

Department of Environmental Protection

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

Virginia B. Wetherell Secretary

February 7, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Murray T. Brinson Vice President of Sugar Processing United States Sugar Corporation Post Office Drawer 1207 Clewiston, Florida 33440

Dear Mr. Brinson:

Attached is a copy of the Technical Evaluation and Preliminary Determination, proposed BACT determination, and proposed permit to increase the allowable carbon monoxide emission limit for the Clewiston Mill Boiler No. 4.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. A. A. Linero of the Bureau of Air Regulation. If you have any questions regarding this matter, please call Willard Hanks at (904)488-1344.

Sincerely,

C. H. Fancy, P.E.

Chief

Bureau of Air Regulation

CHF/WH/t

Attachment

cc: David Knowles, SD
Jewell Harper, EPA
John Bunyak, NPS
David Buff, P.E., KBN

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syour RETURN ADDRESS completed on the reverse side?	SENDER: Complete items 1 and/or 2 for additional services. Complete items 3, and 4s & b. Print your name and address on the reverse of this form so the return this card to you. Attach this form to the front of the mailpiece, or on the back it does not permit. Write "Return Receipt Requested" on the mailpiece below the article The Return Receipt will show to whom the article was delivered a delivered.	1 also wish to receive the following services (for an extra fee): 1. Addressee's Address 2. Restricted Delivery Consult postmaster for fee.	
	3. Article Addressed to: Muray T. Brinson V.P. of Sugar Process. U.S. Sugar Corp. P.D. Drawer 1207 Clewiston, Fl 33440	4b. Ser ☐ Regis ☐ Certi ☐ Expre	icle Number 751860000 vice Type stered Insured fied COD ess Mail Return Receipt for Merchandise of Deliver FB 1 3 1995
	5. Signature (Addressee) 8. Signature (Agent) R8 Form 38/1, December 1991 &U.S. GPO: 1992—323	and '	essee's Address (Only if requested fee is paid)

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STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

CERTIFIED MAIL

In the Matter of an Application for Permit by:

DEP File No. AC 26-248809 PSD-FL-217 Hendry County

Mr. Murray Brinson, Vice President United States Sugar Corporation Post Office Drawer 1207 Clewiston, Florida 33440

INTENT TO ISSUE

The Department of Environmental Protection (Department) hereby gives notice of its intent to issue a construction permit (copy attached) for the proposed project, as detailed in the application specified above, for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, United States Sugar Corporation, applied on June 29, 1994, for an air construction permit to modify/increase the allowable carbon monoxide (CO) emission limit for the existing bagasse/fuel oil fired Boiler No. 4. The boiler is located at the existing sugar mill in Clewiston, Hendry County, Florida. The modification will increase the allowable CO emission limit to reflect a more accurate test method implemented at the initiative of the Department. No increase in actual emissions is expected since the source must comply with a determination of Best Available Control Technology (BACT) of Good Combustion Practice, which was made in 1985.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-212 and 62-4, Florida Administrative Code (F.A.C.). The project is not exempt from permitting procedures. The Department has determined that a construction permit is required for the proposed action.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within seven days of publication. Failure to publish the notice and

provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S.. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice

of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if

any;

- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and,
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the

Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

C. H. Fancy, P.E., Chief Bureau of Air Regulation 2600 Blair Stone Road

Tallahassee, Florida 32399-2400 904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this INTENT TO ISSUE and all copies were mailed by certified mail before the close of business on 2/9/95 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to \$120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk Jayes 2/9/95 Date

Copies furnished to:

cc: David Knowles, SD Jewell Harper, EPA John Bunyak, NPS David Buff, P.E., KBN

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION NOTICE OF INTENT TO ISSUE PERMIT

