Golder Associates Inc.

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

April 25, 2003

0037653

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

Attention: Ms. Trina Vielhauer, Chief, Bureau of Air Regulation

SUBJECT: UNITED STATES SUGAR CORPORATION
CLEWISTON MILL
BOILER NOS. 1, 2 and 4 REPAIRS DURING 2003-2005 OFF-SEASON
0510003-023-AC

Dear Ms. Vielhauer:

On behalf of United States Sugar Corporation (U.S. Sugar), the purpose of this letter is to apply for a construction permit for the planned repairs to Boiler Nos. 1, 2 and 4 at the Clewiston mill. These repairs are planned to be conducted during the 2003-2005 off-seasons. Details of the repairs were contained in letters submitted to the Department dated February 6 and March 27, 2003. We also have had subsequent follow up discussions with you and the Department's staff on this subject.

Attached are the Responsible Official and Professional Engineer signature pages to support this request. Consider this letter and the previous letter submittals referenced above to constitute U. S. Sugar's application. Please call me at (352)336-5600 if you have any questions or comments, or need additional information. Thank you for your consideration of this matter.

Sincerely,
GOLDER ASSOCIATES INC.

David A. Buff

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

DB/jej

Enclosures

cc: Don Griffin
Peter Briggs
Bubba Wade

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Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official:
   William R. Raiola, Senior Vice President - Sugar Processing
2. Owner/Authorized Representative or Responsible Official Mailing Address:
   Organization/Firm: **United States Sugar Corporation**
   Street Address: **111 Ponce DeLeon Ave.**
   City: **Clewiston** State: **FL** Zip Code: **33440**
3. Owner/Authorized Representative or Responsible Official Telephone Numbers:
   Telephone: (**863**) **902 - 2703** Fax: (**863**) **902 - 2729**
4. Owner/Authorized Representative or Responsible Official Statement:

I, the undersigned, am the owner or authorized representative(check here | |, if so) or the responsible official (check here [X], if so) of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.*

Signature — April 25, 2002 — Date

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

1. Professional Engineer Name: **David A. Buff**
   Registration Number: **19011**
2. Professional Engineer Mailing Address:
   Organization/Firm: **Golder Associates Inc. ***
   Street Address: **6241 NW 23rd Street, Suite 500**
   City: **Gainesville** State: **FL** Zip Code: **32653-1500**
3. Professional Engineer Telephone Numbers:
   Telephone: (**352**) **336 - 5600** Fax: (**352**) **336 - 6603**

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

4. Professional Engineer Statement:

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

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

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

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

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

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

David A. Buff
Signature

4/25/03
Date

(seal)

* Attach any exception to certification statement.

Golder Associates Inc.

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April 25, 2003

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APR 28 2003

BUREAU OF AIR REGULATION

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

Attention: Ms. Trina Vielhauer, Chief, Bureau of Air Regulation

SUBJECT: UNITED STATES SUGAR CORPORATION
CLEWISTON MILL
BOILER NO. 4 AND BOILER NO. 7 REPAIRS DURING 2003 OFF-SEASON

Dear Ms. Vielhauer:

This letter is being submitted on behalf of United States Sugar Corporation (U.S. Sugar). We appreciate you and your staff meeting with representatives of U.S. Sugar and Golder Associates Inc. in Tallahassee on January 28, 2003, regarding the planned repairs to the Clewiston Mill boilers. At your request, Golder Associates submitted to the Department a detailed description of the boiler repairs in letters dated February 6 and March 27, 2003. We have also had subsequent follow up discussions with you and the Department's staff on this subject.

It is our understanding that the Department agrees that the repairs to be performed on Boiler No. 4 and Boiler No. 7 during the present off-season (2003 off-season) are considered to be routine in nature. For Boiler No. 4, the repairs consist of repairs to sidewall, main generating bank, and air heater tubes. For Boiler No. 7, the repairs consist of repairs to the stoker, economizer, and furnace wall tubes. As a result, these activities do not require a construction permit from the Department, and U. S. Sugar may proceed with the repairs.

Please call me at (352)336-5600 if you have any questions or comments. Thank you for your consideration of this matter.

Sincerely,
GOLDER ASSOCIATES INC.

David A. Buff

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

DB/jej

cc: Don Griffin
Peter Briggs
Bubba Wade

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Golder Associates Inc.

6241 NW 23rd Street, Suite 500
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Fax (352) 336-6603

March 27, 2003

0037653

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

Attention: Mr. Jeffery F. Koerner, New Source Review

SUBJECT: UNITED STATES SUGAR CORPORATION
CLEWISTON MILL
BOILER REPAIRS DURING 2003-2005 OFF-SEASONS

Dear Mr. Koerner:

United States Sugar Corporation (U.S. Sugar) has received the Department's request for additional information (RAI) dated February 24, 2003, regarding the off-season repairs at the Clewiston sugar mill. Each of the Department's requests is addressed below, in the same order as they appear in the RAI letter.

1. The requested information is difficult to obtain or non-existent for past activities. The best information available pertains to current and planned repairs. For all tube repairs and replacements, there is no specific number of days each type of repair takes. Duration of activities could range from several days to weeks. Actual time of repair/replacement depends on a number of factors, including type of boiler, number of tubes, location of tubes, difficulty of access, size of labor crew, etc. Boiler type affects gas velocities and flow paths in the boiler, which then affects tube wear and corrosion. If tube access is difficult, such as furnace walls or air heater walls having to be removed, the activity can take much longer to perform. Likewise, if the labor crew is relatively small, the activity could take much longer to perform.

   The frequency of repairs/replacements for steam tubes is difficult to estimate, from the aforementioned lack of historical data, as well as the various factors mentioned above. One additional factor, the amount of sugarcane grown on sand land, is very important in regards to frequency of repair. The amount of cane delivered to Clewiston that was grown on sand land is shown in Figure 1. As shown, the total percentage of cane grown on sand land has increased significantly over the years, while the cane grown on muck lands has decreased somewhat. Due to the higher percentage of sugarcane grown on sand lands for the Clewiston mill, repair activities will likely be more frequent in the future. Some level of tube repair can be expected on an annual or bi-annual basis for each boiler at Clewiston.

   Repair/replacement of overfire or distributor air fans are expected to occur very infrequently at Clewiston. The primary activities performed consist of fan blade replacement, motor replacement, or entire fan replacement. Depending on the age and level of repair to the fan, it may be more logical to completely replace the fan as opposed to repairing it. These fans are of relatively small cost.

As presented previously to the Department, the level of tube and fan repair due to wear and corrosion at the Bryant mill are expected to be much less than at Clewiston. This is due to the much lower level of sugarcane grown on sandy soils, as shown in Figure 2. The percentage of cane grown on sand land has remained relatively constant and relatively small in comparison to cane grown on muck soils.

2. The useful life of a bagasse-fired sugar mill boiler could be dependent on several factors. We are not aware of any standard guideline on the life of such a boiler. However, we can analyze the other boilers in the industry to gain a better understanding of this term. Bagasse boilers located in Florida are listed in Table 1. Also shown are those boilers that have been retired and taken out of service. As shown, the oldest active boiler was built in 1947. This boiler, Boiler No. 3 at the Clewiston mill, will be retired in about 3 years, when the new Boiler No. 8 comes on line. Thus, it will be about 60 years old when retired. A number of other active boilers in Florida were built during the 1960's, and these boilers are about 40 years old.

   The retired boilers from Florida, not considering those at Okeelanta, were up to 70 years old when retired. Okeelanta is not considered to be representative of retired boilers since these shutdowns were part of a cogeneration project that prematurely ended the lives of these boilers. As shown in Table 1, the oldest boilers when retired were Boiler Nos. 5 and 6 located at Clewiston. These boilers were built in 1927, when the mill was originally constructed. They were retired about 1997, and therefore were approximately 70 years old when retired.

   Bagasse-fired boilers located in Louisiana are listed in Table 2. This list was current as of about 4 years ago, and was obtained from survey forms sent to each sugar mill by EPA in relation to the MACT rulemaking for industrial boilers. This list is sorted by age. As shown, there were a number of boilers built in the 1930's and 1940's that were still operating.

   These boiler ages suggest that the useful life of a bagasse-fired boiler can be up to 70 years or more. The year of initial installation for each boiler at the Clewiston mill is shown in Table 1. The only boiler at Clewiston whose initial construction date is not the same as the installation date was Boiler No. 4. Boiler No. 4 was originally constructed in the 1950's and was moved to Clewiston in 1983.

3. The actual annual repair costs for the "Boiler Room" at Clewiston and Bryant for the fiscal years 1997-1998 through 2001-2002 are presented in Tables 3 and 4 attached. Also shown are the projected costs for the 2002-2003 fiscal year. These include all repair costs incurred on the boilers. Note that repair costs by individual boiler have not been recorded by U. S. Sugar, and therefore these data are unavailable.

   Actual annual steam production rates for each boiler for the annual periods 1998-2002 are shown in Table 5 attached. The annual amount of sugarcane processed by each mill during the last five years by crop year is shown below (also refer to Figures 1 and 2).

Tons of Cane Ground

Crop Year	Clewiston	Bryant	Total
2001/02	3.8×10^6	2.9×10^6	6.8×10^6
2000/01	3.7×10^6	2.9×10^6	6.6×10^6
1999/00	4.2×10^6	3.1×10^6	7.3×10^6
1998/99	4.0×10^6	3.3×10^6	7.3×10^6
1997/98	3.6×10^6	2.9×10^6	6.5×10^6

4. As shown in Table 5, the steam demands of the sugar mill or the refinery at Clewiston have not increased over the last 5 years. Steam production has varied generally based on the amount of cane ground each year.

5. The requested information is provided below, along with the permitted steam rates.

Compliance Test Steaming Rates (lb/hr) - Clewiston

Boiler #	2002 / 03	2002/02	Permitted Steam Rate
1	194,351	201,572	255,000
2	179,086	196,660	230,000
3	69,924	89,433	130,000
4	275,758	257,941	285,000*
7	316,343	329,896	350,000*

* Maximum 24-hour average steam rate.

Boiler No. 1 – the compliance test rate 201,572 lb/hr steam is approximately 80 percent of the permitted rate of 255,000 lb/hr. Historically, the boiler has achieved 200,000 lb/hr on a 24-hour average basis (during March 2002). Since this was a 24-hour average, the maximum hourly steam production was somewhat above 200,000 lb/hr.

Boiler No. 2 - the compliance test rate of 196,660 lb/hr steam is approximately 86 percent of the permitted rate of 230,000 lb/hr. Historically, the boiler has achieved 220,000 lb/hr on a 24-hour average basis (during December 2001). Since this was a 24-hour average, the maximum hourly steam production was somewhat above 220,000 lb/hr.

Boiler No. 3 - the compliance test rate of 89,433 lb/hr steam is approximately 68 percent of the permitted rate of 130,000 lb/hr. Historically, the boiler has achieved 120,000 lb/hr on a 24-hour average basis (during December 2002). Since this was a 24-hour average, the maximum hourly steam production was somewhat above 120,000 lb/hr. [Note that this boiler is scheduled to be retired in the next several years, when new Boiler No. 8 comes on-line.]

Boiler No. 4 - the compliance test rate of 275,758 lb/hr is approximately 97 percent of the permitted 24-hour steam rate of 285,000 lb/hr. This is within 90 percent of the permitted capacity.

Boiler No. 7 - the compliance test rate of 329,896 lb/hr steam is approximately 94 percent of the permitted 24-hour steam rate 350,000 lb/hr. This is within 90 percent of the permitted capacity.

6. The ash content of bagasse can be used as an indicator of the level of inerts in bagasse. Based on recent bagasse analysis, spanning about 6 months duration, the ash content of Clewiston bagasse currently averages about 4.44 percent (dry basis). This compares to 2.63 percent ash at Bryant, and 1.74 percent ash or less at two other mills in Florida. These levels confirm the fact that the Clewiston mill processes a large amount of cane grown on "sand" soils versus "muck" soils, and that the Bryant mill also shows some influence from sandy soils.

