Golder Associates Inc.

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

Golder Associates

April 25, 2007

063-7602

RECEIVED
APR 27 2007
BUREAU OF AIR REGULATION

Florida Department of Environmental Protection
Bob Martinez Center
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Attention: Mr. Jeff Koerner, Air Permitting South

**RE: UNITED STATES SUGAR CORPORATION
CLEWISTON MILL (FACILITY NO. 0510003)
TITLE V RENEWAL APPLICATION**

Dear Mr. Jeff Koerner:

As per your letter dated March 30, 2007, please find enclosed four copies of the updated application pages for inclusion in the Title V air permit renewal for the Clewiston Mill. The revised application pages are being submitted to incorporate the following air construction permits and revisions into the Title V renewal permit:

- Increased capacity of Clewiston Boiler No. 8 (Permit No. 0510003-037-AC).
- Modified New White Sugar Dryer No. 2 (Permit No. 0510003-038-AC).
- Revised Compliance Assurance Monitoring (CAM) Plan parameters, tables, and graphs based on 2006 stack testing results for Boiler Nos. 1, 2, and 7. Revised parameters for Boiler No. 4 were addressed in the control equipment parameter modification application that is currently being submitted to the Florida Department of Environmental Protection (FDEP).

The modified oil firing requirements for Boiler Nos. 1, 2, and 4 in Permit No. 0510003-039-AC were addressed in the Title V request for additional information (RAI) response submitted to FDEP in September 2006. However, a typographical error was discovered in the page for the NO_x emissions for Boiler No. 4. Therefore, revised pages are attached.

If you have any questions, please do not hesitate to call me at (352) 336-5600.

Sincerely,

GOLDER ASSOCIATES INC.

David A. Buff

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

Claire Booth

E. Claire Booth, E.I.
Staff Engineer

cc: Mr. Don Griffin, USSC
Mr. Peter Briggs, USSC
Mr. Ron Blackburn, FDEP SD Office
Mr. James Stormer, Palm Beach County Health Department

Enclosures

DB/CB/all

Y:\Projects\2006\0637602 US Sugar\Title V Revision\FINAL042507\L042507-602.doc

FM: DEP AIR RESOURCE MGMT
P. Adams
DIRECTOR OFFICE STE 23
111 S MAGNOLIA DR
TALLAHASSEE, FL 32301
UNITED STATES Phone: 850-...

To: DEP SOUTH DISTRI...
MR. A. J. SATY...
2295 VICTORIA
AIR RESOURCE
FORT MYERS, FL
UNITED STATES

Description: 0510003-040

GND

Pieces: 1/1

ORIGIN: TLH

Sender's ref: 37550201000 A7 AY230

POSTCODE: 33902

TEL: 239-332-6975

Day 07TH

...ight: 1 lbs for 1 pcs
...e: 2007-06-06

...erms and conditions apply.

Barbara - This goes in the U.S. Sugar Title V file 0510003-040-AV draft path

FMYW 7C
FSC

(2L)US33902

WAYBILL: 21905955750 (Non-Negotiable)

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To(Company):
DEP South District
Air Resources
2295 Victoria Avenue, Suite 364

Fort Myers, FL 33902
UNITED STATES

Attention To: Mr. A. J. Satyal
Phone#: 239-332-6975

Sent By: P. Adams
Phone#: 850-921-9505

Rate Estimate: 3.09
Protection: Not Required
Description: 0510003-040-AV 6/1/07 letter from U.S. Sugar

Weight (lbs.): 1
Dimensions: 0 x 0 x 0

Ship Ref: 37550201000 A7 AY230
Service Level: Ground (Est. delivery in 1 business day(s))

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Bill To Acct: 778941286

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GND

FM: DEP AIR RESOURCE MGMT
P. Adams
DIRECTOR OFFICE STE 23
111 S MAGNOLIA DR
TALLAHASSEE, FL 32301
UNITED STATES Phone: 850-921-9505

To: U.S. EPA REGION 4
MR. GREGG M. WORLEY
61 FORSYTH STREET
AIR PERMITS SECTION
ATLANTA, GA 30303
UNITED STATES

Pieces: 1/1

ORIGIN: TLH

Sender's ref: 37550201000 A7 AY230

POSTCODE: 30303

TEL: 404-562-9141

Day 07TH

Description: 0510003-040-AC 6/1/07 letter from U.S. Sugar
Weight: 1 lbs for 1 pcs
Date: 2007-06-06

DHL standard terms and conditions apply.

HARB 6V
ATT

(2L)US30303

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SENDER'S RECEIPT
Waybill #: 21906093753

To(Company):
U.S. EPA Region 4
Air Permits Section
61 Forsyth Street

Atlanta, GA 30303
UNITED STATES

Attention To: Mr. Gregg M. Worley
Phone#: 404-562-9141

Sent By: P. Adams
Phone#: 850-921-9505

Rate Estimate: 3.09
Protection: Not Required
Description: 0510003-040-AC 6/1/07 letter from U.S. Sugar

Weight (lbs.): 1
Dimensions: 0 x 0 x 0

Ship Ref: 37550201000 A7 AY230
Service Level: Ground (Est. delivery in 1 business day(s))

Special Svc:

Date Printed: 6/6/2007
Bill Shipment To: Sender
Bill To Acct: 778941286

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Golder Associates Inc.

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Gainesville, FL USA 32653
Telephone (352) 336-5600
Fax (352) 336-6603
www.golder.com

Golder Associates

June 1, 2007

RECEIVED
JUN 05 2007
BUREAU OF AIR REGULATION

07387562

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

Attention: Mr. Jeffery F. Koerner, Air Permitting North

RE: UNITED STATES SUGAR CORPORATION - CLEWISTON MILL
PROJECT NO. 0510003-040-AV
HEALTH-BASED COMPLIANCE ALTERNATIVE DEMONSTRATION
REQUEST FOR ADDITIONAL INFORMATION

Dear Mr. Koerner:

United States Sugar Corporation (U.S. Sugar) has received the Florida Department of Environmental Protection's (FDEP) request for additional information (RAI) dated November 13, 2006 regarding the health-based compliance alternative (HBCA) Title V permit revision application. Each of the FDEP's requests is answered below, in the same order as they appear in the RAI letter.

Comment 1. EPA has given final approval to the AERMOD air quality model. The air quality modeling analysis provided with this project is based on the ISC-Prime model, which is no longer a guideline model. Please revise the analysis by using the AERMOD model. The Department reserves the right to ask additional questions regarding the revised analysis.

Response: The air quality modeling analysis has been performed using the AERMOD air quality model. All corresponding tables and figures have been revised accordingly and are included with this response.

Comment 2. See Table 2-2, "Stack and Operating Parameters Used in the HBCA Modeling Analysis". Boiler 4 is used as a backup boiler during the off-crop season. However, Boiler 4 is not identified in any of the scenarios for the off-crop season. Please explain.

Response: To obtain the worst-case annual impacts, each boiler was modeled at maximum capacity during the crop season. Boiler No. 4 is limited to 2,880,000 MMBtu/yr heat input. If this heat input is spread uniformly over the crop season (5,088 hr/yr), the resulting hourly heat input is 566 MMBtu/hr. Since this heat input is less than Boiler No. 4's maximum permitted 24-hour heat input rate of 633 MMBtu/hr, it was assumed that all of Boiler No. 4's annual heat input occurred during the crop season. Therefore, no off-crop season operation was assumed for Boiler No. 4. However, this was for modeling purposes only, and in no way should limit the year-round operation of Boiler No. 4, subject to the annual heat input limitation.

Comment 3. Table 4-2 of the application (Maximum Annual HCl-Equivalent Emissions During the Crop Season) indicates that a factor of 7% was applied to Cl_2 emissions from Boilers 7 and 8 based on test data for Boiler 8, as summarized in Table A-4. Please provide all other Cl_2 and HCl test data available for Boilers 7 and 8. Were the cyclone pre-controls operated as wet cyclones or dry cyclones? Please identify the operating conditions for the controls.

Response: Since the original submittal, additional performance tests for HCl and Cl_2 have been conducted on Boiler Nos. 7 and 8. The results are presented in Appendix A. The results of the January 25, 2007, test on Boiler No. 7 while burning bagasse is presented in Table A-4a. The results of the January 5, 2007, test on Boiler No. 8 while burning bagasse and the August 22, 2006, test on Boiler No. 8 while burning wood chips are presented in Table A-4b. Three 1-hour test runs were performed on each boiler, and EPA Method 26A was used to determine the HCl and Cl_2 concentrations. Based on these results, U.S. Sugar has revised the HCl and Cl_2 emissions. The HCl and Cl_2 emission test summary pages and corresponding fuel analysis results are included in Appendix B.

The procedure used to derive the HCl and Cl_2 emission rates were as follows:

1. We used the 90^{th} percentile confidence level of the historical fuel analysis data and assumed 100 percent of Cl in the fuel is emitted out the stack, i.e., no control for Cl. The historical bagasse analysis data, as presented in Tables A-1 and A-2, has been revised to account for the more recent bagasse analysis results. In addition, the Boiler MACT bagasse analysis results were treated as one data point in order to not bias the statistical results, since the historical data is based on weekly composites of multiple daily samples beginning in 2002.

2. For both bagasse and wood fuel, the percentage of chlorine in the fuel emitted as Cl_2 was determined from the stack tests and analysis of fuel samples obtained during the stack tests. A safety factor of 2 was applied to these percentages for bagasse, and a safety factor of 3 was used for wood chips.

3. We assumed a percentage of Cl_2 was emitted out the stack, based on the results of the stack testing, with the remainder of the total chlorine in the fuel emitted as HCl, to be conservative.

This methodology was used to justify that most of the chlorine in the fuel is not emitted as Cl_2. The stack tests, summarized in Tables A-4a and A-4b, reveal that most of the chlorine in the fuel is actually absorbed in the fly ash. The tests show that only 6 percent of the total chlorine in bagasse is emitted as Cl_2 from Boiler No. 7, and only 8 percent of the total chlorine in bagasse is emitted as Cl_2 from Boiler No. 8. In addition, only 1 percent of chlorine in wood chips is emitted as Cl_2 from Boiler No. 8. The percentages were increased as described above in order to estimate worst-case emissions.

Since wood chips will normally only be burned during the off-crop season in Boiler Nos. 7 and 8, the HCl and Cl_2 emissions from this fuel were removed from the crop season emissions table. Table 4-2 is used to summarize emissions during the crop season, which are based solely on burning bagasse in all boilers. The revised Table 4-2 has been prepared and is included with this response.

The cyclone pre-controls on Boiler Nos. 7 and 8 were operated as wet cyclones during all HCl/Cl_2 testing. However, as described previously, no credit is being taken for removal of Cl in the control system.

During the January 25, 2007, bagasse test on Boiler No. 7, the water flow ranged from 24,240 to 32,340 gph and the total ESP power input ranged from 92 to 115 kilowatts (kW). During the January 5, 2007, bagasse test on Boiler No. 8, the water flow ranged from 12,000 to 27,000 gph and the total ESP power input ranged from 29 to 36 kW. During the August 22, 2006, wood chip test on Boiler No. 8, the water flow rate was 21,000 gph and the total ESP power input ranged from 20 to 46 kW.

The proposed Title V emission limits for HCl and Cl_2 for the boilers will be expressed in terms of lb/MMBtu (refer to revised Table 5-1 attached). These emission limits incorporate the HCl and Cl_2 test data, with appropriate safety factors.

Comment 4. Table 4-2 of the application (Maximum Annual HCl-Equivalent Emissions During the Crop Season) indicated that a factor of 15% was applied to Cl_2 emissions from Boilers 1, 2 and 4. Please provide the basis for the assumption of a 15% factor for Boilers 1, 2 and 4? Please provide all other Cl_2 and HCl test data available for Boilers 1, 2, and 4. The note in this table indicates that the factor will be verified by stack testing. Please identify the number of tests, the proposed EPA reference methods, and the expected timeframe during which the tests will be conducted.

Response: Stack tests were recently performed on Boiler Nos. 1 and 4 to obtain more accurate HCl and Cl_2 emissions. The stack test on Boiler No. 1 was performed on November 28, 2006, and the stack test on Boiler No. 4 was performed on December 1, 2006. Because Boiler Nos. 1 and 2 are nearly identical, the HCl and Cl_2 emission factors from the Boiler No. 1 test were applied to Boiler No. 2. The results of these two tests are presented in Table A-4a. Three 1-hour test runs were performed on each boiler, and EPA Method 26A was used to determine the HCl and Cl_2 concentrations. The HCl and Cl_2 emission test summary pages and corresponding fuel analyses results are included in Appendix A.

The procedures used to derive the HCl and Cl_2 emission rates for Boiler Nos. 1, 2 and 4 were the same as those described in the response to Comment 3 above. This methodology was used to justify that most of the chlorine in the fuel is not emitted as Cl_2. The stack tests indicate that only 4 percent of the total chlorine in the bagasse fuel burned in Boiler No. 1 and Boiler No. 4 is emitted as Cl_2. The same emission factor and percentage used for Boiler No. 1 was applied to Boiler No. 2 since they are nearly identical boilers.

The proposed Title V emission limits for HCl and Cl_2 for the boilers will be expressed in terms of lb/MMBtu (refer to revised Table 5-1 attached). These emission limits incorporate the HCl and Cl_2 test data, with appropriate safety factors.

Comment 5. When using fuel analyses in the HBCA, the NESHAP Subpart DDDDD provisions in 4(a)(1) require you assume that any chlorine detected will be emitted as Cl_2, when using fuel analyses. Was this done? Please explain.

Response: It was assumed that all chlorine in the fuel is emitted out the stack, but not as 100 percent Cl_2. Although 40 CFR 63, Appendix A, states that any detected chlorine must be assumed to be emitted as chlorine gas when using fuel analyses, this does not realistically portray the emissions from the boilers at the Clewiston Mill. Typically, for this type of combustion source, the majority of chlorine in the fuel is either absorbed or emitted as HCl. To assume that any chlorine detected is emitted as Cl_2 is a gross over-estimation. Tables A-4a and A-4b demonstrate that very little chlorine in the fuel is emitted as Cl_2. In any event, the proposed Title V limits in Table 5-1 reflect lb/MMBtu emission limits for both HCl and Cl_2, which were used in the HBCA demonstration.

Comment 6. Please identify any specific deviations in the proposed fuel sampling and analysis protocol that differ from the NESHAP Subpart DDDDD provisions.

Response: Appendix A of the original HBCA application contains the fuel sampling and analysis protocol for bagasse and wood chips for the Boiler MACT testing. This fuel sampling and analysis protocol describes any deviations from the NESHAP Subpart DDDDD provisions. In addition, Table A-6 in Appendix A also identifies any deviations in the fuel sampling and analysis procedures from the NESHAP Subpart DDDDD provisions.

The main deviation in the bagasse fuel sampling and analysis protocol is that grab samples were obtained from the moving conveyor since it in not possible to "stop" the bagasse conveyor belts. Stopping the conveyor belts disrupts the boiler fuel feed, and therefore, boiler operation since the conveyor belt directly feeds the bagasse feeders on each boiler. In addition, there is no intermediate storage of bagasse between the bagasse storage pile, the conveyor belt, and the bagasse feeders.

During the off-crop season, wood chips are moved from the wood chip storage pile to the biomass fuel conveying system via front-end loader. The wood chips are dropped into a feed hopper, and the feed hopper discharges to a conveyor belt. The main deviation in the wood chips sampling and analysis protocol is that grab samples are obtained from the feed hopper just downstream of the point where wood chips are introduced into the feeder box. This allows the fuel samples to be taken as the wood chips are transported directly into the conveying system.

Comment 7. See Table 4-6, "Maximum Predicted Manganese Impacts". Please identify the calculations for the Hazard Quotient for manganese. For the predicted maximum impacts identified in this table, please provide a map of the facility and surrounding areas (i.e., Figure 4-2) showing the points of maximum predicted impacts. On this map, also identify accessible public areas such as residences, schools, parks, etc.

Response: The hazard quotient for manganese is calculated by dividing the maximum predicted impacts in micrograms per cubic meter ($\mu g/m^3$) by the manganese criteria value of 0.05 $\mu g/m^3$.

The manganese emissions have been revised to reflect the updated emission factors for bagasse and wood chips, and to account for wood chip burning only during the off-crop season in Boiler Nos. 7 and 8. Tables 4-1 and 4-3 have been revised and are included with this response. Impacts at the property line and beyond were modeled using the AERMOD model and Ft. Myers meteorological data for years 2001 through 2005. As per discussions and correspondence with Cleve Holladay, Ft. Myers meteorological data is more appropriate to use in AERMOD than meteorological data from Palm Beach International Airport. Even though the Palm Beach International Airport meteorological data has historically been used to model impacts at the Clewiston Mill, it was recently determined that the surface roughness at the Clewiston Mill is more closely related to the surface roughness at Ft. Myers as compared to the surface roughness at the Palm Beach International Airport. Because of the very sensitive nature of the AERMOD model to surface roughness, it is more appropriate to use the Ft. Myers data.

The modeling results, which are presented in the revised Table 4-6, demonstrate that the maximum impacts occur at the property line. A map of the facility and surrounding areas is provided in

Figure 1 attached, which identifies sensitive receptor locations, and Figure 2 shows isopleths of the predicted annual average Mn impacts, the point of maximum impact.

Comment 8. See Table 4-7, "Maximum Predicted HCl-Equivalent Impacts". Please identify the calculations for the Hazard Quotients for Cl_2 and HCl as well as the overall Hazard Index. For the predicted maximum impacts identified in this table, please provide a map of the facility and surrounding areas (i.e., Figure 4-2) showing the points of maximum predicted impacts. On this map, also identify accessible public areas such as residences, schools, parks, etc.

Response: The hazard quotient for HCl is calculated by dividing the maximum predicted impacts in $\mu g/m^3$ by the HCl criteria value of 20 $\mu g/m^3$. The hazard index is calculated by summing the hazard quotients for multiple substances and/or exposure pathways.

In Table 4-7 of the original HBCA application, the hazard index was not utilized since only the impacts from one pollutant (HCl-equivalent) were determined. Instead, the hazard quotient was used. The maximum predicted HCl impacts in Table 4-7 are based on the HCl-equivalent emissions, which takes into account both HCl and Cl_2 emissions. The modeling results are the same whether the HCl-equivalent is modeled or the HCl and Cl_2 emissions are taken into account separately. Therefore, the HCl-equivalent emissions were modeled. The results of this modeling were then compared to the HCl criteria value of 20 $\mu g/m^3$.

In addition to the typographical error in the column title in Table 4-7, the HCl-equivalent emissions have been revised to reflect the updated emission factors for bagasse and wood chips, and to account for wood chip burning only during the off-crop season in Boiler Nos. 7 and 8. Tables 4-2 and 4-4 have been revised and are included with this response.

Impacts at the property line and beyond were modeled using the AERMOD model and Ft. Myers meteorological data for years 2001 through 2005. The modeling results, which are presented in the revised Table 4-7, demonstrate that the maximum impacts occur at the property line. A map of the facility and surrounding areas is provided in Figure 3 attached, which shows isopleths of the predicted annual average HCl impacts, the point of maximum impact, and identifies sensitive receptor locations.

Comment 9. Appendix A, 4(e) states, "During the emissions test, you must collect operating parameter monitoring system data at least every 15 minutes during the entire emissions test and establish the site-specific operating requirements in Tables 3 or 4, as appropriate, of subpart DDDDD using data from the monitoring system and the procedures specified in §63.7530 of subpart DDDDD." Please provide the monitoring data and specify the applicable operating limits.

Response: Because we are assuming zero control for Cl, i.e., no control device efficiency was relied upon for the HCl and Cl_2 emissions; we are not proposing any operating limits. The operating parameters for particulate matter (PM) control were submitted in the original Title V Compliance Assurance Monitoring (CAM) Plan and subsequent revisions.

Copies of the 15-minute monitoring data for the HCl/Cl_2 stack tests summarized in Tables A-4a and A-4b are included in Appendix A of this response.

Comment 10. In addition to the Title V permit parameters presented in Table 5-1, please include the following: emission release type, stack height, stack area, stack gas

temperature, stack gas exit velocity, type of control devices, control equipment operating limits, and fuel mix (annual average). Identify any restrictions (and the boilers) for which the HBCA analysis was based on less than 100% operation.

Response: Table 5-1 has been updated to include the above mentioned information as enforceable and non-enforceable Title V parameters. The annual average fuel mixtures for the crop and off-crop seasons are presented in Tables 5-2 and 5-3, respectively. The average of the historical bagasse data was used to determine the annual average fuel mix.

The off-crop season emissions were based on a 300,000 lb/hr steam restriction. Three different potential scenarios were evaluated based on the 300,000 lb/hr total steam restriction. These scenarios include operating all the boilers (Boiler Nos. 1, 2, 4, 7, and 8) during the crop season with various boilers operating during the off-crop season. The first off-crop season scenario includes burning wood chips in Boiler No. 7 only, the second off-crop season scenario includes burning wood chips in Boiler No. 8 only, and the third off-crop season scenario includes burning bagasse in Boiler Nos. 1 and 2.

Comment 11. Boilers 1, 2, 4, 7, and 8 are permitted to fire bagasse and distillate oil. Only Boiler 8 is permitted to fire wood. The addition of wood as a permitted fuel for other boilers would require a new HBCA analysis. Please comment.

Response: Because of plans to burn wood chips in Boiler Nos. 7 and 8 primarily during the off-crop season, emissions from this fuel are included in the revised tables for these boilers only (Tables 4-3 and 4-4). There are no plans to burn wood chips in Boiler Nos. 1, 2, and 4 at this time. U.S. Sugar is aware that adding wood chips as a permitted fuel for these boilers would require a new HBCA analysis.

Signed responsible official (R.O.) and professional engineer (P.E.) certification statements are included with this RAI response.

Thank you for consideration of this information. If you have any questions, please do not hesitate to call me at (352) 336-5600.

Sincerely,

GOLDER ASSOCIATES INC.

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

E. Claire Booth, E.I.
Staff Engineer

CB/DB/kjp

Enclosures

cc: Peter Briggs, USSC
Keith Tingberg, USSC

Y:\Projects\2007\07387562 USSC RAI\L053007-562.doc

FACILITY 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 Manufacturing

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 Ave.**
City: **Clewiston** State: **FL** 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: [signature] Date: 5/11/07

Professional Engineer Certification

<table>
<tr><td>1. Professional Engineer Name: David A. Buff
Registration Number: 19011</td></tr>
<tr><td>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</td></tr>
<tr><td>3. Professional Engineer Telephone Numbers...
Telephone: (352) 336-5600 ext.545 Fax: (352) 336-6603</td></tr>
<tr><td>4. Professional Engineer Email Address: dbuff@golder.com</td></tr>
<tr><td>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   6/1/07
Signature   Date

(seal)</td></tr>
</table>

* Attach any exception to certification statement.

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

TABLE 2-2
STACK AND OPERATING PARAMETERS AND LOCATIONS USED IN THE HBCA MODELING ANALYSIS, U.S. SUGAR, CLEWISTON MILL

Emission Unit	Model ID	UTM Coordinates [a] East (m)	UTM Coordinates [a] North (m)	Relative Location [b] X ft	X m	Y ft	Y m	Stack Data [c] Height ft	Height m	Diameter ft	Diameter m	Heat Input (MMBtu/hr)	Steam Rate (lb/hr)	Operating Data [c] Temperature °F	Temperature °K	Gas Flow (acfm)	Velocity ft/s	Velocity m/s
Maximum Permitted - Crop Season																		
Boiler No. 1	BLR1O	506,184.6	2,956,934.8	185	56	-5	-1.5	213	64.9	8.0	2.44	496	245,000	150	339	250,000	82.9	25.3
Boiler No. 2	BLR2O	506,171.8	2,956,934.8	143	44	-5	-1.5	213	64.9	8.0	2.44	447	215,000	150	339	250,000	82.9	25.3
Boiler No. 4 [e]	BLR4O	506,128.2	2,956,936.3	0	0	0	0.0	150	45.7	8.2	2.50	566[e]	268,246	160	344	251,257	79.3	24.2
Boiler No. 7 [f]	BLR7O	506,095.7	2,956,956.1	-107	-33	65	19.8	225	68.6	8.0	2.44	738	350,000	272	406	337,000	111.7	34.1
Boiler No. 8 [f]	BLR8O	506,046.2	2,956,987.3	-269	-82	167	51.0	199	60.7	10.9	3.32	1,077	575,000	255	397	437,000	78.1	23.8
													1,653,246					
Maximum Permitted - Off-Crop Season																		
Scenario A																		
Boiler No. 7 [f]	BLR7F	506,095.7	2,956,956.1	-107	-33	65	19.8	225	68.6	8.0	2.44	738	350,000	272	406	337,000	111.7	34.1
Scenario B																		
Boiler No. 8 [f]	BLR8F	506,046.2	2,956,987.3	-269	-82	167	51.0	199	60.7	10.9	3.32	1,077	575,000	255	397	437,000	78.1	23.8
Scenario C																		
Boiler No. 1	BLR1F	506,184.6	2,956,934.8	185	56	-5	-1.5	213	64.9	8.0	2.44	496	245,000	150	339	250,000	82.9	25.3
Boiler No. 2	BLR2F	506,171.8	2,956,934.8	143	44	-5	-1.5	213	64.9	8.0	2.44	447	215,000	150	339	250,000	82.9	25.3
													460,000					
300,000 lb/hr steam - Off-Crop Season																		
Scenario A																		
Boiler No. 7 [f]	BLR7F	506,095.7	2,956,956.1	-107	-33	65	19.8	225	68.6	8.0	2.44	633	300,000	272	406	289,000	95.8	29.2
Scenario B																		
Boiler No. 8 [f]	BLR8F	506,046.2	2,956,987.3	-269	-82	167	51.0	199	60.7	10.9	3.32	562	300,000	255	397	207,109	37.0	11.3
Scenario C [d]																		
Boiler No. 1	BLR1F	506,184.6	2,956,934.8	185	56	-5	-1.5	213	64.9	8.0	2.44	323	159,789	150	339	163,050	54.1	16.5
Boiler No. 2	BLR2F	506,171.8	2,956,934.8	143	44	-5	-1.5	213	64.9	8.0	2.44	292	140,223	150	339	163,050	54.1	16.5
													300,012					

[a] Universal Transverse Mercator Coordinates, Zone 17, North American Datum of 1927 (NAD27).

[b] Relative to Boiler No. 4

[c] Stack and operating data based on Title V renewal application (2005), unless otherwise noted.

[d] Both boilers operating at 65.22% load, which equates to a total of 300,000 lb/hr steam. Boiler No. 2 is nearly identical to Boiler No. 1.

[e] Boiler No. 4 limited to 2,880,000 MMBtu/yr, which equates to 566 MMBtu/hr for the crop season (5,088 hours).

[f] Temperature and flow rate based on the average of the 2006 and 2007 stack test results

TABLE 4-1
MAXIMUM ANNUAL MANGANESE EMISSIONS DURING THE CROP SEASON, CLEWISTON MILL (SITE SPECIFIC DEMONSTRATION)

Boiler ID	Model ID	Emission Estimation Method	Heat Input (MMBtu/hr)	Steam Rate (lb/hr)	Hours of Operation (hr/yr) [a]	Mn Emission Factor (lb/MMBtu) [b]	Maximum Crop Season Mn Emissions (TPY)	Mn Emissions For 7-Months (lb/hr)	Mn Emissions For 7-Months (g/s)
Boiler No. 1	BLR1O	Bagasse Fuel Analysis	496	245,000	5,088	1.40E-03	1.767	0.694	0.0875
Boiler No. 2	BLR2O	Bagasse Fuel Analysis	447	215,000	5,088	1.40E-03	1.592	0.626	0.0789
Boiler No. 4 [c]	BLR4O	Bagasse Fuel Analysis	566	268,246	5,088	1.40E-03	2.016	0.792	0.0998
Boiler No. 7	BLR7O	Bagasse Fuel Analysis	738	350,000	5,088	1.40E-03	2.628	1.033	0.1302
Boiler No. 8	BLR8O	Bagasse Fuel Analysis	1,077	575,000	5,088	1.40E-03	3.836	1.508	0.1900
Total All Boilers				**1,653,246**			**11.839**	**4.654**	**0.586**

[a] Based on 7 months of operation during the crop season (October - April), which is equivalent to 212 days.

