

Max Jinn

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

November 22, 1989

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. L. A. Stanley
Seminole Kraft Corporation
9469 Eastport Road
Jacksonville, Florida 32218

Dear Mr. Stanley:

Re: Construction Permits for the Recovery Boiler/ Smelt
Dissolving Tank/ Multiple Effect Evaporator Set Project
Numbers: AC 16-168607, -168608, -168609, and PSD-FL-141.

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit for Seminole Kraft's above mentioned project at the existing facility in Jacksonville, Duval County, Florida.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Bill Thomas of the Bureau of Air Regulation.

Sincerely,

C. H. Fancy, P.E.
Chief

Bureau of Air Regulation

CHF/pr

Attachments

cc: A. Kutyna, NE District
S. Pace, BESD
W. Aronson, EPA
C. Shaver, NPS
D. Buff, KBN
J. Subramani, Oertel & Hoffman

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

Seminole Kraft Corporation
9469 Eastport Road
Jacksonville, FL 32218

DER File Nos. AC 16-168607
AC 16-168608
AC 16-168609
PSD-FL-141

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue permits (copy attached) for the project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Seminole Kraft Corporation, applied on August 11, 1989, to the Department of Environmental Regulation for a modification of the construction permit for the Recovery Boiler project at the existing facility in Jacksonville, Duval County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that an air construction permit is required for the proposed work.

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, 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, at the address specified 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, Florida Statutes. 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 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, Florida Statutes.

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 applicant 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 in 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 REGULATION



C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

Copies furnished to:

A. Kutyna, NE District
S. Pace, BESD
W. Aronson, EPA
C. Shaver, NPS
D. Buff, KBN
J. Subramani, Oertel & Hoffman

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on 11/22/89.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to
§120.52(9), Florida Statutes, with
the designated Department Clerk,
receipt of which is hereby
acknowledged.

Kim Johnson
Clerk

11/22/89
Date

State of Florida
Department of Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue construction permits to Seminole Kraft Corporation (SKC), 9469 Eastport Road, Jacksonville, Florida 32218, to replace the three existing kraft recovery boilers (RBs), Nos. 1, 2, and 3; three existing smelt dissolving tanks (SDTs), Nos. 1, 2, and 3; and three existing sets of multiple effect evaporators (MEEs), Nos. 1, 2, and 3; with a new RB, a new SDT, and a new set of MEEs. SKC is proposing these changes to comply with the TRS (total reduced sulfur compounds) Compliance Plan previously submitted. The project will be located at the existing Seminole Kraft facility in Jacksonville, Duval County, Florida.

There will be a net increase in the emissions of nitrogen oxides (NO_x) from the recovery boiler for which a Best Available Control Technology (BACT) determination was required. The Class I NO_x increment consumed is 0.016 ug/m³, of the allowable 2.5 ug/m³ (representing about 0.6%, annual basis). There is no Class II NO_x increment consumed by this project. The maximum combined pollutant concentrations from the proposed project and other sources in the area will be less than the National Ambient Air Quality Standards (NAAQS). The NAAQS are levels set by the EPA which identify the ambient concentration necessary to protect human health and welfare with an adequate margin of safety. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

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. 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 fourteen (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 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, Florida Statutes.

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, F.A.C.

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 Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Environmental Regulation
Northeast District Office
3426 Bills Road
Jacksonville, Florida 32207

Division of Bio-Environmental Services
421 Church Street, Room 412
Jacksonville, Florida 32206

Any person may send written comments on the proposed action to Mr. Bill Thomas at the Department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the Department's final determination. Furthermore, a public hearing can be requested by any person. Such requests must be submitted within 30 days of this notice.

Technical Evaluation
and
Preliminary Determination

Seminole Kraft Corporation
Duval County
Jacksonville, Florida

Permit Numbers:

AC 16-168607, Kraft Recovery Boiler
AC 16-168608, Smelt Dissolving Tank
AC 16-168609, Multiple Effect Evaporators

PSD-FL-141

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

November 22, 1989

I. Application

A. Applicant

Seminole Kraft Corporation
9469 Eastport Road
Jacksonville, Florida 32218

B. Project and Location

The applicant proposes to replace the three existing kraft recovery boilers (RBs), Nos. 1, 2, and 3; three existing smelt dissolving tanks (SDTs), Nos. 1, 2, and 3; and three existing sets of multiple effect evaporators (MEEs), Nos. 1, 2, and 3; with a new RB, a new SDT, and a new set of MEEs. The applicant is proposing these changes as part of an overall compliance plan to bring the mill into compliance with Florida's TRS (total reduced sulfur compounds) rules and to comply with the TRS Compliance Plan previously submitted by Seminole Kraft. There will be no change in the pulp production capacity of the mill associated with this modification.

The project will be located at the Seminole Kraft Corporation (SKC) facility in Jacksonville, Duval County, Florida. The UTM coordinates of the facility are Zone 17, 744.2 km East, and 3365.5 km North.

SKC's application was received on August 11, 1989, and was deemed complete on September 12, 1989.

C. Facility Category

The Standard Industrial Classification (SIC) Code for the Seminole Kraft pulp and paper mill is 2621 - Paper Mills.