   The only comparable data from 1985 or a similar year is contained in the 1985 F-Factor study conducted by KBN Engineering for the Florida Sugar Industry. This study was submitted to the Florida DEP. A number of bagasse samples were taken and analyzed for ash and other constituents. The results of the study, along with the more recent study, were as follows:

Mill	1978/1979 Season Ash (%), dry	1984/1985 Season Ash (%), dry	2001/2002 Season Ash (%), dry
U. S. Sugar Clewiston	2.1	3.53	4.44
U. S. Sugar Bryant	--	1.98	2.63
Sugar Cane Growers	1.0	1.68	1.74
Atlantic Sugar	0.72	1.11	1.30

7. The materials of construction for the replacement tubes will be the same as the existing tubes.

8. The Department is correct. An updated table for Boiler No. 2 is provided below.

Repair	Materials ($)	Labor ($)	Total ($)	Materials (% of total $)	Labor (% of total $)
Roof, Front and Sidewall Tubes; Superheater Tubes	82,000	277,000	359,000	23	77
Main Generating Bank Tubes	46,000	270,000	316,000	15	85
Air Fans	32,000	26,000	58,000	55	45
Air Heater Tubes	150,000	150,000	300,000	50	50
Total	**310,000**	**723,000**	**1,033,000**	**30**	**70**

As discussed on our February 6, 2003, letter, U. S. Sugar believes that due to the nature of these activities, the activities qualify under the routine maintenance, repair and replacement exemptions under the Department's air rules. As such, we believe that no air construction permit is required prior to commencing the requested repairs on the boilers.

Please call me at (352) 336-5600 if you have any questions concerning this request, or need additional information.

Sincerely,

GOLDER ASSOCIATES INC.

David A. Buff

David A. Buff, P.E., Q. E. P.
Principal Engineer
Florida P. E. # 19011
SEAL

DB/db/nav

cc: Don Griffin
Peter Briggs
Bubba Wade

L032803

Table 1. Ages of Bagasse-Fired Boilers in Florida

ICCR Facility ID	Plant Name	Combustor Description	Comb. Type	Primary Vendor	Year Built	Reported Capacity	Capacity (lbs Steam/hr)
ACTIVE BOILERS							
120990026	*SUGAR CANE GROWERS CO-OP*	BOILER #1, SPREADER STOKER, TRAVELING GRATE	SS	RILEY	1963	334 MMBtu/hr	175,000
120990026	*SUGAR CANE GROWERS CO-OP*	BOILER #2, SPREADER STOKER, TRAVELING GRATE	SS	RILEY	1963	334 MMBtu/hr	175,000
120990026	*SUGAR CANE GROWERS CO-OP*	BOILER #3, SPREADER STOKER, DUMPING GRATE,	SS	COMB. ENG	1966	229 MMBtu/hr	100,000
120990026	*SUGAR CANE GROWERS CO-OP*	BOILER #4, SPREADER STOKER, TRAVELING GRATE	SS	RILEY	1975	572 MMBtu/hr	300,000
120990026	*SUGAR CANE GROWERS CO-OP*	BOILER #5, SPREADER STOKER, TRAVELING GRATE	SS	RILEY	1968	439 MMBtu/hr	230,000
120990026	*SUGAR CANE GROWERS CO-OP*	BOILER #8, SPREADER STOKER, TRAVELING GRATE	SS	RILEY	1982	504 MMBtu/hr	264,000
120510003	*UNITED STATES SUGAR -CLEWISTON*	BOILER #1, VIBRATING GRATE, WITH SCRUBBER	SS	RILEY	1968	496 MMBtu/hr	255,100
120510003	*UNITED STATES SUGAR -CLEWISTON*	BOILER #2, VIBRATING GRATE, WITH SCRUBBER	SS	RILEY	1968	496 MMBtu/hr	255,100
120510003	*UNITED STATES SUGAR -CLEWISTON*	BOILER #3, DUMPING GRATE, WITH SCRUBBER	SS	B&W	1947	342 MMBtu/hr	167,600
120510003	*UNITED STATES SUGAR -CLEWISTON*	BOILER #4, TRAVELING GRATE, WITH SCRUBBER	SS	FOSTER-WHE	1983	633 MMBtu/hr	300,000
120510003	*UNITED STATES SUGAR -CLEWISTON*	BOILER #7, VIBRATING GRATE, WITH ESP	SS	ALPHA	1997	812 MMBtu/hr	385,000
120990016	*ATLANTIC SUGAR ASSOCIATION*	BOILER #1, DUMPING GRATE STOKER, WITH SCRUBBER	SS	Erie City	1964	280 MMBtu/hr	144,000
120990016	*ATLANTIC SUGAR ASSOCIATION*	BOILER #2, DUMPING GRATE STOKER, WITH SCRUBBER	SS	Erie City	1964	280 MMBtu/hr	144,000
120990016	*ATLANTIC SUGAR ASSOCIATION*	BOILER #3, CELL TYPE, WITH SCRUBBERS	C	BIGELOW	1965	260 MMBtu/hr	130,000
120990016	*ATLANTIC SUGAR ASSOCIATION*	BOILER # 4, CELL TYPE, WITH SCRUBBER	C	BIGELOW	1974	275 MMBtu/hr	141,000
120990016	*ATLANTIC SUGAR ASSOCIATION*	BOILER #5, TRAVELING GRATE STOKER, WITH SCRUBBER	SS	ALPHA	1981	253 MMBtu/hr	130,000
120990019	*OSCEOLA FARMS COMPANY*	BOILER #2, INCLINED GRATE STOKER, W/2 SCRUBBERS	SS	Bigelow	1965	280 MMBtu/hr	140,000
120990019	*OSCEOLA FARMS COMPANY*	BOILER #3, INCLINED GRATE STOKER, WITH SCRUBBER	SS	Springfield	1961	292 MMBtu/hr	150,000
120990019	*OSCEOLA FARMS COMPANY*	BOILER #4, CELL TYPE, WITH 2 SCRUBBERS AND 2 STACKS	C	Bigelow	1965	280 MMBtu/hr	140,000
120990019	*OSCEOLA FARMS COMPANY*	BOILER #5, CELL TYPE, WITH 2 SCRUBBERS & 2 STACKS	C	Alpha	1978	330 MMBtu/hr	165,000
120990019	*OSCEOLA FARMS COMPANY*	BOILER #6, TRAVELING GRATE, WITH SCRUBBER	SS	Distral	1981	379 MMBtu/hr	195,000
120990061	*UNITED STATES SUGAR -BRYANT*	BOILER #1, VIBRATING GRATE STOKER, WITH SCRUBBER	SS	Riley	1962	385 MMBtu/hr	194,600
120990061	*UNITED STATES SUGAR -BRYANT*	BOILER #2, VIBRATING GRATE STOKER, WITH 2 SCRUBBERS	SS	Riley	1962	385 MMBtu/hr	194,600
120990061	*UNITED STATES SUGAR -BRYANT*	BOILER #3, VIBRATING GRATE STOKER, WITH SCRUBBER	SS	Riley	1963	385 MMBtu/hr	194,600
120990061	*UNITED STATES SUGAR -BRYANT*	BOILER #5, VIBRATING GRATE STOKER, WITH 2 SCRUBBERS	SS	Bigelow	1979	671 MMBtu/hr	342,384
RETIRED BOILERS							
120510003	*UNITED STATES SUGAR -CLEWISTON*	BOILER #5, CELL TYPE, WITH SCRUBBER	C	1927	1927	140 MMBtu/hr	70,200
120510003	*UNITED STATES SUGAR -CLEWISTON*	BOILER #6, CELL TYPE, WITH SCRUBBER	C	1927	1927	144 MMBtu/hr	72,200
120990005	*OKEELANTA CORP*	BAGASSE BOILER #4, CELL TYPE	C	B & W	1954	182 MMBtu/hr	90,000
120990005	*OKEELANTA CORP*	BOILER #5, SPREADER STOKER W/ DUMPING GRATE	SS	B & W	1963	260 MMBtu/hr	116,800
120990005	*OKEELANTA CORP*	BOILER #6, SPREADER STOKER W/ INCLINED GRATE	SS	BIGELOW/AL	1964	260 MMBtu/hr	120,000
120990005	*OKEELANTA CORP*	BOILER #10, CELL TYPE	C	BIGELOW	1974	285 MMBtu/hr	125,000
120990005	*OKEELANTA CORP*	BOILER #11, SPREADER STOKER W/ TRAVLING GRATE	SS	ALPHA	1975	279 MMBtu/hr	125,000
120990005	*OKEELANTA CORP*	BOILER #12, SPREADER STOKER W/ TRAVLING GRATE	SS	B & W	1977	342 MMBtu/hr	150,000
120990005	*OKEELANTA CORP*	BOILER #14, SPREADER STOKER W/ TRAVLING GRATE	SS	B & W	1977	333 MMBtu/hr	150,000
120990005	*OKEELANTA CORP*	BOILER #15, SPREADER STOKER W/ TRAVLING GRATE	SS	ALPHA	1978	279 MMBtu/hr	125,000
120990019	*OSCEOLA FARMS COMPANY*	BOILER #1, INCLINED GRATE STOKER, W/2 SCRUBBERS	SS	?	?	-- MMBtu/hr	40,000