[b] Based on the 90th percentile of historical bagasse data (see Table A-2).

[c] Boiler No. 4 limited to 2,880,000 MMBtu/yr heat input, which equates to 566 MMBtu/hr for 5,088 hr/yr.

TABLE 4-2
MAXIMUM ANNUAL HCL-EQUIVALENT EMISSIONS DURING THE CROP SEASON, CLEWISTON MILL (SITE-SPECIFIC DEMONSTRATION)

Boiler ID	Model ID	Emission Estimation Method	Heat Input (MMBtu/hr)	Steam Rate (lb/hr)	Hours of Operation (hr/yr)[a]	Chlorine Fuel Analysis Factor[b] (lb/MMBtu)	Percentages of Chlorine in Fuel Emitted as[c] HCl	Percentages of Chlorine in Fuel Emitted as[c] Cl_2	HCl Emission Factor (lb/MMBtu)	Cl_2 Emission Factor (lb/MMBtu)	HCl Crop Season Emission Rate (TPY)	Cl_2 Crop Season Emission Rate (TPY)	Crop Season Toxicity-Weighted Emission Rate (HCl-Equivalents) (TPY)[d]	HCl-Equivalent Emissions for 7-Months (lb/hr)	HCl-Equivalent Emissions for 7-Months (g/s)
Boiler No. 1	BLR1O	Bagasse Fuel Analysis/Stack Tests	496	245,000	5,088	0.089	92%	8%	0.0819	0.0071	103.32	8.98	1,001.7	393.8	49.6
Boiler No. 2	BLR2O	Bagasse Fuel Analysis/Stack Tests	447	215,000	5,088	0.089	92%	8%	0.0819	0.0071	93.11	8.10	902.8	354.9	44.7
Boiler No. 4	BLR4O	Bagasse Fuel Analysis/Stack Tests	566[e]	268,246	5,088	0.089	92%	8%	0.0819	0.0071	117.90	10.25	1,143.1	449.3	56.6
Boiler No. 7	BLR7O	Bagasse Fuel Analysis/Stack Tests	735	350,000	5,088	0.089	88%	12%	0.0763	0.0107	147.04	20.05	2,152.2	846.0	106.6
Boiler No. 8	BLR8O	Bagasse Fuel Analysis/Stack Tests	1,077	575,000	5,088	0.089	84%	16%	0.0748	0.0112	204.83	30.69	4,106.4	1,614.2	203.4
Total All Boilers				1,653,246									9,306.2	3,658.1	460.9

[a] Based on 7 months of operation during the crop season (October - April), which is equivalent to 212 days.

[b] Based the the 90th percentile of historical bagasse data (see Table A-2).

[c] Percentages of chlorine in fuel emitted are based on stack tests (see Tables A-4a and A-4b). A safety factor of 2 was added to the Cl_2 percentages. The same emission factor was applied to Boiler Nos. 1 and 2 because they are nearly identical.

[d] Based on Equation 2 in Appendix A (Subpart DDDDD). RV_{HCl} is 0.02 mg/m^3 and RV_{Cl_2} is 0.0002 mg/m^3.

[e] Boiler No. 4 limited to 2,880,000 MMBtu/yr heat input, which equates to 566 MMBtu/hr for 5,088 hr/yr.

TABLE 4-3
MAXIMUM ANNUAL MANGANESE EMISSIONS DURING THE OFF-CROP SEASON, U.S. SUGAR, CLEWISTON MILL (SITE SPECIFIC DEMONSTRATION)

Off-Crop Season Scenario	Boiler ID	Model ID	Emission Estimation Method	Heat Input (MMBtu/hr)	Steam Rate (lb/hr)	Hours of Operation (hr/yr) [a]	Emission Factor (lb/MMBtu) [b]	Maximum Off-Crop Season Mn Emissions (TPY)	Mn Emissions For 5-Months (lb/hr)	(g/s)
Scenario A										
	Boiler No. 7	BLR7F	Wood Chip Fuel Analysis	633	300,000	3,672	4.90E-03	5.691	3.100	0.3905
Scenario B										
	Boiler No. 8	BLR8F	Wood Chip Fuel Analysis	562	300,000	3,672	4.90E-03	5.055	2.753	0.3469
Scenario C										
	Boiler No. 1	BLR1F	Bagasse Fuel Analysis	323	159,789	3,672	1.40E-03	0.832	0.453	0.0571
	Boiler No. 2	BLR2F	Bagasse Fuel Analysis	292	140,223	3,672	1.40E-03	0.749	0.408	0.0514
Boiler Nos. 1 & 2 Total					**300,012**			**1.581**	**0.861**	**0.1085**

[a] Based on 5 months of operation during the off-crop season (May - September), which is equivalent to 153 days.

[b] Based on the 90th percentile of historical bagasse and wood chips fuel analysis data (see Tables A-2 and A-3, respectively).

TABLE 4-4
MAXIMUM ANNUAL HCl-EQUIVALENT EMISSIONS DURING THE OFF-CROP SEASON, U.S. SUGAR, CLEWISTON MILL (SITE SPECIFIC DEMONSTRATION)

Off Crop Season Scenario	Boiler ID	Model ID	Emission Estimation Method	Heat Input (MMBtu/hr)[a]	Steam Rate (lb/hr)	Hours of Operation (hr/yr)[b]	Chlorine Fuel Analysis Factor[c] (lb/MMBtu)	Percentage of Chlorine in Fuel Emitted as HCl[d]	Percentage of Chlorine in Fuel Emitted as Cl_2[d]	HCl Emission Factor (lb/MMBtu)	Cl_2 Emission Factor (lb/MMBtu)	HCl Off-Crop Season Emission Rate (TPY)	Cl_2 Off-Crop Season Emission Rate (TPY)	Off-Crop Season Toxicity-Weighted Emission Rate (HCl-Equivalents) (TPY)[e]	HCl-Equivalent Emissions for 5 Months (lb/hr)	HCl-Equivalent Emissions for 5 Months (g/s)
Scenario A																
	Boiler No. 7	BLR7F	Wood chip fuel analysis/stack tests	633	300,000	3,672	0.310	97%	3%	0.301	0.0093	349.23	10.80	1,429.34	778.51	98.09
Scenario B																
	Boiler No. 8	BLR8F	Wood chip fuel analysis/stack tests	562	300,000	3,672	0.310	97%	3%	0.301	0.0093	310.22	9.59	1,269.68	691.55	87.13
Scenario C																
	Boiler No. 1	BLR1F	Bagasse fuel analysis/stack tests	323	159,789	3,672	0.089	92%	8%	0.082	0.0071	38.63	4.23	471.51	256.81	32.36
	Boiler No. 2	BLR2F	Bagasse fuel analysis/stack tests	292	140,223	3,672	0.089	92%	8%	0.082	0.0071	33.83	3.81	424.93	231.44	29.16
	Boiler Nos. 1 & 2 Total				300,012									896.44	488.26	61.52

[a] Based on 300,000 lb/hr steam during the off-crop season (see Table 2-2).

[b] Based on 5 months of operation during the off-crop season (May - September), which is equivalent to 153 days.

[c] Based on the 90th percentile of fuel analysis data.

[d] Percentages of chlorine in fuel emitted are based on stack tests (see Tables A-4a and A-4b). A safety factor of 2 was added to the Cl_2 percentages for bagasse; a safety factor of 3 was added for wood chips. The same emission factor was applied to Boiler Nos. 1 and 2 because they are nearly identical. U.S. Sugar is in the process of permitting wood chip burning in Boiler No. 7 for the off-crop season. The wood chip emission factor for Boiler No. 8 was used, since these are similar boilers.

[e] Based on Equation 2 in Appendix A (Subpart DDDDD). RV_{HCl} is 0.02 mg/m³ and RV_{Cl2} is 0.0002 mg/m³.

TABLE 4-6
MAXIMUM PREDICTED MANGANESE IMPACTS, U.S. SUGAR, CLEWISTON MILL

Scenario	Averaging Period	Year	Maximum Predicted Impact ($\mu g/m^3$)	Receptor Location [a] East (m)	Receptor Location [a] North (m)	Mn Criteria ($\mu g/m^3$)	Hazard Quotient[b]
Case A	Annual	2001	0.035	507,930	2,954,950	0.05	0.70
		2002	0.032	503,630	2,956,950		0.64
		2003	0.032	504,430	2,958,750		0.64
		2004	0.031	503,630	2,956,950		0.62
		2005	0.031	504,730	2,958,550		0.62
Case B	Annual	2001	0.038	504,230	2,958,550	0.05	0.76
		2002	0.035	503,630	2,956,950		0.70
		2003	0.034	504,430	2,958,650		0.68
		2004	0.034	504,130	2,958,250		0.68
		2005	0.034	504,130	2,958,150		0.68
Case C	Annual	2001	0.030	504,530	2,958,350	0.05	0.60
		2002	0.027	504,130	2,957,050		0.54
		2003	0.026	504,630	2,958,550		0.52
		2004	0.026	503,630	2,956,950		0.52
		2005	0.027	504,830	2,958,450		0.54

[a] UTM coordinates in Zone 17, NAD 27.

[b] The Hazard Quotient is calculated by dividing the maximum predicted impacts in $\mu g/m^3$ by the Mn criteria value of 0.05 $\mu g/m^3$.

Note: Concentrations are highest predicted with AERMOD model and 5-years of meteorological data from Ft. Myers, 2001-2005.

TABLE 4-7
MAXIMUM PREDICTED HCL-EQUIVALENT IMPACTS, U.S. SUGAR, CLEWISTON MILL

Scenario	Averaging Period	Year	Maximum Predicted Impact (μg/m³)	Receptor Location [a] East (m)	Receptor Location [a] North (m)	HCl Criteria (μg/m³)	Hazard Quotient[b]
Case A	Annual	2001	20.1	507,730	2,955,250	20	1.0
		2002	17.1	504,130	2,957,050		0.9
		2003	17.9	504,630	2,958,550		0.9
		2004	17.0	503,630	2,956,950		0.9
		2005	17.6	504,830	2,958,450		0.9
Case B	Annual	2001	20.9	504,630	2,958,250	20	1.0
		2002	18.0	504,130	2,957,050		0.9
		2003	18.6	504,730	2,958,350		0.9
		2004	17.7	504,130	2,956,950		0.9
		2005	18.3	504,830	2,958,350		0.9
Case C	Annual	2001	20.5	504,930	2,957,950	20	1.0
		2002	17.9	504,330	2,956,950		0.9
		2003	18.1	504,930	2,958,150		0.9
		2004	17.6	504,130	2,956,950		0.9
		2005	18.3	505,030	2,958,150		0.9

[a] UTM coordinates in Zone 17, NAD 27.

[b] The Hazard Quotient is calculated by dividing the maximum predicted impacts in μg/m³ by the HCl criteria value of 20 μg/m³.

Note: Concentrations are highest predicted with AERMOD model and 5-years of meteorological data from Ft. Myers, 2001-2005.

TABLE 5-1
TITLE V PERMIT LIMITS FOR SUBPART DDDDD SOURCES, US SUGAR, CLEWISTON MILL

		Title V Enforceable Conditions				Stack and Operating Data (Non-Enforceable Title V Conditions)									
							Stack Height		Stack Area		Stack Gas Temperature		Exit Velocity		
Unit	Process Parameter	Limit	Units	Averaging Time	Fuel Type	Emission Release Type	m	ft	m²	ft²	K	°F	m/s	ft/s	Control Device
Boiler No. 1	Maximum Heat Input	496	MMBtu/hr	1 hr	Bagasse	Vertical Stack	64.9	213	4.68	50.33	339	151	25.3	[illegible]	Wet Scrubber
	Maximum Steam Rate	245,000	lb/hr	24 hr	Bagasse										
	Mn Emissions	1.40E-03	lb/MMBtu	--	Bagasse										
	HCl Emissions	0.032	lb/MMBtu	--	Bagasse										
	Cl2 Emissions	0.0071	lb/MMBtu	--	Bagasse										
Boiler No. 2	Maximum Heat Input	447	MMBtu/hr	1 hr	Bagasse	Vertical Stack	64.9	213	4.68	50.33	339	151	25.3	83.0	Wet Scrubber
	Maximum Steam Rate	215,000	lb/hr	24 hr	Bagasse										
	Mn Emissions	1.40E-03	lb/MMBtu	--	Bagasse										
	HCl Emissions	0.032	lb/MMBtu	--	Bagasse										
	Cl2 Emissions	0.0071	lb/MMBtu	--	Bagasse										
Boiler No. 4	Maximum Heat Input	633	MMBtu/hr	1 hr	Bagasse	Vertical Stack	45.7	150	4.87	52.41	344	160	24.2	79.4	Wet Scrubber
	Maximum Heat Input	600	MMBtu/hr	24 hr	Bagasse										
	Maximum Heat Input	2,880,000	MMBtu/year	Annual	Bagasse										
	Mn Emissions	1.12E-03	lb/MMBtu	--	Bagasse										
	HCl Emissions	0.042	lb/MMBtu	--	Bagasse										
	Cl2 Emissions	0.0071	lb/MMBtu	--	Bagasse										
Boiler No. 7	Maximum Heat Input	813	MMBtu/hr	1 hr	Bagasse	Vertical Stack	68.6	225	4.68	50.33	406	271	34.1	111.9	ESP, Wet Sand Separator
	Maximum Steam Rate	350,000	lb/hr	24 hr	Bagasse										
	Maximum Heat Input	738	MMBtu/hr	24 hr	Bagasse										
	Mn Emissions	1.10E-03	lb/MMBtu	--	Bagasse										
	HCl Emissions	0.078	lb/MMBtu	--	Bagasse										
	Cl2 Emissions	0.011	lb/MMBtu	--	Bagasse										
Boiler No. 8	Maximum Heat Input	1,135	MMBtu/hr	1 hr	Bagasse	Vertical Stack	60.7	199	8.66	93.18	397	255	23.5	77.1	ESP, Dry Sand Separator, Wet Cyclone, SNCR
	Maximum Steam Rate	575,000	lb/hr	24 hr	Bagasse										
	Maximum Heat Input	1,077	MMBtu/hr	24 hr	Bagasse										
	Mn Emissions	1.40E-03	lb/MMBtu	--	Bagasse										
	HCl Emissions	0.075	lb/MMBtu	--	Bagasse										
	Cl2 Emissions	0.014	lb/MMBtu	--	Bagasse										
ADDITIONAL CROP SEASON LIMITATIONS															
Boiler Nos. 1, 2, 4, 7, 8	Maximum Operating Hours (each boiler)	5,088	hr/yr	--	--	--	--		--		--		--		--
ADDITIONAL OFF-CROP SEASON LIMITATIONS															
Boiler Nos. 1, 2, 4, 7, 8	Total Maximum Steam Rate	320,000	lb/hr	--	--	--	--		--		--		--		--
Boiler Nos. 1, 2, 4, 7, 8	Maximum Operating Hours (each boiler)	3,672	hr/yr	--	--	--	--				--		--		--
Boiler No. 1	Maximum Steam Rate	100,000	lb/hr	--	--	Vertical Stack	64.9	213	4.68	50.33	339	151	16.5	54.1	Wet Scrubber
Boiler No. 2	Maximum Steam Rate	100,000	lb/hr	--	--	Vertical Stack	64.9	213	4.68	50.33	339	151	16.5	54.1	Wet Scrubber
Boiler No. 7	Maximum Steam Rate	300,000	lb/hr	--	--	Vertical Stack	68.6	225	4.68	51.33	406	271	29.2	95.8	ESP, Wet Sand Separator
	Mn Emissions	4.9E-03	lb/MMBtu	--	Wood Chips										
	HCl Emissions	0.30	lb/MMBtu	--	Wood Chips										
	Cl2 Emissions	0.009	lb/MMBtu	--	Wood Chips										
Boiler No. 8	Maximum Steam Rate	300,000	lb/hr	--	--	Vertical Stack	60.7	199	8.66	93.18	397	255	11.3	37.1	ESP, Dry Sand Separator, Wet Cyclone, SNCR
	Mn Emissions	4.90E-03	lb/MMBtu	--	Wood Chips										
	HCl Emissions	0.30	lb/MMBtu	--	Wood Chips										
	Cl2 Emissions	0.009	lb/MMBtu	--	Wood Chips										

TABLE 5-2
MAXIMUM ANNUAL FUEL MIXTURES DURING THE CROP SEASON, U.S. SUGAR, CLEWISTON MILL

Boiler ID	Fuel Type	24-Hour Heat Input (MMBtu/hr)	Hours of Operation [a] (hr/yr)	Heating Value [b] (Btu/lb)	Maximum Fuel Usage (TPY)
Boiler No. 1	Bagasse	496	5,088	3,819	330,407
Boiler No. 2	Bagasse	447	5,088	3,819	297,766
Boiler No. 4 [c]	Bagasse	566	5,088	3,819	377,037
Boiler No. 7	Bagasse	738	5,088	3,819	491,614
Boiler No. 8	Bagasse	1,077	5,088	3,819	717,436

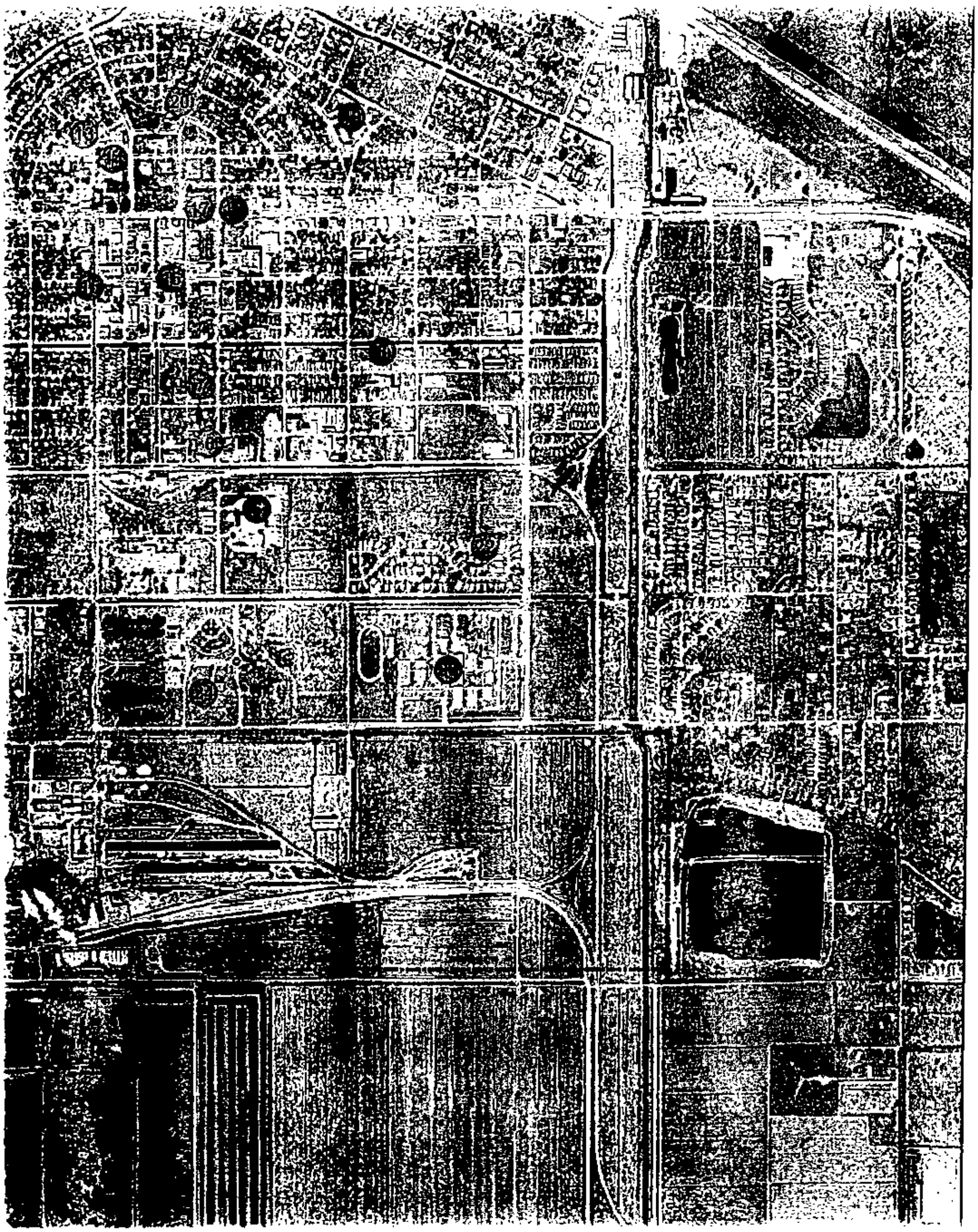
[a] Based on 7 months of operation during the crop season (October - April) , which is equivalent to 212 days.
[b] Based on 3,819 Btu/lb for bagasse and the maximum 24-hour heat input capacity of each boiler. The heating value for bagasse is based on the average of historical fuel data (2002-2007) as presented in Table A-1.
[c] Boiler No. 4 limited to 2,880,000 MMBtu/yr heat input, which equates to 566 MMBtu/hr for 5,088 hr/yr.

TABLE 5-3
MAXIMUM ANNUAL FUEL MIXTURES DURING THE OFF-CROP SEASON, U.S. SUGAR, CLEWISTON MILL

Off-Crop Season Scenario	Boiler ID	Fuel Type	24-Hour Heat Input (MMBtu/hr)	Hours of Operation [a] (hr/yr)	Heating Value [b] (Btu/lb)	Maximum Fuel Usage (TPY)
Scenario A						
	Boiler No. 7	Wood Chips	633	3,672	4,905	236,939
Scenario B						
	Boiler No. 8	Wood Chips	562	3,672	4,905	210,363
Scenario C						
	Boiler No. 1	Bagasse	323	3,672	3,819	155,284
	Boiler No. 2	Bagasse	292	3,672	3,819	140,380

[a] Based on 5 months of operation during the off-crop season (May - September), which is equivalent to 153 days.

[b] Based on 3,819 Btu/lb for bagasse, 4,905 Btu/lb for wood chips, and the maximum 24-hour heat input capacity of each boiler. The heating value for bagasse is based on the average of historical fuel data (2002-2007) as presented in Table A-1. The heating value for wood chips is based on the average of the June and August 2006 fuel sampling results, as presented in Table A-3.



Sensitive Area

1 - Hendry Family Care Center
2 - Clewiston Primary School
3 - Mount Calvary Baptist Church
4 - Missionary Baptist Church
5 - Clewiston Middle School
6 - Iglesia Misionara Mundial
7 - Kingdom hall of Jehovah's Witness
8 - Clewiston Seventh Day
9 - First Missionary Baptist Church
10 - Evangel Assembly of God
11 - Hendry Regional Medical Center
12 - Clewiston High School
13 - First United Methodist Church of Clewiston
14 - St. Martin's Episcopal Church
15 - Iglesia De Dios Pentecostal
16 - First Baptist Church Clewiston
17 - Community Prayer Worship Center
18 - Family Home Care
19 - Clewiston Intermediate School
20 - Community Presbyterian Chursh
21 - Faith Lutheran Church
22 - Clewiston Church of Christ
23 - School
24 - Park
25 - Auditorium
26 - Elementary School

REFERENCE

Projection: Transverse Mercator Datum: NAD 27 Coordinate System: UTM Zone 17

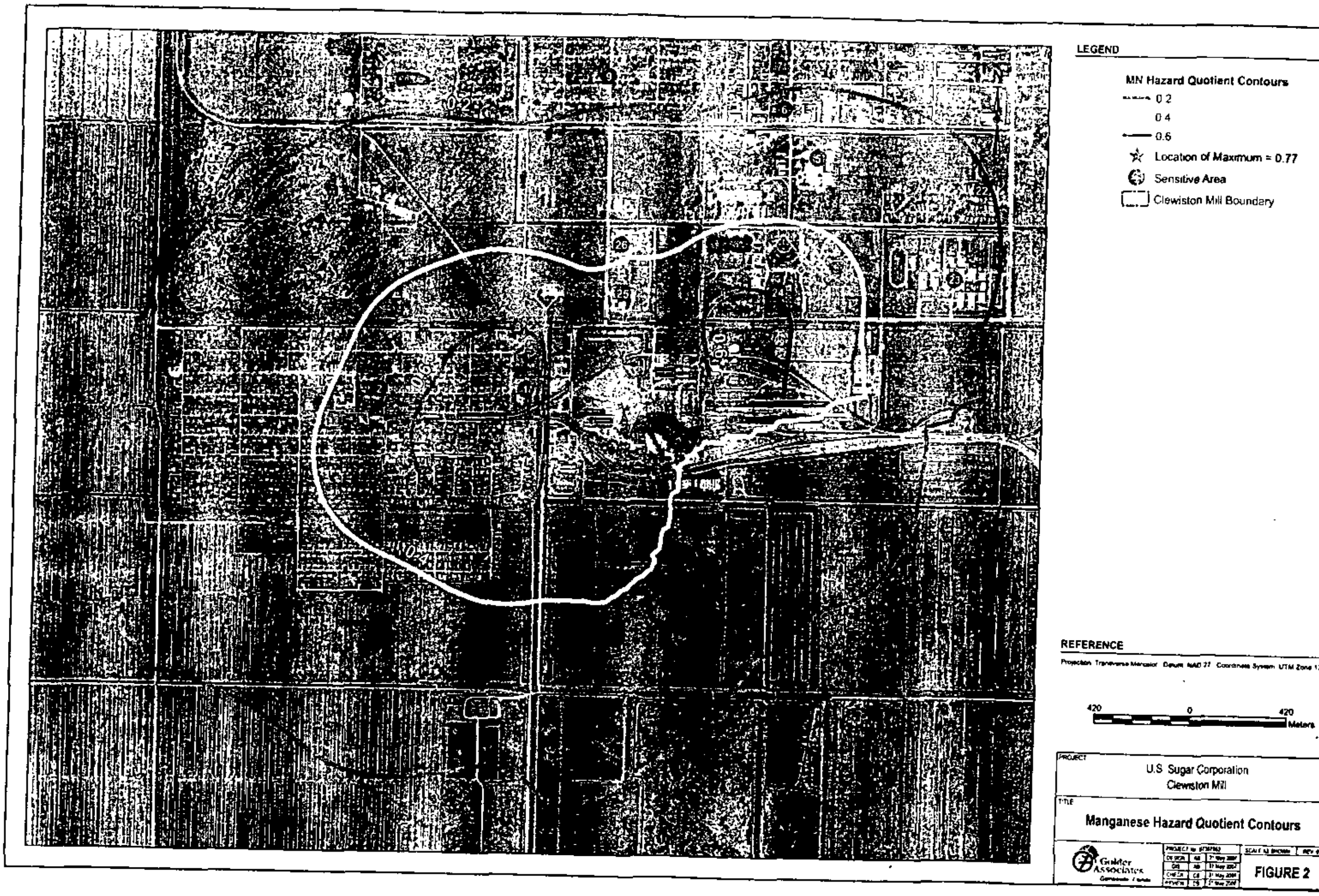
400 0 400 Meters

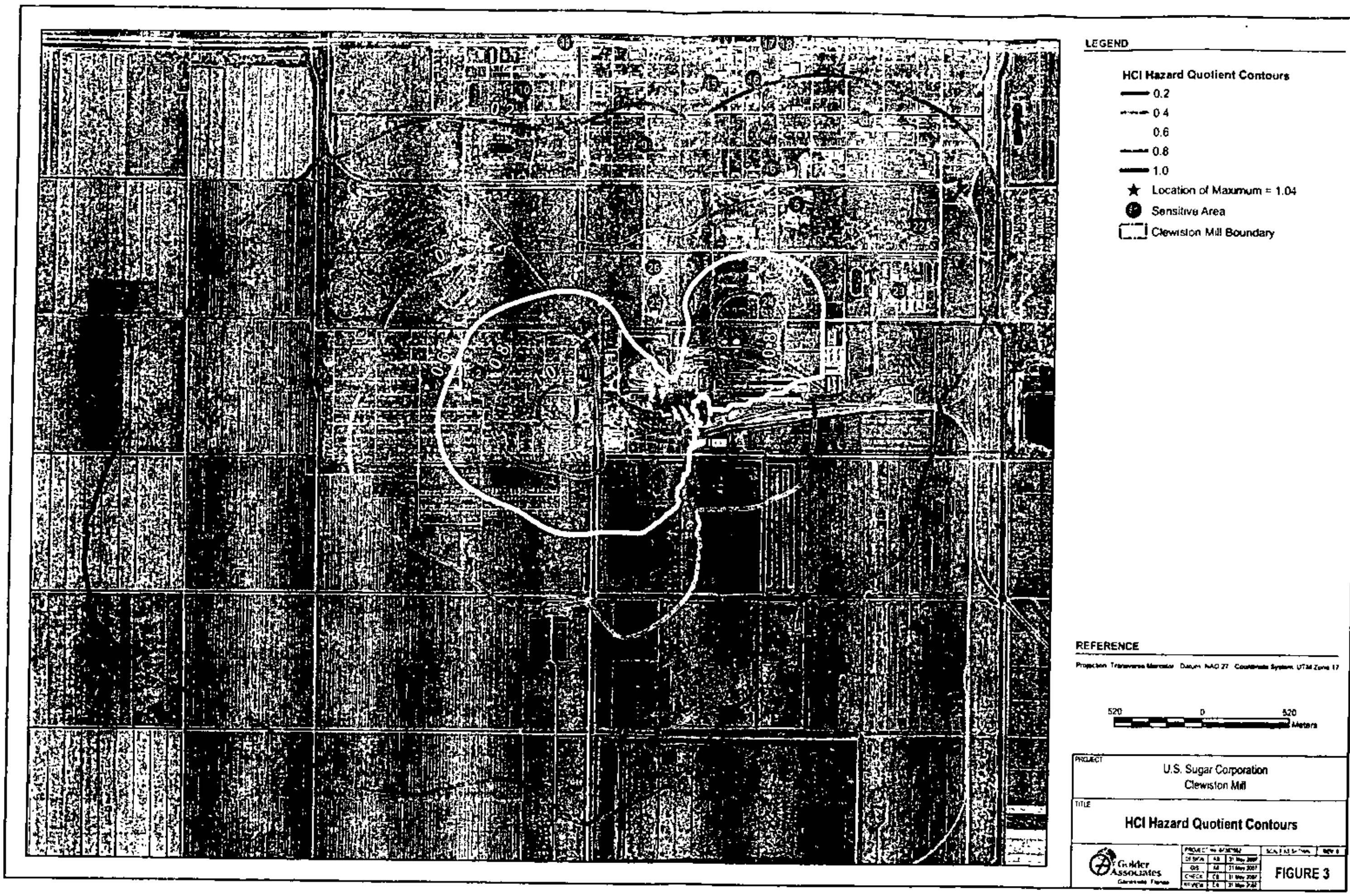
PROJECT

U.S. Sugar Corporation
Clewiston Mill

TITLE

Locations of Sensitive Areas


LEGEND
MN Hazard Quotient Contours
0.2
0.4
0.6
Location of Maximum = 0.77
Sensitive Area
Clewiston Mill Boundary
REFERENCE
Projection: Transverse Mercator Datum: NAD 27 Coordinate System: UTM Zone 17
420
0
420
Meters
PROJECT
U.S. Sugar Corporation
Clewiston Mill
TITLE
Manganese Hazard Quotient Contours
Golder Associates
FIGURE 2