AC 26-248809

PSD-FL-217

The Department of Environmental Protection (Department) gives notice of its intent to issue a construction permit, No. AC 26-248809/PSD-FL-217, to the United States Sugar Corporation for a modification/increase in the potential/allowable carbon monoxide (CO) emission limit for the existing bagasse/fuel oil fired Boiler The boiler is located at the existing sugar mill in Clewiston, Hendry County, Florida. The permit will authorize an increase in the allowable emission rate of CO from 339.1 TPY to 8,818 TPY. The boiler's operation and allowable emissions of all other air pollutants are not changed by this permit. However, the increase in allowable CO emissions is above the significant emission rate and subjects the proposed modification to the Prevention of Significant Deterioration new sources regulations. The allowable CO emissions are set by a determination of Best Available Control Technology. The maximum predicted CO concentrations from all sources, including the CO emission rate increase requested in the application, are: 18,160 ug/m³, 1-hour average, or 45% of the 1-hour ambient air quality standard (AAQS) of 40,000 ug/m³; and, 8,940 ug/m³, 8-hour average, or 89% of the 8-hour AAQS of $10,000 \text{ ug/m}^3$.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action

or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and, (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, Florida Administrative Code.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection Bureau of Air Regulation 111 S. Magnolia Drive, Suite 4 Tallahassee, Florida 32301

Department of Environmental Protection South District 2295 Victoria Avenue, Suite 364 Fort Myers, Florida 33901

Any person may send written comments on the proposed action to Mr. A. A. Linero at the Department of Environmental Protection, Bureau of Air Regulation, Mail Station 5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. All comments received within 30 days of the publication of this notice will be considered in the Department's final determination.

Further, a public hearing can be requested by any person(s). Such request must be submitted within 30 days of this notice.

Technical Evaluation and Preliminary Determination

United States Sugar Corporation Hendry County Clewiston, Florida

Boiler No. 4
Department File No. AC 26-248809
PSD-FL-217

Department of Environmental Protection Division of Air Resources Management Bureau of Air Regulation

February 7, 1995

GENERAL INFORMATION

A. Applicant

United States Sugar Corporation P. O. Drawer 1207 Clewiston, Florida 33440

B. Request

On June 29, 1994, U. S. Sugar Corporation submitted an application for an air construction permit to modify/increase the potential/allowable carbon monoxide (CO) emission limit for the existing bagasse/fuel oil fired Boiler No. 4. The boiler is located at the existing sugar mill in Clewiston, Hendry County, Florida. There will be no physical or operational change made to this boiler. The allowable emissions of all other air pollutants are not being changed. The UTM coordinates of this site are Zone 17, 506.1 km E and 2956.9 km N.

C. Emissions

The applicant requested that the allowable CO limit for Boiler No. 4 be increased from 0.25 lbs/MMBtu to 6.5 lbs/MMBtu heat input from bagasse. The purpose is to reflect a more accurate test method (EPA Method 10) implemented at the initiative of the Department. The previous test method (EPA Method 3) fails to detect carbon monoxide emissions up to an order of magnitude higher than the existing allowable emission rate. Based on a 6-hour average allowable heat input of 706.6 MMBtu/hr and a limit on operation time of 3840 hours per year operation, the allowable CO emissions requested would increase from 339.1 TPY to 8,818 TPY). There will be no increase in actual emissions since the applicant must comply with a Best Available Control Technology (BACT) determination of Good Combustion Practice made in 1985.

II. Rule Applicability

The proposed project, a modification to Boiler No. 4 at the existing sugar mill (SIC 2061), is subject to the preconstruction review requirements under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-212 and 62-4, Florida Administrative Code (F.A.C.).

The existing facility is located in Hendry County, which is an air quality area designated attainment for all criteria pollutants (Rule 62-275.400, F.A.C.).

The facility is major for the pollutants particulate matter, sulfur dioxide, nitrogen oxides, CO, and volatile organic compounds, because each of their emissions exceed 100 TPY (Rule 62-212.200, F.A.C.).

The proposed modification is subject to the Prevention of Significant Deterioration (PSD) regulations (Rule 62-212.400, F.A.C.) because the increase in the potential/allowable CO emissions is above the significant net emission rate (Rule 62-212.400(2)(d)4., F.A.C.). The modification is not subject to any new source performance standard in 40 CFR 60, because there is no physical or operational change being made to the boiler.

This modification is subject to the new source review requirements pursuant to Rule 62-212.400(5), F.A.C., which requires a Best Available Control Technology (BACT) determination for CO pursuant to Rule 62-212.410, F.A.C.

III. Technical Evaluation

The CO emission limit for bagasse fuel in Boilers No. 4 was originally based on the Standard Classification Code, 1-01-011-01, of 2 lbs of CO for each ton of bagasse burned. This is equivalent to approximately 0.25 lbs CO/MMBtu heat input. This bagasse fired boiler was subject to the PSD regulations and was given this standard. This standard was to be met through Good Combustion Practice.