Table 2. Ages of Bagasse-Fired Boilers Located in Louisiana and Texas

ICCR Facility ID	Plant Name	Combustor Description	Comb. Type	Primary Vendor	Year Built	Reported Capacity
220450006	IBERIA SUGAR CO-OP INC.	BOILER #1, HORSESHOE (CELL) TYPE	C	EDGEMOORE	1937	40 M lbs Stm/hr
220450006	IBERIA SUGAR CO-OP INC.	BOILER #2, HORSESHOE (CELL) TYPE	C	EDGEMOORE	1937	40 M lbs Stm/hr
220450006	IBERIA SUGAR CO-OP INC.	BOILER #3, SPREADER STOKER, FIXED GRATE	SS	EDGEMOORE	1937	40 M lbs Stm/hr
220450006	IBERIA SUGAR CO-OP INC.	BOILER #4, SPREADER STOKER, FIXED GRATE	SS	EDGEMOORE	1937	40 M lbs Stm/hr
220770001	ALMA PLANTATION, LTD.	BOILER #1, CELL TYPE	C	WICKERS	1940	28 M lbs Stm/hr
220770001	ALMA PLANTATION, LTD.	BOILER #2, CELL TYPE	C	WICKERS	1940	28 M lbs Stm/hr
220570028	CALDWELL SUGARS CO-OP., INC.	BOILER #5, CELL TYPE	C	EDGEMORE	1946	45 M lbs Stm/hr
221010006	ST.MARY SUGAR COOPERATIVE, INC.	BOILER 1, CELL TYPE	C	BIGELOWF26	1947	50 M lbs Stm/hr
221010006	ST.MARY SUGAR COOPERATIVE, INC.	BOILER 2, CELL TYPE	C	BIGELOWF26	1947	50 M lbs Stm/hr
221010006	ST.MARY SUGAR COOPERATIVE, INC.	BOILER 3, CELL TYPE	C	BIGELOWF26	1947	50 M lbs Stm/hr
220070006	LULA-WESTFIELD LLC-LULA FACTORY	BOILER #4, SPREADER STOKER, DUMP GRATE	SS	CE	1950	40 M lbs Stm/hr
220770001	ALMA PLANTATION, LTD.	BOILER #3, CELL TYPE	C	HEINE	1951	49 M lbs Stm/hr
220770001	ALMA PLANTATION, LTD.	BOILER #4, CELL TYPE	C	HEINE	1951	49 M lbs Stm/hr
220070004	LULA-WESTFIELD LLC-WESTFIELD FACTORY	BOILER #4, SPREADER STOKER, DUMP GRATE	SS	CE	1952	34 M lbs Stm/hr
220450006	IBERIA SUGAR CO-OP INC.	BOILER #5, MASS FEED, FIXED GRATE	SS	BIGELOW-RI	1953	40 M lbs Stm/hr
220070004	LULA-WESTFIELD LLC-WESTFIELD FACTORY	BOILER #2, SPREADER STOKER, DUMP GRATE	SS	CE	1955	43 M lbs Stm/hr
220070004	LULA-WESTFIELD LLC-WESTFIELD FACTORY	BOILER #1, SPREADER STOKER, DUMP GRATE	SS	CE	1958	43 M lbs Stm/hr
221210008	HARRY L. LAWS & COMPANY, INC.	BOILER #1, CELL TYPE	C	WICKES	1958	50 M lbs Stm/hr
220075170	GLENWOOD COOPERATIVE, INC.	BOILER #6, FIXED GRATE	SS	B&W	1959	60 M lbs Stm/hr
220930012	ST JAMES SUGAR CO-OP INC	BOILER #3, SPREADER STOKER	SS	CE VU-10	1959	50 M lbs Stm/hr
220570005	RACELAND SUGARS INC	BOILER NO. 3, SPREADER STOKER, FIXED GRATE	SS	Vogt VL	1960	80 M lbs Stm/hr
221010006	ST.MARY SUGAR COOPERATIVE, INC.	BOILER 4, CELL TYPE	C	BIGELOWF26	1960	50 M lbs Stm/hr
221010012	M.A. PATOUT & SON, LTD.	BOILER #1, CELL TYPE	C	CASEY-HEDG	1960	60 M lbs Stm/hr
221010012	M.A. PATOUT & SON, LTD.	BOILER #2, CELL TYPE	C	B & W	1960	40 M lbs Stm/hr
220050017	EVAN HALL SUGAR COOP.,INC.	BOILER #7, CELL TYPE	C	BIGELOW	1961	100 M lbs Stm/hr
220070004	LULA-WESTFIELD LLC-WESTFIELD FACTORY	BOILER #3, SPREADER STOKER, DUMP GRATE	SS	RILEY	1961	70 M lbs Stm/hr
220070006	LULA-WESTFIELD LLC-LULA FACTORY	BOILER #2, SPREADER STOKER, DUMP GRATE	SS	UNION IRON	1961	70 M lbs Stm/hr
220570000	LAFOURCHE SUGAR CORP	BOILER #3, CELL TYPE, CYCLONE-FIRED	C	BIGELOWF40	1961	168 MMBtu/hr
220570000	LAFOURCHE SUGAR CORP	BOILER #4, CELL TYPE, CYCLONE-FIRED	C	BIGELOWF40	1961	168 MMBtu/hr
220050017	EVAN HALL SUGAR COOP.,INC.	BOILER #5, SPREADER STOKER	SS	VOGT	1962	65 M lbs Stm/hr
220070006	LULA-WESTFIELD LLC-LULA FACTORY	BOILER #1, SPREADER STOKER, DUMP GRATE	SS	CE	1962	40 M lbs Stm/hr
220450006	IBERIA SUGAR CO-OP INC.	BOILER #6, SPREADER STOKER, FIXED GRATE	SS	UNION-RILE	1962	100 M lbs Stm/hr
220570005	RACELAND SUGARS INC	BOILER NO. 4, SPREADER STOKER, FIXED GRATE	SS	Vogt VL	1962	80 M lbs Stm/hr
220990005	LA. SUGAR CANECOOP-St. Martinville	BOILER #4, CELL TYPE (previously Blr #3)	C	BIGELOWF33	1962	53 M lbs Stm/hr
220990005	LA. SUGAR CANECOOP-St. Martinville	BOILER #6, CELL TYPE (previously Blr #5)	C	BIGELOWF44	1962	86 M lbs Stm/hr
221010011	STERLING SUGARS INC	BOILER NO 1, SPREADER STOKER, FIXED GRATE	SS	BIGELOW	1962	120 M lbs Stm/hr
221010011	STERLING SUGARS INC	BOILER NO 2, SPREADER STOKER, FIXED GRATE	SS	BIGELOW	1962	120 M lbs Stm/hr
221010012	M.A. PATOUT & SON, LTD.	BOILER #3, CELL TYPE	C	EDGEMOOR	1962	80 M lbs Stm/hr
220050017	EVAN HALL SUGAR COOP.,INC.	BOILER #8, CELL TYPE	C	BIGELOW	1963	100 M lbs Stm/hr
220070004	LULA-WESTFIELD LLC-WESTFIELD FACTORY	BOILER #6, SPREADER STOKER, DUMP GRATE	SS	BIGELOW	1963	100 M lbs Stm/hr
220930012	ST JAMES SUGAR CO-OP INC	BOILER #4, SPREADER STOKER	SS	RILEY STOK	1963	100 M lbs Stm/hr
221010012	M.A. PATOUT & SON, LTD.	BOILER #4, CELL TYPE	C	EDGEMOOR	1963	80 M lbs Stm/hr
221210008	HARRY L. LAWS & COMPANY, INC.	BOILER #5, CELL TYPE	C	BIGELOWF40	1963	100 M lbs Stm/hr
220070006	LULA-WESTFIELD LLC-LULA FACTORY	BOILER #3, SPREADER STOKER, DUMP GRATE	SS	UNION IRON	1964	70 M lbs Stm/hr
220450008	CAJUN SUGAR COOPERATIVE,INC.	BOILER #1, SPREADER STOKER, FIXED GRATE	SS	RILEY VO	1964	100 M lbs Stm/hr
220450008	CAJUN SUGAR COOPERATIVE,INC.	BOILER #2, SPREADER STOKER, FIXED GRATE	SS	RILEY VO	1964	100 M lbs Stm/hr
220470004	CORA TEXAS MANUFACTURING COMPANY	BOILER 1, SPREADER STOKER, FIXED GRATE	SS	BIGELOW F40	1964	100 M lbs Stm/hr
221210008	HARRY L. LAWS & COMPANY, INC.	BOILER #6, CELL TYPE	C	BIGELOWF40	1964	100 M lbs Stm/hr
220570000	LAFOURCHE SUGAR CORP	BOILER #1, CELL TYPE, CYCLONE-FIRED	C	BIGELOWF40	1965	168 MMBtu/hr
220990005	LA. SUGAR CANECOOP-St. Martinville	BOILER #5, CELL TYPE (previously Blr #4)	C	BIGELOWF33	1965	53 M lbs Stm/hr
221010012	M.A. PATOUT & SON, LTD.	BOILER #5, CELL TYPE	C	BIGELOW	1966	85 M lbs Stm/hr
220450008	CAJUN SUGAR COOPERATIVE,INC.	BOILER #3, CELL TYPE	C	BIGELOW	1967	85 M lbs Stm/hr
220470004	CORA TEXAS MANUFACTURING COMPANY	BOILER 2, MASS FEED	SS	BIGELOW F40	1968	100 M lbs Stm/hr
220570028	CALDWELL SUGARS CO-OP., INC.	BOILER #1, CELL TYPE	C	BIGELOW	1968	80 M lbs Stm/hr
220570028	CALDWELL SUGARS CO-OP., INC.	BOILER #6, CELL TYPE	C	HEINE,V363	1968	65 M lbs Stm/hr
220570028	CALDWELL SUGARS CO-OP., INC.	BOILER #7, CELL TYPE	C	RILEY	1968	100 M lbs Stm/hr