LEGEND
HCl Hazard Quotient Contours
0.2
0.4
0.6
0.8
1.0
Location of Maxumum = 1.04
Sensitive Area
Clewiston Mill Boundary
REFERENCE
Projection Transverse Mercator Datum NAD 27 Coordinate System UTM Zone 17
520
0
520
Meters
PROJECT
U.S. Sugar Corporation
Clewiston Mill
TITLE
HCl Hazard Quotient Contours
Golder Associates
FIGURE 3

APPENDIX A

TABLE A-1
PROXIMATE, ULTIMATE, AND HEAT CONTENT ANALYSES RESULTS FOR BAGASSE FROM U.S. SUGAR CLEWISTON

Analysis Results (dry basis) for Sample Weeks (collection dates)

Parameter	Units	1/13-1/20/02	1/21-1/27/02	1/28-2/3/02	2/4-2/10/02	2/11-2/17/02	2/18-2/24/02	2/25-3/3/02	3/4-3/10/02	3/11-3/17/02	3/18-3/24/02	3/25-3/31/02
No. of Samples Composited		39	42	41	42	43	39	41	42	41	42	41
Moisture	%, as received	52.86	52.01	50.49	50.06	48.99	50.31	50.18	50.84	51.32	51.60	52.56
Ash	%	4.04	2.95	5.32	5.04	5.14	3.61	3.15	2.61	3.90	1.23	3.74
Ash	lb/MMBtu	5.10	6.54	6.90	6.39	6.54	4.48	3.98	3.25	4.91	4.03	4.65
Volatiles	%	85.41	86.38	83.24	82.85	83.42	84.52	85.49	87.68	87.31	84.04	84.82
Fixed C	%	10.55	10.67	11.44	12.10	11.44	11.87	11.36	9.71	8.79	12.73	11.44
HHV	Btu/lb, as received	3,735	3,828	3,874	3,938	4,005	4,012	3,941	3,951	3,872	3,869	3,923
HHV	Btu/lb, dry	7,922	7,978	7,824	7,884	7,852	8,073	7,911	8,017	7,953	7,994	8,058
MMF	Btu/lb	8,284	8,240	8,301	8,338	8,313	8,401	8,189	8,270	8,303	8,283	8,397
MAF	Btu/lb	8,256	8,220	8,264	8,303	8,277	8,376	8,168	8,253	8,276	8,261	8,372
Air Dry Loss	%	52.23	51.65	50.60	48.75	48.30	49.83	49.58	50.05	49.65	50.75	51.98
Carbon	%	47.50	47.65	47.06	46.91	46.78	47.75	48.12	48.26	47.61	48.34	47.51
Hydrogen	%	5.67	5.60	5.63	5.51	5.88	5.98	6.10	6.49	6.00	6.31	6.41
Nitrogen	%	0.36	0.38	0.36	0.28	0.33	0.40	0.36	0.41	0.38	0.38	0.41
Sulfur	%	0.06	0.05	0.07	0.03	0.07	0.07	0.04	0.01	0.01	0.05	0.07
Oxygen	%	42.37	43.37	41.56	42.07	41.80	42.19	42.23	42.19	42.05	41.69	41.80
SO_2	lb/MMBtu	0.15	0.13	0.16	0.08	0.18	0.18	0.10	0.10	0.10	0.13	0.18
F-Factor												
Fd	dscf/MMBtu	9,329	9,203	9,390	9,221	9,403	9,354	9,667	9,722	9,187	9,736	9,562

Parameter	Units	11/25-12/1/02	12/9-12/15/02	12/23-12/29/02	1/6-1/12/03	1/20-1/26/03	2/3-2/9/03	2/17-2/23/03	3/3-3/9/03	3/17-3/23/03	3/31-4/6/03
No. of Samples Composited		39	23	26	42	28	36	34	38	26	32
Moisture	%, as received	54.16	51.20	50.98	51.48	51.66	51.12	51.56	52.96	52.84	55.07
Ash	%	0.87	8.40	6.39	7.30	6.65	3.31	4.19	4.12	5.56	5.60
Ash	lb/MMBtu	6.00	10.96	8.09	9.54	8.75	4.17	5.02	5.21	7.05	7.16
Volatiles	%	87.75	79.86	[illegible]	81.43	81.59	83.90	83.65	85.91	82.98	82.33
Fixed C	%	11.38	11.74	12.72	11.27	11.76	12.79	12.16	9.97	11.46	12.07
HHV	Btu/lb, as received	3,721	3,740	3,873	3,715	3,675	3,880	4,047	3,711	3,715	3,517
HHV	Btu/lb, dry	8,119	7,664	7,900	7,658	7,602	7,936	8,356	7,896	7,878	7,827
MMF	Btu/lb	8,568	8,428	8,456	8,315	8,190	8,230	8,752	8,261	8,381	8,330
MAF	Btu/lb	8,533	8,366	8,440	8,261	8,143	8,208	8,722	8,236	8,342	8,291
Air Dry Loss	%	53.59	50.56	49.72	50.64	50.85	50.26	50.97	52.53	52.19	54.07
Carbon	%	48.26	46.35	46.44	46.11	49.51	50.79	50.94	49.91	49.23	48.88
Hydrogen	%	5.23	4.71	5.24	4.90	6.39	5.86	6.39	6.62	6.46	6.59
Nitrogen	%	0.29	0.25	0.31	0.33	0.33	0.33	0.31	0.38	0.30	0.30
Sulfur	%	0.09	0.05	0.05	0.07	0.07	0.09	0.08	0.06	0.07	0.09
Oxygen	%	41.26	40.24	41.34	41.29	37.05	39.62	38.09	38.91	38.38	38.54
SO_2	lb/MMBtu	0.22	0.13	0.13	0.19	0.19	0.23	0.19	0.15	0.18	0.24
F-Factor											
Fd	dscf/MMBtu	9,114	9,083	9,050	9,072	10,794	10,195	10,025	10,467	10,315	10,367

Note: % = percent
Btu/lb = British thermal unit per pound
C = carbon
HHV = higher heating value
lb/MMBtu = pounds per million British thermal unit
MAF = moisture and ash free, dry basis heating value without ash included
MMF = mineral and matter free, heating value without sulfur and ash included
SO_2 = sulfur dioxide

TABLE A-1
PROXIMATE, ULTIMATE, AND HEAT CONTENT ANALYSES RESULTS FOR BAGASSE FROM U.S. SUGAR CLEWISTON

Parameter	Units	BOILER MACT TESTING																							Boiler MACT Testing Average[a]	Range			Parameter
		3/24/05	3/24/05	3/25/05	3/25/05	3/26/05	3/26/05	6/1/06	6/1/06	6/2/06	6/2/06	6/2/06	11/28/06	11/28/06	11/28/06	12/1/06	12/1/06	12/1/06	1/5/07	1/5/07	1/5/07	1/25/07	1/25/07	1/25/07		Min	Max	Avg	
No. of Samples Composited		1	3	3	3	3	3	3	3	3	3	3	3	3	1	1	3	3	3	3	3	3	3	3	69	--	--	--	
Moisture	%, as received	54.29	56.02	59.11	57.27	58.61	58.16	59.95	50.41	49.01	49.00	46.23	56.48	55.50	55.57	54.38	57.30	56.16	52.42	51.62	51.55	51.53	53.08	52.03	54.07	45.99	55.07	51.24	Moisture
Ash	%	10.64	7.08	5.07	3.78	6.19	4.19	4.78	3.23	5.62	6.09	5.23	5.60	6.47	8.14	2.26	21.00	10.57	5.16	3.32	5.25	4.22	6.96	9.59	6.52	0.52	8.40	4.63	Ash
Ash	lb/MMBtu	14.42	9.11	6.39	4.62	7.87	5.26	5.94	3.69	10.90	7.70	6.45	7.46	8.33	10.75	2.16	32.54	14.11	6.64	4.19	6.44	5.27	8.80	12.32	9.01	1.25	10.96	6.26	Ash
Volatiles	%	77.65	81.26	83.28	84.71	82.05	82.91	83.96	81.46	75.32	79.51	77.89	83.44	81.73	79.57	77.02	68.52	77.51	83.18	83.65	82.11	84.31	81.90	78.57	80.36	79.96	87.68	83.72	Volatiles
Fixed C	%	11.71	11.66	11.65	11.51	11.73	12.90	11.26	14.91	16.02	14.40	16.89	10.76	11.80	13.25	11.44	10.48	11.92	11.66	12.98	12.16	11.47	11.14	11.54	12.55	8.79	12.79	11.35	Fixed C
HHV	Btu/lb, as received	3,373	3,416	3,240	3,441	3,255	3,137	3,218	4,118	4,025	4,034	4,360	3,211	3,456	3,360	3,152	3,014	3,257	3,609	3,890	3,617	3,903	3,710	3,402	3,578	3,517	4,047	3,519	HHV
HHV	Btu/lb, dry	7,378	7,769	7,923	8,130	7,964	7,962	8,185	8,303	7,816	7,910	8,108	7,712	7,765	7,566	7,347	6,453	7,477	7,774	8,041	7,819	8,002	7,909	7,717	7,789	7,302	8,356	7,914	HHV
MMF	Btu/lb	8,335	8,412	8,381	8,517	8,426	8,349	8,650	8,603	8,705	8,466	8,593	8,259	8,348	8,593	8,371	8,346	8,310	8,217	8,342	8,360	8,363	8,552	8,640	8,434	8,189	8,752	8,350	MMF
MAF	Btu/lb	8,256	8,161	8,346	8,450	8,382	8,310	8,596	8,560	8,612	8,422	8,556	8,218	8,303	8,236	8,366	8,169	8,260	8,167	8,321	8,313	8,349	8,501	8,564	8,381	8,543	8,722	8,316	MAF
Air Dry Loss	%	52.74	55.35	58.24	56.50	57.82	57.27	58.15	48.08	47.22	45.83	41.77	47.65	54.70	54.92	53.55	52.59	55.24	51.21	50.32	51.44	46.97	50.74	57.40	52.41	45.50	54.07	50.45	Air Dry Loss
Carbon	%	45.76	45.29	48.91	50.05	48.15	49.61	50.33	50.22	45.60	50.00	50.47	51.14	50.06	49.64	47.52	42.47	47.21	52.94	53.32	52.36	52.29	51.07	49.23	41.55	46.11	50.94	49.37	Carbon
Hydrogen	%	5.58	5.79	5.80	5.20	5.55	5.62	5.93	5.92	5.11	5.61	5.60	6.04	6.07	5.96	5.57	5.19	5.85	5.56	5.99	[illegible]	5.96	5.77	[illegible]	5.74	4.71	6.62	5.90	Hydrogen
Nitrogen	%	0.52	0.47	0.49	0.55	0.42	0.44	0.42	0.12	0.26	0.44	0.40	0.18	0.52	0.55	0.18	0.49	0.35	0.27	0.28	0.28	0.33	0.42	0.35	0.43	0.25	0.37	0.35	Nitrogen
Sulfur	%	0.05	0.06	0.07	0.03	0.06	0.06	0.07	0.06	0.05	0.09	0.09	0.16	0.07	0.07	0.04	0.05	0.03	0.08	0.46	0.06	0.04	0.07	0.05	0.09	0.03	0.09	0.06	Sulfur
Oxygen	%	37.43	38.71	39.66	40.11	39.63	40.05	38.57	39.69	36.65	37.76	38.21	37.39	36.91	35.62	34.20	30.80	35.29	35.93	36.56	36.65	37.16	35.71	34.74	37.07	37.05	43.37	40.63	Oxygen
SO_2	lb/MMBtu	0.14	0.16	0.18	0.12	0.16	0.16	0.18	0.15	0.11	0.21	0.21	0.26	0.18	0.24	0.75	0.16	0.19	0.21	1.20	0.15	0.11	0.19	0.13	0.23	0.05	0.24	0.15	SO_2
F Factor																													
Fd	dscf/MMBtu	9,927	9,967	9,821	9,415	9,631	9,801	9,545	9,753	9,422	10,550	9,883	10,416	10,455	10,716	10,492	10,561	10,254	10,841	10,904	10,513	10,582	10,471	10,341	10,213	9,070	10,794	9,671	Fd

Note: % = percent
Btu/lb = British thermal unit per pound
C = carbon
HHV = higher heating value
lb/MMBtu = pounds per million British thermal unit
MAF = moisture and ash free; dry basis heating value with ash included
MMF = mineral and matter free; heating value without sulfur and ash included
SO_2 = sulfur dioxide

[a] The average of the Boiler MACT tests was used to determine the total average, minimum, and maximum. This was done for consistency since the historical bagasse data is based on weekly composites.

TABLE A-2
METALS AND CHLORINE ANALYSES FOR BAGASSE FROM U.S. SUGAR CLEWISTON

Parameter	Units	1/14-1/20/02	1/14-1/20/02 Duplicate	1/21-1/27/02	1/28-2/3/02	2/4-2/10/02	2/11-2/17/02	2/11-2/17/02 Duplicate	2/18-2/24/02	2/25-3/3/02	3/4-3/10/02	3/4-3/10/02 Duplicate	3/11-3/17/02	3/18-3/24/02	3/25-3/31/02	3/25-3/31/02 Duplicate	11/25-12/1/02	12/9-12/15/02	12/23-12/29/02	12/23-12/29/02 Duplicate	1/6-1/12/03	1/20-1/26/03	2/3-2/9/03
		Concentration (dry basis) for Sample Weeks (collection dates)																					
Chlorine	ppm	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	399.45	41.91	176.63	–	314.44	391.10	667.94
Arsenic	ppm	0.6	0.6	0.5	0.5	< 0.4	0.5	0.2	0.7	0.5	0.4	0.4	< 0.5	0.4	0.3	0.4	0.4	–	0.1	0.5	–	< 1.8	
Beryllium	ppm	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	–	< 0.1	< 0.1	–	< 0.2	
Cadmium	ppm	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	–	< 0.1	< 0.1	–	< 0.1	
Chromium	ppm	0.4	0.6	0.2	0.3	0.6	0.5	0.4	0.2	0.3	0.5	0.7	0.7	0.3	0.2	0.2	0.6	–	0.5	0.6	–	0.6	–
Lead	ppm	0.5	0.7	< 0.3	< 0.3	< 0.4	< 0.3	< 0.5	< 0.3	0.2	< 0.3	0.5	< 0.3	< 0.1	< 0.3	< 0.3	< 0.7	–	0.4	0.4	–	< 1.6	–
Manganese	ppm	6.1	7.5	7.2	6.9	7.4	6.2	3.0	6.2	5.6	1.0	1.6	5.8	6.1	10.9	11.6	9.5	4.4	3.6	9.6	10.2	7.7	8.0
Nickel	ppm	< 0.2	0.2	< 0.2	< 0.2	0.5	0.3	< 0.2	0.3	< 0.2	0.1	0.2	< 0.3	< 0.2	0.2	0.1	0.4		0.5	0.6	–	< 1.3	–
Selenium	ppm	1.0	1.0	0.7	0.9	0.4	0.5	0.1	0.5	0.7	0.6	0.9	0.6	0.7	0.7	0.7	0.9	–	1.2	1.1	–	< 1.3	–
Mercury	ppm	< 0.1	< 0.1	< 0.1	< 0.1	< 0.22	< 0.1	< 0.13	< 0.1	< 0.1	< 0.2	< 0.2	< 0.27	< 0.02	< 0.02	< 0.07	< 0.2	–	< 0.19	< 0.1	–	< 0.07	–
Moisture	%	50.6	51.5	45.6	57.9	54.3	51.4	49.2	46.7	46.3	46.9	50.1	41.6	52.1	43.4	49.5	51.8	49.3	44.5	51.6	54.4	47.6	44.1
No. of Samples Composited		39	39	47	41	43	45	41	39	41	47	42	41	47	41	41	39	21	26	26	41	26	16

Parameter	Units	1/14-1/20/02	1/14-1/20/02 Duplicate	1/21-1/27/02	1/28-2/3/02	2/4-2/10/02	2/11-2/17/02	2/11-2/17/02 Duplicate	2/18-2/24/02	2/25-3/3/02	3/4-3/10/02	3/4-3/10/02 Duplicate	3/11-3/17/02	3/18-3/24/02	3/25-3/31/02	3/25-3/31/02 Duplicate	11/25-12/1/02	12/9-12/15/02	12/23-12/29/02	12/23-12/29/02 Duplicate	1/6-1/12/03	1/20-1/26/03	2/3-2/9/03
		Concentration (dry basis) for Sample Weeks (collection dates)																					
HHV	Btu/lb	7,922	7,922	7,576	7,626	7,884	7,852	7,732	8,071	7,911	8,037	8,037	7,941	7,994	8,094	8,055	8,135	7,844	7,600	7,926	7,655	7,642	[illegible]
Chlorine	lb/MMBtu	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.049	0.054	0.046	–	0.078	0.051	0.054
Arsenic	lb/MMBtu	7.57E-05	7.57E-05	6.21E-05	6.59E-05	< 5.07E-05	7.52E-05	2.59E-05	2.44E-05	3.79E-05	4.98E-05	4.99E-05	< 3.27E-05	5.14E-05	1.72E-05	4.96E-05	4.94E-05	–	1.40E-05	6.35E-05	–	< 2.27E-04	
Beryllium	lb/MMBtu	< 1.26E-05	< 1.26E-05	< 1.25E-05	< 1.25E-05	< 1.27E-05	< 1.27E-05	< 1.27E-05	< 1.24E-05	< 1.26E-05	< 1.24E-05	< 1.24E-05	< 1.26E-05	< 1.25E-05	< 1.24E-05	< 1.24E-05	< 1.23E-05	–	< 1.27E-05	< 1.27E-05	–	< 2.49E-05	–
Cadmium	lb/MMBtu	< 1.26E-05	< 1.26E-05	< 1.25E-05	< 1.24E-05	< 1.27E-05	< 1.27E-05	< 1.27E-05	< 1.24E-05	< 1.26E-05	< 1.24E-05	< 1.24E-05	< 1.26E-05	< 1.25E-05	< 1.24E-05	< 1.24E-05	< 1.23E-05	–	< 1.27E-05	< 1.27E-05	–	< 3.99E-05	–
Chromium	lb/MMBtu	5.05E-05	7.57E-05	2.50E-05	3.83E-05	7.60E-05	6.37E-05	5.09E-05	2.48E-05	3.79E-05	6.22E-05	8.85E-05	2.51E-05	3.75E-05	1.24E-05	2.48E-05	9.85E-05	–	6.33E-05	7.49E-05	–	7.59E-05	–
Lead	lb/MMBtu	3.79E-05	2.52E-05	< 3.79E-05	< 3.83E-05	< 5.07E-05	< 3.81E-05	< 3.17E-05	< 3.72E-05	2.53E-05	< 3.73E-05	3.73E-05	< 3.77E-05	< 3.75E-05	< 3.72E-05	< 3.72E-05	< 2.44E-05		5.06E-05	5.06E-05	–	< 2.37E-04	–
Manganese	lb/MMBtu	1.02E-03	9.47E-04	9.02E-04	1.14E-03	9.39E-04	1.04E-03	1.02E-03	7.65E-04	7.08E-04	9.95E-04	1.11E-03	7.29E-04	7.69E-04	1.35E-03	1.46E-03	1.17E-03	1.29E-03	9.15E-04	1.22E-03	1.33E-03	1.01E-03	1.01E-03
Nickel	lb/MMBtu	< 2.52E-05	2.52E-05	< 2.51E-05	< 2.56E-05	6.54E-05	3.55E-05	< 2.55E-05	2.45E-05	< 2.53E-05	1.11E-05	2.49E-05	< 2.51E-05	< 2.50E-05	2.48E-05	1.23E-05	4.91E-05	–	6.33E-05	7.59E-05	–	< 1.97E-04	
Selenium	lb/MMBtu	1.26E-04	1.26E-04	8.83E-05	1.03E-04	5.07E-05	6.35E-05	1.27E-05	6.19E-05	8.85E-05	9.95E-05	1.12E-04	7.54E-05	8.75E-05	8.65E-05	8.69E-05	1.11E-04	–	1.57E-04	1.39E-04	–	< 1.97E-04	
8 Metals Total		1.34E-03	1.29E-03	1.12E-03	1.39E-03	1.19E-03	1.27E-03	1.21E-03	9.35E-04	9.25E-04	1.34E-03	1.44E-03	6.97E-04	1.01E-03	1.55E-03	1.69E-03	1.50E-03	–	1.31E-03	1.61E-03	–	1.56E-03	–
6 Metals w/o Mn	lb/MMBtu	3.16E-04	3.41E-04	2.19E-04	2.49E-04	2.54E-04	2.32E-04	2.10E-04	1.67E-04	2.15E-04	3.40E-04	3.34E-04	1.61E-04	2.49E-04	1.92E-04	2.30E-04	3.31E-04	–	3.93E-04	4.17E-04	–	5.46E-04	–
Mercury[b]	lb/MMBtu	< 1.26E-05	< 1.26E-05	< 1.25E-05	< 1.31E-05	< 2.29E-05	< 2.55E-05	< 2.17E-05	< 1.24E-05	< 1.26E-05	< 2.49E-05	< 2.49E-05	< 2.73E-05	< 2.50E-06	< 2.48E-06	< 2.44E-06	< 2.46E-05	–	< 2.41E-05	< 2.41E-05	[illegible]	< 3.65E-06	[illegible]
Manganese	lb/MMBtu	1.02E-03	9.47E-04	9.02E-04	1.14E-03	9.39E-04	1.04E-03	1.02E-03	7.65E-04	7.08E-04	9.95E-04	1.11E-03	7.29E-04	7.69E-04	1.35E-03	1.46E-03	1.17E-03	1.29E-03	9.15E-04	1.22E-03	1.33E-03	1.01E-03	1.01E-03

[a] For concentrations that are reported as below detection limit the minimum, maximum, average, and standard deviation were calculated by taking one half of detection level. Duplicate samples were not included in the calculations.

[b] Minimum, maximum, average, and standard deviation for mercury are based only on the individual samples with a lower detection limit.

[c] 90% confidence level calculated based on the following equation [40 CFR 63.7530(b)(2)]:

P_{90} = mean + (SD × t) where:

P_{90} = 90% confidence level pollutant concentration (lb/MMBtu)

mean = average of fuel sampling analyses (lb/MMBtu)

SD = standard deviation of pollutant concentrations (lb/MMBtu)

t = t distribution critical value for 90% confidence probability (0.1) for n-1 degrees of freedom

n = number of samples

[d] Not included because considered an outlier based on all previous testing.

[e] The average of the Boiler MACT tests was used to determine the total average, minimum, maximum, and 90% confidence level. This was done for consistency since the historical bagasse data is based on similar composites.