Early emission test data for CO was based on EPA Method 3. Typical test results by this method showed that the CO concentration in the flue gas was undetectable. Much higher results were obtained when this boiler began measuring CO emissions with EPA Method 10 at the direction of the Department. The results ranged from 2 to 18 lbs CO/MMBtu. The CO emissions appear to vary with boiler operation. The permit for Boiler No. 4 is being revised, based on actual test data, to allow a maximum of 6.5 lbs CO/MMBtu. This emissions limit is to be achieved by Good Combustion Practice.

The applicant has submitted emission test data showing that the average CO emissions from Boiler No. 4 was 6.7 lbs/MMBtu. They requested a CO emission limit of 6.5 lbs/MMBtu. Similar bagasse boilers have already received the same CO emission limiting standard that was requested for Boiler No. 4. The Department believes that if this boiler is operated properly, it should be able to meet the limit. The BACT determination for this boiler for CO is the minimum CO emission rate achievable through Good Combustion Practice, not to exceed 6.5 lbs/MMBtu. At the maximum allowable heat input of 777.2 MMBtu/hr (1-hour max.), the allowable CO emission limit is 5,052 lbs/hr.

The other emission limits and boiler operation restrictions listed in the proposed permit are based on the previous construction and operation permits for Boiler No. 4.

IV.1. Air Quality Report

A. Introduction

The proposed project will emit CO in a PSD significant amount. The air quality impact analyses required by the PSD regulations for this pollutant include:

* An analysis of existing air quality;

* An Ambient Air Quality Standards (AAQS) analysis;

* An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts; and,

* A "Good Engineering Practice" (GEP) stack height determination.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The AAQS analysis depends on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS. However, the following EPA-directed stack height language is included: "In approving this permit, the Florida Department of Environmental Protection has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the modeling methodology and required analyses follows.

B. Analysis of Existing Air Quality and Determination of Background Concentrations

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review. However, an exemption to the monitoring requirement can be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. If preconstruction ambient air quality monitoring is required, this requirement may be met by using existing ambient monitoring data from a monitor in the vicinity of the project.

Even if preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants may be necessary for use in the AAQS analysis for each pollutant. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from previously existing representative monitoring data. These background ambient air quality concentrations are added to the pollutant impacts predicted by modeling and represent the air quality impacts of emission units not included in the modeling.

Table 1 shows that CO impacts from the project were predicted to be greater than the de minimus level. Therefore, preconstruction ambient air quality monitoring is required. However, there are existing ambient CO data available from a SLAMS monitor in West Palm Beach. Background CO concentrations for the 1-hour and 8-hour averaging times are based on data collected during 1987-1992 from this monitor, and were set equal to the highest, second-highest 1-hour and 8-hour CO concentrations observed during this time. These background values are 7800 ug/m³ and 4600 ug/m³ for the 1-hour and 8-hour averaging times, respectively.

C. Modeling Methodology

The EPA-approved Industrial Source Complex Short-Term (ISCST2) dispersion model was used to evaluate the pollutant emissions from the proposed modified facility and other existing major facilities. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area and volume emission units. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST2 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options in each modeling scenario. Direction-specific downwash parameters were used for all emission units for which downwash was considered.

Initially, for the significant impact analysis, concentrations were predicted at 900 receptors located in a radial grid centered on Boiler No. 4. Receptors were located in 25 concentric rings at distances ranging from 0.35 to 100 km away from the boiler. Each ring contained 36 receptors spaced at 10-degree intervals. For the full impact AAQS analysis, receptor grids were based on the size of the significant impact area for each pollutant. The radius of significant impact for CO was 30 km. The receptor grid for the AAQS analysis included 36 receptors per ring

(again spaced at 10-degree intervals) located at the following distances from the boiler: 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 10.0, 15.0, 20.0, 25.0, and 30.0 km.

Meteorological data used in the ISCST2 model to determine air quality impacts consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) station at West Palm Beach. The 5-year period of meteorological data was from 1985 through 1989. The NWS station at West Palm Beach, located approximately 100 km east of the Clewiston site, was selected for use in the study because it is the closest primary weather station to the study area and is most representative of the plant site. The surface observations included wind direction, wind speed, temperature, cloud cover and cloud ceiling.