The NEDs Source Classification Codes (SCC) are as follows:

- a) 3-07-001-04 (tons ADUP), Recovery Boiler
- b) 3-07-001-05 (tons ADUP), Smelt Dissolving Tank
- c) 3-07-001-03 (tons ADUP), Multiple Effect Evaporators

The Seminole Kraft mill is classified as a major facility in accordance with Chapter 17-2 of the Florida Administrative Code (F.A.C.).

II. Project Description

A. Process

In the pulp manufacturing process, wood chips are cooked with white liquor in a digester. After the cooking cycle, the digester blows the pressure cooked pulp and black liquor into a blow tank which is at atmospheric pressure, thus flashing off steam and non condensable gases (NCG). In the case of SKC,

these gases (containing TRS) are eventually transported to the No. 2 or No. 3 lime kiln for incineration.

The spent liquor (black liquor), is then concentrated in the MEE system where the weak black liquor is evaporated to about 70% black liquor solids. This concentrated black liquor is fired in the recovery boiler to recover the chemicals and heat value from the liquor. The NCG from the MEEs will be incinerated in the No. 2 or No. 3 lime kiln.

The recovery boiler smelt is fed to a smelt dissolving tank where it is dissolved in the weak liquor from the causticizing plant. The resulting green liquor is then filtered to separate the white liquor (used in the cooking cycle) from the calcium carbonate "mud" which is sent to the lime kiln to obtain quick lime.

The new RB and associated SDT will be able to process 170,833 lb/hr of dry black liquor solids (BLS), as compared with the combined capacity of the three old RBs of about 155,000 lb/hr.

The new MEE set will be able to process 184,500 lb/hr dry BLS, the same as the combined capacity of the three old sets of MEEs.

B. Controls

The new RB will utilize a 99% efficient, two chamber, dry bottom electrostatic precipitator to control particulate matter (PM) emissions. Additional controls may be required for nitrogen oxides, if necessary, to comply with the Best Available Control Technology (BACT) determination.

The new SDT will utilize a venturi scrubber to control emissions of both PM and TRS, in order to comply with the emission limiting standards.

The TRS emissions from the new MEEs will be transported to the No. 2 or No. 3 lime kiln for incineration, as is currently permitted for the existing MEEs.

III. Rule Applicability

The existing Seminole Kraft facility is major in accordance with Chapter 17-2.100 of the Florida Administrative Code (F.A.C.).

The proposed project is subject to preconstruction review and will be permitted in accordance with F.A.C. Rules 17-2 and 17-4; and Chapter 403 of the Florida Statutes.

The proposed project is subject to the provisions of F.A.C. Rules 17-4.130 - Plant Operation Problems; 17-4.140 - Reports; 17-2.240 - Circumvention; and 17-2.250 - Excess Emissions.

The proposed project will be located in Duval County, an area designated as nonattainment for ozone; within the area of influence of the PM nonattainment area; attainment for NO_x and carbon monoxide (CO); and unclassifiable for sulfur dioxide (SO₂); in accordance with F.A.C. Rules 17-2.410, 17-2.420 and 17-2.430, respectively. The proposed project will also be located within 100 km of Okefenokee National Wilderness Area, a designated Class I Area, in accordance with F.A.C. Rule 17-2.440.

The proposed project is not subject to F.A.C. Rule 17-2.510, Nonattainment Review Requirements for PM and volatile organic compounds (VOCs), for ozone, in accordance with F.A.C. Rule 17-2.510(2)(d), because there will be a net reduction in PM and VOC emissions.

The proposed project is subject to F.A.C. Rule 17-2.500, Source Review Requirement - Prevention of Significant Deterioration (PSD), since the net increase in NO_x emissions exceeds the significant emissions levels in Table 17-2.500-2, in accordance with F.A.C. Rule 17-2.500(2)(d).

The proposed project is subject to Specific Source Emission Limiting Standards for the RB, SDT, and MEEs, in accordance with F.A.C. Rule 17-2.600(4) for kraft pulp mills.

The proposed project is subject to the provisions of F.A.C. Rule 17-2.610(2), General Visible Emission Standard.

The proposed project is subject to the provisions of F.A.C. Rule 17-2.620, General Pollutant Emission Limiting Standards which prohibits objectionable odor.

The proposed project is subject to F.A.C. Rule 17-2.630, BACT determination for NO_x.

The proposed project is subject to F.A.C. Rule 17-2.660, Standards of Performance for New Stationary Sources (NSPS) for the RB, SDT and MEEs, in accordance with 40 CFR 60 Subpart BB.

The proposed project is subject to F.A.C. Rule 17-2.700, Source Sampling and Monitoring Requirements for the RB, SDT and the MEEs. Compliance tests shall be conducted in accordance with the July 1, 1988 version of the 40 CFR 60 Appendix A as follows:

- a) EPA Method 1, for sample and velocity traverses
- b) EPA Method 2, for velocity and volumetric flow rate
- c) EPA Method 3, for gas analysis
- d) EPA Method 5/17, for PM
- e) EPA Method 6/8, for SO₂
- f) EPA Method 7/7A, for NO_x
- g) EPA Method 9, for visible emissions (VE)
- h) EPA Method 16/16A, for TRS
- i) ASTM D 396-76, for determining fuel oil sulfur content.