Table 2. Ages of Bagasse-Fired Boilers Located in Louisiana and Texas

ICCR Facility ID	Plant Name	Combustor Description	Comb. Type	Primary Vendor	Year Built	Reported Capacity
220075170	GLENWOOD COOPERATIVE, INC.	BOILER #3, FIXED GRATE	SS	BIGELOWF40	1969	100 M lbs Stm/hr
220450008	CAJUN SUGAR COOPERATIVE,INC.	BOILER #4, CELL TYPE	C	BIGELOW	1971	85 M lbs Stm/hr
220570028	CALDWELL SUGARS CO-OP., INC.	BOILER #2, CELL TYPE	C	BIGELOW	1972	45 M lbs Stm/hr
220990005	LA. SUGAR CANECOOP-St. Martinville	BOILER #3, CELL TYPE (previously Blr #2)	C	BIGELOWF40	1972	100 M lbs Stm/hr
221010006	ST.MARY SUGAR COOPERATIVE, INC.	BOILER 5, CELL TYPE	C	BIGELOWF40	1972	100 M lbs Stm/hr
221010011	STERLING SUGARS INC	BOILER NO 6, SPREADER STOKER, FIXED GRATE	SS	BIGELOW	1972	120 M lbs Stm/hr
220075170	GLENWOOD COOPERATIVE, INC.	BOILER #7, FIXED GRATE	SS	BIGELOWF40	1973	100 M lbs Stm/hr
220990057	JEANERETTE SUGAR CO. INC.	BOILER #4, CELL TYPE	C	SUPERIOR	1973	55 M lbs Stm/hr
220990057	JEANERETTE SUGAR CO. INC.	BOILER #5, CELL TYPE	C	SUPERIOR	1973	55 M lbs Stm/hr
482150013	RIO GRANDE VALLEY SUGAR GROWERS	BOILER #1, FIXED GRATE	SS	RILEY	1973	150 M lbs Stm/hr
482150013	RIO GRANDE VALLEY SUGAR GROWERS	BOILER #2, SPREADER STOKER, FIXED GRATE	SS	RILEY	1973	150 M lbs Stm/hr
482150013	RIO GRANDE VALLEY SUGAR GROWERS	BOILER #3, SPREADER STOKER, FIXED GRATE	SS	BIGELOW	1973	125 M lbs Stm/hr
482150013	RIO GRANDE VALLEY SUGAR GROWERS	BOILER #4, SPREADER STOKER, FIXED GRATE	SS	BIGELOW	1973	125 M lbs Stm/hr
220450006	IBERIA SUGAR CO-OP INC.	BOILER #7, SPREADER STOKER, FIXED GRATE	SS	BIGELOW-DE	1974	100 M lbs Stm/hr
221210008	HARRY L. LAWS & COMPANY, INC.	BOILER #7, CELL TYPE	C	BIGELOWF40	1974	100 M lbs Stm/hr
220050017	EVAN HALL SUGAR COOP.,INC.	BOILER #9, SPREADER STOKER	SS	BIGELOW	1975	100 M lbs Stm/hr
220050017	EVAN HALL SUGAR COOP.,INC.	BOILER #10, SPREADER STOKER	SS	BIGELOW	1975	100 M lbs Stm/hr
220770001	ALMA PLANTATION, LTD.	BOILER #5, SPREADER STOKER, FIXED GRATE	SS	BIGELOW	1975	100 M lbs Stm/hr
220070008	LULA-WESTFIELD LLC-LULA FACTORY	BOILER #5, SPREADER STOKER, DUMP GRATE	SS	RILEY STOK	1976	70 M lbs Stm/hr
220570000	LAFOURCHE SUGAR CORP	BOILER #5, SPREADER STOKER, PNEUMATIC GRATE	SS	BIGELOWF48	1976	236 MMBtu/hr
220930012	ST JAMES SUGAR CO-OP INC	BOILER #2, SPREADER STOKER	SS	RILEY STOK	1976	200 M lbs Stm/hr
221010011	STERLING SUGARS INC	BOILER NO 3, CELL TYPE	C	ERIE CITY	1976	120 M lbs Stm/hr
220075170	GLENWOOD COOPERATIVE, INC.	BOILER #4, FIXED GRATE	SS	BIGELOWF40	1977	100 M lbs Stm/hr
220470004	CORA TEXAS MANUFACTURING COMPANY	BOILER 3, CELL TYPE, FIXED GRATE	C	BIGELOW F40	1978	100 M lbs Stm/hr
220570005	RACELAND SUGARS INC	BOILER NO. 2, SPREADER STOKER, FIXED GRATE	SS	ALPHA	1978	150 M lbs Stm/hr
221010012	M.A. PATOUT & SON, LTD.	BOILER #6, SPREADER STOKER	SS	UNION IRON	1978	100 M lbs Stm/hr
221010012	M.A. PATOUT & SON, LTD.	BOILER #7, CELL TYPE	C	BIGELOW	1980	100 M lbs Stm/hr
220070004	LULA-WESTFIELD LLC-WESTFIELD FACTORY	BOILER #5, SPREADER STOKER, INCLINED GRATE	SS	RILEY	1982	100 M lbs Stm/hr
220990057	JEANERETTE SUGAR CO. INC.	BOILER #6, CELL TYPE	C	BIGELOW	1982	100 M lbs Stm/hr
220470004	CORA TEXAS MANUFACTURING COMPANY	BOILER 4, CELL TYPE, FIXED GRATE	C	BIGELOW F38	1983	100 M lbs Stm/hr
220990005	LA. SUGAR CANECOOP-St. Martinville	BOILER #2, SPREADER STOKER (previously Blr #1)	SS	BIGELOWF40	1983	100 M lbs Stm/hr
220930012	ST JAMES SUGAR CO-OP INC	BOILER #5, SPREADER STOKER	SS	KEELER	1988	140 M lbs Stm/hr
220990057	JEANERETTE SUGAR CO. INC.	BOILER #7, CELL TYPE	C	BIGELOW	1990	100 M lbs Stm/hr
221010012	M.A. PATOUT & SON, LTD.	BOILER #8, SPREADER STOKER	SS	ALPHA	1990	150 M lbs Stm/hr
220070008	LULA-WESTFIELD LLC-LULA FACTORY	BOILER #6, FIXED GRATE, INCLINE GRATE	SS	FACTORYS&E	1992	80 M lbs Stm/hr
220570005	RACELAND SUGARS INC	BOILER NO 1, SPREADER STOKER, FIXED GRATE	SS	ALPHA	1992	150 M lbs Stm/hr
220770001	ALMA PLANTATION, LTD.	BOILER #7, SPREADER STOKER, FIXED GRATE	SS	VALMONT	1992	100 M lbs Stm/hr
220470004	CORA TEXAS MANUFACTURING COMPANY	BOILER 5, SPREADER STOKER, FIXED GRATE	SS	FCTRY S&EG	1993	150 M lbs Stm/hr
220450008	CAJUN SUGAR COOPERATIVE,INC.	BOILER #5, SPREADER STOKER, FIXED GRATE	SS	FACTORY SA	1995	135 M lbs Stm/hr
221010006	ST.MARY SUGAR COOPERATIVE, INC.	BOILER 6, SPREADER STOKER, FIXED GRATE	SS	ALPHA	1995	150 M lbs Stm/hr
220990057	JEANERETTE SUGAR CO. INC.	BOILER #8, SPREADER STOKER, INCLINED GRATE	SS	FACTORY SA	1996	150 M lbs Stm/hr
221010011	STERLING SUGARS INC	BOILER NO 4, SPREADER STOKER, FIXED GRATE	SS	FCTRY S&EG	1996	70 M lbs Stm/hr
221010011	STERLING SUGARS INC	BOILER NO 5, SPREADER STOKER, FIXED GRATE	SS	FCTRY S&EG	1997	70 M lbs Stm/hr
221210008	HARRY L. LAWS & COMPANY, INC.	BOILER #8 (installed 1997)	C		1997	100 M lbs Stm/hr
220570028	CALDWELL SUGARS CO-OP., INC.	BOILER #8, SPREADER STOKER, INCLINED GRATE	SS	FACTORY SALES	1998	210 M lbs Stm/hr
220990005	LA. SUGAR CANECOOP-St. Martinville	BOILER #1, SPREADER STOKER , INCLINED GRATE	SS	BIGELOWF40	1998	130 M lbs Stm/hr
221010006	ST.MARY SUGAR COOPERATIVE, INC.	BOILER 7, SPREADER STOKER, INCLINED GRATE	SS	BIGELOW	1998	250 M lbs Stm/hr
221010012	M.A. PATOUT & SON, LTD.	BOILER #9, SPREADER STOKER	SS		?	250 M lbs Stm/hr
220070004	LULA-WESTFIELD LLC-WESTFIELD FACTORY	BOILER #7				150 M lbs Stm/hr

Table 3. ANNUAL BOILER ROOM MAINTENANCE COSTS, 1998-2002, CLEWISTON MILL

Description	02 / 03 Fiscal Year Projected	01 / 02 Fiscal Year	00 / 01 Fiscal Year	99 / 00 Fiscal Year	98 / 99 Fiscal Year
Salaried Labor	484,365	233,265	163,953	121,176	108,119
Salaried Labor Fringe	238,996	116,633	67,221	43,623	44,329
Hourly Labor	1,362,754	1,717,530	1,439,436	1,343,257	1,055,113
Hourly Labor Fringe	612,401	738,538	676,535	591,033	506,454
Warehouse Maintenance Parts	767,237	988,950	938,687	916,916	858,747
Outside Purchases Maint. Materials	720,000	1,223,438	771,320	1,186,091	814,375
Contract Labor	3,860,000	1,394,704	1,589,945	1,246,881	1,011,502
Rental Equipment	30,000	37,625	8,869	16,645	28,228
Total Maintenance Cost	**8,075,753**	**6,450,683**	**5,655,966**	**5,465,622**	**4,426,867**

Table 4. ANNUAL BOILER ROOM MAINTENANCE COSTS, 1998-2002, BRYANT MILL

Description	02 / 03 Fiscal Year Projected	01 / 02 Fiscal Year	00 / 01 Fiscal Year	99 / 00 Fiscal Year	98 / 99 Fiscal Year
Salaried Labor	241,395	101,967	98,966	96,657	95,068
Salaried Labor Fringe	118,393	50,983	40,576	34,797	38,978
Hourly Labor	770,847	486,401	394,619	415,189	615,115
Hourly Labor Fringe	359,750	228,608	185,471	182,683	295,255
Warehouse Maintenance Parts	282,300	253,149	269,939	255,273	275,705
Outside Purchases Maint. Materials	137,032	300,647	112,886	106,879	76,728
Contract Labor	23,000	13,342	7,179	135	53,425
Rental Equipment	8,000	0	0	3,245	0
Total Maintenance Cost	**1,940,717**	**1,435,097**	**1,109,636**	**1,094,858**	**1,450,274**

Table 5. USSC Clewiston Boiler Steam Output (lbs/yr) from 1998 to 2002

Boiler	1998	1999	2000	2001	2002
1	712,608,720	923,516,000	665,775,000	748,581,000	721,808,000
2	589,699,320	683,680,000	882,520,000	776,975,000	847,248,000
3	299,934,440	257,499,000	321,287,000	324,140,000	228,417,000
4	848,884,720	918,940,000	805,119,000	885,884,192	773,336,000
7	1,095,046,960	1,777,457,000	1,949,713,077	1,343,740,504	1,526,068,000
Total	**3,546,174,160**	**4,561,092,000**	**4,624,414,077**	**4,079,320,696**	**4,096,877,000**

Figure 1. Clewiston - Sugarcane Harvested From Sand vs Muck Soils

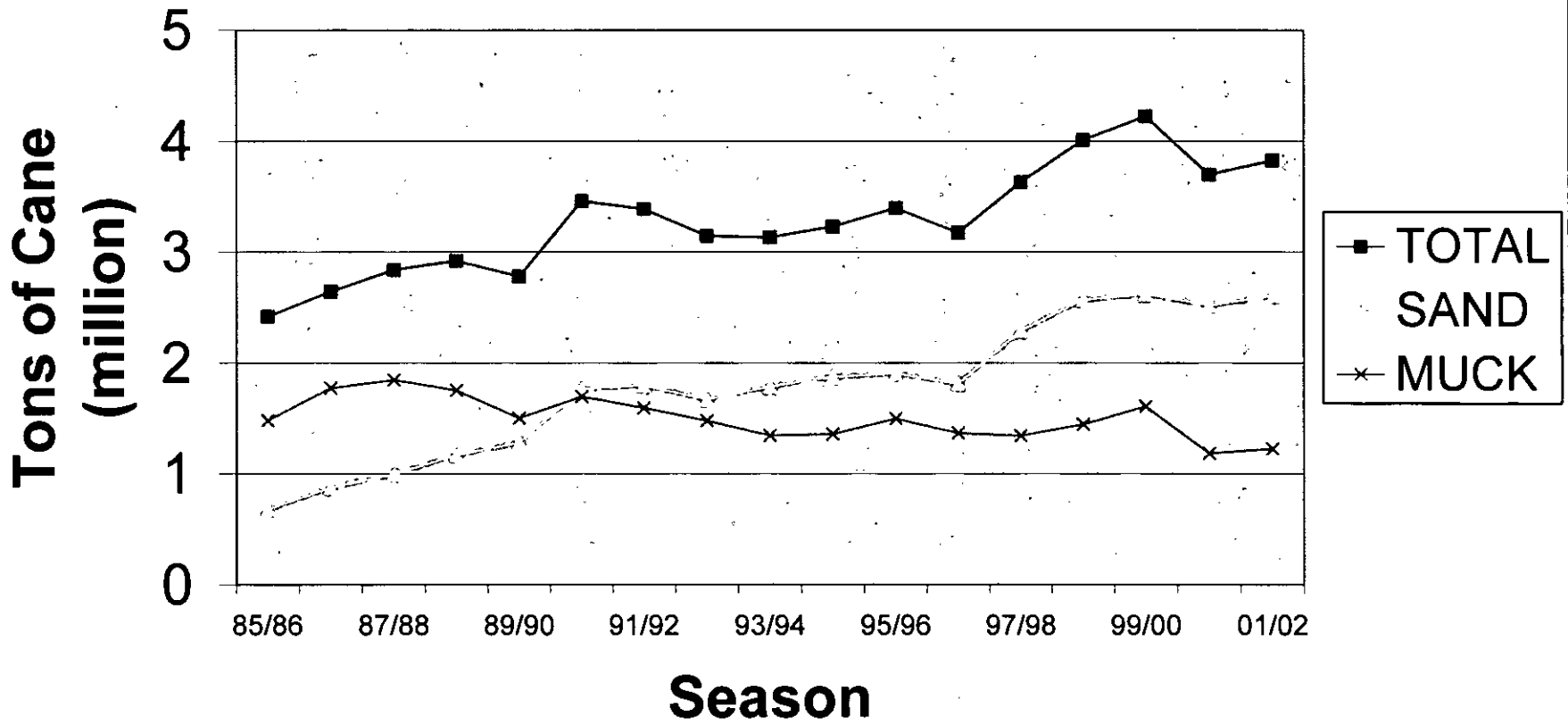
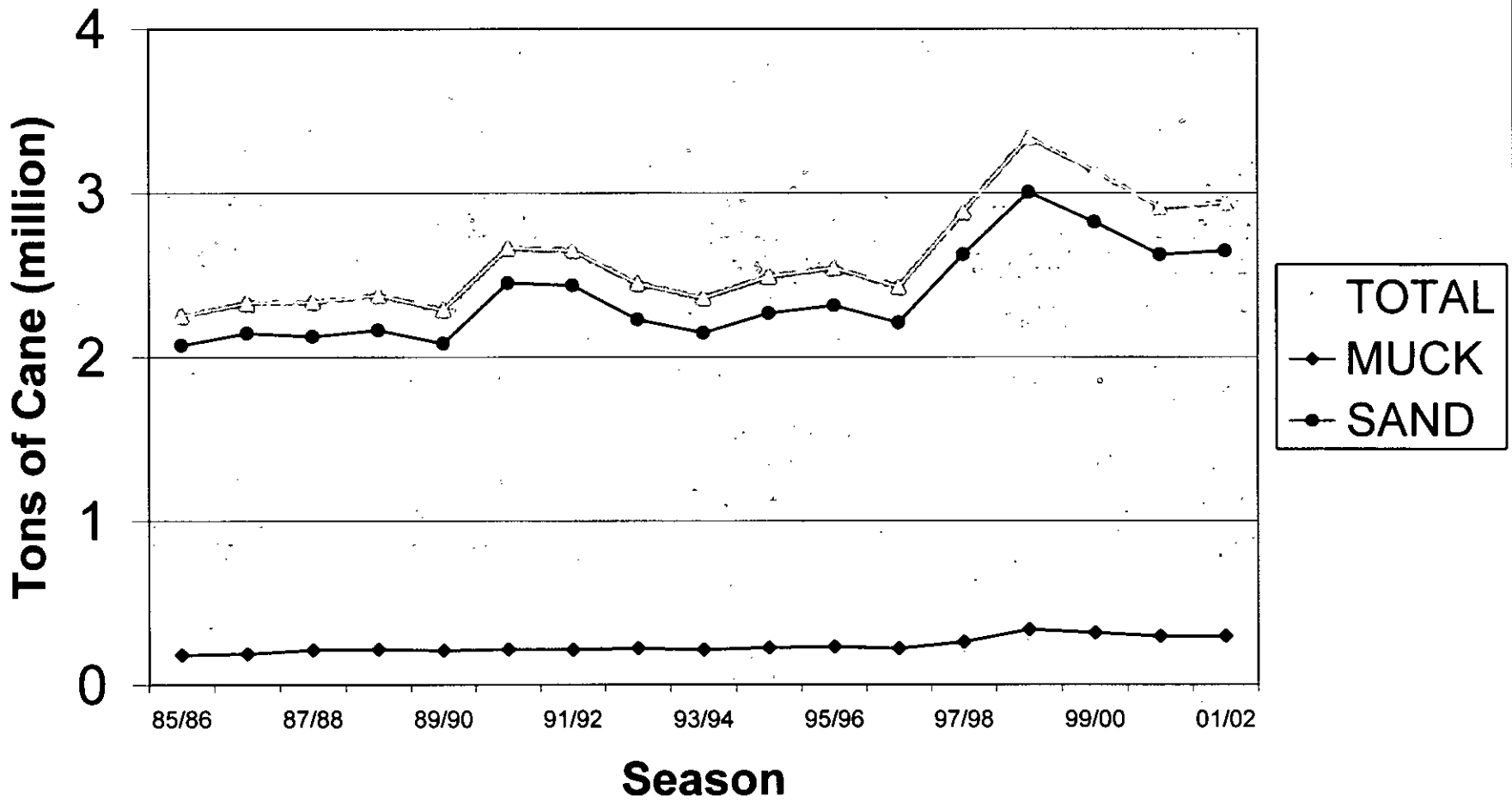