Since five years of data were used and impacts for short-term averages only are necessary for CO emissions, the highest, second-highest predicted concentrations were compared with the appropriate CO AAQS. For determining the significant impact area, the highest predicted concentration was compared with the significant impact level.

D. Significant Impact Analysis

As stated in the section, above, the maximum air quality impact due to CO emissions from the proposed project is greater than the significant impact level. The radius of significant impact for CO is 30 km.

E. AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modeled. The results of the AAQS analysis for CO is summarized in Table 2. As shown in the table, emissions from the proposed project are not expected to cause or contribute to a violation of an AAQS.

IV.2. Additional Impact Analyses

A. Impacts on Soils, Vegetation, and Wildlife

The maximum ground-level concentrations predicted to occur for CO, as a result of the proposed project, including background concentrations and all other nearby emission units, will be below the associated AAQS. The AAQS are designed to protect both the

U.S. Sugar Clewiston Boiler No. 4 AC26-248809 (PSD-FL-217)

Table 1. Maximum Air Quality Impact for Comparison to the De Minimus Ambient Levels.

Pollutant Avg. Time		Predicted Impact (ug/m³)	De Minimus Level (ug/m³)
СО	8-hour	2,319	575

Table 2. Ambient Air Quality Impact

Pollutant	Averaging Time	Modeled Sources Maximum Impact ¹ (ug/m³)	Background Conc. (ug/m³)	Total Impact (ug/m³)	Florida AAQS (ug/m³)
со	1-hour	10,357	7,800	18,157	40,000
	8-hour	4,338	4,600	8,938	10,000

1. Maximum highest, second-highest value over a five-year period.

public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the vicinity of the facility. An air quality related values analysis was also done by the applicant for the Class I area. No significant impacts on this area are expected.

B. Growth-Related Air Quality Impacts

There will be no associated population growth with this project; therefore, there will be no growth-related air quality impacts.

C. GEP Stack Height Determination

Good Engineering Practice (GEP) stack height means the greater of: (1) 65 m (213 ft); or, (2) the maximum nearby building height plus 1.5 times the building height or width, whichever is less.

The Boiling House is the most significant structure associated with Boiler No. 4. This building has a height of 27.4 m and is 66.1 by 69.8 m wide. From the above formula, the GEP stack height is $27.4 + (1.5 \times 27.4) = 68.6 \text{ m}$ (225 ft). The stack for Boiler No. 4 will be 45.7 m (150 ft) high. This stack will not exceed the GEP stack height.

V. Conclusion

Based on the information provided by the applicant, the Department has reasonable assurance that the proposed modification of Boiler No. 4, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapters 62-4 and 62-212 of the Florida Administrative Code.





Department of Environmental Protection

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

Virginia B. Wetherell Secretary

PERMITTEE:
Mr. Murray T. Brinson
Vice President of Sugar
Processing

Processing
U.S. Sugar Corporation
P. O. Drawer 1207
Clewiston, Florida 33440

APIS No: 52FTM26000309
Permit Number: AC26-248809/PSD-FL-217
Expiration Date: July 1, 1995
County: Hendry

Latitude/Longitude: 26°44'05"N 80°56'19"W

Project: Boiler No. 4 Modification

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4, 62-210, 62-212, 62-275, 62-296, and 62-297, Florida Administrative Code (F.A.C.). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and specifically described as follows:

Authorization to increase allowable carbon monoxide (CO) emissions from the existing Foster Wheeler Boiler No. 4 located at U.S. Sugar Corporation's sugar mill. This mill is near the intersection of W.C. Owens Avenue and Clewiston Street in Clewiston, Hendry County, Florida. The UTM coordinates of this site are zone 17, 506.1 km E and 2956.9 km N.

The modification shall be in accordance with the application (cover letter dated April 7, 1994), and the additional information submitted in the U.S. Sugar Corporation's letters dated June 27, 1994, and September 8, 1994, except for the changes mentioned in the Technical Evaluation and Preliminary Determination and listed as Specific Conditions in this permit to construct/modify.

Attachments are listed below:

- 1. U.S. Sugar Corporation's application received April 8, 1994.
- 2. U.S. Sugar Corporation's letter dated June 27, 1994.
- 3. KBN's letter dated August 31, 1994.
- 4. U.S. Sugar Corporation's letter dated September 8, 1994.