The proposed project is subject to F.A.C. Rule 17-2.710(3), Continuous Monitoring Requirements for Kraft Pulp Mills; and 17-2.710(4), Quarterly Reporting Requirements.

The proposed project is subject to F.A.C. Rule 17-2.960(1), Compliance Schedules for Kraft Pulp Mills; and 17-2.971, Compliance Schedules for Continuous Monitoring Requirements.

The technical review on the lime kilns' incineration of NCG from the MEEs will depend on performance test results from the lime kilns once construction is completed and the system is operational. The applicant has stated that there will be no increase in the No. 2 and No. 3 lime kilns' TRS and SO₂ emissions.

IV. Source Impact Analysis

A. Emission Limitations

The following are the emission limitations for the RB and SDT, including the emission's basis:

1. Recovery Boiler

Pollutant	Basis	Emission Limit	
		lb/hr	TPY
PM (TSP)	0.044 gr/dscf @ 8% O ₂	107.0	468.7
PM ₁₀	74.8% of PM	80.8	350.6
SO ₂	180 ppmvd @ 8% O ₂ (max)	514.0	-
	120 ppmvd @ 8% O ₂ (avg)	339.3	1486.0
NO _x	BACT 75 ppmvd @ 8% O ₂	153.0	670.2
CO	400 ppmvd @ 8% O ₂	494.8	2167.2
VOC	80 ppmvd @ 8% O ₂	56.6	247.9
TRS	5 ppmvd @ 8% O ₂	7.5	32.9
Lead	3900 lb / 10 ¹² dscf	0.047	0.21
Beryllium	300 lb / 10 ¹² dscf	0.0036	0.016
Sulfuric Acid Mist	0.81 ppm	3.0	13.3

Visible emissions (VE) shall be less than 35% opacity.

Note: The TRS emissions are based on a 12-hr average.

2. Smelt Dissolving Tank

Pollutant	Basis	Emission Limit	
		lb/hr	TPY
PM (TSP)	0.2 lb/ton BLS	17.1	74.9
PM ₁₀	89.5% of PM	15.3	67.0
SO ₂	0.2 lb/ton ADUP and 80% removal	2.28	10.0
TRS	0.032 lb/ton BLS	2.73	12.0

Visible Emissions shall be less than 20% opacity.

3. Multiple Effect Evaporators

There will be no emissions vented directly to the atmosphere from the MEEs since all the NCG will be transported to the No. 2 or No. 3 lime kiln for incineration. There is a requirement for a minimum temperature of 1200°F and 0.5 second for the destruction of TRS.

The following table lists the net emission changes at the Seminole Kraft mill as a result of the proposed project.

Pollutant	Shut down Sources TPY	New RB TPY	New SDT TPY	New MEE TPY	Net Increase TPY
PM (TSP)	549.8	468.7	74.9	-	-6.2
PM ₁₀	430.2	350.6	67.0	-	-12.6
SO ₂	1489.6	1486.0	10.0	-	6.4
NO _x	321.1	670.2	-	-	349.1
CO	2327.2	2167.2	-	-	-160
VOC	340.2	247.9	-	-	-92.3
TRS	98.2	32.9	12.0	-	-53.3
Lead	0.37	0.21	-	-	-0.16
Beryllium	0.028	0.016	-	-	-0.012
H ₂ SO ₄ Mist	19.1	13.3	-	-	-5.8

In this preliminary determination there are three different tables indicating emission changes at the Seminole Kraft facility. The table above indicates the net changes after considering DER's evaluation. Table 1 in the ambient impact analysis portion reflects the emission changes which the applicant took into consideration in the modeling submitted to DER. The table in the BACT showing emission changes as submitted by the applicant does not take into account DER's evaluation of a revised NO_x emissions and the slaker contemporaneous emissions. Previous contemporaneous emissions are zero. The applicant submitted the emissions decrease from the slaker project which are not creditable.

B. Air Quality Impacts

(i) Introduction

The proposed modifications to the Seminole Kraft plant, located in Jacksonville, will emit in PSD-significant amounts one pollutant, nitrogen dioxides (NOx).

The air quality impact analysis required by the PSD regulations for NOx include:

- * An analysis of existing air quality;
- * A PSD increment analysis (NOx only);
- * An Ambient Air Quality Standards (AAQS) analysis;
- * An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality 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 the air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed modifications to the sources at the Seminole Kraft facility, as described in this report and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any ambient air quality standard. A discussion of the modeling methodology and required analysis follows.

(ii) Modeling Methodology

The EPA-approved Industrial Source Complex Short-Term (ISCST) dispersion model was used in the air quality impact analysis. The applicant used the EPA recommended regulatory options in each modeling scenario.

The modeling used a radial receptor grid with the center of the grid coinciding with the center of the Seminole Kraft facility. Radials were spaced at 10 degree increments from 10 to 360 degrees. The ring distances were placed at downwind distances of 0.1, 0.2, 0.3, 0.4, 0.6, 1.0, 1.3, 1.6, 2.0, 2.5, 3.0, 3.5, and 4.0 km.

Discrete receptors were used to determine the air quality impacts at the boundary of the Okefenokee Wilderness area (PSD Class I area).

