiler No. 7 of 812 MMBtu/hr. The maximum 24-hour average heat input rate to Boiler No. 7 is 738 MMBtu/hr, which would correspond to a maximum daily wood chip burning rate of 1,968 tons per day (TPD). The test burn will be

conducted during the Clewiston Mill's off-season operation (i.e., only the sugar refinery is operating; the sugar mill is shutdown). Therefore, Boiler No. 7 may not be able to reach 90 percent of full load during the test burn. The expected load will be about 250,000 lb/hr steam, which represents about 85 percent of the maximum 24-hour load of 300,000 lb/hr steam. However, this would represent maximum off-season operation.

NO_x and SO₂ concentrations in the Boiler No. 7 flue gas will be recorded during the stack testing. Stack testing will be performed during the latter part of May or the early part of June, after the boiler has been stabilized on wood chips. Testing will be conducted at or near full steam load on Boiler No. 7. Approved U.S. Environmental Protection Agency (EPA) methods will be used for the stack testing, i.e., Method 6 for SO₂, Method 7E for NO_x, and Methods 1-4 as needed for stack gas flow rate, moisture, etc. Three test runs will be performed. Wood chip fuel samples will be collected during the testing, following the procedures in Title 40, Part 63 of the Code of Federal Regulations (40 CFR 63), Subpart DDDDD.

This air construction permit application is requesting authorization to allow U.S. Sugar to conduct the 14-day test burn program.

3.0 AIR EMISSIONS AND PSD APPLICABILITY

The current air emission limits for carbonaceous fuel firing for Boiler No. 7 are shown in Table 1. U.S. Sugar believes that wood chips may be able to be burned in Boiler No. 7 while meeting all permitted emission limits, except for NO_x. As a result, some NO_x emission increases due to the test burn program could result.

Prevention of significant deterioration (PSD) new source review requirements are triggered for modifications for which the increase in actual emissions exceeds certain PSD significant emission rates. To estimate the potential worst-case increase in emissions due to the test burn program, baseline actual and projected actual emission estimates were developed.

Baseline actual emissions are based on the historical emission factors (stack test results) for Boiler No. 7 while burning bagasse (from a separate PSD application requesting the ability to burn wood chips in Boiler No. 7). Baseline operation (heat input) is based on a 14-day time period at full operating load. These emission estimates are shown in Table 2.

Projected actual emissions were developed using expected emission factors while burning wood chips. For PM/PM₁₀, SO₂, carbon monoxide (CO), volatile organic compounds (VOC) and sulfuric acid mist (SAM), emission increases are not expected due to wood chip firing, since these emissions from Boiler No. 7 are not expected to increase during the test burn in comparison to bagasse firing. Only increases in NO_x, lead and mercury emissions are expected. The NO_x emissions increase is based on a past NO_x emission test on Boiler No. 7 when burning 25 percent wood chips and 75 percent bagasse. The increase in lead and mercury emissions is based on AP-42 factors for trace element emissions from wood burning. For the projected actual emissions, maximum operation of Boiler No. 7 for a 14-day time period was used. These emission estimates are shown in Table 3.

The net emission increases were calculated based on comparison of baseline actual to projected actual emissions, as shown in Table 4. Also shown in Table 4 are the PSD significant emission rates. As shown, all increases are well below the PSD significant emission rate. Therefore, PSD review will not be triggered for the test burn program.

**TABLE 1
BOILER NO. 7 EMISSION LIMITS AND EXPECTED WOOD CHIP FIRING EMISSIONS**

Pollutant	Carbonaceous Fuel Emission Limit ^a (lb/MMBtu)	Expected Wood Chip Firing Emission Rate ^b (lb/MMBtu)
Particulate Matter (PM/PM ₁₀)	0.03	<0.03
Sulfur Dioxide	0.17	0.04
Nitrogen Oxides	0.25	0.31
Carbon Monoxide	0.70	<0.32
Volatile Organic Compounds	0.212	<0.035
Sulfuric Acid Mist	0.017	<0.0018

^a Obtained from Permit No. 0510003-017-AV.

^b Based on historic test data firing bagasse in Boiler No. 7, except NO_x based on testing while firing 25% wood chips/75% bagasse in Boiler No. 7.