PERMITTEE:

Permit Number: AC26-248809/PSD-FL-217 U.S. Sugar Corporation Expiration Date: July 1, 1995

GENERAL CONDITIONS:

- 1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, specifications, or conditions of exhibits, this permit may constitute grounds for revocation and enforcement action by the Department.
- 3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.
- The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department
- 7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation

Permit Number: AC26-248809/PSD-FL-217 PERMITTEE: Permit Number: AC26-248809/PSD-U.S. Sugar Corporation Expiration Date: July 1, 1995

GENERAL CONDITIONS:

credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

- a. Have access to and copy any records that must be kept under the conditions of the permit;
- b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and,
- c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

- If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
 - a. a description of and cause of non-compliance; and,
 - b. the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

- In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- 10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.

PERMITTEE: U.S. Sugar Corporation

Permit Number: AC26-248809/PSD-FL-217 Expiration Date: July 1, 1995

GENERAL CONDITIONS:

- 11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- 12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
- 13. This permit also constitutes:
 - (X) Determination of Best Available Control Technology (BACT)
 - (X) Determination of Prevention of Significant Deterioration (PSD)
 - () Compliance with New Source Performance Standards (NSPS)
- 14. The permittee shall comply with the following:
 - a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the dates analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and,
 - the results of such analyses.

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SPECIFIC CONDITIONS:

Equipment Specification

- 1. Stack sampling facilities for Boiler No. 4 shall be in accordance with the requirements of Rule 62-297.345, F.A.C.
- 2. The scrubber control system for Boiler No. 4 shall be equipped with instruments to measure the gas pressure drop and pH of the scrubber water.
- 3. All stationary fuel oil burning equipment at the plant shall be equipped with integrated fuel oil flow meters or continuous recorders to measure the amount of fuel oil consumed by the equipment. Boiler No. 4 shall not have more than two burners with two oil guns each (total of four oil guns). The maximum capacity of all four fuel oil guns shall not exceed the permitted fuel oil input rate.

Operation Limitations

- 4. Boiler No. 4 is limited to 160 days (3840 hrs/yr) operation per season (October to May).
- 5. Steam production, steam pressure, steam temperature, heat input, and bagasse consumption shall not exceed the following:

Steam press.	Steam temp. °]	_	team Prod. lbs/hr	Heat input 10 ⁶ Btu/hr	Bagasse Consum. lbs/hr-wet
850	900	Max.	346,231	777.2	215,889
		6-hr avg	314,757	706.6 	196,264
600	750	Max.	368,500	777.2	215,889
		6-hr avg	335,000	706.6	196,264

^{*}Maximum is a 1-hour average.

- 6. Readings shall be taken and logged every 8 hours of the scrubber pressure drop and every 24 hours for the pH of the scrubber water for each day during which bagasse is burned in Boiler No. 4. During compliance testing, the scrubber parameters shall be measured and recorded at 15 minute intervals.
- 7. The scrubber shall be operated at a <u>six-hour average</u> pressure drop that is 90% or more of the six-hour average pressure drop that existed during a particulate matter test that demonstrated compliance.

PERMITTEE:

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SPECIFIC CONDITIONS:

The scrubber shall in no case be operated with an instantaneous pressure drop less than 75% of the six-hour average pressure drop that was determined concurrently with a stack test that demonstrated compliance for particulate matter.

- The heat input for Boiler No. 4 while firing No. 6 residual fuel oil shall not exceed 225 million Btu per hour, which is approximately equivalent to 1,500 gallons per hour of fuel oil. Fuel oil meter readings on all fuel oil consuming equipment shall be read and logged at least once every three hours, unless fuel oil consumption for the equipment is recorded continuously, and these records shall be kept for at least five years for Department inspection. Each meter shall be calibrated annually by a method approved by the Department.
- 10. During any 12-month period, the maximum quantity of No. 6 residual fuel oil burned in Boiler No. 4 shall not exceed 500,000 gallons.
- During any 24-hour period, not more than 40,800 gallons of fuel oil shall be burned in all stationary fuel oil burning equipment at the plant. All permits to operate other oil burning equipment at this plant are revised to include this limitation.
- 12. During any 3-hour period, not more than 6,300 gallons of fuel oil shall be burned in all stationary fuel oil burning equipment at the plant. All permits to operate other oil burning equipment at this plant are revised to include this limitation.
- 13. Any No. 6 residual fuel oil burned in this boiler shall be replaced during the season in which it is burned with fuel oil containing no more than 1.50 percent sulfur content, by weight. Compliance with this condition shall be determined from certified analysis of the replacement fuel oil by ASTM Method D-129. Records of the quantity and analysis of fuel oil consumed in Boiler No. 4 and invoices for the fuel oil purchased shall be kept for a minimum of five years for regulatory agency inspection.