TABLE A-2
METALS AND CHLORINE ANALYSES FOR BAGASSE FROM U.S. SUGAR CLEWISTON

Parameter	Units	Concentrations (dry basis) for Sample Dates (collection dates)												BOILER MACT TESTING												
		2/17-2/23/03	3/3-3/9/03	3/3-3/9/03 Duplicate	3/17-3/23/03	3/31-4/6/03	3/31-4/6/03 Duplicate	3/24/05	3/24/05	3/25/05	3/26/05	3/26/05	3/26/05	6/1/06	6/1/06	6/2/06	6/2/06	6/2/06	11/28/06	11/28/06	11/29/06	12/1/06	12/1/06	12/1/06	1/5/07	1/5/07
Chlorine	ppm	558.86	631.00	–	601.89	319.74	–	380	410	590	490	610	500	650	570	[illegible]	570	[illegible]	210	260	140	250	290	230	110	210
Arsenic	ppm	0.5	–	–	0.5	–	–	0.7	0.6	0.9	< 0.1	< 0.6	0.5	–	–	–	–	–	–	–	–	–	–	–	–	–
Beryllium	ppm	< 0.2	–	–	< 0.2	–	–	< 1.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	–	–	–	–	–	–	–	–	–	–	–	–	–
Cadmium	ppm	< 0.4	–	–	< 0.4	–	–	< 0.2	< 0.2	< 0.2	< 0.2	< 0.4	< 0.2	–	–	–	–	–	–	–	–	–	–	–	–	–
Chromium	ppm	0.5	–	–	0.5	–	–	1	0.4	0.7	0.9	0.5	0.4	–	–	–	–	–	–	–	–	–	–	–	–	–
Lead	ppm	0.3	–	–	0.3	–	–	0.3	0.2	0.5	0.3	0.2	< 0.2	–	–	–	–	–	–	–	–	–	–	–	–	–
Manganese	ppm	6.3	7.6	6.3	11	12.8	9	10.7	10	7.6	10.5	8.4	7.4	17.4	8.2	16.4	*	11.2	–	–	–	–	–	–	21.0	15.0
Nickel	ppm	0.2	–	–	0.2	–	–	0.5	0.2	0.3	0.4	0.2	0.2	–	–	–	–	–	–	–	–	–	–	–	–	–
Selenium	ppm	0.7	–	–	0.4	–	–	0.9	0.9	1.2	0.9	1.0	0.9	–	–	–	–	–	–	–	–	–	–	–	–	–
Mercury	ppm	< 0.01	–		< 0.01	–	–	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.01	0.07	0.02	0.01	0.03	0.05	0.05	0.06	0.06	0.06	0.02	0.01
Moisture	%	49.4	55.0	51.0	52.8	55.1	55.1	49.6	51.9	57.4	51.9	57.0	59.0	60.0	50.4	49.0	49.0	46.2	58.5	55.5	55.6	51.6	52.6	55.3	52.4	54.6
No. of Samples Composited		34	31	31	26	32	32	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Parameter	Units	Concentrations (dry basis) for Sample Dates (collection dates)												BOILER MACT TESTING												
		2/17-2/23/03	3/3-3/9/03	3/3-3/9/03 Duplicate	3/17-3/23/03	3/31-4/6/03	3/31-4/6/03 Duplicate	3/24/05	3/24/05	3/25/05	3/26/05	3/26/05	3/26/05	6/1/06	6/1/06	6/2/06	6/2/06	6/2/06	11/28/06	11/28/06	11/29/06	12/1/06	12/1/06	12/1/06	1/5/07	1/5/07
HHV	Btu/lb	8,356	[illegible]	7,856	7,811	7,82[illegible]	–	7,316	7,569	7,621	8,170	7,564	7,562	4,185	5,363	7,576	7,960	[illegible]	7,567	7,765	7,566	[illegible]	6,451	[illegible]	7,774	8,044
Chlorine	lb/MMBtu	0.067	0.066	–	0.077	0.042	–	0.052	0.053	0.074	0.059	0.068	0.063	0.079	0.061	0.074	0.117	0.029	0.016	0.033	0.046	0.034	0.045	0.031	0.042	0.026
Arsenic[a]	lb/MMBtu	5.98E-05	–	–	5.13E-05	–	–	[illegible]	7.72E-05	1.18E-04	< 9.79E-05	< 2.63E-05	6.27E-05	–	–	–	–	–	–	–	–	–	–	–	–	–
Beryllium	lb/MMBtu	< 2.39E-05	–	–	< 2.56E-05	–	–	< 2.31E-05	< 2.57E-05	< 2.52E-05	< 2.45E-05	< 2.54E-05	< 2.31E-05	–	–	–	–	–	–	–	–	–	–	–	–	–
Cadmium	lb/MMBtu	< 4.79E-05	–	–	< 5.12E-05	–	–	< 2.71E-05	< 2.57E-05	< 2.51E-05	< 2.45E-05	< 3.09E-05	< 2.43E-05	–	–	–	–	–	–	–	–	–	–	–	–	–
Chromium	lb/MMBtu	5.99E-05	–	–	6.39E-05	–	–	[illegible]	[illegible]	8.82E-05	9.79E-05	6.76E-05	5.02E-05	–	–	–	–	–	–	–	–	–	–	–	–	–
Lead	lb/MMBtu	3.59E-05	–	–	3.83E-05	–	–	[illegible]	2.57E-05	7.70E-05	3.67E-05	2.54E-05	< 2.51E-05	–	–	–	–	–	–	–	–	–	–	–	–	–
Manganese	lb/MMBtu	7.54E-04	8.37E-04	7.98E-04	1.44E-03	1.54E-03	–	[illegible]	1.29E-03	9.34E-04	1.29E-03	1.08E-03	9.29E-04	2.17E-03	9.4[illegible]E-04	2.29E-03	*	1.39E-03	–	–	–	–	–	–	2.96E-03	2.24E-03
Nickel	lb/MMBtu	2.39E-05	–	–	2.56E-05	–	–	6.7[illegible]E-05	2.57E-05	3.9[illegible]E-05	4.90E-05	2.54E-05	2.51E-05	–	–	–	–	–	–	–	–	–	–	–	–	–
Selenium	lb/MMBtu	8.38E-05	–	–	5.11E-05	–	–	1.2[illegible]E-04	1.19E-04	1.5[illegible]E-04	1.10E-04	1.27E-04	1.15E-04	–	–	–	–	–	–	–	–	–	–	–	–	–
8 Metals Total		1.09E-03	–	–	1.85E-03	–	–	1.91E-03	1.61E-03	1.39E-03	1.65E-03	1.45E-03	1.22E-03	–	–	–	–	–	–	–	–	–	–	–	–	–
8 Metals w/o Mn	lb/MMBtu	2.93E-04	–	–	2.34E-04	–	–	[illegible]	3.2[illegible]E-04	4.5[illegible]E-04	3.67E-04	3.18E-04	2.89E-04	–	–	–	–	–	–	–	–	–	–	–	–	–
Mercury[b]	lb/MMBtu	< 1.20E-06	–	–	< 1.27E-06	–	–	< 1.3[illegible]E-06	< 1.2[illegible]E-06	< 1.26E-06	< 1.22E-06	< 1.27E-06	< 1.26E-06	2.44E-06	1.20E-06	2.54E-06	2.58E-06	1.28E-06	6.44E-06	6.44E-06	6.61E-06	8.13E-06	8.10E-06	5.35E-06	2.33E-06	1.24E-06
Manganese	lb/MMBtu	7.54E-04	8.37E-04	7.98E-04	1.44E-03	1.54E-03	–	1.47E-03	1.29E-03	9.34E-04	1.29E-03	1.01E-03	9.29E-04	2.17E-03	9.5[illegible]E-04	2.29E-03	*	1.39E-03	–	–	–	–	–	–	2.96E-03	3.24E-03

[a] For concentrations that are reported below detection limit the maximum, minimum, average and standard deviation were calculated by taking one half of detection limit. Duplicate samples were not included in the calculation.

[b] Maximum, minimum, average, and standard deviation for mercury are based only on the individual samples with a known detection limit.

[c] 90% confidence level calculated based on the following equation [40 CFR 63.7530(b)(2)(ii)]:

P_{90} = mean + (SD * t), where:

P_{90} = 90% confidence level pollutant concentration (lb/MMBtu)

mean = average of fuel samples analyzed (lb/MMBtu)

SD = standard deviation of pollutant concentration (lb/MMBtu)

t = t distribution critical value for 90% confidence probability (0.1) for n-1 degrees of freedom

n = number of samples

[d] Not included because considered an outlier based on all previous testing. Lab is now flowing results by [illegible].

[e] The average of the Boiler MACT tests was used to determine the total average, minimum, maximum, and 90% confidence level. This was done for consistency since the historical bagasse data is based on weekly composites.

Parameter	Units	BOILER MACT TESTING 1/5/07	1/25/07	1/25/07	1/25/07	Boiler MACT Testing Average[1]	Range[1] Min	Max	Avg[1]	Parameter
Chlorine	ppm	250	340	[illegible]	300	[illegible]	[illegible]	720	[illegible]	Chlorine
Arsenic	ppm	–	–	–	–	0.6	[illegible]	0.90	[illegible]	Arsenic
Beryllium	ppm	–	–	–	–	0.1	< 0.05	< 0.10	< 0.06	Beryllium
Cadmium	ppm	–	–	–	–	0.1	< 0.05	< 0.20	< 0.06	Cadmium
Chromium	ppm	–	–	–	–	0.6	0.20	0.60	0.41	Chromium
Lead	ppm	–	–	–		0.2	0.12	0.90	0.24	Lead
Manganese	ppm	19.0	4.8	9.6	15.0	13.7	5.4	13.7	[illegible]	Manganese
Nickel	ppm	–	–	–	–	0.5	0.10	0.75	0.25	Nickel
Selenium	ppm	–	–	–	–	1.0	0.40	1.20	0.72	Selenium
Mercury	ppm	0.01	< 0.01	0.01	[illegible]	0.02	0.01	0.11	[illegible]	Mercury
Moisture	%	51.6	51.2	53.8	57.0	53.8	46.0	55.8	53.3	Moisture
No. of Samples Composited		3	5	3	3	69	–	–	–	

Parameter	Units	BOILER MACT TESTING 1/5/07	1/25/07	1/25/07	1/25/07	Boiler MACT Testing Average[5]	Range[1] Min	Max	Avg[1]	Standard Deviation[1]		90% Confidence Level[3]	Parameter
HHV	Btu/lb	7,419	[illegible]	3,9[illegible]	3,712	3,769	3,672	4,356	[illegible]	–		–	HHV
Chlorine	lb/MMBtu	0.032	0.042	0.047	0.039	0.051	0.019	0.092	0.061	0.014		0.084	Chlorine
											n =	11	
											t =	1.372	
Arsenic	lb/MMBtu	–	–	–	–	7.29E-05	1.83E-05	1.18E-04	5.06E-05	–		–	Arsenic
Beryllium	lb/MMBtu	–	–	–	–	1.29E-05	< 6.94E-06	< 1.32E-05	< 7.74E-06	–		–	Beryllium
Cadmium	lb/MMBtu	–	–	–	–	1.49E-05	< 6.11E-06	< 2.54E-05	< [illegible]	–		–	Cadmium
Chromium	lb/MMBtu	–	–	–	–	8.47E-05	1.74E-05	9.43E-05	5.15E-05	–		–	Chromium
Lead	lb/MMBtu	–	–	–		2.96E-05	1.21E-05	1.18E-04	3.29E-05	–		–	Lead
Manganese	lb/MMBtu	2.43E-03	7.59E-04	1.14E-03	2.31E-03	1.60E-03	2.09E-04	1.60E-03	1.[illegible]E-03	–		–	Manganese
Nickel	lb/MMBtu	–	–	–	–	5.40E-05	1.25E-05	9.87E-05	5.21E-05			–	Nickel
Selenium	lb/MMBtu	–	–	–	–	1.21E-04	5.[illegible]E-05	1.52E-04	9.12E-05	–		–	Selenium
8 Metals Total		–	–	–	–	1.97E-03	9.93E-04	1.97E-03	1.29E-03	2.99E-04		1.49E-03	8 Metals
											n =	17	
											t =	[illegible]	
7 Metals w/o Mn	lb/MMBtu	–	–	–	–	3.44E-04	1.47E-04	3.46E-04	2.74E-04	9.44E-05		4.30E-04	7 Metals w/o Mn
											n =	17	
											t =	1.337	
Mercury[2]	lb/MMBtu	1.27E-06	< 1.25E-06	1.26E-06	1.8[illegible]E-06	1.93E-06	5.98E-07	2.40E-06	1.5[illegible]E-06	7.99E-07		2.4[illegible]E-06	Mercury[2]
											n =	6	
											t =	1.476	
Manganese	lb/MMBtu	2.41E-03	7.58E-04	1.14E-03	2.13E-03	1.60E-03	7.09E-04	1.60E-03	1.09E-03	2.5[illegible]E-04		1.40E-03	Manganese
											n =	22	
											t =	1.323	

[1] For concentrations that are reported as below detection limit the minimum, maximum, average, and standard deviation were calculated by taking one half of detection limit. Duplicate samples were not included in the calculations.

[2] Maximum, minimum, average, and standard deviation for mercury are based only on the individual samples with a lower detection limit.

[3] 90% confidence level calculated based on the following equation [40 CFR 63.7550 (b)(2)]:

P_{90} = mean + (SD * t), where

P_{90} = 90% confidence level pollutant concentration (lb/MMBtu)

mean = average of fuel sample analysis (lb/MMBtu)

SD = standard deviation of pollutant concentration (lb/MMBtu)

t = t distribution critical value for 90% confidence probability (0.1) for n-1 degrees of freedom

n = number of samples

[4] Not included because it was deemed an outlier based on all previous testing. Lab is reconfirming results by re-analysis.

[5] The average of the Boiler MACT tests was used to determine the total average, minimum, maximum, and 90% confidence level. This was done for consistency since the historical bypass data is based on weekly composites.

TABLE A-3
WOOD CHIP ANALYSIS - U.S. SUGAR CLEWISTON - BOILER NO. 8

Parameter	Units	Sample 1 6/1/2006	Sample 2 6/1/2006	Sample 3 6/1/2006	1036-1142 8/22/2006	1320-1426 8/22/2006	1530-1636 8/22/2006	Average
		Analysis Results - Wood Chip Samples						
No. of Samples Composited		5	5	5	3	3	3	
Moisture	%, as received	32.24	33.95	30.20	36.57	32.72	33.93	33.27
Ash	%, as received	5.73	8.52	8.86	12.08	12.02	11.70	9.82
Ash	%, dry basis	8.46	12.90	12.70	19.04	17.87	17.71	14.78
HHV	Btu/lb, as received	5,434	4,901	5,157	4,397	4,757	4,782	4,905
HHV	Btu/lb, dry basis	8,018	7,421	7,388	6,932	7,071	7,238	7,345
Nitrogen	%, as received	0.44	0.30	0.29	0.33	0.32	0.36	0.34
Nitrogen	%, dry basis	0.65	0.45	0.42	0.52	0.48	0.54	0.51
Chlorine	%, as received	0.173	0.132	0.122	0.092	0.095	0.107	0.12
Chlorine	%, dry basis	0.255	0.200	0.175	0.145	0.141	0.161	0.18
Chlorine	lb/MMBtu	0.318	0.269	0.237	0.209	0.199	0.222	**0.24**
							Standard deviation =	**0.04**
							t-distribution =	**1.475884**
							90th percentile =	**0.31**
Mercury	ppm, as received	0.04	0.03	0.03	0.01	0.01	0.01	0.02
Mercury	ppm, dry basis	0.05	0.04	0.04	0.02	0.02	0.02	0.03
Mercury	lb/MMBtu	6.2E-06	5.4E-06	5.4E-06	2.9E-06	2.8E-06	2.8E-06	**4.3E-06**
							Standard deviation =	**1.6E-06**
							t-distribution =	**1.475884**
							90th percentile =	**6.6E-06**
Arsenic	ppm, as received	3.1	3.4	12.4	--	--	--	6.3
Arsenic	ppm, dry basis	4.5	5.1	17.7	--	--	--	9.1
Arsenic	lb/MMBtu	5.7E-04	6.9E-04	2.4E-03	--	--	--	1.2E-03
Beryllium	ppm, dry basis	<0.08	<0.1	<0.1	--	--	--	0.1
Beryllium	lb/MMBtu	1.0E-05	1.3E-05	1.4E-05	--	--	--	1.2E-05
Cadmium	ppm, dry basis	0.69	0.88	0.72	--	--	--	0.76
Cadmium	lb/MMBtu	8.5E-05	1.2E-04	9.8E-05	--	--	--	1.0E-04
Chromium	ppm, dry basis	12.7	14.2	16.5	--	--	--	14.5
Chromium	lb/MMBtu	1.6E-03	1.9E-03	2.2E-03	--	--	--	1.9E-03
Lead	ppm, dry basis	6.3	6.3	5.8	--	--	--	6.1
Lead	lb/MMBtu	7.8E-04	8.5E-04	7.9E-04	--	--	--	8.1E-04
Manganese	ppm, dry basis	34.3	37.0	25.1	19.0	18.0	19.0	25.4
Manganese	lb/MMBtu	4.3E-03	5.0E-03	3.4E-03	2.7E-03	2.5E-03	2.6E-03	**3.4E-03**
							Standard deviation =	**1.0E-03**
							t-distribution =	**1.475884**
							90th percentile =	**4.9E-03**
Nickel	ppm, dry basis	1.7	2.6	1.3	--	--	--	1.8
Nickel	lb/MMBtu	2.1E-04	3.5E-04	1.7E-04	--	--	--	2.4E-04
Selenium	ppm, as received	0.06	0.06	0.06	--	--	--	0.06
Selenium	ppm, dry basis	0.08	0.09	0.09	--	--	--	0.09
Selenium	lb/MMBtu	1.0E-05	1.2E-05	1.2E-05	--	--	--	1.1E-05
TSM[a]	ppm, dry basis	60.3	66.2	67.3	--	--	--	64.6
TSM[a]	lb/MMBtu	7.5E-03	8.9E-03	9.1E-03	--	--	--	**8.5E-03**
							Standard deviation =	**8.7E-04**
							t-distribution =	**1.885618**
							90th percentile =	**0.010**

Note: % = percent

Btu/lb = British thermal unit per pound

HHV = higher heating value

lb/MMBtu = pound per million British thermal units

ppm = parts per milion

TSM = total selected metals (arsenic, beryllium, cadmium, chromium, lead, manganese, nickel and selenium)

Footnotes:

[a] For informational purposes only. Boiler No. 8 complies with the MACT limit for PM.

TABLE A-4a
HCL AND Cl_2 STACK TEST RESULTS ON BOILER NOS. 1, 4, AND 7, U.S. SUGAR CLEWISTON

Parameter	Source of Data	Boiler No. 1 11/28/06 0919-1022	Boiler No. 1 11/28/06 1107-1209	Boiler No. 1 11/28/06 1303-1407	Boiler No. 1 Average	Boiler No. 4 12/1/06 1256-1402	Boiler No. 4 12/1/06 1446-1551	Boiler No. 4 12/1/06 1622-1735	Boiler No. 4 Average	Boiler No. 7 1/25/07 0909-1013	Boiler No. 7 1/25/07 1106-1210	Boiler No. 7 1/25/07 1325-1429	Boiler No. 7 Average
Fuel Type		89% Bagasse/11% Oil	94% Bagasse/6% Oil	97% Bagasse/3% Oil		83% Bagasse/17% Oil	84% Bagasse/16% Oil	83% Bagasse/17% Oil		100% Bagasse	100% Bagasse	100% Bagasse	
F-Factor (dscf/MMBtu) [a]	Fuel Analysis	10,436	10,435	10,716	10,529	10,482	10,561	10,254	10,432	10,582	10,471	10,391	10,481
Stack Flow (acfm)	Stack Test	228,163	286,469	271,574	262,069	228,163	228,163	228,163	228,163	318,415	301,630	301,314	307,120
Stack Flow (dscfm)	Stack Test	122,830	160,360	152,745	145,312	122,830	122,830	122,830	122,830	185,293	174,015	175,714	178,341
Stack Temp (deg F)	Stack Test	154.8	156.6	158.8	156.7	151.3	152.8	152.3	152.1	275.6	272.8	271.3	273.2
Oxygen (%) - dry basis	Stack Test	14.0	12.0	13.0	13.0	10.5	9.7	10.1	10.1	10.6	9.8	10.7	10.4
Steam Production (lb/hr)	Stack Test	165,882	171,045	165,217	167,381	245,070	255,000	246,038	248,703	307,597	319,097	290,569	305,754
Heat Input from F-Factor (MMBtu/hr)	Stack Test	234	392	323	316	352	374	371	366	520	531	495	515
Hydrogen Chloride (lb/hr)	Stack Test	0.53	1.33	1.22	1.03	0.94	0.91	0.69	0.85	0.93	0.75	2.81	1.50
Hydrogen Chloride (lb/MMBtu)	Stack Test	0.0023	0.0034	0.0038	0.0032	0.0027	0.0024	0.0019	0.0023	0.0018	0.0014	0.0057	0.0030
Chlorine Gas (lb/hr)	Stack Test	0.39	0.36	0.58	0.44	0.56	0.57	0.50	0.54	1.13	1.31	1.28	1.24
Chlorine Gas (lb/MMBtu)	Stack Test	0.0017	0.0012	0.0015	0.0014	0.0016	0.0015	0.0013	0.0015	0.0022	0.0025	0.0026	0.0024
Chlorine (lb/MMBtu)	Fuel Analysis	0.036	0.043	0.038	0.039	0.034	0.045	0.031	0.037	0.042	0.042	0.039	0.041
			Percentage of chlorine in fuel emitted as HCl =		8%		Percentage of chlorine in fuel emitted as HCl =		6%		Percentage of chlorine in fuel emitted as HCl =		7%
			Percentage of chlorine in fuel emitted as Cl_2 =		4%		Percentage of chlorine in fuel emitted as Cl_2 =		4%		Percentage of chlorine in fuel emitted as Cl_2 =		6%

Notes:
lb/hr = pound per hour
MMBtu/hr = million British thermal units per hour
acfm = actual cubic foot per minute
dscfm = dry standard cubic foot per minute
F = Fahrenheit
% = percent
lb/MMBtu = pound per million British thermal units
dscf/MMBtu = dry standard cubic foot per million British thermal units

[a] Fuel factors for Boiler No. 1 and Boiler No. 4 are representative of the combination of bagasse and oil firing.

TABLE A-4b

HCL AND CL_2 STACK TEST RESULTS ON BOILER NO. 8, U.S. SUGAR CLEWISTON

Parameter	Source of Data	Boiler No. 8 [a] 1/5/07 1058-1158	Boiler No. 8 [a] 1/5/07 1345-1445	Boiler No. 8 [a] 1/5/07 1622-1722	Boiler No. 8 [a] Average	Boiler No. 8 [a] 8/22/06 1036-1142	Boiler No. 8 [a] 8/22/06 1320-1426	Boiler No. 8 [a] 8/22/06 1530-1636	Boiler No. 8 [a] Average
Fuel Type		Bagasse	Bagasse	Bagasse		Wood Chips	Wood Chips	Wood Chips	
F-Factor (dscf/MMBtu)	Fuel Analysis	10,904	10,804	10,843	**10,850**	11,162	11,501	11,005	**11,223**
Stack Flow (acfm)	Stack Test	421,959	429,330	443,786	**431,692**	262,552	256,382	257,466	**258,800**
Stack Flow (dscfm)	Stack Test	216,073	216,113	219,030	**217,072**	148,855	146,795	148,794	**148,148**
Stack Temp. (deg. F)	Stack Test	353	358	362	**358**	315	313	315	**314**
Oxygen (%) - dry basis	Stack Test	9.3	8.7	7.6	**8.5**	10.4	10.4	10.3	**10.4**
Steam Production (lb/hr)	DAHS	499,726	520,274	510,811	**510,270**	202,398	202,350	199,188	**201,312**
Heat Input from F-Factor (MMBtu/hr)	Stack Test	795	832	831	**820**	404	384	411	**400**
Hydrogen Chloride (lb/hr)	Stack Test	0.74	3.02	1.17	**1.64**	31.63	37.05	33.23	**33.97**
Hydrogen Chloride (lb/MMBtu)	Stack Test	0.0011	0.0043	0.0015	**0.0023**	0.0784	0.0966	0.0808	**0.0852**
Chlorine Gas (lb/hr)	Stack Test	2.03	1.89	1.98	**1.97**	0.56	0.44	0.40	**0.47**
Chlorine Gas (lb/MMBtu)	Stack Test	0.0031	0.0027	0.0026	**0.0028**	0.0014	0.0011	0.0010	**0.0012**
Chlorine (lb/MMBtu)	Fuel Analysis	0.042	0.026	0.032	**0.033**	0.209	0.199	0.222	**0.210**
		Percentage of chlorine in fuel emitted as HCl =			**7%**	**Percentage of chlorine in fuel emitted as HCl =**			**41%**
		Percentage of chlorine in fuel emitted as Cl_2 =			**8%**	**Percentage of chlorine in fuel emitted as Cl_2 =**			**1%**

Notes:

lb/hr = pound per hour

MMBtu/hr = million British thermal units per hour

acfm = actual cubic foot per minute

dscfm = dry standard cubic foot per minute

F = Fahrenheit

% = percent

lb/MMBtu = pound per million British thermal units

dscf/MMBtu = dry standard cubic foot per million British thermal units

[a] Measured at the east inlet to the wet cyclones.

APPENDIX B

BOILER 1

11/28/06

SOURCE TEST REPORT
FOR
HYDROCHLORIC ACID, AND CHLORINE EMISSIONS

BOILER 1
IMPINGEMENT WET SCRUBBER OUTLET
TRAVELING GRATE
CLEWISTON, FLORIDA

FDEP PERMIT NUMBER 0510003-017-AV
I D NUMBER 001

MACT PERFORMANCE TEST

NOVEMBER 28, 2006

PREPARED FOR:

U.S. SUGAR CORPORATION
SOUTH W.C. OWEN AVENUE
CLEWISTON, FLORIDA 33440

PREPARED BY:

AIR CONSULTING AND ENGINEERING, INC.
2106 N.W. 67TH PLACE, SUITE 4
GAINESVILLE, FLORIDA 32653
(352) 335-1889

238-06-01

Table 1. Emission Summary
Boiler 1
United States Sugar Corporation - Clewiston Mill
Clewiston, Florida
November 28, 2006

Run Number	Time	Oxygen %	CO2 %	Flow Rate dscfm	Steam Rate lbs/hr	Fuel Factor dscf/MMBTU	Heat Input MMBTUH	HCl Emissions lbs/hr	HCl Emissions lbs/MMBTU	Cl2 Emissions lbs/hr	Cl2 Emissions lbs/MMBTU
1	0919-1022	14.0	7.0	122830	165882	10416	233.5	0.54	0.0023	0.39	0.0017
2	1107-1209	12.0	8.5	160360	171045	10455	391.9	1.33	0.0034	0.46	0.0012
3	1303-1407	13.0	9.0	152745	165217	10716	323.3	1.22	0.0038	0.48	0.0015
Average	--	13.0	8.2	145312	167381	10529	316.2	1.03	0.0032	0.44	0.0015

$$\text{lbs/MMBTU HCl} = \frac{[(\text{mg}) \times (\text{lbs}/453{,}600\text{mg})]}{\text{VMstd.}} \times \text{F-Factor} \times \frac{20.9}{(20.9-\%O_2)}$$

$$\text{Heat Input} = \text{MMBTUH} = \frac{(\text{dscfm} \times 60\ \text{min/hr})}{\text{F-Factor}} \times \frac{(20.9-\%O_2)}{20.9}$$

AIR CONSULTING AND ENGINEERING, INC.
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

HCL and CL2 Laboratory Results

Boiler 1
United States Sugar Corporation - Clewiston Mill
Clewiston, Florida
November 28, 2006

Run	HCL as Chloride mg	HCL mg	Chlorine as Chloride mg	Chlorine Gas mg
1	1.6	1.54	3.0	1.1
2	2.9	2.88	2.9	1.0
3	2.8	2.78	3.0	1.1
0.1N H2SO4Blank	0.1			
0.1N NAOH Blank			1.9	

Molecular Weight CL = 35.453 lb/lb-mole
Molecular Weight HCL = 36.453 lb/lb-mole

$$\text{mg HCL} = (\text{mg CL} - \text{CL Blank } (0.1\text{NH2SO4})) \times \frac{\text{MW HCL}}{\text{MW CL}}$$

mg CL2 = (mg CL - CL Blank (0.1N NaOH))

AIR CONSULTING AND ENGINEERING, INC.

FUEL FACTOR CALCULATION

COMPANY NAME: United States Sugar Corporation - Clewiston Mill
SOURCE: Boiler 1
FUEL FIRED: Bagasse

Run	1	2	3
F-Factor (scf/MMBTU) Bagasse	10571	10541	10764
F-Factor (scf/MMBTU) Oil	9190	9190	9190
Heat Input from Oil (MMBTUH)	38.9	22.6	10.6
Total Heat Input (MMBTUH)	346.5	355.4	346.2
Fuel % Bagasse	88.77	93.64	96.94
Fuel % Oil	11.23	6.36	3.06
F-Factor (scf/MMBTU) (Bagasse & Oil)	**10416**	**10455**	**10716**

F-Factor (scf/MMBTU) (Bagasse & Oil) =
(F-Factor Bagasse x % Bagasse in Fuel) + (F-Factor Oil x % Oil in Fuel)

$$\text{Fuel \% Oil} = \frac{\text{Heat Input Oil}}{\text{Total Heat Input}} \times 100\%$$

AIR CONSULTING AND ENGINEERING, INC.