Figure 2. Bryant - Sugarcane Harvested From Sand vs Muck Soils



Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

February 24, 2003

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. David Buff, P.E.
Golder Associates Inc.
6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500

Re: **Request for Additional Information**
U.S. Sugar Corporation, Clewiston Mill
Off-Season Repairs

Dear Mr. Buff:

On February 7th, the Department received your letter on behalf of U.S. Sugar requesting concurrence that the off-season repair activities described for each boiler at the Clewiston Mill are considered routine and do not trigger New Source Review requirements. The Department needs additional details upon which to base a conclusion. Please submit the following additional information.

1. Your request describes repairs to the following components: main boiler bank tubes; air heater tubes; superheater tubes; economizer tubes; roof, front, and sidewall tubes; screenwall tubes; overfire fans; and distributor fans. For each type of component, describe the typical repair activities and extent of replacements performed on units during the off-season at USSC's Clewiston Mill. Approximately how many days does it take to complete each type of repair? Estimate the typical frequency (years) for each type of repair activity during the normal useful life of a sugar mill boiler. Provide the same information for boilers located at USSC's Bryant Mill.
2. U.S. Sugar contends that the repairs will not extend the useful life of the boiler, but will ensure attaining the full useful life of each boiler. Based on industry sources, the useful life of a coal-fired boiler is approximately 50 years. What is the useful life of a bagasse-fired sugar mill boiler? For each boiler, identify the year of initial construction and the year of installation at the USSC Clewiston Mill.
3. For each year during the span of 1998 - 2002, provide the following information:
   - Actual annual repair costs for each boiler and identify the primary repairs performed;
   - Actual annual steam production rates (lb/year) for each boiler; and
   - Actual annual amount of sugarcane processed (tons/year) during each of these years.
4. Have the steam demands at either the sugar mill or the refinery increased within the past five years? Please explain.
5. For each boiler, provide the steam production rates (lb/hour) for each compliance test run conducted during the past two seasons. For each boiler, provide steam production records during the past two seasons that indicate the boiler is capable of operating within its permitted capacity.
6. Based on an ultimate fuel analysis, what is the level of "inerts" for the bagasse currently being fired? Similarly, what was the level of "inerts" in 1985? What is the level of "inerts" at a mill processing sugarcane harvested from "muck" fields, such as the Bryant Mill?

7. The majority of repairs identified are to replace tubes in the path of the exhaust flue gas. Will the materials of construction for the replacement tubes be different from the original tubes?

8. For Boiler No. 2, it appears that the itemized cost of the air heater tubing repair was inadvertently omitted. However, it appears that this cost is $300,000 (50% materials, 50% labor) and was included in the total repair costs. Please comment.

If you have any questions regarding this matter, please call me at 850/921-9536.

Sincerely,

Jeffery F. Koerner
New Source Review Section

cc: Mr. Don Griffin, USSC
Mr. Peter Briggs, USSC
Mr. Ron Blackburn, SD Office
Mr. Gregg Worley, EPA Region 4
Mr. John Bunyak, NPS

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1. Article Addressed to:

MR. DAVID BUFF, P.E.
GOLDER ASSOCIATES, INC.
6241 NW 23 ST, STE 500
GAINESVILLE, FL 32653

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

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☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

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MR. DAVID BUFF, P.E.
GOLDER ASSOCIATES, INC.
6241 NW 23 ST, STE 500
GAINESVILLE, FL 32653

7001 0320 0001 3692 6907

PS Form 3800, January 2001 See Reverse for Instructions

Golder Associates Inc.

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

February 6, 2003

0037653

RECEIVED

FEB 07 2003

BUREAU OF AIR REGULATION

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

Attention: Mr. Al Linero, Chief, New Source Review

SUBJECT: UNITED STATES SUGAR CORPORATION
CLEWISTON MILL
BOILER REPAIRS DURING 2003 THROUGH 2005 OFF-SEASONS

Dear Mr. Linero:

United States Sugar Corporation (U.S. Sugar) operates the Clewiston sugar mill located in Hendry County, Florida. Boiler Nos. 1, 2, 3, 4, and 7 at the mill provides process steam to the sugar mill during the sugar cane processing season and to the sugar refinery during the off-season. U.S. Sugar is planning repairs to the boilers in the upcoming 2003 through 2005 off-seasons (starting in May of each year). We believe these repairs are normal and routine and, therefore, do not trigger the requirement for new source review (NSR) under the federal and state prevention of significant deterioration (PSD) rules. The following are descriptions of the boilers and their operations, and the planned repairs to the boilers.

Boiler No. 1

Boiler No. 1 is a vibrating grate type boiler. The boiler is permitted to generate up to 255,000 pounds per hour (lb/hr) steam, with a maximum heat input rate due to bagasse of 495 million British thermal units per hour (MMBtu/hr). During the next three off-seasons, Boiler No. 1 is scheduled to undergo several repair and maintenance activities. These consist of the following (with years of repair given in parenthesis):

- Replace four rows of main generating bank steam tubes, amounting to about 26 percent of the boiler heat transfer surface (2003);
- Replace one-half of air heater tubes (2003 and 2004); and
- Replace 100 percent of the superheater tubes (2004 and 2005).

These repairs are not associated with any other repairs to the boiler, or any other projects planned for Boiler No. 1. As indicated, some of these repairs will be spread over several years. The repairs are estimated to cost:

Repair	Materials ($)	Labor ($)	Total ($)	Materials (% of total $)	Labor (% of total $)
Main Bank Steam Tubes	47,000	268,000	315,000	15	85
Air Heater Tubes	150,000	150,000	300,000	50	50
Superheater Tubes	60,000	400,000	460,000	13	87
Total	**257,000**	**818,000**	**1,075,000**	**24**	**76**

As indicated, these repairs are relatively labor intensive, with the material costs representing a small percentage of the total costs. All costs will come out of the operating budget for the facility (i.e., not from the capital budget).

This project affects only the steam side of the boiler. The gas side (i.e., emissions) is not affected by this project. In addition, the maximum permitted heat input rate, steam production rate, or any other aspect of the boiler will not be changed by the planned repairs. The boiler has been able to achieve varying capacities during compliance testing over the last 10 years. Individual run steam rates have ranged up to 252,000 lb/hr, while individual run heat input rates have ranged up to 491.3 MMBtu/hr (i.e., up to 99 percent of the permitted rates). This variable operation is normal for a bagasse boiler.

Boiler No. 2

Boiler No. 2 is a vibrating grate type boiler. The boiler is permitted to generate up to 230,000 lb/hr steam, with a maximum heat input rate due to bagasse of 447 MMBtu/hr. During the next three off-seasons, Boiler No. 2 is scheduled to undergo several repair and maintenance activities. These consist of the following:

- Replace roof, front, and sidewall tubes, amounting to about 7 percent of the boiler heat transfer surface (2003);
- Replace superheater tube section (2003);
- Replace three rows of main generating bank steam tubes, amounting to about 18 percent of boiler heat transfer surface (2004 and 2005);
- Replace overfire air fan and distributor air fan (2004 and 2005); and
- Replace one-half of air heater tubes (2003 and 2004).

These repairs are not associated with any other repairs to the boiler, or any other projects planned for Boiler No. 2. As described, some of these repairs will be spread over several years. The repairs are estimated to cost:

Repair	Materials ($)	Labor ($)	Total ($)	Materials (% of total $)	Labor (% of total $)
Roof, Front and Sidewall Tubes; Superheater Tubes	82,000	277,000	359,000	23	77
Main Generating Bank Tubes	46,000	270,000	316,000	15	85
Air Fans	32,000	26,000	58,000	55	45
Total	**310,000**	**723,000**	**1,033,000**	**30**	**70**

As shown, these repairs are very labor intensive, with the material costs representing only a small percentage of the total costs. All costs will come out of the operating budget for the facility (no costs from capital budget).

This project affects only the steam side of the boiler. The gas side (i.e., emissions) is not affected by this project. In addition, the planned repairs will not change the maximum permitted heat input rate, steam production rate, or any other aspect of the boiler. The boiler has been able to achieve varying capacities during compliance testing over the last 10 years. Individual run steam rates have ranged up to 212,000 lb/hr, while individual run heat input rates have ranged up to 436.3 MMBtu/hr (i.e., greater than 90 percent of permitted rates). This variable operation is normal for this bagasse boiler.

Boiler No. 3
Boiler No. 3 is a cell type boiler (i.e., has no grate). The boiler is presently permitted to generate up to 130,000-lb/hr steam, at a maximum heat input rate due to bagasse of 265 MMBtu/hr. During the next three off-seasons, Boiler No. 3 is scheduled to undergo the following repair and maintenance activities:

- Replace several rows of main generating bank steam tubes, amounting to about 33 percent of boiler heat transfer surface (2004 and 2005);
- Replace three rows of superheater tubes (2003).

