Golder Associates Inc.

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December 5, 2006

043-7584

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

Attention: Mr. Jeffery Koerner, P. E.

RE: UNITED STATES SUGAR CORPORATION (U.S. SUGAR)
PROJECT NOS. 0510003-031-AC AND 0510003-032-AV
CLEWISTON SUGAR MILL AND REFINERY / BRYANT SUGAR MILL
TITLE V RENEWAL PROJECTS

Dear Mr. Koerner:

United States Sugar Corporation (U.S. Sugar) and Golder Associates Inc. have received the Florida Department of Environmental Protection (FDEP) request for additional information (RAI) dated October 4, 2006, regarding the above captioned projects for the renewal of the Title V operating permit for the Clewiston and Bryant Mills. Each of the FDEP's comments is addressed below, in the same order as they are listed in the RAI.

1. U.S. Sugar will not be complying with the industrial boiler maximum achievable control technology (MACT) limits for particulate matter (PM) for the existing source boilers (Boiler Nos. 1, 2, 4 and 7) at the mill. Instead, U.S. Sugar is choosing to comply with the MACT limits for total selected metals through fuel analysis, and by submitting an application for the health-based risk alternative for manganese (previously submitted to FDEP in September 2006). If this compliance option is approved, the existing PM limits the boilers have will continue to be in effect. That being the case, the industrial boiler MACT surrogate parameter monitoring requirements and requirements of setting minimum parameter levels will not apply. However, since such procedures (i.e., surrogate parameter value based on 90 percent of minimum test run value) are sufficient for compliance with the MACT PM limits, they should also be adequate for complying with the state-implementation plan (SIP) and/or best available control technology (BACT) limits the boilers have for PM emissions.

   Please note that a few minor errors were found in the Compliance Assurance Monitoring Plan and in the Title V application form pages for Boiler No. 8 submitted to FDEP in September 2006. Please find attached replacement pages which have been corrected. Please insert these into the September 2006 submittal document.

2. Please find attached a modeling protocol, as requested.

Please call or e-mail me if you have any questions concerning this request.

Sincerely,

GOLDER ASSOCIATES INC.

David A. Buff

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

DB/all

Enclosures

cc: Don Griffin, USS
Peter Briggs, USS
Ron Blackburn, FDEP
James Stormer, PBCHP

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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:
   Neil Smith, Vice President and General Manager, Sugar Processing Operations

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):
   - ☒ 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.
   - ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.
   - ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.
   - ☐ The designated representative at an Acid Rain source.

3. Application Responsible Official Mailing Address...
   Organization/Firm: **United States Sugar Corporation**
   Street Address: **111 Ponce de Leon Avenue**
   City: **Clewiston** State: **Florida** Zip Code: **33440**

4. Application Responsible Official Telephone Numbers...
   Telephone: **(863) 902-2703** ext. Fax: **(863) 902-2729**

5. Application Responsible Official Email Address: **nsmith@ussugar.com**

6. Application Responsible Official Certification:

   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.

   Signature _____ Date 12/1/06

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: **32653-1500**
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, the undersigned, hereby certify, except as particularly noted herein, that:*

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

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

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

(4) If the purpose of this application is to obtain an air construction permit (check here ☐, 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 ☒, 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.

(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 ☐, 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.

David A. Buff — Signature

11/30/06 — Date

(seal)

* Attach any exception to certification statement.

** **Board of Professional Engineers Certificate of Authorization #00001670**

REVISED CAM PLAN PAGES

9.4 Monitoring Approach

The monitoring approach is based on monitoring scrubber pressure drop and scrubber water flow rate. The monitoring approach is summarized in the table below:

Bryant Boiler No. 1	Indicator No. 1	Indicator No. 2
Indicator	Pressure drop across the scrubber.	Total water flow rate to the scrubber.
Measurement Approach	Pressure drop is monitored with a manometer or equivalent.	The scrubber water flow rate is measured using a flow meter.
Indicator Range	An excursion is defined as any pressure drop below 5.4 inches H_2O. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.	An excursion is defined as any water flow rate below 200 gpm. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.
Data Representativeness	The monitoring system consists of a manometer which measures the pressure drop across the scrubber. The minimum accuracy of the device is ±0.5 inches of water gauge pressure.	The scrubber water flow meter is located on the scrubber liquid supply line. The minimum accuracy of the device is ±5 percent of total water flow.
Verification of Operational Status	NA	NA
QA/QC Practices and Criteria	The manometer is maintained in accordance with the manufacturer's recommendations.	The flow meter is maintained in accordance with the manufacturer's recommendations.
Monitoring Frequency	Pressure drop is monitored continuously.	Scrubber water flow rate is monitored continuously.
Data Collection Procedures	Reading taken once every 8 hours and recorded in log.	Reading taken once every 8 hours and recorded in log.
Averaging Period	NA	NA

9.5 Justification

Both pressure drop across the scrubber and water flow rate to the scrubber are recognized parameters for controlling PM emissions with wet scrubbers. The pressure drop is a measure of the energy imparted to the gas stream and, therefore, the efficiency of the scrubbing process. The water flow rate is a measure of sufficient fresh scrubbing liquid being supplied to the scrubber.

Water delivery pressure is currently monitored, which provides an indication of plugging of the spray nozzles in the scrubber. However, scrubber water flow rate provides a more direct indicator of

adequate water supply to the scrubber. Therefore, water delivery pressure is not proposed as a parameter for CAM purposes.

U.S. Sugar has sufficient historic test data necessary to establish indicator values for pressure drop and total water flow rate to the Boiler No. 1 wet scrubber. The test data correlating the parameters to the PM emission levels are presented in Figures 9-1 through 9-2. Supporting information is contained in Appendix B.

The proposed parameter minimum values are based on 90 percent of the minimum parameter values recorded during the test runs, using the historic test data, when compliance was demonstrated with the PM limit. The calculations of the minimum parameter values are provided below:

Pressure Drop:	Minimum test run value = 6.0 inches H_2O
	Minimum parameter value = 6.0 x 0.9 = 5.4 inches H_2O
Water Flow Rate:	Minimum test run value = 220 gpm
	Minimum parameter value = 220 x 0.9 = 198 gpm

Wet scrubber operating parameter values below these minimum parameter values are indicative of abnormal operation of the wet scrubbers. This methodology is consistent with the establishment of wet scrubber operating limits under 40 CFR 63, Subpart DDDDD, which are the Industrial Boiler/Process Heater MACT standards. Boiler No. 1 will be subject to these standards beginning in September 2007.

The CAM regulations generally require that pollutant-specific emissions units with the potential to emit greater than 100 TPY collect monitoring data at least four (4) times per hour. However, 40 CFR 64.3(b)(4)(ii) allows the permitting authority to approve a reduced data collection frequency, if appropriate, based on the data collection mechanisms available for a particular parameter.

U.S. Sugar has been recording scrubber parameters once every 8-hour shift, according to the current Title V permit conditions. Although U.S. Sugar has continuous pressure drop and water flow rate monitors in place, the mechanisms are not in place to continuously record the data and create hourly averages. It is, therefore, requested that the current recording frequency of once per 8-hour shift be retained.

12.4 Monitoring Approach

The monitoring approach is based on monitoring scrubber pressure drop and scrubber water flow rate. The monitoring approach is summarized in the table below:

Bryant Boiler No. 5	Indicator No. 1	Indicator No. 2
Indicator	Pressure drop across each scrubber.	Total water flow rate to the scrubbers.
Measurement Approach	Pressure drop is monitored with a manometer or equivalent.	The scrubber water flow rate is measured using a flow meter.
Indicator Range	An excursion is defined as any pressure drop below 6.3 inches H_2O. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.	An excursion is defined as any total water flow rate below 765 gpm. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.
Data Representativeness	The monitoring system consists of a manometer which measures the pressure drop across the scrubber. The minimum accuracy of the device is ±0.5 inches H_2O gauge pressure.	The scrubber water flow meter is located on the scrubber liquid supply line. The minimum accuracy of the device is ±5 percent of total water flow.
Verification of Operational Status	NA	NA
QA/QC Practices and Criteria	The manometer is maintained in accordance with the manufacturer's recommendations.	The flow meter is maintained in accordance with the manufacturer's recommendations.
Monitoring Frequency	Pressure drop is monitored continuously.	Scrubber water flow rate is monitored continuously.
Data Collection Procedures	Reading taken once every 8 hours and recorded in log.	Reading taken once every 8 hours and recorded in log.
Averaging Period	NA	NA

12.5 Justification

Both pressure drop across the scrubbers and water flow rate to the scrubbers are recognized parameters for controlling PM emissions with wet scrubbers. The pressure drop is a measure of the energy imparted to the gas stream and, therefore, the efficiency of the scrubbing process. The water flow rate is a measure of sufficient fresh scrubbing liquid being supplied to the scrubbers.