The net air quality change was obtained spatially by subtracting the maximum predicted baseline NOx concentrations from the predicted future concentrations receptor by receptor.

Meteorological data used in the modeling consisted of five years (1983-1987) of hourly surface data taken at Jacksonville. Mixing heights used in the modeling were based on upper air data from Waycross, Georgia.

Table 1 lists the significant and net emission rates submitted initially by Seminole Kraft for the proposed modification. Table 2 lists the stack parameters and emission rates for the proposed modification and the sources that are to be replaced by the modifications.

Table 1. Significant and Net Emission Rates (Tons per Year)

Pollutant	Significant Emission Rate	Existing Emissions	Proposed Maximum Emissions	Net Emissions	Applicable Pollutant (Yes/No)
CO	100	2327.2	2167.2	-160.0	No
NO ₂	40	321.1	1617.5	1296.4	Yes
SO ₂	40	1489.6	1372.2	-117.4	No
PM	25	549.8	543.6	-140.7*	No
PM10	15	430.2	417.6	-138.6*	No
O ₃ (VOC)	40	340.2	247.9	-92.3	No
Lead	0.6	0.37	0.21	-0.16	No
Be	0.0004	0.028	0.016	-0.012	No
Sulfuric Acid Mst	7	19.1	13.1	-5.8	No
TRS	10	98.2	44.9	-53.3	No

* Includes previous contemporaneous emissions reductions.

Table 2. Stack Parameters for Proposed and Existing NOx Sources.

Source	Emission Rate (g/s)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diameter (m)
Proposed Rec. Boil.	46.6	121	477	20.4	3.43
Existing R. B. #1	3.0	38	344	17.9	2.59
R. B. #2	9.4	38	344	17.4	2.74
R. B. #3	9.4	38	344	17.4	2.74

(iii) Analysis of Existing Air Quality

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review. In general, one year of quality assured data using an EPA reference, or the equivalent monitor must be submitted. Sometimes less than one year of data, but no less than four months, may be accepted when Departmental approval is given.

An exemption to the monitoring requirement can be obtained if the maximum air quality impact, as determined by air quality modeling, is less than a pollutant-specific "de minimus" concentration. In addition, if current monitoring data exists and these data are representative of the proposed source area, then at the discretion of the Department these data may be used.

The predicted ambient impact of the net emission increase of NO_x is less than zero. As such no additional monitoring was required.

In 1988 the maximum annual arithmetic mean for NO_x was 35 ug/m³ near the Seminole Kraft facility. For the purposes of this application, this value is considered to be the "background" concentration for NO_x in this area.

(iv) PSD Increment Analysis (NO_x)

a. Class II Area

The Seminole Kraft facility is located in a Class II area. This area is also designated as an attainment area for NO_x. Therefore, a PSD increment analysis is required to show compliance with the Class II NO_x increment.

The PSD NO_x increment represents the amount that new sources in an area may increase ambient ground-level concentrations of NO_x. At no time, however, can the increased loading of NO_x cause or contribute to a violation of the ambient air quality standard.

Atmospheric dispersion modeling, as previously described, was performed to quantify the amount of PSD increment consumed. The results of this modeling indicate that all the net impacts in the Class II area have negative concentrations. Consequently, no PSD Class II increment is consumed by this project.

b. Class I Area

A Class I area increment analysis is required because the facility is located within 100 km of the Okefenokee Wilderness Area, a designated Class I area. Modeling results indicate the maximum NOx PSD Class I increment consumed is 0.016 ug/m³, which is less than one percent of the allowable PSD NOx increment of 2.5 ug/m³, annual average.

(v) AAQS Analysis

Given existing air quality in the area of the Seminole Kraft facility, emissions from the proposed modifications are not expected to cause or contribute to a violation of the AAQS for NO₂. The results of the AAQS analysis are summarized in Table 3.

Table 3. Ambient Air Quality Impact

Pollutant and Averaging Time	Maximum Impact of Proposed Project (ug/m ³)	Predicted Total Impact (ug/m ³)	Florida AAQS (ug/m ³)
NO ₂ (Annual)	0.23	35.23	100

(vi) Additional Impacts Analysis

a. Impacts on Soils and Vegetation

The maximum ground-level concentration predicted to occur for NOx as a result of the proposed project, including a background concentration, will be below the applicable AAQS including the national secondary standard (same quantity as primary standard) developed to protect public welfare-related values. As such, this project is not expected to have a harmful impact on soils and vegetation.

b. Impact on Visibility

Impacts upon visibility in the PSD Class I area (Okefenokee Wilderness Area) were predicted with the EPA Level-1 visibility screening model. The predicted impacts upon visibility are below the Level-1 screening criteria for the visibility parameters. As a result, virtually no impact upon visibility are predicted.

c. Growth-Related Air Quality Impacts

The proposed modification is not expected to significantly change employment, population, housing or commercial/industrial development in the area to the extent that an air quality impact will result.

d. GEP Stack Height Determination

Good Engineering Practice (GEP) stack height means the greater of: (1) 65 meters or (2) the maximum nearby building height plus 1.5 times the building height or width, whichever is less. For the new recovery boiler a stack height of 121.0 meters is proposed. The proposed stack height is equal to the GEP calculated height.