These repairs are not associated with any other repairs to Boiler No. 3, except that the superheater tube repairs are part of a 2-year project that was begun in 2002.

As described, the repairs to the main generating bank tubes will be spread over 2 years. The above repairs are estimated to cost as follows (the superheater tube repairs include costs incurred during 2002):

Repair	Materials ($)	Labor ($)	Total ($)	Materials (% of total $)	Labor (% of total $)
Main Generating Bank Tubes	100,000	300,000	400,000	25	75
Superheater Tubes	47,000	130,000	177,000	27	83
Total	**147,000**	**430,000**	**577,000**	**25**	**75**

As indicated, these repairs are relatively labor intensive, with the material costs representing a small percentage of the total costs. All costs will come out of the operating budget for the facility.

This project affects only the steam side of the boiler. The gas side (i.e., emissions) is not affected by this project. In addition, the planned repairs will not change the maximum permitted heat input rate, steam production rate, or any other aspect of the boiler.

Boiler No. 3 has been able to achieve varying capacities during compliance testing over the last 10 years. Individual run steam rates have ranged up to 117,400 lb/hr, while individual run heat input rates have ranged up to 234.3 MMBtu/hr (i.e., greater than 90 percent of permitted rates). During more recent years, steam rates have only reached about 100,000 lb/hr. This variable operation is normal for this bagasse boiler. It is not expected that the planned repairs to the boiler will result in any greater steam production than recent years have demonstrated.

Boiler No. 4
Boiler No. 4 was originally permitted for the Clewiston mill in 1985, and began operating in 1985. This was an existing coal-fired boiler that was converted to bagasse/oil-firing. The conversion included new steam generating bank tubes, new superheater, and the air heater and economizer were retubed. The boiler has a traveling grate. The boiler is presently permitted to generate up to 300,000-lb/hr steam at a heat input rate of 633 MMBtu/hr.

During the upcoming off-season, Boiler No. 4 is scheduled to undergo the following repair and maintenance activities:

- Replace both side wall tubes during refractory repair, amounting to about 19 percent of the boiler heat transfer surface (2003);
- Replace 40 percent of main generating bank tubes (2004);
- Replace superheater tubes (2005);
- Replace screenwall tubes in gas flow region (2005); and
- Replace one-half of the air heater tubes (2003).

These repairs are not associated with any other repairs to the boiler, or any other projects planned for Boiler No. 4, except for the main generating bank tubes. The main generating bank tube replacement project is part of a 2-year project to replace all the main generating bank tubes.

All of these repairs are estimated to cost as follows (the main generating bank costs include 2002 costs):

Repair	Materials ($)	Labor ($)	Total ($)	Materials (% of total $)	Labor (% of total $)
Sidewall Tubes	23,000	69,000	92,000	25	75
Main Generating Bank Tubes*	149,000	580,000	729,000	20	80
Lagging on Superheater Tubes	100,000	300,000	400,000	25	75
Screenwall Tubes	15,000	75,000	90,000	17	83
Air Heater Tubes	75,000	150,000	225,000	33	67
Total	**362,000**	**1,174,000**	**1,536,000**	**24**	**76**

* Includes 2002 costs.

All of these costs will come from the operating budget for the facility.

This project affects only the steam side of Boiler No. 4. The gas side (i.e., emissions) is not affected by this project. In addition, the planned repairs will not change the maximum permitted heat input rate, steam production rate, or any other aspect of the boiler. The boiler has been able to achieve at least 90 percent of its permitted 24-hour average steam rate capacity during recent compliance testing.

Boiler No. 7

Boiler No. 7 is a bagasse/oil-fired boiler originally permitted in 1996. The boiler was subject to prevention of significant deterioration (PSD) review and a best available control technology (BACT) determination at the time of original permitting. The boiler was constructed and began operating in 1997. Initial compliance tests on the boiler were conducted in November 1997. The boiler is presently permitted to generate up to 385,000-lb/hr steam (350,000, maximum 24-hr average). During the upcoming off-season, Boiler No. 7 is scheduled to undergo the following repair and maintenance activities:

- Repairs to stoker (2003);
- Replace two-thirds of economizer tubes (2003).

These repairs are not associated with any other repairs to the boiler, or any other projects planned for Boiler No. 7, other than the economizer repair. During 2002, the first one-third of the economizer tubes were replaced, and the planned 2003 repairs is to replace the remaining tubes.

All of these repairs are estimated to cost as follows:

Repair	Materials ($)	Labor ($)	Total ($)	Materials (% of total $)	Labor (% of total $)
Stoker	0	150,000	150,000	0	100
Economizer Tubes	92,000	25,000	117,000	77	23
Total	**92,000**	**175,000**	**267,000**	**34**	**66**

As indicated, these repairs are relatively labor intensive, with the material costs representing a small percentage of the total costs. All costs will come out of the operating budget for the facility.

This project affects only the steam side of Boiler No. 7. The stoker repairs will not change the operation of the stoker. Therefore, the gas side of the boiler (i.e., emissions) is not affected by this project. In addition, the planned repairs will not change the maximum permitted heat input rate, steam production rate, or any other aspect of the boiler. The boiler has been able to achieve at least 90 percent of its permitted 24-hour average steam rate capacity during recent compliance testing.

Discussion

To summarize, the types of boiler repairs U. S. Sugar is planning for the Clewiston mill include the following:

- Replace tubes:
  - Rows of main generating bank steam tubes,
  - Air heater tubes,
  - Superheater tubes,
  - Economizer tubes,
  - Roof, front, and sidewall tubes, and
  - Screen tubes;
- Replace overfire air fan and distributor air fan; and
- Repairs to stoker.

Nearly all of the planned repairs to the boilers involve tube repair and replacement.

All of the boilers at the Clewiston mill are routinely repaired and maintained during the off-season. The primary reason for many of the repairs is the nature of the bagasse fuel burned in the boilers. The operating environment created by the bagasse fuel is harsher compared to fossil fuel boilers or even wood-fired boilers. This is due to the relatively high and variable moisture content of bagasse, the lower heating value of the fuel, and the presence of sand in the bagasse fuel. The sulfur in the fuel, although relatively low, coupled with high moisture and cold end temperatures, increases corrosion, scaling and fouling of air heater and economizer tubes, ductwork, and other boiler internals. Therefore, a higher level of repairs and maintenance is required on bagasse boilers compared to boilers burning other fuels.

The sand in the fuel, present even after multiple washings in the cane grinding mills, causes erosion of boiler internals, fans, and ductwork. At the Clewiston mill, the amount of sugar cane grown on

sandy soils as opposed to muck soils has risen steadily over the last 20 years. This increasing trend is shown in Figure 1 attached. As shown, the percentage of cane grown on sandy soils has increased from about 30 percent in 1985 to nearly 70 percent in the 2001 - 2002 crop season. The result is that even a greater level of repairs and maintenance is required on the boilers compared to previous years.

Although a greater level of repairs is required for bagasse boilers, the extended off-season, which can last from 5 to 7 months depending on the sugar cane crop, allows a greater level of repairs and maintenance to be performed compared to boilers in other industries, which generally must operate year-around. Thus, the average life of a bagasse boiler is much greater than that of a boiler burning fossil fuels or wood.

It is also noted, as discussed in our meeting, that U. S. Sugar is in the planning stages for a new boiler at the Clewiston mill, and will be submitting a construction permit application to the Department in the near future. As part of this project, the existing Boiler No. 3 will be retired.

U. S. Sugar has become increasingly aware of U. S. Environmental Protection Agency's (EPA) initiatives related to routine repair and maintenance activities and life extension projects. As a result, U. S. Sugar is presenting this information regarding the Clewiston boilers to gain concurrence that the planned activities do indeed constitute routine repair, maintenance or replacement, as defined under the PSD regulations.

A summary of the boiler repair costs is presented in Table 1. Two important points are to be made from this table. First, the materials costs associated with the repairs are low: less than 30 percent of the total repair cost for each boiler. The majority of costs are due to labor costs. This confirms that these projects do not represent major replacements of the boiler components. The labor costs are high due in part to the contract labor that U. S. Sugar must use. The labor costs would be much less if U. S. Sugar performed the labor. However, U. S. Sugar does not have adequate personnel to perform the necessary labor.

Secondly, the total repair costs for each boiler represent only a small fraction of the cost of a comparable new boiler. The total cost of a new boiler of comparable size to the existing boilers is estimated to range from $5.5 to $8.5 million, depending on boiler size. The total repair costs for each boiler are less than 20 percent of the cost of a comparable new boiler. Material costs associated with the repairs, therefore, represent less than 6 percent of the cost of a comparable new boiler.

As described previously, all costs for the planned repairs will come out of the operating budget for the Clewiston mill.

U. S. Sugar believes that, due to the nature of these repairs, they qualify for routine maintenance, repair, and replacement exemptions under the Department's air rules. To assist in this determination, we have addressed EPA's five-factor criteria for assessing whether a project qualifies as routine maintenance, replacement, or repair (see Tables 2 through 6 attached).

As such, we believe that no air construction permit is required prior to commencing these repairs on the boilers. The Department's written concurrence that no air construction permit is required for these activities.

Please call me at (352) 336-5600 if you have any questions concerning this request, or need additional information.

Sincerely,

GOLDER ASSOCIATES INC.

David A. Buff

David A. Buff, P.E., Q. E. P.
Principal Engineer
Florida P. E. # 19011
SEAL

DB/db/jej

cc: Don Griffin
Peter Briggs

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Table 1. Summary of Planned Repairs to Clewiston Boilers, 2003-2005

Boiler	Years 2003-2005 Estimated Cost of Repairs[a] ($)			Repair Cost as Percentage of		Cost of Comparable New Boiler[b] ($)	Repair Cost as Percentage of New Boiler Cost
	Materials	Labor	Total	Materials	Labor		
Boiler 1	257,000	818,000	1,075,000	24%	76%	7,000,000	15%
Boiler 2	310,000	723,000	1,033,000	30%	70%	7,000,000	15%
Boiler 3	147,000	430,000	577,000	25%	75%	5,500,000	10%
Boiler 4	362,000	1,174,000	1,536,000	24%	76%	8,000,000	19%
Boiler 7	92,000	175,000	267,000	34%	66%	8,500,000	3%

[a] Does not include costs of replacing refractory.

[b] Does not include costs of air pollution control .

Table 2.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 1
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 1 Repairs
Nature	
1. Whether major components of the facility are being modified or replaced	1. A major component of the facility is not being modified or replaced. Only 26% of the tubes (heating surface) of the generating section of the boiler is being replaced, along with one-half of the air heater tubes and 100% of the super heater tubes. The air heater and superheater repairs will be performed over a two year period. This repair consists only of steam tubes.
2. Whether the unit is of considerable size, function, or importance to the operation of the facility	2. Boiler No. 1 is equally important to the other boilers during the crop season, but is a backup boiler during the off-seson operation. During 2002, it provided about 18% of the mills' steam generation.
3. Whether the source itself has characterized the change as non-routine	3. U. S. Sugar considers this project to be routine: the operating environment is harsh. Accelerated wear and corrosion are caused by sand, moisture and sulfur in bagasse fuel, and extended downtime. Cost is coming out of operating budget.
a. Is the repair/replacement common in the industry?	a. Unknown. Sand in the fuel may be unique to U. S. Sugar because 70% of the cane for Clewiston is grown on sand lands. Biomass fuels are more erosive than fossil fuels.
4. Whether the change could be performed during full functioning of the facility or while it was in full working order	4. Boiler No. 1 needs to be off-line to perform the repair. Boiler No. 1 is routinely off-line during the off-season.
5. Whether the materials, equipment and resources necessary to carry out the planned activity are already on site	5. Due to the nature of the work, the materials, equipment and resources to carry out the planned activity will come from off-site.