Water delivery pressure is currently monitored, which provides an indication of plugging of the spray nozzles in the scrubber. However, scrubber water flow rate provides a more direct indicator of

adequate water supply to the scrubber. Therefore, water delivery pressure is not proposed as a parameter for CAM purposes.

U.S. Sugar has historic test data to establish indicator values for pressure drop and total water flow rate to the Boiler No. 5 wet scrubbers. The test data correlating the parameters to the PM emission levels are presented in Figures 12-1 through 12-3. Supporting information is contained in Appendix B.

The proposed parameter minimum values are based on 90 percent of the minimum parameter values recorded during the test runs, using the historic test data, when compliance was demonstrated with the PM limit. The calculations of the minimum parameter values are provided below:

Pressure Drop:	Minimum test run value = 7 inches H_2O
	Minimum parameter value = 7 x 0.9 = 6.3 inches H_2O
Water Flow Rate:	Minimum test run value = 850 gpm
	Minimum parameter value = 850 x 0.9 = 765 gpm

Wet scrubber operating parameter values below these minimum parameter values are indicative of abnormal operation of the wet scrubbers. This methodology is consistent with the establishment of wet scrubber operating limits under 40 CFR 63, Subpart DDDDD, which are the Industrial Boiler/Process Heater MACT standards. Boiler No. 5 will be subject to these standards beginning in September 2007.

The CAM regulations generally require that pollutant-specific emissions units with the potential to emit greater than 100 TPY collect monitoring data at least four times per hour. However, 40 CFR 64.3(b)(4)(ii) allows the permitting authority to approve a reduced data collection frequency, if appropriate, based on the data collection mechanisms available for a particular parameter.

U.S. Sugar has been recording scrubber parameters once every 8-hour shift, according to the current Title V permit conditions. Although U.S. Sugar has continuous pressure drop and water flow rate monitors in place, the mechanisms are not in place to continuously record the data and create hourly averages. It is, therefore, requested that the current recording frequency of once per 8-hour shift be retained.

13.4 Monitoring Approach

The monitoring approach is based on monitoring the two scrubbers' pressure drop. The monitoring approach is summarized in the table below:

Granular Carbon Furnace	Indicator No. 1	Indicator No. 2
Indicator	Pressure drop across the venturi scrubber.	Pressure drop across the wet tray scrubber.
Measurement Approach	Pressure drop is monitored with a manometer or equivalent.	Pressure drop is monitored with a manometer or equilvalent.
Indicator Range	An excursion is defined as any pressure drop below 18 inches H_2O. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.	An excursion is defined as any pressure drop below 5.6 inches H_2O. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.
Data Representativeness	The monitoring system consists of a manometer which measures the pressure drop across the scrubber. The minimum accuracy of the device is ±0.5 inches H_2O gauge pressure.	The monitoring system consists of a manometer which measures the pressure drop across the scrubber. The minimum accuracy of the device is ±0.5 inches H_2O gauge pressure.
Verification of Operational Status	NA	NA
QA/QC Practices and Criteria	The nanometer is maintained in accordance with the manufacturer's recommendations.	The nanometer is maintained in accordance with the manufacturer's recommendations.
Monitoring Frequency	Pressure drop is monitored continuously.	Pressure drop is monitored continuously.
Data Collection Procedures	Reading taken once every 8 hours and recorded in log.	Reading taken once every 8 hours and recorded in log.
Averaging Period	NA	NA

13.5 Justification

Pressure drop across the wet scrubber is a recognized parameter for controlling PM emissions with wet scrubbers. The pressure drop is a measure of the energy imparted to the gas stream and, therefore, the efficiency of the scrubbing process. The afterburner temperature is related to VOC destruction and not PM emissions. Therefore, this parameter is not proposed as a CAM indicator.