TABLE 2
BASELINE ACTUAL EMISSIONS FOR BOILER NO. 7 - BAGASSE
14-DAY TEST BURN

Regulated Pollutant	Bagasse Emission Factor	Reference	14-Day Activity Factor^a	14-Day Emissions (tons)
Particulate (PM)	0.02 lb/MMBtu	1	247,968 MMBtu	2.5
Particulate (PM ₁₀)	0.02 lb/MMBtu	1	247,968 MMBtu	2.5
Sulfur dioxide	0.04 lb/MMBtu	2	247,968 MMBtu	5.0
Nitrogen oxides	0.21 lb/MMBtu	1	247,968 MMBtu	26.0
Carbon Monoxide	0.32 lb/MMBtu	1	247,968 MMBtu	39.7
Volatile Organic Compds.	0.035 lb/MMBtu	1	247,968 MMBtu	4.3
Sulfuric Acid Mist	0.0072 lb/MMBtu	3	247,968 MMBtu	0.89
Lead	3.06E-05 lb/MMBtu	4	247,968 MMBtu	3.79E-03
Mercury	1.18E-06 lb/MMBtu	4	247,968 MMBtu	1.46E-04

^a Based on 738 MMBtu/hr permit limit, 24/hr day for 14 days.

References:

1. Based on highest 5-year average emission tests (from PSD application for burning wood chips in Boiler No. 7. Golder Associates, 2007).
2. Based on average stack tests performed 11/18/1997 & 02/04/2005.
3. Based on one stack test on Boiler No. 7.
4. Average value from Clewiston Mill bagasse analysis. Assumes no removal in ESP.

TABLE 3
PROJECTED ACTUAL EMISSIONS FOR BOILER NO. 7 - WOOD CHIPS
14-DAY TEST BURN

Regulated Pollutant	Wood Chips		14-Day		14-Day Emissions (tons)
	Emission Factor	Reference	Activity	Factor ^a	
Particulate (PM)	0.02 lb/MMBtu	1	247,968 MMBtu		2.5
Particulate (PM ₁₀)	0.02 lb/MMBtu	1	247,968 MMBtu		2.5
Sulfur dioxide	0.04 lb/MMBtu	2	247,968 MMBtu		5.0
Nitrogen oxides	0.31 lb/MMBtu	3	247,968 MMBtu		38.6
Carbon Monoxide	0.32 lb/MMBtu	1	247,968 MMBtu		39.7
Volatile Organic Compds.	0.035 lb/MMBtu	1	247,968 MMBtu		4.3
Sulfuric Acid Mist	0.0072 lb/MMBtu	1	247,968 MMBtu		0.89
Lead	4.8E-05 lb/MMBtu	4	247,968 MMBtu		5.95E-03
Mercury	3.5E-06 lb/MMBtu	4	247,968 MMBtu		4.34E-04

Footnotes:

^a Based on 738 MMBtu/hr permit limit, 24 hr/day for 14 days.

References:

1. No increase expected from wood chip firing; factor is the same as for bagasse firing (Table 2).
2. Based on average bagasse firing emission tests, which are higher than the AP-42 factor for wood of 0.025 lb/MMBtu.
3. Based on stack test (5/3/05) using 25% wood and 75% bagasse on a weight basis or 20.5% wood chips on a heat input basis.
4. AP-42 factor for trace element emissions from wood residue combustion.

**TABLE 4
NET INCREASE IN EMISSIONS DUE TO TEST BURN OF BOILER NO. 7**

Source/ Pollutant	Baseline Actual Emissions (tons)	Projected Actual Emissions (tons)	Net Increase in Emissions (tons)	PSD Significant Emission Rate (TPY)
Particulate Matter (PM)	2.5	2.5	0.0	25
Particulate Matter (PM ₁₀)	2.5	2.5	0.0	15
Sulfur dioxide	5.0	5.0	0.0	40
Nitrogen oxides	26.0	38.6	12.5	40
Carbon Monoxide	39.7	39.7	0.0	100
Volatile Organic Compds.	4.3	4.3	0.0	40
Sulfuric Acid Mist	0.89	0.89	0.0	7
Lead	0.0038	0.0060	0.0022	0.6
Mercury	0.00015	0.00043	0.00029	0.1