Table 2.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 1
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 1 Repairs
Extent	
1. Whether an entire emissions unit will be replaced	1. The entire emissions unit will not be replaced. Replacement of only 26% of heating surface of the generating section of the boiler; one-half of air heater tubes, and 100% of the superheater tubes.
2. Whether the change will take significant time to perform	2. The change can occur within a short amount of time, during the off-season when the unit does not typically operate. The work will be performed during the same time period when normal maintenance on the boiler is performed. All work to be performed during the approximate 5 to 7 month off-season.
3. Whether the collection of activities, taken as a whole, constitutes a non-routine effort, notwithstanding that individual elements could be routine	3. In the Clewiston Mill's operating environment, these repairs taken as a whole are considered routine.
4. Whether the change requires the addition of parts to existing equipment	4. No addition of parts are used - only in kind replacement.
a. Does repair/replacement involve improved design/materials?	a. Generally not, but some tubes could be fitted with additional erosion protection, depending on location in boiler.

Table 2.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 1
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 1 Repairs
Purpose	
1. Whether the purpose of the effort is to extend the useful life of the units; similarly, whether the source proposes to replace a unit at the end of its useful life	1. The purpose is not to "extend the useful life" of the boiler. Conversely, without repair or replacement, the unit's normal life would be shortened. The replacement and repair of the tubes will not extend the life of the unit. The purpose of replacing the tubes is to repair damage due to erosion and corrosion, resulting from sand, moisture and sulfur in the bagasse fuel and extended downtime.
2. Whether the modification will keep the unit operating in its present condition, or whether it will allow enhanced operation (e.g., will it permit increased capacity, operating rate, utilization, or fuel adaptability)	2. The replacement will not allow enhanced operation in anyway. The tube replacement will have the same primary function as the existing components. There will be no increase in maximum steam rate. Annual operation is dependent upon, and limited by, the amount of sugar cane harvested and refined sugar produced. There is continuous economic incentive to decrease (not increase) boiler usage. The steam needs of the sugar mill and refinery remain the same, regardless of an individual boiler's operation. Boiler No. 1 will continue to operate as it has in the past.
a. Does repair/replacement enhance efficiency?	a. No.
b. Does repair/replacement make the unit more attractive to run from an economic standpoint?	b. No.
c. Does repair/replacement increase capacity of unit?	c. No.
d. Does repair/replacement allow for less frequent maintenance?	d. Potentially, due to reduced tube erosion due to erosion protection for certain replaced tubes.

Table 2.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 1
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 1 Repairs
Frequency	
1. Whether the change is performed frequently in a typical unit's life	1. It is expected that in similar bagasse boilers burning similar fuel that the repair frequency is normal and routine.
a. Has the affected unit performed the repair/replacement frequently at its facility?	a. Portions of the generating tubes are repaired frequently.
Cost	
1. Whether the change will be costly, both in absolute terms and relative to the cost of replacing the unit	1. Project cost is approximately $1,075,000, but only about 24% of this total cost is in materials. Also, labor cost and overall cost would be much lower if performed internally by U. S. Sugar. Total project cost is about 15% of a new boiler cost, while the parts cost is less than 4% of a new boiler. The cost of a comparable new boiler is estimated at $7 million.
a. Is the relative cost of the proposed replacement high in comparison to the cost of a typical identical replacement of a worn part?	a. No, the cost is the same.
2. Whether a significant amount of the cost of the change is included in the source's capital expenses, or whether the change can be paid for out of the operating budget (i.e., whether the costs are reasonably reflective of the costs originally projected during the source's or unit's design phase as necessary to maintain the day-to-day operation of the source)	2. 100% of costs are being paid out of the operating budget. No portion of the costs will be capitalized.

Table 3.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 2
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 2 Repairs
Nature	
1. Whether major components of the facility are being modified or replaced	1. A major component of the facility is not being modified or replaced. Only 25% of the main generating bank and wall tubes (heating surface) of the boiler is being replaced, along with super heater and air heater tube sections. Additionally, small air distributor fans are being replaced. Several of these repairs will be over a two-year period.
2. Whether the unit is of considerable size, function, or importance to the operation of the facility	2. Boiler No. 2 is equally important to the other boilers during the crop season, but is a backup boiler during the off-season operation. During 2002, it provided about 21% of the mills' steam generation.
3. Whether the source itself has characterized the change as non-routine	3. U. S. Sugar considers this project to be routine: the operating environment is harsh. Accelerated wear and corrosion are caused by sand, moisture and sulfur in bagasse fuel, and extended downtime. Cost is coming out of operating budget.
a. Is the repair/replacement common in the industry?	a. Unknown. Sand in the fuel may be unique to U. S. Sugar because 70% of the cane for Clewiston is grown on sand lands. Biomass fuels are more erosive than fossil fuels.
4. Whether the change could be performed during full functioning of the facility or while it was in full working order	4. Boiler No. 2 needs to be off-line to perform the repair. Boiler No. 2 is routinely off-line during the off-season.
5. Whether the materials, equipment and resources necessary to carry out the planned activity are already on site	5. Due to the nature of the work, the materials, equipment and resources to carry out the planned activity will come from off-site.

Table 3.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 2
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 2 Repairs
Extent	
1. Whether an entire emissions unit will be replaced	1. The entire emissions unit will not be replaced. Replacement of only 25% of heating surface of the generating section of the boiler; one-quarter of air heater tubes, a section of the superheater tubes, and two samll fans.
2. Whether the change will take significant time to perform	2. The change can occur within a short amount of time, during the off-season when the unit does not typically operate. The work will be performed during the same time period when normal maintenance on the boiler is performed. All work to be performed in the 5 to 7 month off-season.
3. Whether the collection of activities, taken as a whole, constitutes a non-routine effort, notwithstanding that individual elements could be routine	3. In the Clewiston Mill's operating environment, these repairs taken as a whole are considered routine.
4. Whether the change requires the addition of parts to existing equipment	4. No addition of parts are used - only in kind replacement.
a. Does repair/replacement involve improved design/materials?	a. Generally not, but some tubes could be fitted with additional erosion protection, depending on location in boiler.

Table 3.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 2
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 2 Repairs
Purpose	
1. Whether the purpose of the effort is to extend the useful life of the units; similarly, whether the source proposes to replace a unit at the end of its useful life	1. The purpose is not to "extend the useful life" of the boiler. Conversely, without repair or replacement, the unit's normal life would be shortened. The replacement and repair of the tubes will not extend the life of the unit. The purpose of replacing the tubes is to repair damage due to erosion and corrosion, resulting from sand, moisture and sulfur in the bagasse fuel and extended downtime.
2. Whether the modification will keep the unit operating in its present condition, or whether it will allow enhanced operation (e.g., will it permit increased capacity, operating rate, utilization, or fuel adaptability)	2. The replacement will not allow enhanced operation in anyway. The tube and fan replacements will have the same primary function as the existing components. There will be no increase in maximum steam rate. Annual operation is dependent upon, and limited by, the amount of sugar cane harvested and refined sugar produced. There is continuous economic incentive to decrease (not increase) boiler usage. The steam needs of the sugar mill and refinery remain the same, regardless of an individual boiler's operation. Boiler No. 2 will continue to operate as it has in the past.
a. Does repair/replacement enhance efficiency?	a. No.
b. Does repair/replacement make the unit more attractive to run from an economic standpoint?	b. No.
c. Does repair/replacement increase capacity of unit?	c. No.
d. Does repair/replacement allow for less frequent maintenance?	d. Potentially, due to reduced tube erosion due to erosion protection for certain replaced tubes.

Table 3.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 2
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 2 Repairs
Frequency	
1. Whether the change is performed frequently in a typical unit's life	1. It is expected that in similar bagasse boilers burning similar fuel that the repair frequency is normal and routine.
a. Has the affected unit performed the repair/replacement frequently at its facility?	a. Portions of the generating tubes are repaired frequently.
Cost	
1. Whether the change will be costly, both in absolute terms and relative to the cost of replacing the unit	1. Project cost is approximately $1,033,000, but only about 30% of this total cost is in materials. Also, labor cost and overall cost would be much lower if performed internally by U. S. Sugar. Total project cost is less than 16% of a new boiler cost, while the materials cost is less than 5% of a new boiler. The cost of a comparable new boiler is estimated at $7 million.
a. Is the relative cost of the proposed replacement high in comparison to the cost of a typical identical replacement of a worn part?	a. No, the cost is the same.
2. Whether a significant amount of the cost of the change is included in the source's capital expenses, or whether the change can be paid for out of the operating budget (i.e., whether the costs are reasonably reflective of the costs originally projected during the source's or unit's design phase as necessary to maintain the day-to-day operation of the source)	2. 100% of costs are being paid out of the operating budget. No portion of the costs will be capitalized.

Table 4.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 3
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 3 Repairs
Nature	
1. Whether major components of the facility are being modified or replaced	1. A major component of the facility is not being modified or replaced. Only 33% of the tubes (heating surface) of the generating section of the boiler is being replaced over a two-year period. Three rows of superheater tubes are also being replaced. This repair consists only of steam tubes.
2. Whether the unit is of considerable size, function, or importance to the operation of the facility	2. Boiler No. 3 is the least important boiler at the mill, due to its size, and is a backup boiler during the off-season operation. During 2002, it provided about 6% of the mills' steam generation.
3. Whether the source itself has characterized the change as non-routine	3. U. S. Sugar considers this project to be routine: the operating environment is harsh. Accelerated wear and corrosion are caused by sand, moisture and sulfur in bagasse fuel, and extended downtime. Cost is coming out of operating budget.
a. Is the repair/replacement common in the industry?	a. Unknown. Sand in the fuel may be unique to U. S. Sugar because 70% of the cane for Clewiston is grown on sand lands. Biomass fuels are more erosive than fossil fuels.
4. Whether the change could be performed during full functioning of the facility or while it was in full working order	4. Boiler No. 3 needs to be off-line to perform the repair. Boiler No. 3 is routinely off-line during the off-season.
5. Whether the materials, equipment and resources necessary to carry out the planned activity are already on site	5. Due to the nature of the work, the materials, equipment and resources to carry out the planned activity will come from off-site.

Table 4.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 3
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 3 Repairs
Extent	
1. Whether an entire emissions unit will be replaced	1. The entire emissions unit will not be replaced. Replacement of only 33% of heating surface of the generating section of the boiler, and three rows of superheater tubes.
2. Whether the change will take significant time to perform	2. The change can occur within a short amount of time, during the off-season when the unit does not typically operate. The work will be performed during the same time period when normal maintenance on the boiler is performed. All work to be performed during the approximate 5 to 7 month off-season.
3. Whether the collection of activities, taken as a whole, constitutes a non-routine effort, notwithstanding that individual elements could be routine	3. In the Clewiston Mill's operating environment, these repairs taken as a whole are considered routine.
4. Whether the change requires the addition of parts to existing equipment	4. No addition of parts are used - only in kind replacement.
a. Does repair/replacement involve improved design/materials?	a. Generally not, but some tubes could be fitted with additional erosion protection, depending on location in boiler.

Table 4.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 3
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 3 Repairs
Purpose	
1. Whether the purpose of the effort is to extend the useful life of the units; similarly, whether the source proposes to replace a unit at the end of its useful life	1. The purpose is not to "extend the useful life" of the boiler. Conversely, without repair or replacement, the unit's normal life would be shortened. The replacement and repair of the tubes will not extend the life of the unit. The purpose of replacing the tubes is to repair damage due to erosion and corrosion, resulting from sand, moisture and sulfur in the bagasse fuel and extended downtime.
2. Whether the modification will keep the unit operating in its present condition, or whether it will allow enhanced operation (e.g., will it permit increased capacity, operating rate, utilization, or fuel adaptability)	2. The replacement will not allow enhanced operation in anyway. The tube replacement will have the same primary function as the existing components. There will be no increase in maximum steam rate. Annual operation is dependent upon, and limited by, the amount of sugar cane harvested and refined sugar produced. There is continuous economic incentive to decrease (not increase) boiler usage. The steam needs of the sugar mill and refinery remain the same, regardless of an individual boiler's operation. Boiler No. 3 will continue to operate as it has in the past.
a. Does repair/replacement enhance efficiency?	a. No.
b. Does repair/replacement make the unit more attractive to run from an economic standpoint?	b. No.
c. Does repair/replacement increase capacity of unit?	c. No.
d. Does repair/replacement allow for less frequent maintenance?	d. Potentially, due to reduced tube erosion due to erosion protection for certain replaced tubes.