FUEL FACTOR CALCULATION

COMPANY NAME: United States Sugar Corporation - Clewiston Mill
SOURCE: Boiler 1
FUEL FIRED: Bagasse

Run	1	2	3
	wet	wet	wet
Date	11/28/06	11/28/06	11/28/06
Time			
Carbon (%)	20.82	22.28	22.05
Hydrogen (%)	2.53	2.70	2.65
Nitrogen (%)	0.20	0.23	0.24
Sulfur (%)	0.04	0.03	0.04
Oxygen (%)	15.52	16.38	15.81
HHV (BTU/lb)	3214	3456	3360
F-Factor (scf/MMBTU)	**10571**	**10541**	**10764**

Sample Calculation - Run 1

$$F_w = \frac{K[(Khw*\%H) + (Kcw*\%C) + (Ksw*\%S) + (Knw*\%N) - (Kow*\%O)]}{GCVw}$$

$$= \frac{10E6[3.64(2.53) + 1.53(20.82) + 0.57(0.04) + 0.14(0.2) - 0.46(15.52)]}{3214}$$

$$= 10571$$

Where:

%H	Concentration of hydrogen from the ultimate fuel analysis on a wet basis (as received)
%C	Concentration of carbon from the ultimate fuel analysis on a wet basis (as received)
%S	Concentration of sulfur from the ultimate fuel analysis on a wet basis (as received)
%N	Concentration of nitrogen from the ultimate fuel analysis on a wet basis (as received)
%O	Concentration of oxigen from the ultimate fuel analysis on a wet basis (as received)
Khd	conversion factor (3.64 scf/lb-%)
Kc	conversion factor (1.53 scf/lb-%)
Ks	conversion factor (0.57 scf/lb-%)
Kn	conversion factor (0.14 scf/lb-%)
Ko	conversion factor (0.46 scf/lb-%)
K	conversion factor (10E6 BTU/MMBTU)
GCV	gross calorific heating value (BTU/lb HHV) wet

Hazen Research, Inc.
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Fax: (303) 278-1528

Date January 17 2007
HRI Project 002-SA2
HRI Series No. L136/06-1
Date Rec'd. 12/13/06
Cust. P.O.#

Air Consulting and Engineering
Dagmar Fick
2106 NW 67th Place
Gainesville, FL 32606

Sample Identification
Boiler 1 Run 1

Reporting Basis >	As Rec'd		Dry	Air Dry
Proximate (%)				
Moisture	58.48		0.00	1.90
Ash	2.41		5.80	5.69
Volatile	34.64		83.44	81.85
Fixed C	4.47		10.76	10.56
Total	100.00		100.00	100.00
Sulfur	0.04		0.10	0.10
Btu/lb (HHV)	3214		7742	7595
MMF Btu/lb	3298		8259	
MAF Btu/lb			8218	
Air Dry Loss (%)		57.68		
Ultimate (%)				
Moisture	58.48		0.00	1.90
Carbon	20.82		50.14	49.19
Hydrogen	2.53		6.09	5.98
Nitrogen	0.20		0.48	0.47
Sulfur	0.04		0.10	0.10
Ash	2.41		5.80	5.69
Oxygen*	15.52		37.39	36.67
Total	100.00		100.00	100.00
Chlorine**	0.011		0.028	0.027
Forms of Sulfur (as S,%)				
Sulfate				
Pyritic				
Organic				
Total	0.04		0.10	
Water Soluble Alkalies (%)				
Na2O				
K2O				

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 7.49
Lb. SO2/MM Btu= 0.26
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 10,570

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

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Date	January 17 2007
HRI Project	002-SA2
HRI Series No.	L136/06-2
Date Rec'd.	12/13/06
Cust. P.O.#	

Air Consulting and Engineering
Dagmar Fick
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Gainesville, FL 32606

Sample Identification
Boiler 1 Run 2

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	55.50	0.00	1.76
Ash	2.88	6.47	6.36
Volatile	36.37	81.73	80.29
Fixed C	5.25	11.80	11.59
Total	100.00	100.00	100.00
Sulfur	0.03	0.07	0.07
Btu/lb (HHV)	3456	7765	7628
MMF Btu/lb	3566	8348	
MAF Btu/lb		8303	
Air Dry Loss (%)	54.70		
Ultimate (%)			
Moisture	55.50	0.00	1.76
Carbon	22.28	50.06	49.18
Hydrogen	2.70	6.07	5.96
Nitrogen	0.23	0.52	0.51
Sulfur	0.03	0.07	0.07
Ash	2.88	6.47	6.36
Oxygen*	16.38	36.81	36.16
Total	100.00	100.00	100.00
Chlorine**	0.012	0.026	0.026

Forms of Sulfur (as S,%)	As Rec'd	Dry
Sulfate		
Pyritic		
Organic		
Total	0.03	0.07

Water Soluble Alkalies (%)

Na2O
K2O

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 8.34
Lb. SO2/MM Btu= 0.18
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 10,543

Report Prepared By:

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* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

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Date January 17 2007
HRI Project 002-SA2
HRI Series No. L136/06-3
Date Rec'd. 12/13/06
Cust. P.O.#

Air Consulting and Engineering
Dagmar Fick
2106 NW 67th Place
Gainesville, FL 32606

Sample Identification
Boiler 1 Run 3

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	55.59	0.00	1.48
Ash	3.62	8.14	8.02
Volatile	34.90	78.57	77.41
Fixed C	5.89	13.29	13.09
Total	100.00	100.00	100.00
Sulfur	0.04	0.09	0.09
Btu/lb (HHV)	3360	7566	7454
MMF Btu/lb	3495	8295	
MAF Btu/lb		8236	
Air Dry Loss (%)	54.92		
Ultimate (%)			
Moisture	55.59	0.00	1.48
Carbon	22.05	49.64	48.91
Hydrogen	2.65	5.96	5.87
Nitrogen	0.24	0.55	0.54
Sulfur	0.04	0.09	0.09
Ash	3.62	8.14	8.02
Oxygen*	15.81	35.62	35.09
Total	100.00	100.00	100.00
Chlorine**	0.015	0.035	0.034
Forms of Sulfur (as S,%)			
Sulfate			
Pyritic			
Organic			
Total	0.04	0.09	
Water Soluble Alkalies (%)			
Na2O			
K2O			

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 10.76
Lb. SO2/MM Btu= 0.24
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 10,760

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

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Date: January 17, 2007
Project No: 002-SA2
Control No: L136/06
Received: 12/13/06

Air Consulting and Engineering
Dagmar Fick
2106 NW 67th Place, Suite 4
Gainesville, FL 32606

Sample Number: K317/06	-1	-2	-3	-4	-5	-6
Sample Identification:	B1 Run1	B1 Run 2	B1 Run 3	B4 Run 2	B4 Run 3	B4 Run 4
Air Dry Loss, %	57.68	54.70	54.92	53.55	52.59	55.29
Residual Moisture, %	1.90	1.76	1.48	1.79	1.48	1.68
As Received Moisture, %	58.48	55.50	55.59	54.38	53.29	56.04
Mercury (Air Dry Basis), mg/kg	0.05	0.05	0.05	0.06	0.06	0.04
Mercury (As Received Basis), mg/kg	0.02	0.02	0.02	0.03	0.03	0.02
Mercury (Dry Basis), mg/kg	0.05	0.05	0.05	0.06	0.06	0.04

By:

Gerard H. Cunningham
Fuel Laboratory Manager

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Date:	Jan. 17, 2007
PROJ. #	002-SA2
CTRL #	L136/06
REC'D	12/13/06

Air Consulting and Engineering
Dagmar Fick
2106 NW 67th Place, Suite 4
Gainesville, FL 32606

Sample No: L136/06-7
Sample Identification: Boiler 1 Fuel Oil 11/28/06

ULTIMATE

Water, %	0.005
Ash, %	<0.001
Sulfur, %	0.023
Carbon, %	88.16
Hydrogen, %	11.60
Nitrogen, %	0.11
Oxygen, %*	0.10

PROXIMATE

Water, %	0.005
Ash, %	<0.001
Volatile Matter, %	100.00
Fixed Carbon, %*	<0.01

CALORIFIC VALUE

BTU/lb	19473

By:

Gerard H. Cunningham
Fuel Laboratory Manager

* by difference

AIR CONSULTING AND ENGINEERING, INC.

SCRUBBER WATER DATA

PLANT: US Sugar, Clewiston
SOURCE: Boiler 1
LOCATION: Clewiston, FL

DATE: 11/28/06
RUN: C-1
OPERATOR:

TIME	PRESSURE	FLOW GPM	~~PH~~ ΔP		PRESSURE	FLOW GPH	PH	
9:15	90	214	8.2					
9:30	89	212	8.0					
9:45	89	212	7.9					
10:00	89	212	7.9					
10:15	89	211	8.1					
10:30								

AIR CONSULTING AND ENGINEERING, INC.

SCRUBBER WATER DATA

PLANT: USSC
SOURCE: Boiler 1
LOCATION: Clewiston, FL

DATE: 11/28/06
RUN: C-2
OPERATOR:

TIME	PRESSURE	FLOW GPM	~~PH~~ ΔP		PRESSURE	FLOW GPH	PH	
1105	91	212	8.2					
1120	91	212	8.1					
1135	90	212	8.1					
1150	91	213	7.9					
1205	91	212	8.1					
12:20								

AIR CONSULTING AND ENGINEERING, INC.

SCRUBBER WATER DATA

PLANT: US Sugar, Clewiston
SOURCE: Boiler 1
LOCATION: Clewiston, FL
DATE: 11/28/06
RUN: C-3
OPERATOR:

TIME	PRESSURE	FLOW GPM	PH		PRESSURE	FLOW GPH	PH	
1:00	90	212	7.8					
1:15	91	214	7.9					
1:30	91	213	8.0					
1:45	90	210	8.1					
2:00	91	212	7.9					

BOILER 4

12/1/06

SOURCE TEST REPORT
FOR
HYDROCHLORIC ACID AND CHLORINE EMISSIONS

BOILER 4
IMPINGEMENT WET SCRUBBER OUTLET
TRAVELING GRATE
CLEWISTON, FLORIDA

FDEP PERMIT NUMBER 051-0003-017-AV
EMISSION UNIT 009

MACT PERFORMANCE TEST

DECEMBER 1, 2006

PREPARED FOR:

U.S. SUGAR CORPORATION
SOUTH W.C. OWEN AVENUE
CLEWISTON, FLORIDA 33440

PREPARED BY:

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(352) 335-1889

238-06-01

Table 1. **Emission Summary**
Boiler 4
United States Sugar Corporation - Clewiston Mill
Clewiston, Florida
December 1, 2006

Run Number	Time	Oxygen %	CO2 %	Flow Rate dscfm	Steam Rate lbs/hr	Fuel Factor dscf/MMBTU	Heat Input MMBTUH	HCl Emissions lbs/hr	HCl Emissions lbs/MMBTU	Cl2 Emissions lbs/hr	Cl2 Emissions lbs/MMBTU
2	1256-1402	10.5	9.8	122830	245070	10482	351.6	0.94	0.0027	0.56	0.0016
3	1446-1551	9.7	10.5	122830	255000	10561	374.0	0.91	0.0024	0.57	0.0015
4	1622-1735	10.1	10.2	122830	246038	10254	371.1	0.69	0.0019	0.50	0.0013
Average	--	10.1	10.1	122830	248703	10432	365.5	0.85	0.0023	0.54	0.0015

Note: Run 1 was voided - problems with the HCl Train

$$\text{lbs/MMBTU HCl} = \frac{[(\text{mg}) \times (\text{lbs}/453{,}600\text{mg})]}{\text{VMstd.}} \times \text{F-Factor} \times \frac{20.9}{(20.9-\%O_2)}$$

$$\text{Heat Input} = \text{MMBTUH} = \frac{(\text{dscfm} \times 60\ \text{min/hr})}{\text{F-Factor}} \times \frac{(20.9-\%O_2)}{20.9}$$

AIR CONSULTING AND ENGINEERING, INC.
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

HCL and CL2 Laboratory Results

Boiler 4
United States Sugar Corporation - Clewiston Mill
Clewiston, Florida
December 1, 2006

Run	HCL as Chloride mg	HCL mg	Chlorine as Chloride mg	Chlorine Gas mg	
1	4.7	4.73	1.8	-0.10	Run voided
2	2.2	2.16	3.2	1.30	
3	2.1	2.06	3.2	1.30	
4	1.6	1.54	3.0	1.10	
0.1N H2SO4Blank	0.1				
0.1N NAOH Blank			1.9		

Molecular Weight CL = 35.453 lb/lb-mole
Molecular Weight HCL = 36.453 lb/lb-mole

$$\text{mg HCL} = (\text{mg CL} - \text{CL Blank (0.1NH2SO4)}) \times \frac{\text{MW HCL}}{\text{MW CL}}$$

mg CL2 = (mg CL - CL Blank (0.1N NaOH))

AIR CONSULTING AND ENGINEERING, INC.

FUEL FACTOR CALCULATION

COMPANY NAME: United States Sugar Corporation - Clewiston Mill
SOURCE: Boiler # 4
FUEL FIRED: Bagasse

Run	1	2	3
F-Factor (scf/MMBTU) Bagasse	10739	10814	10466
F-Factor (scf/MMBTU) Oil	9190	9190	9190
Heat Input from Oil (MMBTUH)	86.1	86.3	86.3
Total Heat Input (MMBTUH)	519.7	554.2	518.4
Fuel % Bagasse	83.43	84.43	83.35
Fuel % Oil	16.57	15.57	16.65
F-Factor (scf/MMBTU) (Bagasse & Oil)	**10482**	**10561**	**10254**

F-Factor (scf/MMBTU) (Bagasse & Oil) =
(F-Factor Bagasse x % Bagasse in Fuel) + (F-Factor Oil x % Oil in Fuel)

Fuel % Oil = $\frac{\text{Heat Input Oil}}{\text{Total Heat Input}} \times 100\%$

DC MW3 020 -0-0376

AIR CONSULTING AND ENGINEERING, INC.

FUEL FACTOR CALCULATION

COMPANY NAME: United States Sugar Corporation - Clewiston Mill
SOURCE: Boiler #4
FUEL FIRED: Bagasse

Run	2 wet	3 wet	4 wet
Date	12/1/06	12/1/06	12/1/06
Time			
Carbon (%)	21.81	19.84	20.98
Hydrogen (%)	2.68	2.42	2.58
Nitrogen (%)	0.22	0.23	0.21
Sulfur (%)	0.04	0.02	0.03
Oxygen (%)	15.61	14.38	15.51
HHV (BTU/lb)	3352	3014	3287
F-Factor (scf/MMBTU)	**10739**	**10814**	**10466**

Sample Calculation - Run 1

$$F_w = \frac{K[(Khw*\%H) + (Kcw*\%C) + (Ksw*\%S) + (Knw*\%N) - (Kow*\%O)]}{GCVw}$$

$$= \frac{10E6[3.64(2.68) + 1.53(21.81) + 0.57(0.04) + 0.14(0.22) - 0.46(15.61)]}{3352}$$

$$= 10739$$

Where:

%H	Concentration of hydrogen from the ultimate fuel analysis on a wet basis (as received)
%C	Concentration of carbon from the ultimate fuel analysis on a wet basis (as received)
%S	Concentration of sulfur from the ultimate fuel analysis on a wet basis (as received)
%N	Concentration of nitrogen from the ultimate fuel analysis on a wet basis (as received)
%O	Concentration of oxigen from the ultimate fuel analysis on a wet basis (as received)
Khd	conversion factor (3.64 scf/lb-%)
Kc	conversion factor (1.53 scf/lb-%)
Ks	conversion factor (0.57 scf/lb-%)
Kn	conversion factor (0.14 scf/lb-%)
Ko	conversion factor (0.46 scf/lb-%)
K	conversion factor (10E6 BTU/MMBTU)
GCV	gross calorific heating value (BTU/lb HHV) wet

Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80403 USA
Tel: (303) 279-4501
Fax: (303) 278-1528

Date January 17 2007
HRI Project 002-SA2
HRI Series No. L136/06-4
Date Rec'd. 12/13/06
Cust. P.O.#

Air Consulting and Engineering
Dagmar Fick
2106 NW 67th Place
Gainesville, FL 32606

Sample Identification
Boiler 4 Run 2

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	54.38	0.00	1.79
Ash	5.26	11.54	11.33
Volatile	35.13	77.02	75.64
Fixed C	5.23	11.44	11.24
Total	100.00	100.00	100.00
Sulfur	0.04	0.09	0.09
Btu/lb (HHV)	3352	7347	7216
MMF Btu/lb	3552	8393	
MAF Btu/lb		8306	
Air Dry Loss (%)	53.55		
Ultimate (%)			
Moisture	54.38	0.00	1.79
Carbon	21.81	47.82	46.96
Hydrogen	2.68	5.87	5.77
Nitrogen	0.22	0.48	0.47
Sulfur	0.04	0.09	0.09
Ash	5.26	11.54	11.33
Oxygen*	15.61	34.20	33.59
Total	100.00	100.00	100.00
Chlorine**	0.012	0.025	0.025

Forms of Sulfur (as S,%)

	As Rec'd	Dry
Sulfate		
Pyritic		
Organic		
Total	0.04	0.09

Water Soluble Alkalies (%)

Na2O
K2O

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 15.70
Lb. SO2/MM Btu= 0.25
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 10,742

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80403 USA
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Fax: (303) 278-1528

Date	January 17 2007
HRI Project	002-SA2
HRI Series No.	L136/06-5
Date Rec'd.	12/13/06
Cust. P.O.#	

Air Consulting and Engineering
Dagmar Fick
2106 NW 67th Place
Gainesville, FL 32606

Sample Identification
Boiler 4 Run 3

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	53.30	0.00	1.49
Ash	9.81	21.00	20.69
Volatile	32.00	68.52	67.50
Fixed C	4.89	10.48	10.32
Total	100.00	100.00	100.00
Sulfur	0.02	0.05	0.05
Btu/lb (HHV)	3014	6453	6357
MMF Btu/lb	3370	8346	
MAF Btu/lb		8169	
Air Dry Loss (%)	52.59		
Ultimate (%)			
Moisture	53.30	0.00	1.49
Carbon	19.84	42.47	41.84
Hydrogen	2.42	5.19	5.11
Nitrogen	0.23	0.49	0.48
Sulfur	0.02	0.05	0.05
Ash	9.81	21.00	20.69
Oxygen*	14.38	30.80	30.34
Total	100.00	100.00	100.00
Chlorine**	0.014	0.029	0.029

Forms of Sulfur (as S,%)	As Rec'd	Dry
Sulfate		
Pyritic		
Organic		
Total	0.02	0.05

Water Soluble Alkalies (%)

Na2O
K2O

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 32.55
Lb. SO2/MM Btu= 0.16
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 10,818

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

Hazen Research, Inc.
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Date January 17 2007
HRI Project 002-SA2
HRI Series No. L136/06-6
Date Rec'd. 12/13/06
Cust. P.O.#

Air Consulting and Engineering
Dagmar Fick
2106 NW 67th Place
Gainesville, FL 32606

Sample Identification
Boiler 4 Run 4

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	56.04	0.00	1.68
Ash	4.65	10.57	10.39
Volatile	34.07	77.51	76.21
Fixed C	5.24	11.92	11.72
Total	100.00	100.00	100.00
Sulfur	0.03	0.07	0.07
Btu/lb (HHV)	3287	7477	7351
MMF Btu/lb	3459	8440	
MAF Btu/lb		8360	
Air Dry Loss (%)	55.29		
Ultimate (%)			
Moisture	56.04	0.00	1.68
Carbon	20.98	47.73	46.93
Hydrogen	2.58	5.86	5.76
Nitrogen	0.21	0.48	0.47
Sulfur	0.03	0.07	0.07
Ash	4.65	10.57	10.39
Oxygen*	15.51	35.29	34.70
Total	100.00	100.00	100.00
Chlorine**	0.010	0.023	0.023

Forms of Sulfur (as S,%)	As Rec'd	Dry
Sulfate		
Pyritic		
Organic		
Total	0.03	0.07

Water Soluble Alkalies (%)

Na2O
K2O

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 14.13
Lb. SO2/MM Btu= 0.19
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 10,463

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

An Employee-Owned Company

Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80403 USA
Tel: (303) 279-4501
Fax: (303) 278-1528

Date:	January 17, 2007
Project No:	002-SA2
Control No:	L136/06
Received:	12/13/06

Air Consulting and Engineering
Dagmar Fick
2106 NW 67th Place, Suite 4
Gainesville, FL 32606

Sample Number: K317/06	-1	-2	-3	-4	-5	-6
Sample Identification:	B1 Run1	B1 Run 2	B1 Run 3	B4 Run 2	B4 Run 3	B4 Run 4
Air Dry Loss, %	57.68	54.70	54.92	53.55	52.59	55.29
Residual Moisture, %	1.90	1.76	1.48	1.79	1.48	1.68
As Received Moisture, %	58.48	55.50	55.59	54.38	53.29	56.04
Mercury (Air Dry Basis), mg/kg	0.05	0.05	0.05	0.06	0.06	0.04
Mercury (As Received Basis), mg/kg	0.02	0.02	0.02	0.03	0.03	0.02
Mercury (Dry Basis), mg/kg	0.05	0.05	0.05	0.06	0.06	0.04

By: [signature]
Gerard H. Cunningham
Fuel Laboratory Manager

Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80403 USA
Tel: (303) 279-4501
Fax: (303) 278-1528

Date:	Jan. 17, 2007
PROJ. #	002-SA2
CTRL #	L136/06
REC'D	12/13/06

Air Consulting and Engineering
Dagmar Fick
2106 NW 67th Place, Suite 4
Gainesville, FL 32606

Sample No: L136/06-7
Sample Identification: Boiler 1 Fuel Oil 11/28/06

ULTIMATE

Water, %	0.005
Ash, %	<0.001
Sulfur, %	0.023
Carbon, %	88.16
Hydrogen, %	11.60
Nitrogen, %	0.11
Oxygen, %*	0.10

PROXIMATE

Water, %	0.005
Ash, %	<0.001
Volatile Matter, %	100.00
Fixed Carbon, %*	<0.01

CALORIFIC VALUE

BTU/lb	19473

By:

Gerard H. Cunningham
Fuel Laboratory Manager

* by difference

AIR CONSULTING AND ENGINEERING, INC.

SCRUBBER WATER DATA

PLANT: US Sugar, Clewiston
SOURCE: Blr. 4
LOCATION: Clewiston, FL

DATE: 12/1/06
RUN: C-1
OPERATOR: Johnny Navarro

TIME	PRESSURE	FLOW GPM	~~PH~~ ΔP		PRESSURE	FLOW GPH	PH	
10:15	53	300	6.3					
10:30	53	300	6.4					
10:45	53	299	6.7					
11:00	53	300	6.3					
11:15	53	300	6.8					

AIR CONSULTING AND ENGINEERING, INC.

SCRUBBER WATER DATA

PLANT: US Sugar, Clewiston
SOURCE: Boiler 4
LOCATION: Clewiston, FL

DATE: 12/1/06
RUN: C-2
OPERATOR: Johnny Navarro

TIME	PRESSURE	FLOW GPM	~~PH~~ DP		PRESSURE	FLOW GPH	PH	
12:54	51	292	6.2					
1:09	51	291	6.6					
1:24	54	298	6.2					
1:39	54	298	6.8					
1:54	54	299	6.2					

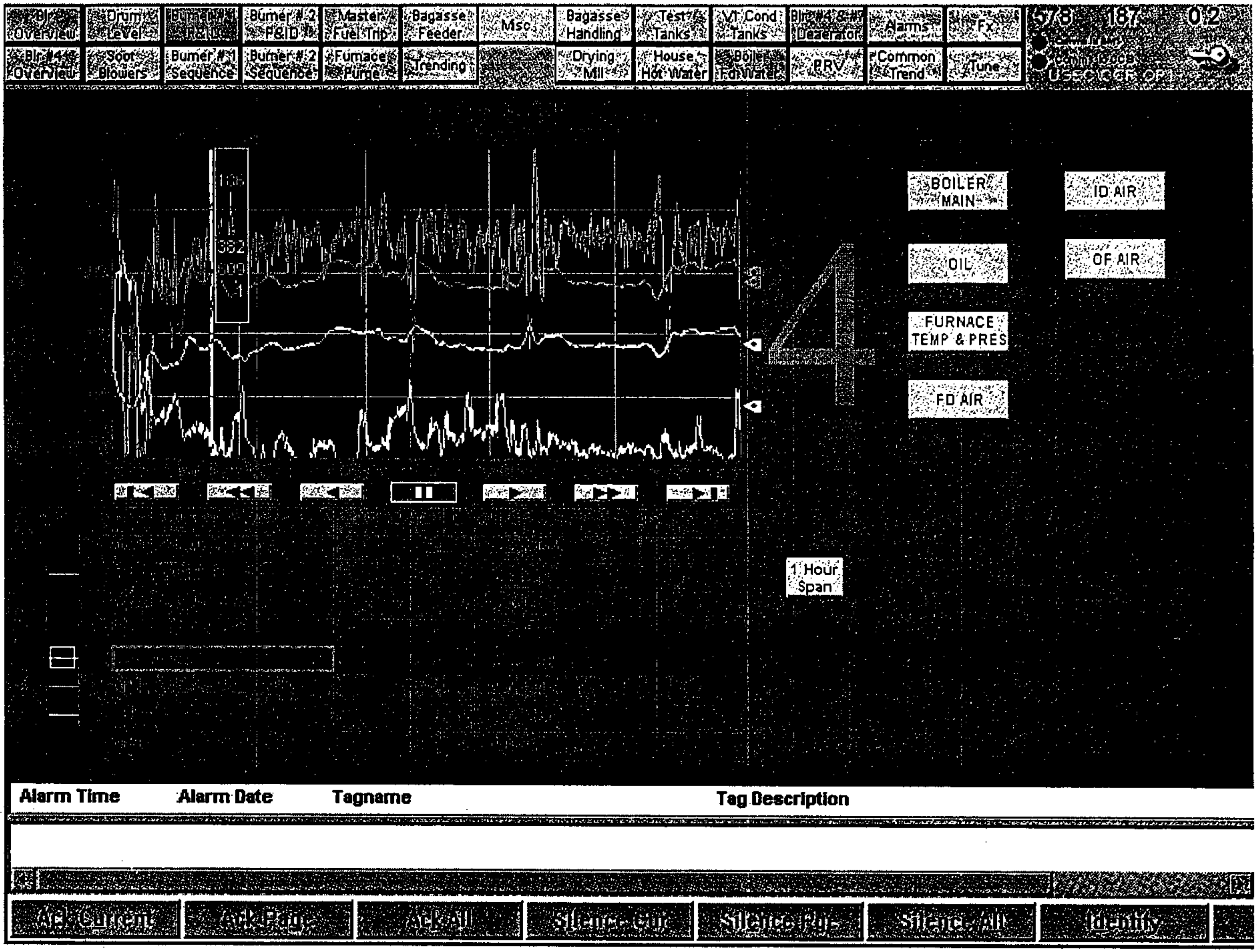
AIR CONSULTING AND ENGINEERING, INC.