TABLE B-1

BOILER PM EMISSIONS TESTS, CLEWISTON

Unit	Run Number	Boiler Type	Test Date	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Steam Rate (lb/hr)	Heat Input Rate (MMBtu/hr)	Bagasse Burning Rate [1] (TPH)	Allowable PM Emissions (EPA Method 5)		Actual PM Emissions (EPA Method 5)		Avg. Liquid Pressure (psig)	Avg. Water Flow (gpm)	Avg. Pressure Drop (in. H_2O)
									lb/hr	lb/MMBtu	lb/hr	lb/MMBtu			
Boiler 1	1	Vibrating Grate	01/16/96	113,127	183,707	194,211	410.0	56.94	102.49	0.250	99.14	0.242			9.5
Boiler 1	2	Vibrating Grate	01/16/96	117,058	187,835	202,025	426.0	59.17	106.50	0.250	64.43	0.151			9.3
Boiler 1	3	Vibrating Grate	01/16/96	118,730	191,603	219,200	461.0	64.02	115.24	0.250	67.68	0.147			
Boiler 1	1	Vibrating Grate	01/07/97	125,679	200,419	203,284	426.5	59.24	106.63	0.250	57.91	0.136			9.5
Boiler 1	2	Vibrating Grate	01/07/97	123,272	198,803	210,000	440.8	61.22	110.21	0.250	62.38	0.142			9.5
Boiler 1	3	Vibrating Grate	01/07/97	122,608	200,926	211,765	443.9	61.65	110.97	0.250	56.04	0.126			9.5
Boiler 1	1	Vibrating Grate	01/08/98	148,591	223,239	193,433	404.9	56.24	101.24	0.250	39.25	0.097			9.8
Boiler 1	2	Vibrating Grate	01/08/98	139,359	211,566	209,630	440.0	61.11	103.59	0.240	42.80	0.097			10.8
Boiler 1	3	Vibrating Grate	01/08/98	141,780	215,994	204,507	430.3	59.76	103.60	0.240	54.89	0.128			10.0
Boiler 1	1	Vibrating Grate	12/08/00	116,457	185,495	193,151	406.5	56.46	99.11	0.244	78.60	0.193	67		9.0
Boiler 1	2	Vibrating Grate	12/08/00	117,435	189,657	198,261	419.3	58.23	101.82	0.243	69.20	0.165	62		7.0
Boiler 1	3	Vibrating Grate	12/08/00	114,205	187,798	195,833	414.0	57.50	100.68	0.243	80.96	0.196	65		7.0
Boiler 1	1	Vibrating Grate	12/05/01	122,015	182,934	198,000	403.3	56.01	96.73	0.240	58.44	0.145			8.8
Boiler 1	2	Vibrating Grate	12/05/01	118,508	179,141	201,127	406.5	56.46	96.79	0.238	47.69	0.117			8.0
Boiler 1	3	Vibrating Grate	12/05/01	118,063	177,096	205,588	416.0	57.78	99.18	0.238	51.10	0.123			7.5
Boiler 1	1	Vibrating Grate	11/20/02	139,322	201,193	192,329	386.2	53.64	92.96	0.241	63.82	0.165	91.6		10.5
Boiler 1	2	Vibrating Grate	11/20/02	132,473	194,240	197,391	398.7	55.37	95.88	0.240	81.67	0.205	94		10.2
Boiler 1	3	Vibrating Grate	11/20/02	139,170	200,673	193,333	412.8	57.33	98.68	0.239	70.70	0.171	94.8		10.3
Boiler 1	1	Vibrating Grate	11/14/03	147,286	202,987	196,709	409.0	56.81	102.26	0.250	49.17	0.120	75	56*	9.0
Boiler 1	2	Vibrating Grate	11/14/03	152,860	210,916	197,813	414.8	57.61	103.69	0.250	84.77	0.204	75	57*	9.0
Boiler 1	3	Vibrating Grate	11/14/03	155,202	215,710	204,000	412.2	57.24	103.04	0.250	83.72	0.203	75	56*	9.0
Boiler 1	1	Vibrating Grate	01/13/05	161,467	245,339	197,391	429.2	59.60	107.29	0.250	77.96	0.182	120	370	11.6
Boiler 1	2	Vibrating Grate	01/13/05	164,310	250,264	186,835	402.0	55.83	100.50	0.250	76.50	0.190	120	364	11.5
Boiler 1	3	Vibrating Grate	01/13/05	162,661	244,548	195,652	425.0	59.02	106.24	0.250	81.49	0.192	125	364	11.6
Boiler 1	1	Vibrating Grate	12/16/05	135,375	215,916	174,000	362.1	50.28	90.51	0.250	120.04	0.332	140	372	12.0
Boiler 1	2	Vibrating Grate	12/16/05	136,281	216,285	179,143	376.3	52.26	94.07	0.250	61.55	0.164	140	387	12.0
Boiler 1	3	Vibrating Grate	12/16/05	137,233	212,492	177,568	370.9	51.51	92.71	0.250	48.20	0.130	140	367	12.0