Emission Limitation

14. Particulate matter (PM) emissions from Boiler No. 4 shall not exceed 0.150 pounds per million Btu heat input (lbs/MMBtu) for bagasse fuel or 0.10 lbs/MMBtu for No. 6 residual fuel oil. Maximum PM emissions shall not exceed 116.6 lbs/hr and 223.8 TPY. In the event that both fuels are burned concurrently, the allowable PM emissions shall be prorated from the allowable standards for each fuel by their respective heat inputs.

PERMITTEE: U.S. Sugar Corporation

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SPECIFIC CONDITIONS:

- 15. Visible emissions (VE) from Boiler No. 4 shall not exceed 20 percent opacity except for one two-minute period per hour during which the opacity shall not exceed 40 percent pursuant to Rule 62-296.405(1)(a), F.A.C. Compliance with the standard shall be determined by the EPA Method 9 as described in 40 CFR 60, Appendix A.
- 16. Sulfur dioxide emissions from Boiler No. 4, while it is burning a mixture of fuel oil and bagasse, shall not exceed 0.87 lbs/MMBtu and 680 lbs/hr. Sulfur dioxide emissions from Boiler No. 4, while it is burning 100 percent bagasse fuel, shall not exceed 0.166 lbs/MMBtu and 129.0 lbs/hr. Total sulfur dioxide emissions from Boiler No. 4 during any 12 month period shall not exceed 340 tons. Sulfur dioxide emissions shall be determined by EPA Method 6 or 6C as described in 40 CFR 60, Appendix A. The compliance test results shall be calculated by assuming the thermal efficiency of Boiler No. 4 is 55 percent. For informational purposes only, the sulfur dioxide emission rate shall also be calculated by utilizing both the F factor (for each compliance test) and the short term ASME boiler efficiency test results (once every five years).
- 17. Emissions of carbon monoxide and volatile organic compounds shall be maintained at the lowest possible level through the implementation of an Operation and Maintenance plan that is approved by the Department. Emissions of carbon monoxide (1-hour average) shall not exceed 3.5 lbs/MMBtu, 2,720 lbs/hr, and 4,748 TPY, as determined by EPA Method 10. Emissions of volatile organic compounds shall not exceed 1.7 lbs/ton of wet bagasse as determined by EPA Method 25. These test methods are described in 40 CFR 60, Appendix A.
- 18. Pursuant to Rule 62-296.310(3), F.A.C., the permittee shall not cause, let, permit, suffer or allow the emissions of unconfined particulate matter from the bagasse storage and handling system without taking reasonable precautions to prevent such emissions. These precautions shall include, but shall not be limited to the following: paving and maintenance of roads, parking areas and yards; application of water or chemicals to control unconfined emissions; application of asphalt, water, oil, chemicals or other dust suppressants to unpaved roads, yards, open stock piles and similar sources; removal of particulate matter from roads and other paved areas under the control of the permittee to prevent reentrainment, and from buildings or work areas to prevent particulate matter from becoming airborne; landscaping or planting of vegetation; use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter; and, enclosure or covering of conveyer systems.

PERMITTEE:

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SPECIFIC CONDITIONS:

- 19. Nitrogen oxides emissions, expressed as NO2, shall not exceed 192.4 lbs/hr and 346.9 TPY, as determined by EPA Reference Method 7 or 7E in accordance with 40 CFR 60, Appendix A.
- 20. All references to the 40 CFR 60 requirements are of the July 1, 1993 version.