SCRUBBER WATER DATA

PLANT: USSC
SOURCE: Blr. 4
LOCATION: Clariston

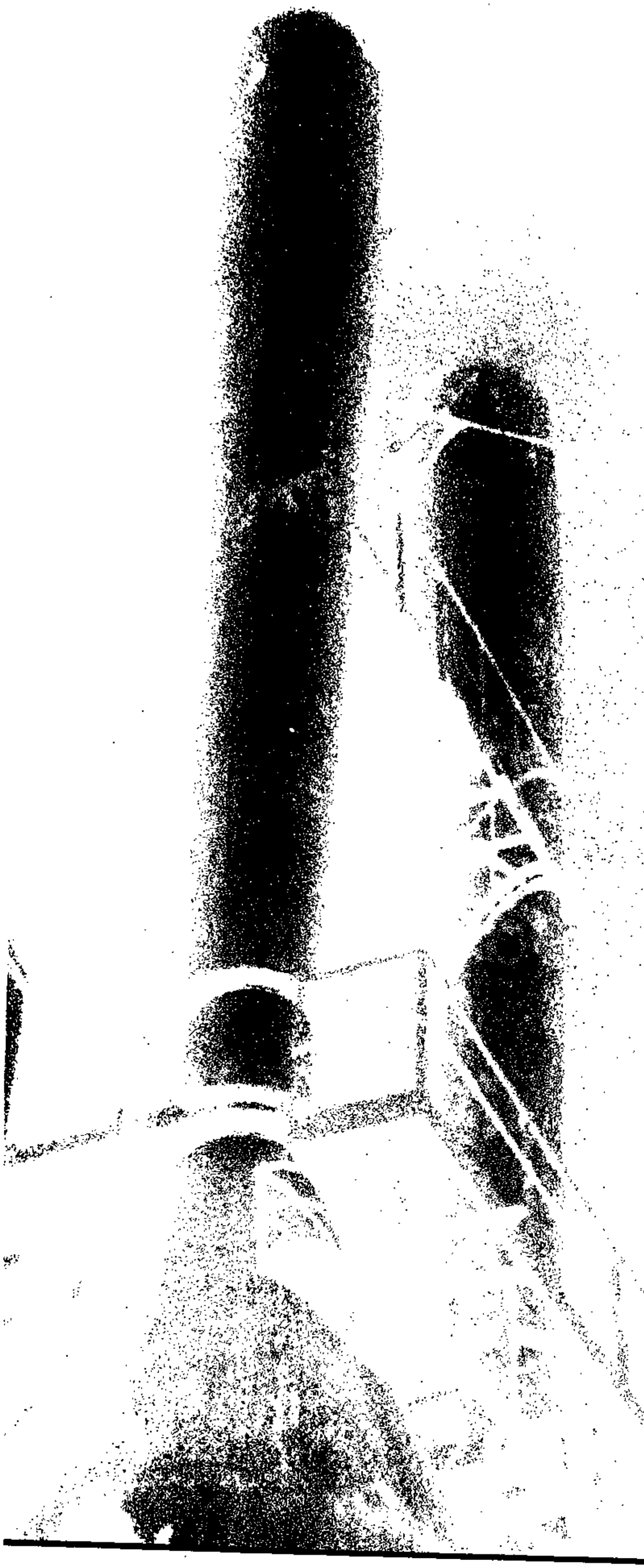
DATE: 12/1/06
RUN: C-3
OPERATOR:

TIME	PRESSURE	FLOW GPM	PH		PRESSURE	FLOW GPH	PH	
2:40	54	298	6.7					
2:55	55	302	6.5					
3:10	53	295	6.4					
3:25	52	290	6.1					
3:40	52	292	6.7					


Blr Overview
Drum Level
Burner #2 P&ID
Master Fuel Trip
Bagasse Feeder
Misc
Bagasse Handling
Test Tanks
V1 Cond Tanks
Blr #4 & #5 Deaerator
Alarms
Fx
Blr #4 Overview
Soot Blowers
Burner #1 Sequence
Burner #2 Sequence
Furnace Purge
Trending
Drying Mill
House Hot Water
Boiler Fd Water
PRV
Common Trend
Tune
BOILER MAIN
ID AIR
OIL
OF AIR
FURNACE TEMP & PRES
FD AIR
1 Hour Span
Alarm Time
Alarm Date
Tagname
Tag Description
Ack Current
Ack Page
Ack All
Silence Cur
Silence Pg
Silence All
Identify

BOILER 7

1/25/07



SOURCE TEST REPORT FOR HYDROCHLORIC ACID AND CHLORINE EMISSIONS

BOILER NUMBER 7 – ESP OUTLET
VIBRATING GRATE

U.S. SUGAR CORPORATION – CLEWISTON MILL
CLEWISTON, FLORIDA

FDEP PERMIT 0510003-017-AV

MACT PERFORMANCE TEST

JANUARY 25, 2007

PREPARED FOR:

U.S. SUGAR CORPORATION
SOUTH W.C. OWEN AVENUE
CLEWISTON, FLORIDA 33440

PREPARED BY:

AIR CONSULTING AND ENGINEERING, INC.
2106 NW 67TH PLACE, SUITE 4
GAINESVILLE, FLORIDA 32653
(352) 335-1889

238-06-01

Table 1. Emission Summary
Boiler 7
United States Sugar Corporation - Clewiston Mill
Clewiston, Florida
January 25, 2007

Run Number	Time	Oxygen %	CO2 %	Flow Rate dscfm	Fuel Factor dscf/MMBTU (Fuel Analysis)	Steam Rate lbs/hr	Heat Input MMBTUH	HCl Emissions		Cl2 Emissions	
								lbs/hr	lbs/MMBTU	lbs/hr	lbs/MMBTU
1	0909-1013	10.6	9.8	185293	10582	307597	519.8	0.93	0.0018	1.13	0.0022
2	1106-1210	9.8	10.6	174015	10471	319097	530.5	0.75	0.0014	1.31	0.0025
3	1325-1429	10.7	9.7	175714	10391	290569	494.7	2.81	0.0057	1.28	0.0026
Average	--	10.4	10.0	178341	10481	305754	515.0	1.50	0.0030	1.24	0.0024

$$\text{lbs/MMBTU HCl} = \frac{[(\text{mg}) \times (\text{lbs}/453{,}600\text{mg})]}{\text{VMstd.}} \times \text{F-Factor} \times \frac{20.9}{(20.9-\%O_2)}$$

$$\text{Heat Input} = \text{MMBTUH} = \frac{(\text{dscfm} \times 60 \text{ min/hr})}{\text{F-Factor}} \times \frac{(20.9-\%O_2)}{20.9}$$

AIR CONSULTING AND ENGINEERING, INC.
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

HCL and CL2 Laboratory Results

Boiler 7
United States Sugar Corporation - Clewiston Mill
Clewiston, Florida
January 25, 2007

Run	HCL as Chloride mg	HCL mg	Chlorine as Chloride mg	Chlorine Gas mg
1	2.1	2.06	5.5	2.5
2	1.7	1.65	5.9	2.9
3	6.1	6.17	5.8	2.8
0.1N H2SO4Blank	0.10			
0.1N NAOH Blank			3	

Molecular Weight CL = 35.453 lb/lb-mole
Molecular Weight HCL = 36.453 lb/lb-mole

$$\text{mg HCL} = (\text{mg CL} - \text{CL Blank } (0.1N\,H_2SO_4)) \times \frac{\text{MW HCL}}{\text{MW CL}}$$

mg CL2 = (mg CL - CL Blank (0.1N NaOH))

AIR CONSULTING AND ENGINEERING, INC.

FUEL FACTOR CALCULATION

COMPANY NAME: United States Sugar Corporation - Clewiston Mill
SOURCE: Boiler 7
FUEL FIRED: Bagasse

Run	1	2	3
	dry	dry	dry
Date	1/25/07	1/25/07	1/25/07
Time			
Carbon (%)	52.29	51.07	49.29
Hydrogen (%)	5.96	5.77	5.68
Nitrogen (%)	0.33	0.42	0.35
Sulfur (%)	0.04	0.07	0.05
Oxygen (%)	37.16	35.71	34.74
HHV (BTU/lb)	8002	7909	7717
F-Factor (dscf/MMBTU)	**10582**	**10471**	**10391**

Sample Calculation - Run 1

$$F_d = \frac{K[(Khd\%H) + (Kc\%C) + (Ks\%S) + (Kn\%N) - (Ko\%O)]}{GCV_d}$$

$$= \frac{10E6[3.64(5.96) + 1.53(52.29) + 0.57(0.04) + 0.14(0.33) - 0.46(37.16)]}{8002}$$

$$= 10582$$

Where:

%H	Concentration of hydrogen from the ultimate fuel analysis on a wet basis (as received)
%C	Concentration of carbon from the ultimate fuel analysis on a wet basis (as received)
%S	Concentration of sulfur from the ultimate fuel analysis on a wet basis (as received)
%N	Concentration of nitrogen from the ultimate fuel analysis on a wet basis (as received)
%O	Concentration of oxigen from the ultimate fuel analysis on a wet basis (as received)
Khd	conversion factor (3.64 scf/lb-%)
Kc	conversion factor (1.53 scf/lb-%)
Ks	conversion factor (0.57 scf/lb-%)
Kn	conversion factor (0.14 scf/lb-%)
Ko	conversion factor (0.46 scf/lb-%)
K	conversion factor (10E6 BTU/MMBTU)
GCV	gross calorific heating value (BTU/lb HHV) dry

MERCURY EMISSIONS

HHV dry: 7876 BTU/lb dry

Hg dry: 0.01 mg/kg = 0.01 x 10E-6 kg/kg = 1.0 x 10E-8 lb/lb

lbs/mmBTU Hg = ' 1.0 x 10E-8 lb/lb / '7876 x 10E-6mmBTU/lb = 1.27 x 10E-6

Hazen Research, Inc.
4601 Indiana Street
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Tel: (303) 279-4501
Fax: (303) 278-1528

Date February 15 2007
HRI Project 009-555
HRI Series No. A344/07-1
Date Rec'd. 01/30/07
Cust. P.O.#

Golder Associates, Inc.
David Buff
6241 NW 23rd Street, Suite 500
Gainesville, FL 32653

Sample Identification
USSC-BLR7-012507-C1

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	51.23	0.00	8.03
Ash	2.06	4.22	3.88
Volatile	41.12	84.31	77.54
Fixed C	5.59	11.47	10.55
Total	100.00	100.00	100.00
Sulfur	0.02	0.04	0.04
Btu/lb (HHV)	3903	8002	7359
MMF Btu/lb	3991	8383	
MAF Btu/lb		8354	
Air Dry Loss (%)	46.97		
Ultimate (%)			
Moisture	51.23	0.00	8.03
Carbon	25.50	52.29	48.09
Hydrogen	2.91	5.96	5.48
Nitrogen	0.16	0.33	0.30
Sulfur	0.02	0.04	0.04
Ash	2.06	4.22	3.88
Oxygen*	18.12	37.16	34.18
Total	100.00	100.00	100.00
Chlorine**	0.016	0.034	0.031
Forms of Sulfur (as S,%)			
Sulfate			
Pyritic			
Organic			
Total	0.02	0.04	
Water Soluble Alkalies (%)			
Na2O			
K2O			

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 5.27
Lb. SO2/MM Btu= 0.11
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 10,582

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

HAZEN

Hazen Research, Inc.
4601 Indiana Street
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Tel: (303) 279-4501
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Date February 15 2007
HRI Project 009-555
HRI Series No. A344/07-2
Date Rec'd. 01/30/07
Cust. P.O.#

Golder Associates, Inc.
David Buff
6241 NW 23rd Street, Suite 500
Gainesville, FL 32653

Sample Identification
USSC-BLR7-012507-C2

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	53.08	0.00	4.76
Ash	3.27	6.96	6.63
Volatile	38.42	81.90	78.00
Fixed C	5.23	11.14	10.61
Total	100.00	100.00	100.00
Sulfur	0.03	0.07	0.07
Btu/lb (HHV)	3710	7909	7532
MMF Btu/lb	3845	8552	
MAF Btu/lb		8501	
Air Dry Loss (%)	50.74		
Ultimate (%)			
Moisture	53.08	0.00	4.76
Carbon	23.96	51.07	48.64
Hydrogen	2.71	5.77	5.50
Nitrogen	0.20	0.42	0.40
Sulfur	0.03	0.07	0.07
Ash	3.27	6.96	6.63
Oxygen*	16.75	35.71	34.00
Total	100.00	100.00	100.00
Chlorine**	0.015	0.033	0.031
Forms of Sulfur (as S,%)			
Sulfate			
Pyritic			
Organic			
Total	0.03	0.07	

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 8.80
Lb. SO2/MM Btu= 0.19
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 10,473

Water Soluble Alkalies (%)

Na2O
K2O

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

Hazen Research, Inc.
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Fax: (303) 278-1528

Date February 15 2007
HRI Project 009-555
HRI Series No. A344/07-3
Date Rec'd. 01/30/07
Cust. P.O.#

Golder Associates, Inc.
David Buff
6241 NW 23rd Street, Suite 500
Gainesville, FL 32653

Sample Identification
USSC-BLR7-012507-C3

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	52.03	0.00	3.28
Ash	4.75	9.89	9.57
Volatile	37.69	78.57	75.99
Fixed C	5.53	11.54	11.16
Total	100.00	100.00	100.00
Sulfur	0.02	0.05	0.05
Btu/lb (HHV)	3702	7717	7464
MMF Btu/lb	3901	8640	
MAF Btu/lb		8564	
Air Dry Loss (%)	50.40		
Ultimate (%)			
Moisture	52.03	0.00	3.28
Carbon	23.64	49.29	47.67
Hydrogen	2.72	5.68	5.49
Nitrogen	0.17	0.35	0.34
Sulfur	0.02	0.05	0.05
Ash	4.75	9.89	9.57
Oxygen*	16.67	34.74	33.60
Total	100.00	100.00	100.00
Chlorine**	0.014	0.030	0.029

Forms of Sulfur (as S,%)	As Rec'd	Dry
Sulfate		
Pyritic		
Organic		
Total	0.02	0.05

Water Soluble Alkalies (%)

Na2O
K2O

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 12.82
Lb. SO2/MM Btu= 0.13
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 10,390

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

Hazen Research, Inc.
4601 Indiana Street
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Tel: (303) 279-4501
Fax: (303) 278-1528

Date:	February 15, 2007
Project No:	009-555
Control No:	A344/07
Received:	01/30/07

Golder Associates, Inc.
David Buff
6241 NW 23rd Street, Suite 500
Gainesville, Florida 32653

Sample Number: A344/07	-1	-2	-3
Sample Identification: USSC-BLR7	012507-C1	012507-C2	012507-C3
Air Dry Loss, %	46.97	50.74	50.40
Residual Moisture, %	8.03	4.76	3.28
As Received Moisture, %	51.23	53.08	52.03
Ash (Air Dry Basis), %	3.88	6.63	9.57
Ash (As Received Basis), %	2.06	3.27	4.75
Ash (Dry Basis), %	4.22	6.96	9.89
Mercury (Air Dry Basis), mg/kg	<0.01	0.01	0.01
Mercury (As Received Basis), mg/kg	<0.005	0.005	0.005
Mercury (Dry Basis), mg/kg	<0.01	0.01	0.01
Metals in Ash			
Manganese, mg/kg	150	130	180
Dry Whole Fuel Basis			
Manganese, mg/kg	6	9	18

The ash was prepared at 600 degrees Celsius.
The 'dry whole' fuel values are calculated values.

By: [signature]
Gerard H. Cunningham
Fuel Laboratory Manager

AIR CONSULTING AND ENGINEERING, INC.

SCRUBBER WATER DATA

PLANT: U.S. Sugar, Clewiston

SOURCE: Boiler 7

LOCATION: Clewiston, FL

DATE: 1-25-07

RUN: C-[illegible]

OPERATOR: Johnny Navarro

TIME	PRESSURE	FLOW GPM	[illegible]	ESP Power (kW x 10)	PRESSURE	FLOW GPH	PH	
9:05	29	407		974				
9:20	28	407		917				
9:35	26	406		970				
9:50	26	415		991				
10:05	26	409		972				

AIR CONSULTING AND ENGINEERING, INC.

SCRUBBER WATER DATA

PLANT: US Sugar
SOURCE: BLR 7
LOCATION: Clewiston

DATE: 1-25-07
RUN: C-2
OPERATOR: Johnny Navarro

TIME	PRESSURE	FLOW GPM	PH	ESP POWER (KW X10)	PRESSURE	FLOW GPH	PH	
11:05	26	408 ~~406~~		1016				
11:20	28	406		964				
:35	26	406		987				
1:50	28	404		1010 964				
2:05	28	539						

AIR CONSULTING AND ENGINEERING, INC.

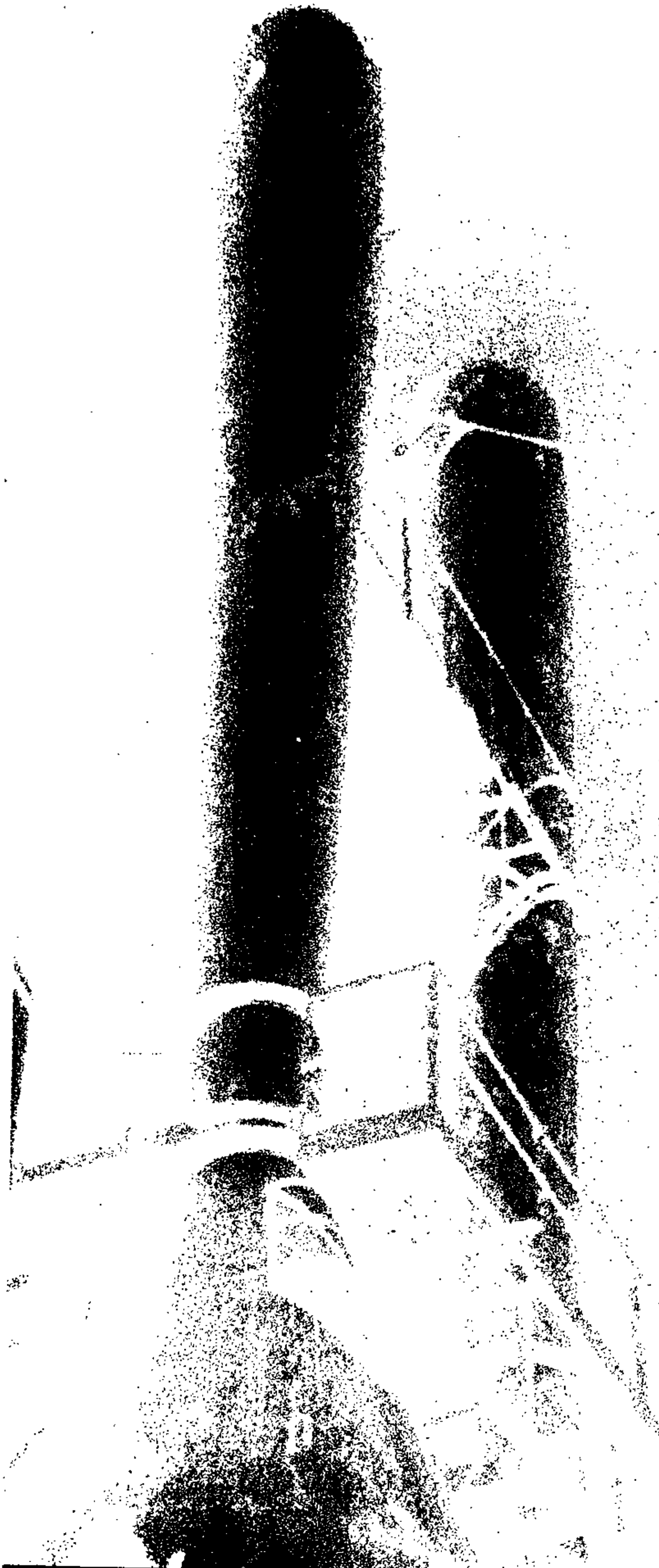
SCRUBBER WATER DATA

PLANT: US Sugar
SOURCE: Boiler 7
LOCATION: Clewiston, FL
DATE: 1-25-07
RUN: C-3
OPERATOR: Jaby Nava

TIME	PRESSURE	FLOW GPM	PH	ESP Power (kwx10)	PRESSURE	FLOW GPH	PH	
1:25	30	520		1036				
1:40	30	406		1145				
1:55	28	407		1012				
2:10	26	408		992				
2:25	26	405		1010				

BOILER 8

1/5/07



SOURCE TEST REPORT
FOR
PARTICULATE MATTER, HYDROCHLORIC ACID, AND CHLORINE EMISSIONS

BOILER 8
EAST INLET DUCT TO CYCLONE
CLEWISTON, FLORIDA

FDEP PERMIT NUMBER 051-0003-030-AC
PSD-FL-333B
EMISSION UNIT 028

MACT PERFORMANCE TEST

JANUARY 5, 2007

PREPARED FOR:

U.S. SUGAR CORPORATION
111 PONCE DELEON AVENUE
CLEWISTON, FLORIDA 33440

PREPARED BY:

AIR CONSULTING AND ENGINEERING, INC.
2106 N.W. 67TH PLACE
GAINESVILLE, FLORIDA 32653
(352) 335-1889

238-06-01

Table 1. Emission Summary
Boiler 8
United States Sugar Corporation - Clewiston Mill
Clewiston, Florida
January 5, 2007

Run Number	Time	Oxygen %	CO2 %	Flow Rate dscfm	Fuel Factor dscf/MMBTU Fuel Analysis	Steam Rate lbs/hr Boiler Parameters	Heat Input MMBTUH Fuel Analysis	HCl Emissions		Cl2 Emissions	
								lbs/hr	lbs/MMBTU	lbs/hr	lbs/MMBTU
1	1058-1158	9.3	10.8	216073	10904	499726	660.5	0.74	0.0011	2.03	0.0031
2	1345-1445	8.7	11.3	216113	10804	520274	699.4	3.02	0.0043	1.89	0.0027
3	1622-1722	7.6	12.5	219030	10843	510811	773.0	1.17	0.0015	1.98	0.0026
Average	--	8.5	11.5	217072	10850	510270	711.0	1.64	0.0023	1.96	0.0028

$$\text{lbs/MMBTU HCl} = \frac{[(\text{mg}) \times (\text{lbs}/453{,}600\text{mg})]}{\text{VMstd.}} \times \text{F-Factor} \times \frac{20.9}{(20.9-\%O2)}$$

$$\text{Heat Input} = \text{MMBTUH} = \frac{(\text{dscfm} \times 60\ \text{min/hr})}{\text{F-Factor}} \times \frac{(20.9-\%O2)}{20.9}$$

where: mg = from HCl/Cl2 analysis (Appendix C)
VMstd. = sample volume (Appendix A)

AIR CONSULTING AND ENGINEERING, INC.
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

HCL and CL2 Laboratory Results

Boiler 8
United States Sugar Corporation - Clewiston Mill
Clewiston, Florida
January 5, 2007

Run	HCL as Chloride mg	HCL mg	Chlorine as Chloride mg	Chlorine Gas mg
1	1.3	1.09	5.4	3.0
2	4.6	4.48	5.2	2.8
3	1.9	1.71	5.3	2.9
0.1N H2SO4Blank	0.24			
0.1N NAOH Blank			2.4	

Molecular Weight CL = 35.453 lb/lb-mole
Molecular Weight HCL = 36.453 lb/lb-mole

mg HCL = (mg CL - CL Blank (0.1NH2SO4)) x $\frac{\text{MW HCL}}{\text{MW CL}}$

mg CL2 = (mg CL - CL Blank (0.1N NaOH))

AIR CONSULTING AND ENGINEERING, INC.

FUEL FACTOR CALCULATION

COMPANY NAME:	United States Sugar Corporation - Clewiston Mill
SOURCE:	Boiler 8
FUEL FIRED:	Bagasse

Run	1 dry	2 dry	3 dry
Date	1/5/07	1/5/07	1/5/07
Time			
Carbon (%)	52.94	53.32	52.36
Hydrogen (%)	5.56	5.99	6
Nitrogen (%)	0.27	0.28	0.28
Sulfur (%)	0.08	0.48	0.06
Oxygen (%)	35.99	36.56	36.07
HHV (BTU/lb)	7774	8041	7879
F-Factor (dscf/MMBTU)	**10904**	**10804**	**10843**

Sample Calculation - Run 1

$$F_d = \frac{K[(Khd\%H) + (Kc\%C) + (Ks\%S) + (Kn\%N) - (Ko\%O)]}{GCV}$$

$$= \frac{10E6[3.64(5.56) + 1.53(52.94) + 0.57(0.08) + 0.14(0.27) - 0.46(35.99)]}{7774}$$

$$= 10904$$

Where:

%H	Concentration of hydrogen from the ultimate fuel analysis on a wet basis (as received)
%C	Concentration of carbon from the ultimate fuel analysis on a wet basis (as received)
%S	Concentration of sulfur from the ultimate fuel analysis on a wet basis (as received)
%N	Concentration of nitrogen from the ultimate fuel analysis on a wet basis (as received)
%O	Concentration of oxigen from the ultimate fuel analysis on a wet basis (as received)
Khd	conversion factor (3.64 scf/lb-%)
Kc	conversion factor (1.53 scf/lb-%)
Ks	conversion factor (0.57 scf/lb-%)
Kn	conversion factor (0.14 scf/lb-%)
Ko	conversion factor (0.46 scf/lb-%)
K	conversion factor (10E6 BTU/MMBTU)
GCV	gross calorific heating value (BTU/lb HHV) dry

MERCURY EMISSIONS

HHV dry: 7898 BTU/lb dry

Hg dry: 0.0133 mg/kg = 0.0133 x 10E-6 kg/kg = 1.33 x 10E-8 lb/lb

$$\text{lbs/mmBTU Hg} = \frac{1.33 \times 10E\text{-}8\ \text{lb/lb}}{7898 \times 10E\text{-}6\ \text{mmBTU/lb}} = 1.68 \times 10E\text{-}6$$

Hazen Research, Inc.
4601 Indiana Street
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Fax: (303) 278-1528

Date February 5 2007
HRI Project 009-555
HRI Series No. A110/07-1
Date Rec'd. 01/11/07
Cust. P.O.#

Golder Associates, Inc.
David Buff
6241 NW 23rd Street, Suite 500
Gainesville, FL 32653

Sample Identification
010507-1 01/05/07 11 AM

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	52.42	0.00	1.47
Ash	2.45	5.16	5.08
Volatile	39.58	83.18	81.96
Fixed C	5.55	11.66	11.49
Total	100.00	100.00	100.00
Sulfur	0.04	0.08	0.08
Btu/lb (HHV)	3699	7774	7660
MMF Btu/lb	3799	8232	
MAF Btu/lb		8197	
Air Dry Loss (%)	51.71		
Ultimate (%)			
Moisture	52.42	0.00	1.47
Carbon	25.19	52.94	52.16
Hydrogen	2.64	5.56	5.48
Nitrogen	0.13	0.27	0.27
Sulfur	0.04	0.08	0.08
Ash	2.45	5.16	5.08
Oxygen*	17.13	35.99	35.46
Total	100.00	100.00	100.00
Chlorine**	0.016	0.033	0.033

Forms of Sulfur (as S,%)	As Rec'd	Dry
Sulfate		
Pyritic		
Organic		
Total	0.04	0.08

Water Soluble Alkalies (%)

Na2O
K2O

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 6.63
Lb. SO2/MM Btu= 0.21
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 10,902

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

Hazen Research, Inc.
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Fax: (303) 278-1528

Date	February 5 2007
HRI Project	009-555
HRI Series No.	A110/07-2
Date Rec'd.	01/11/07
Cust. P.O.#	

Golder Associates, Inc.
David Buff
6241 NW 23rd Street, Suite 500
Gainesville, FL 32653

Sample Identification
010507-2 01/05/07 2 PM

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	51.62	0.00	2.62
Ash	1.63	3.37	3.28
Volatile	40.47	83.65	81.46
Fixed C	6.28	12.98	12.64
Total	100.00	100.00	100.00
Sulfur	0.23	0.48	0.47
Btu/lb (HHV)	3890	8041	7830
MMF Btu/lb	3953	8342	
MAF Btu/lb		8321	
Air Dry Loss (%)	50.32		
Ultimate (%)			
Moisture	51.62	0.00	2.62
Carbon	25.79	53.32	51.92
Hydrogen	2.90	5.99	5.84
Nitrogen	0.13	0.28	0.27
Sulfur	0.23	0.48	0.47
Ash	1.63	3.37	3.28
Oxygen*	17.70	36.56	35.60
Total	100.00	100.00	100.00
Chlorine**	0.010	0.021	0.020
Forms of Sulfur (as S,%)			
Sulfate			
Pyritic			
Organic			
Total	0.23	0.48	
Water Soluble Alkalies (%)			
Na2O			
K2O			

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 4.19
Lb. SO2/MM Btu= 1.20
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 10,806

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

Hazen Research, Inc.
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Date	February 5 2007
HRI Project	009-555
HRI Series No.	A110/07-3
Date Rec'd.	01/11/07
Cust. P.O.#	

Golder Associates, Inc.
David Buff
6241 NW 23rd Street, Suite 500
Gainesville, FL 32653

Sample Identification
010507-3 01/15/07 4 PM

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	51.55	0.00	1.37
Ash	2.53	5.23	5.16
Volatile	39.88	82.31	81.18
Fixed C	6.04	12.46	12.29
Total	100.00	100.00	100.00
Sulfur	0.03	0.06	0.06
Btu/lb (HHV)	3817	7879	7771
MMF Btu/lb	3923	8350	
MAF Btu/lb		8313	
Air Dry Loss (%)	50.88		
Ultimate (%)			
Moisture	51.55	0.00	1.37
Carbon	25.37	52.36	51.64
Hydrogen	2.91	6.00	5.92
Nitrogen	0.14	0.28	0.28
Sulfur	0.03	0.06	0.06
Ash	2.53	5.23	5.16
Oxygen*	17.47	36.07	35.57
Total	100.00	100.00	100.00
Chlorine**	0.012	0.025	0.025
Forms of Sulfur (as S,%)			
Sulfate			
Pyritic			
Organic			
Total	0.03	0.06	
Water Soluble Alkalies (%)			
Na2O			
K2O			

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 6.64
Lb. SO2/MM Btu= 0.15
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 10,843

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

Hazen Research, Inc.
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Date:	February 5, 2007
Project No:	009-555
Control No:	A110/07
Received:	01/11/07

Golder Associates, Inc.
David Buff
6241 NW 23rd Street, Suite 500
Gainesville, Florida 32653

Sample Number: A110/07 Sample Identification:	-1 010507-1 11AM	-2 010507-2 2PM	-3 010507-1 4PM
Air Dry Loss, %	51.71	50.32	50.88
Residual Moisture, %	1.47	2.62	1.37
As Received Moisture, %	52.42	51.62	51.55
Ash (Air Dry Basis), %	5.08	3.28	5.16
Ash (As Received Basis), %	2.45	1.63	2.53
Ash (Dry Basis), %	5.16	3.37	5.23
Mercury (Air Dry Basis), mg/kg	0.02	0.01	0.01
Mercury (As Received Basis), mg/kg	0.01	0.005	0.005
Mercury (Dry Basis), mg/kg	0.02	0.01	0.01
Metals in Ash			
Manganese, mg/kg	440	549	359
Dry Whole Fuel Basis			
Manganese, mg/kg	23	18	19

The ash was prepared at 600 degrees Celsius.
The 'dry whole' fuel values are calculated values.