* Not considered to be representative of normal operation.

TABLE B-1

BOILER PM EMISSIONS TESTS, CLEWISTON

Unit	Run Number	Boiler Type	Test Date	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Steam Rate (lb/hr)	Heat Input Rate (MMBtu/hr)	Bagasse Burning Rate [1] (TPH)	Allowable PM Emissions (EPA Method 5)		Actual PM Emissions (EPA Method 5)		Avg. Liquid Pressure (psig)	Avg. Water Flow (gpm)	Avg. Pressure Drop (in. H_2O)
									lb/hr	lb/MMBtu	lb/hr	lb/MMBtu			
Boiler 2	1	Vibrating Grate	01/22/96	105,831	163,718	177,188	371.7	51.63	92.93	0.250	73.62	0.198			6.0
Boiler 2	2	Vibrating Grate	01/22/96	94,417	150,521	177,188	371.7	51.63	92.93	0.250	66.10	0.178			6.0
Boiler 2	3	Vibrating Grate	01/22/96	93,727	154,170	181,184	379.7	52.74	94.93	0.250	52.37	0.138			6.0
Boiler 2	1	Vibrating Grate	01/12/98	107,485	165,905	172,286	363.3	50.45	90.82	0.250	45.54	0.125			3.0*
Boiler 2	2	Vibrating Grate	01/12/98	106,311	165,445	173,824	366.9	50.96	91.72	0.250	48.70	0.133			3.0*
Boiler 2	3	Vibrating Grate	01/12/98	104,790	166,166	175,522	370.3	51.43	92.57	0.250	69.51	0.188			
Boiler 2	1	Vibrating Grate	01/13/98	126,475	198,634	201,739	425.1	59.03	101.08	0.240	71.72	0.169			8.5
Boiler 2	2	Vibrating Grate	01/13/98	122,422	195,643	202,059	426.2	59.19	106.55	0.250	71.59	0.168			8.5
Boiler 2	3	Vibrating Grate	01/13/98	125,162	197,964	202,388	427.0	59.31	101.42	0.240	98.31	0.230			8.5
Boiler 2	1	Vibrating Grate	12/12/00	113,638	186,994	169,459	364.4	50.61	87.57	0.240	47.53	0.130	67		8.5
Boiler 2	2	Vibrating Grate	12/12/00	108,878	181,681	174,167	373.3	51.84	88.14	0.236	60.87	0.163	61		8.2
Boiler 2	3	Vibrating Grate	12/12/00	107,998	181,348	163,714	350.3	48.65	81.96	0.234	77.50	0.221	68		8.7
Boiler 2	1	Vibrating Grate	12/12/01	141,555	214,981	212,055	435.1	60.43	103.50	0.238	112.59	0.259			9.3
Boiler 2	2	Vibrating Grate	12/12/01	125,108	187,343	182,535	374.2	51.97	93.55	0.250	73.38	0.196			
Boiler 2	3	Vibrating Grate	12/12/01	127,585	200,931	195,211	403.0	55.97	100.75	0.250	108.53	0.269			
Boiler 2	1	Vibrating Grate	12/17/02	135,626	203,449	173,239	354.6	49.25	88.64	0.250	64.49	0.182	91.8		7.1
Boiler 2	2	Vibrating Grate	12/17/02	133,618	201,955	174,167	356.6	49.53	89.16	0.250	65.36	0.183	90		7.1
Boiler 2	3	Vibrating Grate	12/17/02	134,529	201,199	189,851	389.0	54.03	97.26	0.250	67.82	0.174	80.6		6.3
Boiler 2	1	Vibrating Grate	11/18/03	125,842	196,117	183,478	387.5	53.82	96.88	0.250	88.89	0.229	51.2	75*	10.0
Boiler 2	2	Vibrating Grate	11/18/03	132,395	205,353	190,746	405.7	56.35	101.42	0.250	76.69	0.189	50.38	70*	9.0
Boiler 2	3	Vibrating Grate	11/18/03	123,840	199,614	192,537	407.4	56.58	101.84	0.250	72.78	0.179	45	65*	9.0
Boiler 2	1	Vibrating Grate	11/12/04	153,146	235,990	189,565	399.1	55.43	95.26	0.239	88.69	0.222	123.6	113*	9.5
Boiler 2	2	Vibrating Grate	11/12/04	150,689	235,118	198,000	417.9	58.05	102.27	0.245	72.18	0.173	130	123*	9.1
Boiler 2	3	Vibrating Grate	11/17/04	174,817	260,767	197,838	424.1	58.91	101.25	0.239	26.34	0.062			
Boiler 2	1	Vibrating Grate	12/14/05	116,370	174,405	183,478	383.2	53.22	85.21	0.222	77.93	0.203	115	354	12.0
Boiler 2	2	Vibrating Grate	12/14/05	140,607	219,765	170,000	354.5	49.24	88.62	0.250	63.04	0.178	115	354	12.0
Boiler 2	3	Vibrating Grate	12/14/05	137,722	214,970	177,500	371.4	51.58	92.84	0.241	64.10	0.173	115	353	12.0