V. Conclusion

Based on the information provided by Seminole Kraft, the Department has reasonable assurance that the proposed replacement of the three existing recovery boilers, smelt dissolving tanks, and multiple effect evaporators, with a new recovery boiler, smelt dissolving tank, and a set of multiple effect evaporators, 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 Chapter 17-2 of the Florida Administrative Code.

John Thomas
11/22/89



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

PERMITTEE:

Seminole Kraft Corporation
9469 Eastport Road
Jacksonville, FL 32218

Permit Number: AC 16-168609
PSD-FL-141

Expiration Date: November 12, 1992

County: Duval

Latitude/Longitude: 30°25'15"N
81°36'00"W

Project: Multiple Effect Evaporators

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. 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 made a part hereof and specifically described as follows:

For the construction of a set of multiple effect evaporators (MEEs) with a capacity to process 184,500 lbs/hr dry black liquor solids (BLS), evaporating weak black liquor to about 70% BLS. The MEE set will consist of six effects of the falling film type. TRS gases will be transported to the No. 2 or No. 3 lime kiln for incineration. The project will be located at Seminole Kraft Corporation's (SKC) existing facility in Jacksonville, Duval County, Florida.

The UTM coordinates are Zone 17, 744.2 km East and 3365.5 km North.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. SKC's application received August 11, 1989.
2. EPA's letter received August 31, 1989.
3. DER's incompleteness letter dated September 8, 1989.
4. KBN's letter received September 11, 1989.
5. SKC's response received September 12, 1989.
6. SKC's letter received September 14, 1989.
7. KBN's letter received October 11, 1989.
8. EPA's letter received November 9, 1989.
9. DER's Preliminary Determination dated November 22, 1989.

PERMITTEE:

Seminole Kraft Corporation

Permit Number: AC 16-168609
PSD-FL-141

Expiration Date: November 12, 1992

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, Florida Statutes. 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.

2. 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, exhibits, specifications, or conditions of 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), Florida Statutes, 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.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement 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.

5. 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 Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

PERMITTEE:

Seminole Kraft Corporation

Permit Number: AC 16-168609

PSD-FL-141

Expiration Date: November 12, 1992

GENERAL CONDITIONS:

6. 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 rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of 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.

8. 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.

PERMITTEE:

Permit Number: AC 16-168609

PSD-FL-141

Seminole Kraft Corporation

Expiration Date: November 12, 1992

GENERAL CONDITIONS:

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.

9. 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 Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes. 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 Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, 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 Prevention of Significant Deterioration (PSD)
- (x) 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.

PERMITTEE:

Seminole Kraft Corporation

Permit Number: AC 16-168609

PSD-FL-141

Expiration Date: November 12, 1992

GENERAL CONDITIONS:

- 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.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. The multiple effect evaporators (MEEs) may operate continuously, i.e., 8760 hours/year.
2. The maximum process rate of the MEEs shall not exceed 184,500 lbs/hr dry black liquor solids (BLS), or 4,428,000 lbs/day dry BLS. This reflects a 1987 TPD ADUP (tons per day of air dried unbleached pulp) production rate for the mill.

PERMITTEE:

Permit Number: AC 16-168609
PSD-FL-141

Seminole Kraft Corporation

Expiration Date: November 12, 1992

SPECIFIC CONDITIONS:

3. The TRS gases from the MEEs shall be combusted in the No. 2 or No. 3 lime kiln. The TRS gases from the MEEs shall be subjected to a minimum temperature of 1200° for at least 0.5 second. The No. 2 and No. 3 lime kiln exhaust gases shall not contain TRS in excess of 20 ppmvd at standard conditions corrected to 10% O₂ as a 12-hr average, in accordance with F.A.C. Rule 17-2.600(4)(c)5. The construction permits for the No. 2 and No. 3 lime kilns shall be changed to state that they are the pollution control devices for the MEE system.

4. The MEE system is subject to the provisions of F.A.C. Rule 17-2.600(4)(c)1.c., which includes the requirement of establishing a contingency plan.

5. All process equipment shall be maintained in good operating condition to minimize fugitive gaseous emissions.

6. In the event that a compliance test has to be performed on the MEE system for TRS emissions, EPA Method 16/16A, pursuant to F.A.C. Rule 17-2.700 and 40 CFR 60 Appendix A, shall be used.

7. The MEE system is subject to the provisions of F.A.C. Rules 17-4.130 - Plant Operation Problems; 17-4.140 - Reports; 17-2.240 - Circumvention; 17-2.250 - Excess Emissions; 17-2.710(4) - Quarterly Reporting Requirements; and all other applicable provisions of F.A.C. Rules 17-2, 17-4 and July 1, 1988 version of 40 CFR 60 Subpart BB - NSPS for Kraft Pulp Mills.

8. The No. 2 and No. 3 lime kiln shall be tested for TRS and SO₂ emissions to determine whether or not further technical review is required for the project pursuant to F.A.C. Rule 17-2, and 17-4. The DER may require a determination of the kiln operating temperature in the zone where TRS gases are combusted.