Table 4.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 3
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 3 Repairs
Frequency	
1. Whether the change is performed frequently in a typical unit's life	1. It is expected that in similar bagasse boilers burning similar fuel that the repair frequency is normal and routine.
a. Has the affected unit performed the repair/replacement frequently at its facility?	a. Portions of the generating tubes are repaired frequently.
Cost	
1. Whether the change will be costly, both in absolute terms and relative to the cost of replacing the unit	1. Project cost is approximately $577,000, but only about 25% of this total cost is in materials. Also, labor cost and overall cost would be much lower if performed internally by U. S. Sugar. Total project cost is less than 10% of a new boiler cost, while the parts cost is less than 3% of a new boiler. The cost of a comparable new boiler is estimated at $5.5 million.
a. Is the relative cost of the proposed replacement high in comparison to the cost of a typical identical replacement of a worn part?	a. No, the cost is the same.
2. Whether a significant amount of the cost of the change is included in the source's capital expenses, or whether the change can be paid for out of the operating budget (i.e., whether the costs are reasonably reflective of the costs originally projected during the source's or unit's design phase as necessary to maintain the day-to-day operation of the source)	2. 100% of costs are being paid out of the operating budget. No portion of the costs will be capitalized.

Table 5.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 4
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 4 Repairs
Nature	
1. Whether major components of the facility are being modified or replaced	1. A major component of the facility is not being modified or replaced. About 59% of the tubes (heating surface) of the boiler is being replaced over a two-year period. Superheater, screenwall and air heater tubes are also being replaced. This repair consists only of steam tubes.
2. Whether the unit is of considerable size, function, or importance to the operation of the facility	2. Boiler No. 4 is equally important to other boilers at the mill, and is a backup boiler during the off-season operation. During 2002, it provided about 19% of the mills' steam generation.
3. Whether the source itself has characterized the change as non-routine	3. U. S. Sugar considers this project to be routine: the operating environment is harsh. Accelerated wear and corrosion are caused by sand, moisture and sulfur in bagasse fuel, and extended downtime. Cost is coming out of operating budget.
a. Is the repair/replacement common in the industry?	a. Unknown. Sand in the fuel may be unique to U. S. Sugar because 70% of the cane for Clewiston is grown on sand lands. Biomass fuels are more erosive than fossil fuels.
4. Whether the change could be performed during full functioning of the facility or while it was in full working order	4. Boiler No. 4 needs to be off-line to perform the repair. Boiler No. 3 is routinely off-line during the off-season.
5. Whether the materials, equipment and resources necessary to carry out the planned activity are already on site	5. Due to the nature of the work, the materials, equipment and resources to carry out the planned activity will come from off-site.

Table 5.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 4
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 4 Repairs
Extent	
1. Whether an entire emissions unit will be replaced	1. The entire emissions unit will not be replaced. About 59% of heating surface of the generating section of the boiler will be replaced, along with superheater, screenwall and air hacter tubes.
2. Whether the change will take significant time to perform	2. The change can occur within a short amount of time, during the off-season when the unit does not typically operate. The work will be performed during the same time period when normal maintenance on the boiler is performed. All work to be performed during the approximate 5 to 7 month off-season.
3. Whether the collection of activities, taken as a whole, constitutes a non-routine effort, notwithstanding that individual elements could be routine	3. In the Clewiston Mill's operating environment, these repairs taken as a whole are considered routine.
4. Whether the change requires the addition of parts to existing equipment	4. No addition of parts are used - only in kind replacement.
a. Does repair/replacement involve improved design/materials?	a. Generally not, but some tubes could be fitted with additional erosion protection, depending on location in boiler.

Table 5.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 4
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 4 Repairs
Purpose	
1. Whether the purpose of the effort is to extend the useful life of the units; similarly, whether the source proposes to replace a unit at the end of its useful life	1. The purpose is not to "extend the useful life" of the boiler. Conversely, without repair or replacement, the unit's normal life would be shortened. The replacement and repair of the tubes will not extend the life of the unit. The purpose of replacing the tubes is to repair damage due to erosion and corrosion, resulting from sand, moisture and sulfur in the bagasse fuel and extended downtime.
2. Whether the modification will keep the unit operating in its present condition, or whether it will allow enhanced operation (e.g., will it permit increased capacity, operating rate, utilization, or fuel adaptability)	2. The replacement will not allow enhanced operation in anyway. The tube replacement will have the same primary function as the existing components. There will be no increase in maximum steam rate. Annual operation is dependent upon, and limited by, the amount of sugar cane harvested and refined sugar produced. There is continuous economic incentive to decrease (not increase) boiler usage. The steam needs of the sugar mill and refinery remain the same, regardless of an individual boiler's operation. Boiler No. 4 will continue to operate as it has in the past.
a. Does repair/replacement enhance efficiency?	a. No.
b. Does repair/replacement make the unit more attractive to run from an economic standpoint?	b. No.
c. Does repair/replacement increase capacity of unit?	c. No.
d. Does repair/replacement allow for less frequent maintenance?	d. Potentially, due to reduced tube erosion due to erosion protection for certain replaced tubes.
Frequency	
1. Whether the change is performed frequently in a typical unit's life	1. It is expected that in similar bagasse boilers burning similar fuel that the repair frequency is normal and routine.
a. Has the affected unit performed the repair/replacement frequently at its facility?	a. Portions of the generating tubes are repaired frequently.

Table 5.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 4
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 4 Repairs
Cost	
1. Whether the change will be costly, both in absolute terms and relative to the cost of replacing the unit	1. Project cost is approximately $1,536,000, but only about 24% of this total cost is in materials. Also, labor cost and overall cost would be much lower if performed internally by U. S. Sugar. Total project cost is less than 20% of a new boiler cost, while the materials cost is less than 5% of a new boiler. The cost of a comparable new boiler is estimated at $8 million.
a. Is the relative cost of the proposed replacement high in comparison to the cost of a typical identical replacement of a worn part?	a. No, the cost is the same.
2. Whether a significant amount of the cost of the change is included in the source's capital expenses, or whether the change can be paid for out of the operating budget (i.e., whether the costs are reasonably reflective of the costs originally projected during the source's or unit's design phase as necessary to maintain the day-to-day operation of the source)	2. 100% of costs are being paid out of the operating budget. No portion of the costs will be capitalized.

Table 6.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 7
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 7 Repairs
Nature	
1. Whether major components of the facility are being modified or replaced	1. A major component of the facility is not being modified or replaced. Only repairs to the stoker and replacement of two-thirds of the economizer tubes is pbeing permformed. This repair consists primarily of steam tubes.
2. Whether the unit is of considerable size, function, or importance to the operation of the facility	2. Boiler No. 7 is the most important boiler at the mill, since it is used as the primary steam source during the off-season. During 2002, it provided about 37% of the mills' steam generation.
3. Whether the source itself has characterized the change as non-routine	3. U. S. Sugar considers this project to be routine: the operating environment is harsh. Accelerated wear and corrosion are caused by sand, moisture and sulfur in bagasse fuel, and extended downtime. Cost is coming out of operating budget.
a. Is the repair/replacement common in the industry?	a. Unknown. Sand in the fuel may be unique to U. S. Sugar because 70% of the cane for Clewiston is grown on sand lands. Biomass fuels are more erosive than fossil fuels.
4. Whether the change could be performed during full functioning of the facility or while it was in full working order	4. Boiler No. 7 needs to be off-line to perform the repair. Boiler No. 7 can be off-line during the off-season since Boilers 1-4 provide backup.
5. Whether the materials, equipment and resources necessary to carry out the planned activity are already on site	5. Due to the nature of the work, the materials, equipment and resources to carry out the planned activity will come from off-site.

Table 6.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 7
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 7 Repairs
Extent	
1. Whether an entire emissions unit will be replaced	1. The entire emissions unit will not be replaced. Only the stoker and the economizer are affected.
2. Whether the change will take significant time to perform	2. The change can occur within a short amount of time, during the off-season when the unit does not typically operate. The work will be performed during the same time period when normal maintenance on the boiler is performed.
3. Whether the collection of activities, taken as a whole, constitutes a non-routine effort, notwithstanding that individual elements could be routine	3. In the Clewiston Mill's operating environment, these repairs taken as a whole are considered routine.
4. Whether the change requires the addition of parts to existing equipment	4. No addition of parts are used - only in kind replacement.
a. Does repair/replacement involve improved design/materials?	a. No.

Table 6.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 7
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 7 Repairs
Purpose	
1. Whether the purpose of the effort is to extend the useful life of the units; similarly, whether the source proposes to replace a unit at the end of its useful life	1. The purpose is not to "extend the useful life" of the boiler. Conversely, without repair or replacement, the unit's normal life would be shortened. The replacement and repair of the tubes and stoker will not extend the life of the unit. The purpose of the repairs is to repair damage due to erosion and corrosion, resulting from sand, moisture and sulfur in the bagasse fuel and extended downtime.
2. Whether the modification will keep the unit operating in its present condition, or whether it will allow enhanced operation (e.g., will it permit increased capacity, operating rate, utilization, or fuel adaptability)	2. The replacement will not allow enhanced operation in anyway. The repairs will have the same primary function as the existing components. There will be no increase in maximum steam rate. Annual operation is dependent upon, and limited by, the amount of sugar cane harvested and refined sugar produced. There is continuous economic incentive to decrease (not increase) boiler usage. The steam needs of the sugar mill and refinery remain the same, regardless of an individual boiler's operation. Boiler No. 7 will continue to operate as it has in the past.
a. Does repair/replacement enhance efficiency?	a. No.
b. Does repair/replacement make the unit more attractive to run from an economic standpoint?	b. No.
c. Does repair/replacement increase capacity of unit?	c. No.
d. Does repair/replacement allow for less frequent maintenance?	d. Potentially, due to reduced tube erosion due to erosion protection for certain replaced tubes.

Table 6.
United States Sugar Corporation
Clewiston Mill
Repairs for Boiler No. 7
February 5, 2003

Criteria Based on EPA May 23, 2000 Guidance	Boiler No. 7 Repairs
Frequency	
1. Whether the change is performed frequently in a typical unit's life	1. It is expected that in similar bagasse boilers burning similar fuel that the repair frequency is normal and routine.
a. Has the affected unit performed the repair/replacement frequently at its facility?	a. Portions of the generating tubes are repaired frequently.
Cost	
1. Whether the change will be costly, both in absolute terms and relative to the cost of replacing the unit	1. Project cost is approximately $267,000, with only about 34% of this total cost in materials. Also, labor cost and overall cost would be much lower if performed internally by U. S. Sugar. Total project cost is less than 3% of a new boiler cost, while the materials cost is less than 2% of a new boiler. The cost of a comparable new boiler is estimated at $8.5 million.
a. Is the relative cost of the proposed replacement high in comparison to the cost of a typical identical replacement of a worn part?	a. No, the cost is the same.
2. Whether a significant amount of the cost of the change is included in the source's capital expenses, or whether the change can be paid for out of the operating budget (i.e., whether the costs are reasonably reflective of the costs originally projected during the source's or unit's design phase as necessary to maintain the day-to-day operation of the source)	2. 100% of costs are being paid out of the operating budget. No portion of the costs will be capitalized.