* Not considered to be representative of normal operation.

TABLE B-1

BOILER PM EMISSIONS TESTS, CLEWISTON

Unit	Run Number	Boiler Type	Test Date	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Steam Rate (lb/hr)	Heat Input Rate (MMBtu/hr)	Bagasse Burning Rate [1] (TPH)	Allowable PM Emissions (EPA Method 5)		Actual PM Emissions (EPA Method 5)		Avg. Liquid Pressure (psig)	Avg. Water Flow (gpm)	Avg. Pressure Drop (in. H_2O)
									lb/hr	lb/MMBtu	lb/hr	lb/MMBtu			
Boiler 4	1	Traveling Grate	02/23/94	134,590	215,068	283,043	616.9	85.68	92.54	0.150	81.72	0.132	40.5	428	
Boiler 4	2	Traveling Grate	02/23/94	136,057	218,507	290,769	633.1	87.94	94.97	0.150	73.42	0.116	40.6	430	
Boiler 4	3	Traveling Grate	02/23/94	132,839	216,547	284,308	618.0	85.83	92.70	0.150	93.94	0.152	41.2	433	
Boiler 4	1	Traveling Grate	12/30/94	152,950	222,172	288,750	626.8	87.06	94.02	0.150	88.74	0.142	50	492	10.0
Boiler 4	2	Traveling Grate	12/30/94	142,730	220,121	280,986	609.4	84.64	91.41	0.150	70.23	0.115	50	492	10.0
Boiler 4	3	Traveling Grate	12/30/94	144,948	225,530	281,918	614.3	85.32	92.15	0.150	73.08	0.119	50	492	10.0
Boiler 4	1	Traveling Grate	12/22/95	147,476	227,747	290,548	617.5	85.76	92.62	0.150	59.28	0.096	53	300	9.5
Boiler 4	2	Traveling Grate	12/22/95	143,821	222,383	280,946	597.7	83.01	89.65	0.150	63.06	0.106	54	300	9.5
Boiler 4	3	Traveling Grate	12/22/95	145,645	221,056	291,200	617.4	85.75	92.61	0.150	52.29	0.085	55	300	9.5
Boiler 4	1	Traveling Grate	12/17/96	154,554	236,304	289,909	608.8	84.56	91.32	0.150	67.58	0.111	48	245	9.5
Boiler 4	2	Traveling Grate	12/17/96	159,316	241,659	291,818	610.9	84.85	91.64	0.150	70.56	0.116	48	245	9.5
Boiler 4	3	Traveling Grate	12/17/96	156,697	239,434	286,462	601.1	83.49	90.17	0.150	61.82	0.103	48	245	9.5
Boiler 4	1	Traveling Grate	01/05/00	136,759	210,179	238,378	509.0	70.69	73.93	0.145	66.45	0.131		380	8.5
Boiler 4	2	Traveling Grate	01/05/00	136,322	209,218	241,644	514.5	71.46	75.28	0.146	64.16	0.125		390	9.0
Boiler 4	3	Traveling Grate	01/05/00	135,432	208,934	236,800	504.8	70.11	73.99	0.147	55.95	0.111		420	8.5
Boiler 4	1	Traveling Grate	11/17/00	161,372	248,028	258,400	558.2	77.53	83.72	0.150	50.40	0.090	66.4	384	10.2
Boiler 4	2	Traveling Grate	11/17/00	160,074	248,560	256,667	554.7	77.04	83.21	0.150	60.47	0.109	66.4	385	9.6