9. Objectionable odors shall not be allowed off plant property, in accordance with F.A.C. Rule 17-2.620(2).

10. Any change in the method of operation, raw materials and chemicals processed, equipment, or operating hours pursuant to F.A.C. Rule 17-2.100, defining modification, shall be submitted for approval to DER's Bureau of Air Regulation and the Bio-Environmental Services Division (BESD) office.

PERMITTEE:

Seminole Kraft Corporation

Permit Number: AC 16-168609

PSD-FL-141

Expiration Date: November 12, 1992

SPECIFIC CONDITIONS:

11. The BESD office shall be notified, in writing, a minimum of 15 days prior to source testing pursuant to F.A.C. Rule 17-2.700(2)(a)5. Written reports of the test results shall be submitted to the BESD office within 30 days of test completion.

12. The existing permits for the three existing sets of MEEs Nos. 1, 2, and 3 (AC 16-141799, -800, -801), which shall be permanently shut down and dismantled, shall be turned in to the BESD office upon receipt of the operation permit for the new set of MEEs.

13. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

14. An application for an operation permit must be submitted to the BESD 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 (F.A.C. Rule 17-4.220).

Issued this _____ day
of _____, 1989

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Dale Twachtmann, Secretary



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

PERMITTEE:

Seminole Kraft Corporation
9469 Eastport Road
Jacksonville, FL 32218

Permit Number: AC 16-168608
PSD-FL-141

Expiration Date: November 12, 1992

County: Duval

Latitude/Longitude: 30°25'18"N
81°36'18"W

Project: Smelt Dissolving Tank

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. 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 made a part hereof and specifically described as follows:

For the construction of a smelt dissolving tank associated with the recovery boiler which has a capacity of 170,833 lbs/hr dry black liquor solids (BLS). TRS and particulate emissions will be controlled by a venturi scrubber. The project will be located at Seminole Kraft Corporation's (SKC) existing facility in Jacksonville, Duval County, Florida.

The UTM coordinates are Zone 17, 744.2 km East and 3365.5 km North.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. SKC's application received August 11, 1989.
2. EPA's letter received August 31, 1989.
3. DER's incompleteness letter dated September 8, 1989.
4. KBN's letter received September 11, 1989.
5. SKC's response received September 12, 1989.
6. SKC's letter received September 14, 1989.
7. KBN's letter received October 11, 1989.
8. EPA's letter received November 9, 1989.
9. DER's Preliminary Determination dated November 22, 1989.

PERMITTEE:
Seminole Kraft Corporation

Permit Number: AC 16-168608
PSD-FL-141
Expiration Date: November 12, 1992

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, Florida Statutes. 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.

2. 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, exhibits, specifications, or conditions of 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), Florida Statutes, 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.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement 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.

5. 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 Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

PERMITTEE:
Seminole Kraft Corporation

Permit Number: AC 16-168608
PSD-FL-141
Expiration Date: November 12, 1992

GENERAL CONDITIONS:

6. 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 rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of 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.

8. 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.

PERMITTEE:
Seminole Kraft Corporation

Permit Number: AC 16-168608
PSD-FL-141
Expiration Date: November 12, 1992

GENERAL CONDITIONS:

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.

9. 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 Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes. 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 Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, 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 Prevention of Significant Deterioration (PSD)
- (x) 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.

PERMITTEE:
Seminole Kraft Corporation

Permit Number: AC 16-168608
PSD-FL-141
Expiration Date: November 12, 1992

GENERAL CONDITIONS:

- 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.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. The smelt dissolving tank (SDT) may operate continuously, i.e., 8760 hours/year.
2. The maximum smelt processing rate shall not exceed the rate corresponding to 170,833 lbs/hr dry black liquor solids (BLS) for the recovery boiler.

PERMITTEE:
Seminole Kraft Corporation

Permit Number: AC 16-168608
PSD-FL-141
Expiration Date: November 12, 1992

SPECIFIC CONDITIONS:

3. The PM and TRS emissions shall be controlled by a venturi scrubber. The maximum emissions from the SDT shall not exceed:

Pollutant	Basis	Emission Limit	
		lb/hr	TPY
PM (TSP)	0.2 lb/ton BLS	17.1	74.9
TRS	0.032 lb/ton BLS	2.73	12.0

Visible Emissions shall be less than 20% opacity.

4. The following are tabulated for PSD and inventory purposes:

Pollutant	Basis	Emission Limit	
		lb/hr	TPY
PM ₁₀	89.5% of PM	15.3	67.0
SO ₂	0.2 lb/ton ADUP and 80% removal	2.28	10.0

5. Initial (I) and annual (A) compliance tests shall be conducted in accordance with the July 1, 1988 version of 40 CFR 60, Appendix A, as follows:

- a) EPA Method 1, for sample and velocity traverses (I,A)
- b) EPA Method 2, for velocity and volumetric flow rate (I,A)
- c) EPA Method 3, for gas analyzers (I,A)
- d) EPA Method 5, for PM (I,A)
- e) EPA Method 6/8, for SO₂ (I)
- f) EPA Method 9, for VE (I,A)
- g) EPA Method 16/16A, for TRS (I,A)

Compliance test methods, other than those mentioned above, may be used only after prior DER approval.