Testing and Reporting

- 21. Compliance tests for all emission standards listed in Specific Conditions Nos. 10, 11, 12, 13, and 15 for Boiler No. 4 shall be conducted once each Federal fiscal year and reported to the Department's South District office within 45 days of completion of the last test run.
- Annual stack tests shall be required for PM, sulfur dioxide, nitrogen oxides, carbon monoxide, and visible emissions.
- 23. As a condition of this permit, PM emissions and VE tests shall be conducted concurrently on the boiler.
- Compliance with the PM standards shall be determined by EPA Reference Methods 1, 2, 3, 4, and 5, as described in 40 CFR 60, Appendix A. The compliance test results shall be calculated by assuming the thermal efficiency of Boiler No. 4 is 55 percent. For informational purposes only, the particulate matter emissions rate shall also be calculated by utilizing both the F factor (for each sempliance test) and the short term ASME boiler officiency test compliance test) and the short term ASME boiler efficiency test results (once every five years).
- 25. A test shall be conducted on Boiler No. 4 to determine its actual thermal efficiency in accordance with the ASME short-form procedure each time the operating permit for this boiler is renewed. The test shall be conducted while the tubes are clean and within 14 days of the compliance test. A current report on the thermal efficiency test must be included with the application to operate this boiler.
- 26. Testing of emissions shall be conducted with the emission unit operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then emission units may be tested at less than 90 percent of the maximum operating rate allowed by the permit. In this case, subsequent emission unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit.

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SPECIFIC CONDITIONS:

- 27. An annual operation report shall be submitted to the Department's South District office by March 1 of each year pursuant to Rule 62-210.370(2), F.A.C. The report shall include the amount of fuel oil burned by each emission unit at the plant in order to determine compliance with the limits on fuel oil usage in this permit, the sulfur content of the residual fuel oil purchased for the season, and a summary of the scrubber parameters listed in Specific Condition No. 2.
- 28. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 62-4.090, F.A.C.).
- 29. An application for an operation permit must be submitted to the Department's South District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (Rule 62-4.220, F.A.C.).

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Virginia B. Wetherell, Secretary Department of Environmental Protection

Best Available Control Technology (BACT) Determination United States Sugar Corporation Clewiston Mill Boiler No. 4

AC 26-248809 PSD-FL-217

The United States Sugar Corporation requested the carbon monoxide (CO) emission limit for Boiler No. 4 at the existing sugar mill in Clewiston, Hendry County, Florida, be increased from 0.25 lbs CO/MMBtu heat input to 9.0 lbs CO/MMBtu heat input. The requested emission limit is based on actual EPA Method 10 test data on Boiler No. 4. The increase in allowable emission is not associated with any change in production or operation of the boiler. The emissions of all other air pollutants are not affected by this request.

The higher allowable emission rate requested will result in an increase in CO emissions above the significant emission rate of 100 TPY. This subjects the facility to the Prevention of Significant Deterioration (PSD) new source review regulations. These regulations require a BACT determination to be made for CO for the boiler.

Date of Receipt of a BACT Application:

June 29, 1994

Date Application Complete

September 8, 1994

BACT Requested by the Applicant:

The BACT determination requested by the applicant is summarized below:

Carbon Monoxide (CO): The requested emission limit is 9.0 lbs CO/MMBtu heat input. For the 706.6 MMBtu/hr bagasse-fuel oil fired boiler, this will result in 6,359 lbs CO/hr emissions. The heat input and CO emissions are 6-hour averages (permit No. AC 26-126965). For a 3,840 hour per year operation, this is equivalent to 12,210 TPY CO emissions. The CO emission limit of 9.0 lbs/MMBtu is to be achieved by good operation practice of the boiler. Compliance is to be determined using EPA Reference Method 10 as described in 40 CFR 60, Appendix A.

BACT Determination Procedure:

In accordance with Rule 62-212.410, Florida Administrative Code, Best Available Control Technology Determination, Stationary Source-Preconstruction Review, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by

case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that in making the BACT determination the Department shall give consideration to:

- (a) Any Environmental Protection Agency determination of BACT pursuant to 40 CFR 52.21, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).
- (b) All scientific, engineering, and technical material and other information available to the Department.
- (c) The emission limiting standards or BACT determinations of any other state.
- (d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission unit in question the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

BACT Determined by the Department:

Carbon Monoxide emissions shall not exceed 3.5 lbs/MMBtu and 2,720 lbs/hr. Carbon Monoxide emissions during any 12-month period shall not exceed 4,748 TPY. Compliance shall be determined using EPA Reference Method 10 as described in 40 CFR 60, Appendix A. These emission limits shall be achieved through good operational practice of the boiler.

BACT Determination Rationale:

The applicant submitted information indicating the high CO emissions from this boiler are due to the short residence time of the combustion gases in the furnace area. Based on limited emission data, they concluded that CO emissions averaged 6.7 lbs/MMBtu. The requested limit of 9.0 lbs/MMBtu is to allow for normal fluctuations in emissions experienced by bagasse boilers.