Boiler 4	3	Traveling Grate	11/17/00	161,936	249,043	262,192	566.9	78.74	85.03	0.150	51.23	0.090			9.3
Boiler 4	1	Traveling Grate	01/23/02	158,108	238,305	255,882	549.8	76.37	82.48	0.150	48.91	0.089	52	477	12.7
Boiler 4	2	Traveling Grate	01/23/02	151,705	231,241	257,647	555.6	77.17	83.34	0.150	32.17	0.058	53	482	10.7
Boiler 4	3	Traveling Grate	01/23/02	155,993	236,906	260,294	561.3	77.96	84.20	0.150	34.81	0.062	67	544	9.5
Boiler 4	1	Traveling Grate	12/18/02	167,367	250,551	272,000	600.4	83.39	90.06	0.150	66.32	0.110	64	533	15.5
Boiler 4	2	Traveling Grate	12/18/02	164,949	247,408	272,000	599.9	83.32	89.98	0.150	57.41	0.096	62.2	534	14.2
Boiler 4	3	Traveling Grate	12/18/02	161,294	241,460	274,783	601.7	83.57	90.26	0.150	54.65	0.091	62.8	537	16.5
Boiler 4	4	Traveling Grate	12/19/02	163,340	245,494	284,250	627.4	87.13					64.5	491	13.2
Boiler 4	1	Traveling Grate	11/21/03	184,631	280,071	265,479	579.9	80.54	86.98	0.150	84.74	0.146	51.02	359	22.5
Boiler 4	2	Traveling Grate	11/21/03	187,732	272,428	264,167	576.9	80.12	86.53	0.150	72.85	0.126	45.84	406	22.4
Boiler 4	3	Traveling Grate	11/21/03	179,768	261,129	260,000	567.1	78.77	85.07	0.150	61.34	0.108	55.38	409	22.4
Boiler 4	1	Traveling Grate	11/24/04	164,581	254,686	267,115	588.5	81.73	88.27	0.150	71.68	0.122	72.86	493	11.0
Boiler 4	2	Traveling Grate	11/24/04	165,619	262,011	259,737	572.2	79.47	85.83	0.150	74.10	0.130	71.67	492	11.0
Boiler 4	3	Traveling Grate	11/24/04	165,111	263,455	246,923	542.8	75.39	81.42	0.150	79.60	0.147	72.4	490	11.0
Boiler 4	4	Traveling Grate	11/24/04	166,378	265,717	254,526	558.2	77.53	83.73	0.150	74.71	0.134	70.67	419	11.0
Boiler 4	1	Traveling Grate	02/10/05	156,977	228,241	237,600	515.1	71.54	77.26	0.150	58.57	0.114	78.6	611	11.0
Boiler 4	2	Traveling Grate	02/10/05	158,258	233,152	239,178	516.5	71.73	77.47	0.150	59.15	0.115	80.2	623	10.9
Boiler 4	3	Traveling Grate	02/10/05	161,994	235,662	230,649	500.5	69.52	75.08	0.150	53.51	0.107	78.6	623	11.0
Boiler 4	1	Traveling Grate	01/13/06	127,859	203,260	229,014	478.3	66.43	71.75	0.150	53.96	0.113	50	356	9.9
Boiler 4	2	Traveling Grate	01/13/06	123,326	198,482	244,225	510.4	70.88	76.55	0.150	34.27	0.067	51	360	10.0
Boiler 4	3	Traveling Grate	01/13/06	122,129	196,063	236,522	498.0	69.16	74.70	0.150	48.24	0.097	51.4	361	10.0