6. The permittee shall install, calibrate, maintain, and operate the following continuous monitoring systems in accordance with the July 1, 1988 version of 40 CFR 60 Subpart BB:

- a) measurement of the pressure loss of the gas stream through the venturi scrubber, accurate to within 2" water gauge pressure

PERMITTEE:
Seminole Kraft Corporation

Permit Number: AC 16-168608
PSD-FL-141
Expiration Date: November 12, 1992

SPECIFIC CONDITIONS:

- b) measurement of the scrubbing liquid supply pressure to the scrubber, accurate to within 15% of the design scrubber liquid pressure
7. The SDT is subject to the provisions of F.A.C. Rules 17-4.130 - Plant Operation Problems; 17-4.140 - Reports; 17-2.240 - Circumvention; 17-2.250 - Excess Emissions; 17-2.710(3) - Continuous Monitoring; 17-2.710(4) - Quarterly Reporting Requirements; 17-2.971 - Compliance Schedules for Continuous Monitoring Requirements; and all other applicable provisions of F.A.C. Rules 17-2, 17-4 and July 1, 1988 version of 40 CFR 60 Subpart BB - NSPS for Kraft Pulp Mills.
8. Objectionable odors shall not be allowed of plant property, in accordance with F.A.C. Rule 17-2.620(2).
9. Any change in the method of operation, raw materials and chemicals processed, equipment, or operating hours pursuant to F.A.C. Rule 17-2.100, defining modification, shall be submitted for approval to DER's Bureau of Air Regulation and the Bio-Environmental Services Division (BESD) office.
10. The BESD office shall be notified, in writing, a minimum of 15 days prior to source testing pursuant to F.A.C. Rule 17-2.700(2)(a)5. Written reports of the test results shall be submitted to the BESD office within 30 days of test completion.
11. The operation permits for the three existing smelt dissolving tank Nos. 1, 2, and 3 (AO 16-71209, -10, -11), which shall be permanently shut down and dismantled, shall be turned in to the BESD office upon receipt of the operation permit for the new smelt dissolving tank.
12. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).
13. An application for an operation permit must be submitted to the BESD 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 (F.A.C. Rule 17-4.220).

PERMITTEE:
Seminole Kraft Corporation

Permit Number: AC 16-168608
PSD-FL-141
Expiration Date: November 12, 1992

Issued this _____ day
of _____, 1989

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Dale Twachtmann, Secretary



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

PERMITTEE:

Seminole Kraft Corporation
9469 Eastport Road
Jacksonville, FL 32218

Permit Number: AC 16-168607
PSD-FL-141

Expiration Date: November 12, 1992

County: Duval

Latitude/Longitude: 30°25'17"N
81°36'19"W

Project: Kraft Recovery Boiler

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. 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 made a part hereof and specifically described as follows:

For the construction of a low odor kraft recovery boiler with a capacity of firing 170,833 lbs/hr dry black liquor solids, and approximately 750,000 gals/yr of No. 6 fuel oil during start-up, shutdown or malfunction. Particulate emissions will be controlled by a dry bottom ESP. The project will be located at Seminole Kraft Corporation's (SKC) existing facility in Jacksonville, Duval County, Florida.

The UTM coordinates are Zone 17, 744.2 km East and 3365.5 km North.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. SKC's application received August 11, 1989.
2. EPA's letter received August 31, 1989.
3. DER's incompleteness letter dated September 8, 1989.
4. KBN's letter received September 11, 1989.
5. SKC's response received September 12, 1989.
6. SKC's letter received September 14, 1989.
7. KBN's letter received October 11, 1989.
8. EPA's letter received November 9, 1989.
9. DER's Preliminary Determination dated November 22, 1989.

PERMITTEE:
Seminole Kraft Corporation

Permit Number: AC 16-168607
PSD-FL-141
Expiration Date: November 12, 1992

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, Florida Statutes. 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.
2. 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, exhibits, specifications, or conditions of 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), Florida Statutes, 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.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement 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.
5. 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 Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

PERMITTEE:
Seminole Kraft Corporation

Permit Number: AC 16-168607
PSD-FL-141
Expiration Date: November 12, 1992

GENERAL CONDITIONS:

6. 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 rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of 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.

8. 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.

PERMITTEE:
Seminole Kraft Corporation

Permit Number: AC 16-168607
PSD-FL-141
Expiration Date: November 12, 1992

GENERAL CONDITIONS:

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.

9. 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 Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes. 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 Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, 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)
- (x) 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.

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Seminole Kraft Corporation

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GENERAL CONDITIONS:

- 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.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. The Kraft Recovery Boiler (RB) may operate continuously, i.e., 8760 hours/year.
2. The maximum process rate shall not exceed 170,833 lbs/hr dry black liquor solids (BLS), or 4,100,000 lb/day dry BLS. This reflects a 1987 TPD ADUP (tons per day of air dried unbleached pulp) production rate for the mill.
3. The maximum heat input to the RB shall not exceed 1,125,000 Btu/hr. It is anticipated that the No. 6 fuel oil utilization rate will not exceed 750,000 gals/year (used during start-up, shutdown, and malfunction).