New bagasse fired boilers are capable of meeting a CO emission limit of 0.35 lbs/MMBtu. This has been reported to be a direct function of the residence time of the flue gases in the boiler. Increasing the residence time of an existing boiler is not feasible.

The applicant investigated retrofitting a new bagasse feed/air distribution system (at the Department's request), retrofitting a flue gas recirculation system (FGR), use of a CO oxidation system, and drying the bagasse prior to burning (at the Department's request).

Boiler vendors stated that no decrease in CO emissions would be achieved through the use of a new feed/air distribution system. The high CO level for this boiler was due to the low residence time of the flue gases in the boiler. Higher residence times would allow for more complete combustion. Newer boilers have up to twice the volume of this existing boiler.

Retrofitting a flue gas recirculation (FGR) system to the existing boiler would be difficult and expensive (\$1,400,000 capital cost + \$1,000,000 annual operation cost). The CO reduction by a FGR system was unknown and potentially no reduction would be achieved. No bagasse boiler in Florida is using FGR.

Oxidation catalyst systems require elevated temperatures and low particulate matter loading. This boiler's flue gas temperature is too low and the particulate matter loading is too high to use an oxidation catalyst. No bagasse boiler in Florida uses an oxidation catalyst system.

Drying the bagasse prior to burning was considered unproven technology. No data was available to show a CO reduction from this approach.

All BACT determinations to control CO emissions from bagasse boilers in Florida have been good operational practice. The newer boilers with larger furnaces have lower CO emission rates. Expanding the volume of the existing boiler is not considered feasible. Through elimination of add-on controls, the Department is left with good operational practice as BACT to control CO from this existing boiler.

The Department believes that if this boiler is operated properly, it should be able to meet the same CO limit given to a similar boiler in the sugar industry. The BACT determination for Boiler No. 4 is established at 3.5 lbs CO/MMBtu, which is the limit that was proposed by Osceola Farms Company for Boiler No. 3 and was granted by the Department on July 22, 1991. The Department has no

information to suggest that this boiler is designed significantly differently from the Osceola Farms Company Boiler No. 3.

Conclusion

For a CO emission standard of up to 9.0 lbs/MMBtu, the ambient air impact will be below the ambient air standards.

Details of the Analysis May be Obtained by Contacting:

Martin Costello, P.E., BACT Coordinator Department of Environmental Protection Bureau of Air Regulation 2600 Blair Stone Road Tallahassee, Florida 32399-2400

Recommended by:	Approved by:
C. H. Fancy, P.E., Chief Bureau of Air Regulation	Virginia B. Wetherell, Secretary Dept. of Environmental Protection
, 1994	, 1994 Date

Florida Department of Environmental Protection

To: Clair Fancy

From: Willard Hanks work

Date: February 3, 1995

Subject: U. S. Sugar Corp. Boiler No. 4

U. S. Sugar Corp. stroker fed bagasse Boiler No. 4 was subject to PSD in 1985. It was given a BACT standard for CO of 0.25 lbs/MMBtu as determined by EPA Method 3, to be achieved by good combustion practice. This and other bagasse boilers in the industry are unable to meet this standard. Several of the stroker fed bagasse boilers have had their permits modified to allow CO emissions of 6.5 lbs/MMBtu. One cell fed bagasse boiler received a CO emission standard of 3.5 lbs/MMBtu. Based on a series of EPA Method 10 tests on Boiler No. 4, U. S. Sugar Corp. has submitted another PSD application and requested the CO standard be raised to 6.5 lbs/MMBtu.

The attached Technical Evaluation, proposed air construction permit, and BACT determination says the CO standard is to be the lowest rate achievable by good combustion practice, not to exceed 6.5 lbs/MMBtu. Tests are required next season to establish the lowest CO emission rate during good combustion practice.

Other changes to the previous permits for Boiler No. 4 that are in the proposed permit are to replace the previous fugitive dust control requirements with the language from the regulations, to express all emission limits in lbs/hr and TPY, and to require annual compliance tests on all air pollutants subject to PSD.

The other specific conditions in the proposed permit are carried over from previous permits issued for this boiler.

The 90-day waiver for this application expires on February 15, 1995.

CF/WH/h