TABLE B-1

BOILER PM EMISSIONS TESTS, CLEWISTON

Unit	Run Number	Boiler Type	Test Date	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Steam Rate (lb/hr)	Heat Input Rate (MMBtu/hr)	Bagasse Burning Rate [1] (TPH)	Allowable PM Emissions (EPA Method 5)		Actual PM Emissions (EPA Method 5)		Total Power Input (kW)
									lb/hr	lb/MMBtu	lb/hr	lb/MMBtu	
Boiler 7	1	Spreader-Stoker Vibrating Grate	02/04/05	165,392	296,331	232,174	494.28	68.65	14.83	0.030	11.57	0.023	49.32
Boiler 7	2	Spreader-Stoker Vibrating Grate	02/04/05	161,579	296,174	228,000	487.84	67.76	14.64	0.030	6.84	0.014	55.14
Boiler 7	3	Spreader-Stoker Vibrating Grate	02/04/05	159,426	285,860	223,099	475.52	66.04	14.27	0.030	13.03	0.027	70.01
Boiler 7	1	Spreader-Stoker Vibrating Grate	01/05/06	184,525	318,378	318,300	659.85	91.65	19.80	0.030	13.47	0.020	60.1
Boiler 7	2	Spreader-Stoker Vibrating Grate	01/05/06	178,105	315,125	348,674	721.46	100.20	21.64	0.030	9.96	0.014	63.9
Boiler 7	3	Spreader-Stoker Vibrating Grate	01/05/06	173,265	306,013	349,209	720.61	100.08	21.62	0.030	8.77	0.012	67.9

Notes:
lb/hr = pounds per hour.
lb/MMBtu = pounds per million British thermal units.
lb/ton = pounds per ton.
MMBtu/hr = million British thermal units per hour.
TPH = tons per hour.

Footnotes:
[1] Assumed 3,600 Btu/lb average heat content for wet bagasse, except where noted.

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **NO_x**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **309.0** lb/hour **473.7** tons/year	4. Synthetically Limited? ☒ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.14 lb/MMBtu, 30-day rolling average** Reference: **Permit No. 0510003-030-AC/PSD-FL-333B**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Maximum hourly rate: 1,030 MMBtu/hr x 0.30 lb/MMBtu = 309.0 lb/hr
Annual: 6,767,100 MMBtu/yr x 0.14 lb/MMBtu ÷ 2,000 lb/ton = 473.7 TPY

11. Potential Fugitive and Actual Emissions Comment:

Maximum hourly rate represents worst-case uncontrolled without SNCR system. Annual average is 30-day rolling average limit, based on permit No. 0510003-030-AC/PSD-FL-333B.

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **6,695** lb/hour **1,285** tons/year	4. Synthetically Limited? ☒ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **400 ppmvd @ 7% O_2, 30-day rolling.** Reference: **40 CFR 63, Subpart DDDDD**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

Maximum hourly rate: 1,030 MMBtu/hr x 6.5 lb/MMBtu = 6,695 lb/hr
30-day rolling average based on 40 CFR 63, Subpart DDDDD:
400 ppmvd @ 7-percent O_2 x 225,000 dscfm @ 7-percent O_2 x 60 min/hr x 2,116.8 lb_f/ft^2 ÷ (1,545.6/28) ft-lb_f/lb_m-°R ÷ 528°R = 392.2 lb/hr
Annual based on 30-day rolling average: 392.2 lb/hr x 8,760 hr/yr ÷ 2,000 lb/ton = 1,717.8 TPY
Annual limit based on PSD-FL-333B: 0.38 lb/MMBtu (12-month rolling average)
6,767,100 MMBtu/yr x 0.38 lb/MMBtu ÷ 2,000 lb/ton = 1,285 TPY

11. Potential Fugitive and Actual Emissions Comment:

Annual limit based on 12-month rolling average, based on Permit No. 0510003-030-AC/PSD-FL-333B.