By:
Gerard H. Cunningham
Fuel Laboratory Manager

AIR CONSULTING AND ENGINEERING, INC.

SCRUBBER WATER DATA

LANT: U.S. Sugar Clewiston
OURCE: Boiler 8
OCATION: Clewiston Fl

DATE: 1-5-07
RUN: C-1 Run 1
OPERATOR: Dalton Carrington

IME	PRESSURE	FLOW GPM	PH		PRESSURE	FLOW GPH	PH	
10:55	87	450						
11:10	87	444						
11:25	87	443						
11:40	87	444						
11:55	87	444						
12:10	87	444						

AIR CONSULTING AND ENGINEERING, INC.

SCRUBBER WATER DATA

PLANT: U.S. Sugar, Clewiston
SOURCE: Boiler 8
LOCATION: Clewiston, FL

DATE: 1-5-07
RUN: C-2 Run 2
OPERATOR: Dallon Caminzler

TIME	PRESSURE	FLOW GPM	PH		PRESSURE	FLOW GPH	PH	
1:43	86	448						
1:58	86	448						
2:13	86	448						
2:28	86	447						
2:43	86	448						

AIR CONSULTING AND ENGINEERING, INC.

SCRUBBER WATER DATA

PLANT: US Sugar, Clewiston
SOURCE: Boiler 8
LOCATION: Clewiston, FL

DATE: 1-5-07
RUN: C-3 Run 3
OPERATOR: Johnny Navarro

TIME	PRESSURE	FLOW GPM	PH		PRESSURE	FLOW GPH	PH	
4:15	99	200						
4:30	99	200						
4:45	99	200						
5:00	99	200						
5:15	99	200						
5:30	99	200						

Boiler No. 8 - ESP Report
1/5/2007 (C-1)

Time	Power Input 1 (kW)	Power Input 2 (kW)	Power Input 3 (kW)	Power Input 4 (kW)	Power Input 5 (kW)	Power Input Total (kW)
10:58	8.92	Down	Down	10.93	12.40	32.25
10:59	7.48	Down	Down	10.17	12.45	30.10
11:00	7.95	Down	Down	10.68	12.58	31.22
11:01	7.62	Down	Down	10.50	12.00	30.12
11:02	8.23	Down	Down	11.17	12.50	31.90
11:03	8.85	Down	Down	11.57	12.63	33.05
11:04	8.67	Down	Down	11.08	12.33	32.08
11:05	7.07	Down	Down	11.28	12.13	30.48
11:06	7.45	Down	Down	11.02	12.30	30.77
11:07	7.65	Down	Down	10.62	12.30	30.57
11:08	8.03	Down	Down	10.58	12.60	31.22
11:09	6.15	Down	Down	10.80	12.65	29.60
11:10	7.65	Down	Down	10.55	12.63	30.83
11:11	7.15	Down	Down	9.57	12.53	29.25
11:12	8.20	Down	Down	10.18	12.78	31.17
11:13	6.73	Down	Down	8.78	12.48	28.00
11:14	5.77	Down	Down	8.70	12.62	27.08
11:15	6.70	Down	Down	9.03	11.63	27.37
11:16	8.23	Down	Down	10.08	11.92	30.23
11:17	8.10	Down	Down	10.07	11.90	30.07
11:18	7.85	Down	Down	10.18	11.97	30.00
11:19	7.93	Down	Down	10.52	11.97	30.42
11:20	8.28	Down	Down	10.57	11.97	30.82
11:21	7.83	Down	Down	10.47	11.97	30.27
11:22	7.07	Down	Down	10.82	11.93	29.82
11:23	8.28	Down	Down	10.78	12.00	31.07
11:24	8.48	Down	Down	10.90	12.35	31.73
11:25	8.10	Down	Down	11.13	12.20	31.43
11:26	7.92	Down	Down	11.12	12.35	31.38
11:27	7.17	Down	Down	11.02	12.15	30.33
11:28	8.57	Down	Down	11.25	12.47	32.28
11:29	8.75	Down	Down	11.38	12.00	32.13
11:30	7.87	Down	Down	10.98	12.35	31.20
11:31	6.72	Down	Down	10.73	12.40	29.85
11:32	7.70	Down	Down	10.98	12.00	30.68
11:33	8.17	Down	Down	11.08	12.00	31.25
11:34	7.53	Down	Down	10.92	12.10	30.55
11:35	8.27	Down	Down	11.05	12.20	31.52
11:36	7.32	Down	Down	11.20	11.97	30.48
11:37	8.33	Down	Down	10.92	12.17	31.42
11:38	8.75	Down	Down	11.45	12.10	32.30
11:39	7.53	Down	Down	10.40	11.93	29.87
11:40	7.38	Down	Down	10.63	11.90	29.92
11:41	6.70	Down	Down	10.03	11.90	28.63
11:42	7.70	Down	Down	10.35	12.08	30.13
11:43	6.45	Down	Down	9.80	11.85	28.10
11:44	7.38	Down	Down	10.37	12.03	29.78
11:45	8.20	Down	Down	10.77	12.02	30.98
11:46	8.48	Down	Down	11.17	11.97	31.62
11:47	6.30	Down	Down	10.53	11.90	28.73
11:48	7.63	Down	Down	10.97	11.85	30.45
11:49	6.10	Down	Down	11.33	11.75	29.18
11:50	7.03	Down	Down	10.57	11.80	29.40
11:51	7.10	Down	Down	11.08	11.97	30.15
11:52	6.85	Down	Down	10.85	12.02	29.72
11:53	8.43	Down	Down	8.62	11.93	28.98
11:54	8.35	Down	Down	8.98	11.90	29.23
11:55	8.50	Down	Down	9.67	12.13	30.30
11:56	5.92	Down	Down	8.85	11.77	26.53
11:57	7.65	Down	Down	10.68	11.87	30.20
11:58	8.28	Down	Down	11.02	11.90	31.20
Average =	**7.66**	**N/A**	**N/A**	**10.55**	**12.14**	**30.35**

Boiler No. 8 - ESP Report
1/5/2007 (C-2)

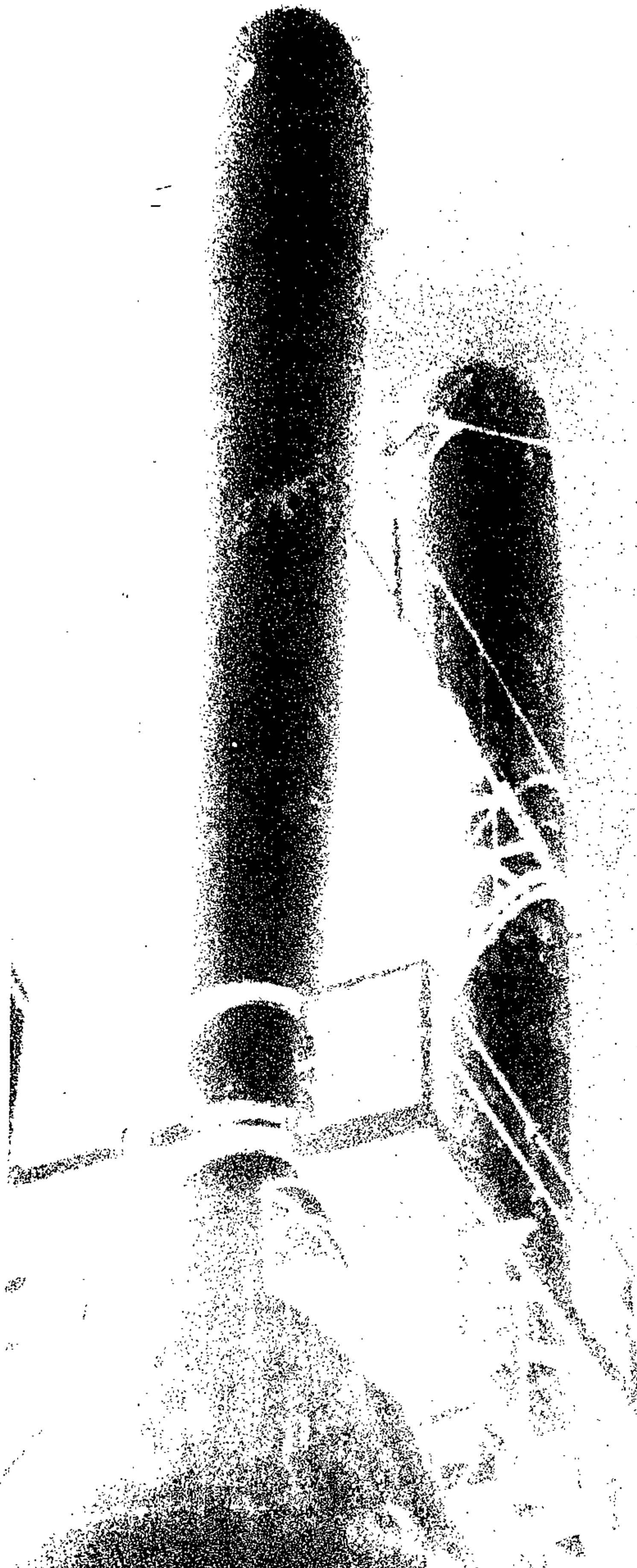
Time	Power Input 1 (kW)	Power Input 2 (kW)	Power Input 3 (kW)	Power Input 4 (kW)	Power Input 5 (kW)	Power Input Total (kW)
13:45	7.27	Down	Down	11.30	11.72	30.28
13:46	6.80	Down	Down	11.18	11.77	29.75
13:47	6.83	Down	Down	10.95	11.73	29.52
13:48	6.47	Down	Down	11.70	11.68	29.85
13:49	7.27	Down	Down	10.97	11.68	29.92
13:50	7.32	Down	Down	11.15	11.85	30.32
13:51	6.77	Down	Down	11.00	11.03	28.80
13:52	8.02	Down	Down	11.55	11.52	31.08
13:53	8.02	Down	Down	11.43	11.55	31.00
13:54	7.67	Down	Down	11.45	11.45	30.57
13:55	6.63	Down	Down	11.08	11.32	29.03
13:56	6.37	Down	Down	11.72	11.65	29.73
13:57	8.38	Down	Down	11.60	11.73	31.72
13:58	8.32	Down	Down	11.90	11.87	32.08
13:59	7.78	Down	Down	11.27	11.65	30.70
14:00	7.40	Down	Down	11.13	12.25	30.78
14:01	8.08	Down	Down	11.08	12.83	32.00
14:02	8.33	Down	Down	11.87	12.95	33.15
14:03	7.47	Down	Down	11.57	12.30	31.33
14:04	6.72	Down	Down	10.47	12.22	29.40
14:05	8.03	Down	Down	10.92	11.67	30.62
14:06	7.67	Down	Down	11.20	11.68	30.55
14:07	7.98	Down	Down	11.25	11.18	30.42
14:08	7.30	Down	Down	10.73	11.67	29.70
14:09	7.12	Down	Down	10.83	11.75	29.70
14:10	6.98	Down	Down	11.02	11.48	29.48
14:11	5.93	Down	Down	10.10	11.28	27.32
14:12	5.97	Down	Down	10.10	10.80	26.87
14:13	7.03	Down	Down	9.18	11.03	27.25
14:14	6.82	Down	Down	10.20	11.93	28.95
14:15	7.03	Down	Down	10.50	11.77	29.30
14:16	6.27	Down	Down	10.17	11.72	28.15
14:17	5.63	Down	Down	10.10	11.62	27.35
14:18	4.93	Down	Down	10.25	11.12	26.30
14:19	5.17	Down	Down	9.67	10.77	25.60
14:20	5.80	Down	Down	8.00	10.95	24.75
14:21	5.72	Down	Down	9.70	11.07	26.48
14:22	6.45	Down	Down	9.80	11.60	27.85
14:23	5.93	Down	Down	10.48	11.92	28.33
14:24	5.62	Down	Down	10.42	11.67	27.70
14:25	5.58	Down	Down	10.15	11.68	27.42
14:26	6.60	Down	Down	10.37	11.65	28.62
14:27	7.58	Down	Down	10.70	11.90	30.18
14:28	7.78	Down	Down	10.57	11.93	30.28
14:29	7.38	Down	Down	11.02	11.63	30.03
14:30	6.93	Down	Down	10.47	11.50	28.90
14:31	7.15	Down	Down	10.48	11.25	28.88
14:32	7.53	Down	Down	10.63	11.68	29.85
14:33	6.53	Down	Down	10.25	11.43	28.22
14:34	4.67	Down	Down	9.58	11.05	25.30
14:35	6.55	Down	Down	10.17	11.30	28.02
14:36	7.13	Down	Down	10.50	11.57	29.20
14:37	8.40	Down	Down	10.70	11.70	30.80
14:38	7.90	Down	Down	10.68	11.25	29.83
14:39	8.40	Down	Down	10.82	11.60	30.82
14:40	8.12	Down	Down	10.78	11.47	30.37
14:41	7.50	Down	Down	10.13	11.62	29.25
14:42	5.90	Down	Down	10.15	10.85	26.90
14:43	6.70	Down	Down	10.43	11.15	28.28
14:44	5.30	Down	Down	10.03	11.17	26.50
14:45	4.82	Down	Down	9.38	10.78	24.98
Average =	**6.91**	**N/A**	**N/A**	**10.64**	**11.57**	**29.12**

Boiler No. 8 - ESP Report
1/5/2007 (C-3)

Time	Power Input 1 (kW)	Power Input 2 (kW)	Power Input 3 (kW)	Power Input 4 (kW)	Power Input 5 (kW)	Power Input Total (kW)
16:22	5.53	Down	Down	7.98	13.97	27.48
16:23	6.62	Down	Down	6.93	13.72	27.27
16:24	6.80	Down	Down	8.23	13.22	28.25
16:25	6.42	Down	Down	6.42	16.17	29.00
16:26	6.12	Down	Down	9.82	29.90	45.83
16:27	8.18	Down	Down	10.27	15.40	33.85
16:28	5.65	Down	Down	8.67	13.53	27.85
16:29	7.53	Down	Down	7.55	13.87	28.95
16:30	7.45	Down	Down	8.50	13.82	29.77
16:31	7.08	Down	Down	7.28	14.18	28.55
16:32	6.45	Down	Down	7.53	14.23	28.22
16:33	7.38	Down	Down	8.10	14.87	30.35
16:34	8.08	Down	Down	7.87	14.23	30.18
16:35	7.53	Down	Down	9.82	14.38	31.73
16:36	7.83	Down	Down	10.22	14.55	32.60
16:37	5.58	Down	Down	7.33	14.03	26.95
16:38	7.02	Down	Down	7.93	14.77	29.72
16:39	7.23	Down	Down	8.18	15.02	30.43
16:40	6.12	Down	Down	8.00	15.10	29.22
16:41	7.43	Down	Down	7.53	14.38	29.35
16:42	6.83	Down	Down	6.97	13.88	27.68
16:43	8.18	Down	Down	7.70	14.45	30.33
16:44	6.05	Down	Down	8.25	14.92	29.22
16:45	5.82	Down	Down	8.10	14.42	28.33
16:46	7.78	Down	Down	8.25	14.83	30.87
16:47	7.07	Down	Down	6.75	14.67	28.48
16:48	6.55	Down	Down	9.17	16.30	32.02
16:49	5.07	Down	Down	9.65	18.88	33.60
16:50	7.10	Down	Down	8.58	19.35	35.03
16:51	6.45	Down	Down	9.35	23.05	38.85
16:52	6.25	Down	Down	8.43	19.02	33.70
16:53	7.78	Down	Down	7.62	24.77	40.17
16:54	7.62	Down	Down	9.20	66.78	83.60
16:55	6.25	Down	Down	10.10	39.73	56.08
16:56	8.50	Down	Down	11.35	30.30	50.15
16:57	9.02	Down	Down	10.00	30.02	49.03
16:58	8.22	Down	Down	11.02	38.77	58.00
16:59	8.27	Down	Down	9.02	27.10	44.38
17:00	10.68	Down	Down	11.03	23.23	44.95
17:01	10.58	Down	Down	12.35	20.67	43.60
17:02	7.43	Down	Down	10.77	17.92	36.12
17:03	8.73	Down	Down	11.17	17.20	37.10
17:04	10.38	Down	Down	12.77	16.80	39.95
17:05	6.95	Down	Down	12.78	16.65	36.38
17:06	6.63	Down	Down	11.82	16.30	34.75
17:07	7.83	Down	Down	8.33	15.80	31.97
17:08	8.13	Down	Down	8.93	16.15	33.22
17:09	8.72	Down	Down	9.60	17.30	35.62
17:10	10.43	Down	Down	13.05	17.10	40.58
17:11	6.43	Down	Down	11.53	17.10	35.07
17:12	8.77	Down	Down	9.00	16.20	33.97
17:13	8.17	Down	Down	12.68	16.22	37.07
17:14	9.37	Down	Down	10.85	16.38	36.60
17:15	8.27	Down	Down	12.95	16.22	37.43
17:16	5.48	Down	Down	9.27	15.93	30.68
17:17	8.45	Down	Down	11.23	16.30	35.98
17:18	11.92	Down	Down	14.05	16.65	42.62
17:19	8.23	Down	Down	10.68	17.08	36.00
17:20	10.38	Down	Down	10.47	17.47	38.32
17:21	9.85	Down	Down	14.47	17.18	41.50
17:22	9.28	Down	Down	13.27	17.92	40.47
Average =	**7.67**	**N/A**	**N/A**	**9.62**	**18.69**	**35.98**

BOILER 8

8/22/06



SOURCE TEST REPORT
FOR
PARTICULATE MATTER, MERCURY, CHLORINE AND HYDROCHLORIC ACID EMISSIONS

BOILER 8
UNITED STATES SUGAR CORPORATION
CLEWISTON, FLORIDA

FDEP PERMIT NUMBER 051-0003-030-AC
PSD-FL-333B
EMISSION UNIT 028

MACT PERFORMANCE TEST
WOOD CHIP FIRING

AUGUST 22, 2006

PREPARED FOR:

U.S. SUGAR CORPORATION
111 PONCE DELEON AVENUE
CLEWISTON, FLORIDA 33440

PREPARED BY:

AIR CONSULTING AND ENGINEERING, INC.
2106 NW 67TH PLACE, SUITE 4
GAINESVILLE, FLORIDA 32653
(352) 335-1889

238-05-01

Table 2. **Hydrochloric Acid Emission Summary**
Boiler 8 - Inlet to Wet Cyclones
United States Sugar Corporation
Clewiston, Florida
August 22, 2006

Run Number	Time	Oxygen %	CO2 %	Steam Rate lbs/hr Plant Data	Fuel Factor dscf/MMBTU Fuel Analysis	Heat Input* MMBTUH	Flow Rate dscfm	HCl Emissions lbs/hr	HCl Emissions lbs/MMBTU	CL2 Emissions lbs/hr	CL2 Emissions lbs/MMBTU
1	1036-1136	11.5	9.6	202933	11162	403.5	148855	28.14	0.0785	1.10	0.0031
2	1320-1420	12.5	7.7	202604	11501	383.6	146795	29.73	0.0967	0.90	0.0029
3	1530-1630	11.4	8.9	199219	11005	411.4	148794	29.93	0.0809	0.79	0.0021
Average	--	11.8	8.8	201585	11223	399.5	148148	29.27	0.0854	0.93	0.0027

Note: Results were not blank corrected
HCl and Cl2 were not measured isokinetically, emissions in lbs/hr were calculated using the stack flow rate

* The heat input was calculated using the stack flow rate and stack O2 measurements

$$\text{lbs/MMBTU HCl} = \frac{[(\text{mg})\text{x}(\text{lbs}/453{,}600\text{mg})]\text{xF-Factor}}{\text{VMstd.}} \text{ x } \frac{20.9}{20.9-\%O2}$$

Laboratory Results
Boiler 8

Run	HCL as Chloride mg	HCL mg	Chlorine as Chloride mg	Chlorine mg
1	60.0	61.69	1.2	2.40
2	64.0	65.81	1	2.00
3	64.0	65.81	0.87	1.74
H2SO4Blank	0.1	0.10		
NAOH Blank			0.1	0.20

CL = 35.453 lb/lb-mole
HCL = 36.453 lb/lb-mole
Chlorine = 70.906 lb/lb-mole

AIR CONSULTING AND ENGINEERING, INC.

FUEL FACTOR CALCULATION

COMPANY NAME:	United States Sugar Corporation
SOURCE:	Boiler 8
FUEL FIRED:	Wood Chips

Run	1	2	3
	wet	wet	wet
Date	8/22/06	8/22/06	8/22/06
Time			
Carbon (%)	29.34	32.33	31.56
Hydrogen (%)	3.43	3.79	3.55
Nitrogen (%)	0.33	0.32	0.36
Sulfur (%)	0.05	0.06	0.06
Oxygen (%)	18.20	18.76	18.84
HHV (BTU/lb)	4397	4757	4782
F-Factor (scf/MMBTU)	**11162**	**11501**	**11005**

Sample Calculation - Run 1

$$F_w = \frac{K[(Khw*\%H) + (Kcw*\%C) + (Ksw*\%S) + (Knw*\%N) - (Kow*\%O)]}{GCVw}$$

$$= \frac{10E6[3.64(3.43) + 1.53(29.34) + 0.57(0.05) + 0.14(0.33) - 0.46(18.2)]}{4397}$$

= 11162

Where:

%H	Concentration of hydrogen from the ultimate fuel analysis on a wet basis (as received)
%C	Concentration of carbon from the ultimate fuel analysis on a wet basis (as received)
%S	Concentration of sulfur from the ultimate fuel analysis on a wet basis (as received)
%N	Concentration of nitrogen from the ultimate fuel analysis on a wet basis (as received)
%O	Concentration of oxigen from the ultimate fuel analysis on a wet basis (as received)
Khd	conversion factor (3.64 scf/lb-%)
Kc	conversion factor (1.53 scf/lb-%)
Ks	conversion factor (0.57 scf/lb-%)
Kn	conversion factor (0.14 scf/lb-%)
Ko	conversion factor (0.46 scf/lb-%)
K	conversion factor (10E6 BTU/MMBTU)
GCV	gross calorific heating value (BTU/lb HHV) wet

Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80403 USA
Tel: (303) 279-4501
Fax: (303) 278-1528

Date September 14 2006
HRI Project 009-555
HRI Series No. H301/06-1
Date Rec'd. 08/29/06
Cust. P.O.#

Golder Associates, Inc.
David Buff
6241 NW 23rd Street, Suite 500
Gainesville, FL 32653

Sample Identification
USSC-082206-1 Wood Chips

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	36.57	0.00	1.85
Ash	12.08	19.04	18.69
Volatile	40.87	64.43	63.24
Fixed C	10.48	16.53	16.22
Total	100.00	100.00	100.00
Sulfur	0.05	0.08	0.08
Btu/lb (HHV)	4397	6932	6804
MMF Btu/lb	5056	8727	
MAF Btu/lb		8563	
Air Dry Loss (%)	35.37		
Ultimate (%)			
Moisture	36.57	0.00	1.85
Carbon	29.34	46.26	45.40
Hydrogen	3.43	5.41	5.31
Nitrogen	0.33	0.52	0.51
Sulfur	0.05	0.08	0.08
Ash	12.08	19.04	18.69
Oxygen*	18.20	28.69	28.16
Total	100.00	100.00	100.00
Chlorine**	0.092	0.145	0.142

Forms of Sulfur (as S,%)	As Rec'd	Dry
Sulfate		
Pyritic		
Organic		
Total	0.05	0.08

Water Soluble Alkalies (%)

Na2O
K2O

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 27.47
Lb. SO2/MM Btu= 0.24
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 11,165

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

Hazen Research, Inc.
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Golden, CO 80403 USA
Tel: (303) 279-4501
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Date September 14 2006
HRI Project 009-555
HRI Series No. H301/06-2
Date Rec'd. 08/29/06
Cust. P.O.#

Golder Associates, Inc.
David Buff
6241 NW 23rd Street, Suite 500
Gainesville, FL 32653

Sample Identification
USSC-082206-2 Wood Chips

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	32.72	0.00	2.18
Ash	12.02	17.87	17.48
Volatile	45.61	67.80	66.32
Fixed C	9.65	14.33	14.02
Total	100.00	100.00	100.00
Sulfur	0.06	0.09	0.09
Btu/lb (HHV)	4757	7071	6917
MMF Btu/lb	5466	8762	
MAF Btu/lb		8609	
Air Dry Loss (%)	31.22		
Ultimate (%)			
Moisture	32.72	0.00	2.18
Carbon	32.33	48.06	47.01
Hydrogen	3.79	5.63	5.51
Nitrogen	0.32	0.48	0.47
Sulfur	0.06	0.09	0.09
Ash	12.02	17.87	17.48
Oxygen*	18.76	27.87	27.26
Total	100.00	100.00	100.00
Chlorine**	0.095	0.141	0.138
Forms of Sulfur (as S,%)			
Sulfate			
Pyritic			
Organic			
Total	0.06	0.09	
Water Soluble Alkalies (%)			
Na2O			
K2O			

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 25.27
Lb. SO2/MM Btu= 0.26
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 11,500

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

Hazen Research, Inc.
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Date September 14 2006
HRI Project 009-555
HRI Series No. H301/06-3
Date Rec'd. 08/29/06
Cust. P.O.#

Golder Associates, Inc.
David Buff
6241 NW 23rd Street, Suite 500
Gainesville, FL 32653

Sample Identification
USSC-082206-3 Wood Chips

Reporting Basis >	As Rec'd	Dry	Air Dry
Proximate (%)			
Moisture	33.93	0.00	4.54
Ash	11.70	17.71	16.91
Volatile	45.10	68.26	65.16
Fixed C	9.27	14.03	13.39
Total	100.00	100.00	100.00
Sulfur	0.06	0.08	0.08
Btu/lb (HHV)	4782	7238	6909
MMF Btu/lb	5472	8950	
MAF Btu/lb		8796	
Air Dry Loss (%)	30.79		
Ultimate (%)			
Moisture	33.93	0.00	4.54
Carbon	31.56	47.77	45.60
Hydrogen	3.55	5.38	5.13
Nitrogen	0.36	0.54	0.52
Sulfur	0.06	0.08	0.08
Ash	11.70	17.71	16.91
Oxygen*	18.84	28.52	27.22
Total	100.00	100.00	100.00
Chlorine**	0.107	0.161	0.154

Forms of Sulfur (as S,%)	As Rec'd	Dry
Sulfate		
Pyritic		
Organic		
Total	0.06	0.08

Water Soluble Alkalies (%)

Na2O
K2O

Lb. Alkali/MM Btu=
Lb. Ash/MM Btu= 24.47
Lb. SO2/MM Btu= 0.23
HGI= @ % Moisture
As Rec'd. Sp.Gr.=
Free Swelling Index=
F-Factor(dry),DSCF/MM BTU= 11,007

Report Prepared By:

Gerard H. Cunningham
Fuels Laboratory Supervisor

* Oxygen by Difference.
** Not usually reported as part of the ultimate analysis.

Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80403 USA
Tel: (303) 279-4501
Fax: (303) 278-1528

Date:	Sept. 14, 2006
Project No:	009-555
Control No:	H301/06
Received:	08/29/06

Golder Associates, Inc.
David Buff
6241 NW 23rd Street, Suite 500
Gainesville, Florida 32653

Sample Number: H301/06 Sample Identification: USSC-060106	-1 -4	-2 -6	-3 -8
Air Dry Loss, %	35.37	31.22	30.79
Residual Moisture, %	1.85	2.18	4.54
As Received Moisture, %	36.57	32.72	33.93
Ash (Air Dry Basis), %	18.69	17.48	16.91
Ash (As Received Basis), %	12.08	12.02	11.70
Ash (Dry Basis), %	19.04	17.87	17.71
Mercury (Air Dry Basis), mg/kg	0.02	0.02	0.02
Mercury (As Received Basis), mg/kg	0.01	0.01	0.01
Mercury (Dry Basis), mg/kg	0.02	0.02	0.02
Metals In Ash			
Manganese, mg/kg	98	100	110
Dry Whole Fuel Basis			
Manganese, mg/kg	19	18	19

The ash was prepared at 600 degrees Celsius.
The 'dry whole' fuel values are calculated values.

By: [signature]
Gerard H. Cunningham
Fuel Laboratory Manager

Boiler 8 - Wet Cyclone Report
8/22/2006 (C-1)

Time [a]	Water Flow Rate 1 (gal/hr)	Water Flow 1 (On/Off)	Pressure Drop 1 (inches H_2O)	Water Flow Rate 2 (gal/hr)	Water Flow 2 (On/Off)	Pressure Drop 2 (inches H_2O)
9:36	21,010	On	0.32	21,000	On	0.34
9:37	20,990	On	0.51	21,000	On	0.51
9:38	21,000	On	0.48	20,990	On	0.29
9:39	21,010	On	0.31	21,010	On	0.33
9:40	21,000	On	0.42	21,000	On	0.39
9:41	21,010	On	0.43	21,000	On	0.37
9:42	21,000	On	0.40	21,000	On	0.36
9:43	20,990	On	0.40	21,000	On	0.39
9:44	21,010	On	0.37	21,000	On	0.33
9:45	20,990	On	0.43	21,000	On	0.38
9:46	21,000	On	0.37	21,010	On	0.31
9:47	20,990	On	0.39	20,990	On	0.38
9:48	21,010	On	0.39	21,010	On	0.39
9:49	21,000	On	0.42	20,990	On	0.32
9:50	21,000	On	0.41	21,010	On	0.36
9:51	21,010	On	0.39	20,990	On	0.29
9:52	21,000	On	0.52	21,000	On	0.35
9:53	21,000	On	0.48	21,000	On	0.36
9:54	21,000	On	0.31	21,010	On	0.24
9:55	20,980	On	0.52	21,010	On	0.42
9:56	21,010	On	0.40	20,990	On	0.38
9:57	21,000	On	0.51	21,000	On	0.46
9:58	20,990	On	0.39	20,990	On	0.26
9:59	21,000	On	0.45	21,010	On	0.37
10:00	21,010	On	0.32	21,000	On	0.23
10:01	20,980	On	0.42	21,010	On	0.48
10:02	21,010	On	0.32	20,990	On	0.34
10:03	21,000	On	0.25	21,000	On	0.18
10:04	21,000	On	0.40	21,000	On	0.39
10:05	21,000	On	0.43	21,010	On	0.39
10:06	21,000	On	0.40	21,010	On	0.29
10:07	21,000	On	0.36	20,990	On	0.34
10:08	21,000	On	0.38	21,000	On	0.16
10:09	21,000	On	0.46	21,000	On	0.28
10:10	21,000	On	0.47	21,010	On	0.26
10:11	21,000	On	0.30	21,000	On	0.29
10:12	21,000	On	0.49	21,000	On	0.33
10:13	21,000	On	0.32	21,010	On	0.29
10:14	21,000	On	0.24	20,990	On	0.22
10:15	21,000	On	0.38	20,990	On	0.28
10:16	21,000	On	0.49	21,000	On	0.44
10:17	20,990	On	0.37	21,000	On	0.28
10:18	21,000	On	0.44	21,010	On	0.43
10:19	21,000	On	0.57	21,000	On	0.45
10:20	21,000	On	0.47	21,000	On	0.44
10:21	21,010	On	0.50	21,010	On	0.40
10:22	20,990	On	0.46	21,000	On	0.45
10:23	21,000	On	0.36	20,990	On	0.36
10:24	21,000	On	0.42	20,990	On	0.42
10:25	21,000	On	0.33	21,000	On	0.33
10:26	20,990	On	0.53	21,000	On	0.48
10:27	21,000	On	0.38	21,000	On	0.42
10:28	21,000	On	0.43	21,000	On	0.29
10:29	21,010	On	0.38	20,990	On	0.30
10:30	20,990	On	0.32	21,010	On	0.36
10:31	21,010	On	0.31	21,000	On	0.24
10:32	20,990	On	0.44	20,990	On	0.42
10:33	21,000	On	0.44	21,000	On	0.50
10:34	21,010	On	0.45	21,010	On	0.38
10:35	21,000	On	0.49	21,000	On	0.44
10:36	21,010	On	0.31	20,990	On	0.40
Average	**21,000**	**N/A**	**0.41**	**21,000**	**N/A**	**0.35**

[a] The CEMS DAHS does not account for Daylight Savings Time, therefore, the CEMS data corresponding to the stack test runs is one-hour behind actual time.

Boiler 8 - ESP Report
8/22/2006 (C-1)

Time *	Secondary Power Input 1 (kW)	Secondary Power Input 2 (kW)	Secondary Power Input 3 (kW)	Secondary Power Input 4 (kW)	Secondary Power Input 5 (kW)	Secondary Power Input Total (kW)
9:36	0.18	0.00	14.55	30.53	0.00	45.27
9:37	0.40	0.00	12.95	32.17	0.00	45.52
9:38	0.27	0.00	13.72	28.85	0.00	42.83
9:39	0.27	0.00	13.70	26.68	0.00	40.65
9:40	0.25	0.00	13.97	32.67	0.00	46.88
9:41	0.18	0.00	14.98	32.87	0.00	48.03
9:42	0.18	0.00	15.07	31.27	0.00	46.52
9:43	0.30	0.00	14.50	31.53	0.00	46.33
9:44	0.25	0.00	14.63	31.18	0.00	46.07
9:45	0.27	0.00	14.53	31.17	0.00	45.97
9:46	0.27	0.00	14.35	29.93	0.00	44.55
9:47	0.25	0.00	14.40	31.50	0.00	46.15
9:48	0.20	0.00	14.40	31.97	0.00	46.57
9:49	0.25	0.00	13.82	28.48	0.00	42.55
9:50	0.18	0.00	14.35	32.37	0.00	46.90
9:51	0.20	0.00	14.40	32.02	0.00	46.62
9:52	0.17	0.00	14.35	31.17	0.00	45.68
9:53	0.13	0.00	14.30	31.37	0.00	45.80
9:54	0.17	0.00	13.55	31.08	0.00	44.80
9:55	0.13	0.00	14.35	31.65	0.00	46.13
9:56	0.23	0.00	13.12	31.82	0.00	45.17
9:57	0.33	0.00	14.53	31.42	0.00	46.28
9:58	0.20	0.00	14.60	31.73	0.00	46.53
9:59	0.13	0.00	14.68	31.37	0.00	46.18
10:00	0.18	0.00	14.45	31.85	0.00	46.48
10:01	0.17	0.00	14.05	31.60	0.00	45.82
10:02	0.28	0.00	14.15	31.97	0.00	46.40
10:03	0.30	0.00	14.25	30.97	0.00	45.52
10:04	0.20	0.00	13.88	30.93	0.00	45.02
10:05	0.23	0.00	14.07	31.48	0.00	45.78
10:06	0.25	0.00	14.40	30.67	0.00	45.32
10:07	0.18	0.00	14.40	31.08	0.00	45.67
10:08	0.20	0.00	14.13	30.25	0.00	44.58
10:09	0.13	0.00	13.90	30.62	0.00	44.65
10:10	0.23	0.00	14.57	31.45	0.00	46.25
10:11	0.27	0.00	14.63	30.93	0.00	45.83
10:12	0.32	0.00	14.35	31.43	0.00	46.10
10:13	0.20	0.00	14.45	30.80	0.00	45.45
10:14	0.17	0.00	14.35	31.18	0.00	45.70
10:15	0.22	0.00	14.35	30.87	0.00	45.43
10:16	0.20	0.00	14.25	31.12	0.00	45.57
10:17	0.23	0.00	14.25	31.18	0.00	45.67
10:18	0.10	0.00	14.20	31.02	0.00	45.32
10:19	0.18	0.00	14.10	30.85	0.00	45.13
10:20	0.27	0.00	14.05	30.65	0.00	44.97
10:21	0.22	0.00	14.25	31.38	0.00	45.85
10:22	0.25	0.00	13.98	30.65	0.00	44.88
10:23	0.27	0.00	14.20	30.92	0.00	45.38
10:24	0.23	0.00	14.10	30.70	0.00	45.03
10:25	0.17	0.00	14.30	30.80	0.00	45.27
10:26	0.20	0.00	14.35	31.40	0.00	45.95
10:27	0.13	0.00	13.77	30.95	0.00	44.85
10:28	0.17	0.00	14.32	31.05	0.00	45.53
10:29	0.20	0.00	14.35	31.52	0.00	46.07
10:30	0.17	0.00	14.30	31.12	0.00	45.58
10:31	0.20	0.00	14.27	30.80	0.00	45.27
10:32	0.13	0.00	14.32	31.68	0.00	46.13
10:33	0.20	0.00	14.22	30.47	0.00	44.88
10:34	0.20	0.00	13.92	31.40	0.00	45.52
10:35	0.33	0.00	14.25	31.58	0.00	46.17
10:36	0.23	0.00	14.10	30.65	0.00	44.98
Average	**0.22**	**0.00**	**14.23**	**31.09**	**0.00**	**45.54**

* The CEMS DAHS does not account for Daylight Savings Time, therefore, the CEMS data corresponding to the stack test runs is one-hour behind actual time.

Boiler 8 - Wet Cyclone Report
8/22/2006 (C-2)

Time *	Water Flow Rate 1 (gal/hr)	Water Flow 1 (On/Off)	Pressure Drop 1 (inches H_2O)	Water Flow Rate 2 (gal/hr)	Water Flow 2 (On/Off)	Pressure Drop 2 (inches H_2O)
12:20	21,000	On	0.34	21,010	On	0.33
12:21	21,000	On	0.35	21,000	On	0.31
12:22	21,000	On	0.52	21,000	On	0.48
12:23	21,000	On	0.44	21,000	On	0.37
12:24	21,000	On	0.48	21,000	On	0.41
12:25	21,010	On	0.36	21,000	On	0.29
12:26	21,000	On	0.54	21,000	On	0.37
12:27	21,000	On	0.47	21,000	On	0.44
12:28	21,000	On	0.37	21,010	On	0.28
12:29	21,010	On	0.44	21,000	On	0.32
12:30	21,000	On	0.43	21,000	On	0.30
12:31	21,000	On	0.63	21,000	On	0.52
12:32	21,010	On	0.23	21,010	On	0.17
12:33	21,010	On	0.50	21,000	On	0.39
12:34	21,000	On	0.45	21,010	On	0.29
12:35	20,980	On	0.37	21,000	On	0.30
12:36	21,000	On	0.46	21,000	On	0.42
12:37	21,010	On	0.52	21,000	On	0.44
12:38	21,000	On	0.44	21,010	On	0.41
12:39	21,000	On	0.48	21,000	On	0.48
12:40	21,010	On	0.43	21,010	On	0.40
12:41	20,990	On	0.53	20,990	On	0.38
12:42	21,010	On	0.40	21,010	On	0.35
12:43	21,010	On	0.44	21,010	On	0.31
12:44	21,000	On	0.47	20,990	On	0.47
12:45	20,980	On	0.39	21,000	On	0.32
12:46	21,000	On	0.31	20,990	On	0.24
12:47	21,020	On	0.36	21,000	On	0.33
12:48	21,000	On	0.51	21,010	On	0.33
12:49	21,000	On	0.26	21,000	On	0.29
12:50	21,000	On	0.29	20,990	On	0.21
12:51	21,010	On	0.37	21,010	On	0.36
12:52	20,990	On	0.33	21,010	On	0.29
12:53	21,000	On	0.61	21,000	On	0.47
12:54	21,010	On	0.50	20,990	On	0.36
12:55	20,990	On	0.40	21,000	On	0.18
12:56	20,990	On	0.58	21,000	On	0.43
12:57	21,010	On	0.47	21,000	On	0.39
12:58	21,000	On	0.38	21,000	On	0.36
12:59	20,990	On	0.29	21,010	On	0.26
13:00	21,000	On	0.38	21,000	On	0.30
13:01	21,000	On	0.47	21,000	On	0.37
13:02	21,010	On	0.45	21,000	On	0.46
13:03	21,000	On	0.39	21,000	On	0.34
13:04	21,010	On	0.55	21,000	On	0.40
13:05	20,990	On	0.35	21,000	On	0.33
13:06	21,010	On	0.44	20,990	On	0.43
13:07	21,000	On	0.57	21,010	On	0.59
13:08	20,990	On	0.44	20,990	On	0.35
13:09	21,000	On	0.41	21,010	On	0.33
13:10	21,000	On	0.24	21,000	On	0.17
13:11	21,010	On	0.27	21,000	On	0.22
13:12	20,990	On	0.39	21,000	On	0.38
13:13	21,000	On	0.34	20,990	On	0.37
13:14	21,000	On	0.39	21,010	On	0.43
13:15	21,000	On	0.38	21,000	On	0.30
13:16	21,000	On	0.38	21,010	On	0.34
13:17	21,000	On	0.47	20,990	On	0.45
13:18	21,000	On	0.42	21,000	On	0.43
13:19	21,000	On	0.31	21,000	On	0.26
13:20	20,990	On	0.51	21,000	On	0.23
Average	**21,001**	**N/A**	**0.42**	**21,001**	**N/A**	**0.35**

* The CEMS DAHS does not account for Daylight Savings Time, therefore, the CEMS data corresponding to the stack test runs is one-hour behind actual time.

Boiler 8- ESP Report
8/22/2006 (C-2)

Time *	Secondary Power Input 1 (kW)	Secondary Power Input 2 (kW)	Secondary Power Input 3 (kW)	Secondary Power Input 4 (kW)	Secondary Power Input 5 (kW)	Secondary Power Input Total (kW)
12:20	0.22	0.00	0.00	20.75	0.00	20.97
12:21	0.20	0.00	0.00	20.07	0.00	20.27
12:22	0.20	0.00	0.00	19.93	0.00	20.13
12:23	0.17	0.00	0.00	20.32	0.00	20.48
12:24	0.33	0.00	0.00	19.85	0.00	20.18
12:25	0.17	0.00	0.00	19.68	0.00	19.85
12:26	0.20	0.00	0.00	20.82	0.00	21.02
12:27	0.15	0.00	0.00	19.98	0.00	20.13
12:28	0.27	0.00	0.00	20.53	0.00	20.80
12:29	0.18	0.00	0.00	19.47	0.00	19.65
12:30	0.23	0.00	0.00	19.57	0.00	19.80
12:31	0.25	0.00	0.00	19.57	0.00	19.82
12:32	0.10	0.00	0.00	19.43	0.00	19.53
12:33	0.18	0.00	0.00	17.82	0.00	18.00
12:34	0.17	0.00	0.00	18.65	0.00	18.82
12:35	0.17	0.00	0.00	19.23	0.00	19.40
12:36	0.10	0.00	0.00	19.80	0.00	19.90
12:37	0.20	0.00	0.00	20.42	0.00	20.62
12:38	0.17	0.00	0.00	20.22	0.00	20.38
12:39	0.25	0.00	0.00	19.93	0.00	20.18
12:40	0.17	0.00	0.00	16.35	0.00	16.52
12:41	0.20	0.00	0.00	20.30	0.00	20.50
12:42	0.25	0.00	0.00	19.40	0.00	19.65
12:43	0.20	0.00	0.00	20.68	0.00	20.88
12:44	0.17	0.00	0.00	19.50	0.00	19.67
12:45	0.32	0.00	0.00	20.05	0.00	20.37
12:46	0.20	0.00	0.00	19.95	0.00	20.15
12:47	0.20	0.00	0.00	20.25	0.00	20.45
12:48	0.13	0.00	0.00	19.05	0.00	19.18
12:49	0.20	0.00	0.00	20.50	0.00	20.70
12:50	0.30	0.00	0.00	19.87	0.00	20.17
12:51	0.20	0.00	0.00	19.93	0.00	20.13
12:52	0.22	0.00	0.00	19.77	0.00	19.98
12:53	0.20	0.00	0.00	19.30	0.00	19.50
12:54	0.17	0.00	0.00	18.88	0.00	19.05
12:55	0.23	0.00	0.00	19.45	0.00	19.68
12:56	0.27	0.00	0.00	20.47	0.00	20.73
12:57	0.23	0.00	0.00	20.12	0.00	20.35
12:58	0.37	0.00	0.00	20.33	0.00	20.70
12:59	0.17	0.00	0.00	19.72	0.00	19.88
13:00	0.20	0.00	0.00	19.55	0.00	19.75
13:01	0.23	0.00	0.00	19.67	0.00	19.90
13:02	0.20	0.00	0.00	20.13	0.00	20.33
13:03	0.22	0.00	0.00	20.07	0.00	20.28
13:04	0.25	0.00	0.00	19.63	0.00	19.88
13:05	0.22	0.00	0.00	18.12	0.00	18.33
13:06	0.23	0.00	0.00	20.85	0.00	21.08
13:07	0.33	0.00	0.00	19.63	0.00	19.97
13:08	0.15	0.00	0.00	16.65	0.00	16.80
13:09	0.17	0.00	0.00	19.40	0.00	19.57
13:10	0.13	0.00	0.00	19.35	0.00	19.48
13:11	0.20	0.00	0.00	20.62	0.00	20.82
13:12	0.15	0.00	0.00	18.78	0.00	18.93
13:13	0.27	0.00	0.00	21.35	0.00	21.62
13:14	0.13	0.00	0.00	20.97	0.00	21.10
13:15	0.27	0.00	0.00	20.85	0.00	21.12
13:16	0.25	0.00	0.00	19.98	0.00	20.23
13:17	0.23	0.00	0.00	20.50	0.00	20.73
13:18	0.20	0.00	0.00	19.07	0.00	19.27
13:19	0.17	0.00	0.00	19.60	0.00	19.77
13:20	0.13	0.00	0.00	20.62	0.00	20.75
Average	**0.21**	**0.00**	**0.00**	**19.76**	**0.00**	**19.97**

* The CEMS DAHS does not account for Daylight Savings Time, therefore, the CEMS data corresponding to the stack test runs is one-hour behind actual time.

Boiler 8 - Wet Cyclone Report
8/22/2006 (C-3)

Time *	Water Flow Rate 1 (gal/hr)	Water Flow 1 (On/Off)	Pressure Drop 1 (inches H_2O)	Water Flow Rate 2 (gal/hr)	Water Flow 2 (On/Off)	Pressure Drop 2 (inches H_2O)
14:30	20,990	On	0.50	21,000	On	0.37
14:31	21,010	On	0.40	21,010	On	0.35
14:32	20,990	On	0.44	21,000	On	0.43
14:33	21,010	On	0.36	21,000	On	0.21
14:34	21,000	On	0.37	21,000	On	0.44
14:35	21,000	On	0.40	21,000	On	0.22
14:36	21,010	On	0.34	21,000	On	0.37
14:37	20,990	On	0.45	21,000	On	0.36
14:38	21,010	On	0.29	21,000	On	0.24
14:39	21,000	On	0.30	21,000	On	0.15
14:40	21,000	On	0.45	21,000	On	0.38
14:41	21,000	On	0.44	21,000	On	0.24
14:42	21,010	On	0.49	21,010	On	0.34
14:43	21,000	On	0.52	21,000	On	0.41
14:44	21,010	On	0.48	21,000	On	0.37
14:45	20,990	On	0.33	21,010	On	0.33
14:46	21,000	On	0.34	21,000	On	0.22
14:47	20,990	On	0.63	21,010	On	0.43
14:48	21,000	On	0.44	20,990	On	0.43
14:49	21,000	On	0.47	20,990	On	0.38
14:50	21,000	On	0.47	21,000	On	0.42
14:51	21,000	On	0.57	21,010	On	0.31
14:52	21,010	On	0.35	20,990	On	0.30
14:53	20,990	On	0.63	21,000	On	0.46
14:54	21,000	On	0.49	20,990	On	0.35
14:55	21,000	On	0.44	21,000	On	0.40
14:56	21,020	On	0.33	20,990	On	0.38
14:57	21,000	On	0.58	21,010	On	0.48
14:58	21,000	On	0.35	21,000	On	0.40
14:59	21,010	On	0.35	21,010	On	0.28
15:00	21,010	On	0.62	21,000	On	0.47
15:01	20,990	On	0.42	20,990	On	0.22
15:02	21,000	On	0.49	20,990	On	0.48
15:03	20,990	On	0.37	21,010	On	0.23
15:04	20,990	On	0.51	21,000	On	0.26
15:05	21,020	On	0.48	21,000	On	0.39
15:06	21,000	On	0.47	20,990	On	0.39
15:07	21,010	On	0.43	20,990	On	0.46
15:08	21,000	On	0.47	21,000	On	0.32
15:09	21,000	On	0.37	21,000	On	0.35
15:10	21,010	On	0.49	21,000	On	0.46
15:11	21,010	On	0.45	21,000	On	0.31
15:12	21,000	On	0.50	21,000	On	0.43
15:13	20,990	On	0.49	21,010	On	0.43
15:14	21,000	On	0.38	21,000	On	0.34
15:15	21,000	On	0.46	21,000	On	0.40
15:16	21,010	On	0.38	21,000	On	0.30
15:17	21,000	On	0.50	21,000	On	0.44
15:18	21,000	On	0.39	20,990	On	0.29
15:19	21,000	On	0.42	20,990	On	0.29
15:20	21,000	On	0.42	21,000	On	0.39
15:21	21,000	On	0.56	21,010	On	0.35
15:22	21,000	On	0.46	21,000	On	0.44
15:23	21,010	On	0.47	21,000	On	0.44
15:24	21,000	On	0.46	21,000	On	0.46
15:25	21,010	On	0.50	21,000	On	0.40
15:26	20,990	On	0.48	21,000	On	0.34
15:27	20,990	On	0.35	21,000	On	0.35
15:28	21,010	On	0.44	21,010	On	0.39
15:29	20,990	On	0.49	20,990	On	0.41
15:30	21,010	On	0.42	21,000	On	0.39
Average	**21,001**	**N/A**	**0.44**	**21,000**	**N/A**	**0.36**

* The CEMS DAHS does not account for Daylight Savings Time, therefore, the CEMS data corresponding to the stack test runs is one-hour behind actual time.

Boiler 8 - ESP Report
8/22/2006 (C-3)

Time *	Secondary Power Input 1 (kW)	Secondary Power Input 2 (kW)	Secondary Power Input 3 (kW)	Secondary Power Input 4 (kW)	Secondary Power Input 5 (kW)	Secondary Power Input Total (kW)
14:30	0.37	0.00	0.00	22.07	0.00	22.43
14:31	0.25	0.00	0.00	22.15	0.00	22.40
14:32	0.20	0.00	0.00	21.77	0.00	21.97
14:33	0.20	0.00	0.00	21.77	0.00	21.97
14:34	0.20	0.00	0.00	21.20	0.00	21.40
14:35	0.27	0.00	0.00	20.82	0.00	21.08
14:36	0.25	0.00	0.00	20.50	0.00	20.75
14:37	0.20	0.00	0.00	20.25	0.00	20.45
14:38	0.27	0.00	0.00	20.43	0.00	20.70
14:39	0.20	0.00	0.00	20.95	0.00	21.15
14:40	0.17	0.00	0.00	20.32	0.00	20.48
14:41	0.17	0.00	0.00	19.48	0 00	19.65
14:42	0.20	0.00	0.00	20.85	0.00	21.05
14:43	0.18	0.00	0.00	20.63	0.00	20.82
14:44	0.27	0.00	0.00	20.10	0.00	20.37
14:45	0.17	0.00	0.00	20.15	0.00	20.32
14:46	0.28	0.00	0.00	19.80	0.00	20.08
14:47	0.22	0.00	0.00	19.55	0.00	19.77
14:48	0.17	0.00	0.00	19 92	0.00	20.08
14:49	0.20	0.00	0.00	20.18	0 00	20.38
14:50	0.23	0.00	0.00	19.98	0.00	20.22
14:51	0.30	0.00	0.00	18.02	0.00	18.32
14:52	0.23	0.00	0.00	18.73	0.00	18.97
14:53	0.27	0.00	0.00	19.05	0.00	19.32
14:54	0.17	0.00	0.00	20.23	0.00	20.40
14:55	0.18	0.00	0.00	19.85	0.00	20.03
14:56	0.17	0 00	0.00	19.43	0.00	19.60
14:57	0.35	0.00	0.00	21.08	0.00	21.43
14:58	0.20	0.00	0.00	20.52	0.00	20.72
14:59	0.25	0.00	0.00	20.25	0.00	20.50
15:00	0.27	0.00	0.00	20.77	0.00	21.03
15:01	0.10	0.00	0.00	20.60	0.00	20.70
15:02	0.13	0.00	0.00	19.95	0.00	20.08
15:03	0.22	0.00	0.00	20.22	0.00	20.43
15:04	0.27	0.00	0.00	19.95	0.00	20.22
15:05	0.20	0.00	0.00	19.95	0.00	20.15
15:06	0.33	0.00	0.00	20.42	0.00	20.75
15:07	0.20	0.00	0.00	19.68	0.00	19.88
15:08	0.20	0.00	0.00	19.45	0.00	19.65
15:09	0.20	0.00	0.00	17.77	0.00	17.97
15:10	0.20	0.00	0.00	19.77	0.00	19.97
15:11	0.30	0.00	0.00	19.48	0.00	19.78
15:12	0.20	0.00	0.00	19.85	0.00	20.05
15:13	0.28	0.00	0.00	19.82	0.00	20.10
15:14	0.25	0.00	0.00	20.00	0.00	20.25
15:15	0 17	0.00	0.00	20.02	0.00	20.18
15:16	0.20	0.00	0.00	19.50	0.00	19.70
15:17	0.17	0.00	0.00	19.52	0.00	19.68
15:18	0.23	0.00	0.00	19.43	0.00	19.67
15:19	0.25	0.00	0.00	19.55	0.00	19.80
15:20	0.17	0.00	0.00	19.83	0.00	20.00
15:21	0.17	0.00	0.00	19.77	0.00	19.93
15:22	0.22	0.00	0.00	19.87	0.00	20.08
15:23	0.22	0.00	0.00	19.65	0.00	19.87
15:24	0.23	0.00	0.00	19.42	0.00	19.65
15:25	0.23	0.00	0.00	19.48	0.00	19.72
15:26	0.23	0.00	0.00	19.55	0.00	19.78
15:27	0.13	0.00	0.00	19.32	0.00	19.45
15:28	0.35	0.00	0.00	20.05	0.00	20.40
15:29	0.10	0 00	0.00	19.68	0.00	19.78
15:30	0.17	0.00	0.00	19.82	0.00	19.98
Average	**0.22**	**0.00**	**0.00**	**20.04**	**0.00**	**20.25**

* The CEMS DAHS does not account for Daylight Savings Time, therefore, the CEMS data corresponding to the stack test runs is one-hour behind actual time.