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SPECIFIC CONDITIONS:

3. The maximum heat input to the RB shall not exceed 1,125,000 Btu/hr. It is anticipated that the No. 6 fuel oil utilization rate will not exceed 750,000 gals/year (used during start-up, shutdown, and malfunction).

4. Particulate emissions shall be controlled by a dry bottom electrostatic precipitator. The NO_x emissions are based on the BACT determination. The maximum pollutant emissions from the RB shall not exceed:

Pollutant	Basis	Emission Limit	
		lb/hr	TPY
PM (TSP)	0.044 gr/dscf @ 8% O ₂	107.0	468.7
SO ₂	180 ppmvd @ 8% O ₂ (max)	514.0	-
	120 ppmvd @ 8% O ₂ (avg)	339.3	1486.0
NO _x	75 ppmvd @ 8% O ₂	153.0	670.2
TRS	5 ppmvd @ 8% O ₂	7.5	32.9

Note: The TRS emissions are based on a 12-hr average.

Visible emissions (VE) shall be less than 35% opacity.

5. The following are tabulated for PSD and inventory purposes:

Pollutant	Basis	Emission Limit	
		lb/hr	TPY
PM ₁₀	74.8% of PM	80.8	350.6
CO	400 ppmvd @ 8% O ₂	494.8	2167.2
VOC	80 ppmvd @ 8% O ₂	56.6	247.9
Lead	3900 lb / 10 ¹² dscf	0.047	0.21
Beryllium	300 lb / 10 ¹² dscf	0.0036	0.016
H ₂ SO ₄ Mist	0.81 ppm	3.0	13.3

6. Initial (I) and annual (A) compliance tests shall be conducted in accordance with the July 1, 1988 version of 40 CFR 60, Appendix A, as follows:

- a) EPA Method 1, for sample and velocity traverses (I,A)
- b) EPA Method 3, for gas analyses (I,A)
- c) EPA Method 5/17, for PM (I,A)
- d) EPA Method 6/8, for SO₂ (I)
- e) EPA Method 7/7A, for NO_x (I,A)
- f) EPA Method 9, for VE (I,A)
- g) EPA Method 16/16A, for TRS (I,A)
- h) ASTM D 396-76, for sulfur content of No. 6 fuel oil (I)

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SPECIFIC CONDITIONS:

DER may require a compliance test for SO₂ at the time of operation permit renewal. Compliance test methods, other than those mentioned above, may be used only after prior DER approval.

7. The permittee shall install, calibrate, maintain, and operate the following continuous monitoring systems in accordance with the July 1, 1988 version of 40 CFR 60 Subpart BB:

- a) Opacity monitor and recorder, with the span set at 70% opacity
- b) TRS monitor and recorder, with the span set at 30 ppm TRS (monitoring on dry basis)
- c) Oxygen monitor and recorder, with the span set at 20% O₂ (monitoring on dry basis)

8. The RB is subject to the provisions of F.A.C. Rules 17-4.130 - Plant Operation Problems; 17-4.140 - Reports; 17-2.240 - Circumvention; 17-2.250 - Excess Emissions; 17-2.710(3) - Continuous Monitoring; 17-2.710(4) - Quarterly Reporting Requirements; 17-2.971 - Compliance Schedules for Continuous Monitoring Requirements; and all other applicable provisions of F.A.C. Rules 17-2, 17-4 and the July 1, 1988 version of 40 CFR 60 Subpart BB - NSPS for Kraft Pulp Mills.

9. Objectionable odors shall not be allowed off plant property, in accordance with F.A.C. Rule 17-2.620(2).

10. Any change in the method of operation, raw materials and chemicals processed, equipment, or operating hours, pursuant to F.A.C. Rule 17-2.100, defining modification, shall be submitted for approval to DER's Bureau of Air Regulation and the Bio-Environmental Services Division (BESD) office.

11. The BESD office shall be notified, in writing, a minimum of 15 days prior to source testing. Written reports of the test results shall be submitted to the BESD office within 30 days of test completion.

12. The operation permits for the three existing recovery boiler Nos. 1, 2, and 3 (AO 16-71206, -07, and -08), which shall be permanently shut down and dismantled, shall be turned in to the BESD office upon receipt of the operation permit for the new recovery boiler.

13. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

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14. An application for an operation permit must be submitted to the BESD 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 (F.A.C. Rule 17-4.220).

Issued this _____ day
of _____, 1989

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Dale Twachtman, Secretary

Best Available Control Technology (BACT) Determination
Seminole Kraft Corporation
Duval County

The applicant proposes to install a kraft recovery boiler at their facility located in Jacksonville, Florida. The recovery boiler, rated at 1,125 MMBtu/hr, will replace three old recovery boilers. Also included in the project is the installation of a new smelt dissolving tank and a new set of evaporators which will replace three old smelt dissolving tanks and three old sets of evaporators, respectively.

The applicant has indicated the maximum net total annual tonnage of regulated air pollutants emitted from the project based on 8,760 hours per year operation to be as follows:

<u>Pollutant</u>	<u>Max. Net Increase in Emissions (TPY)</u>	<u>PSD Significant Emission Rate (TPY)</u>
TSP	-140.7	25
PM ₁₀	-138.6	15
SO ₂	6.4	40
NO _x	1296.4	40
CO	-160.0	100
VOC	-92.3	40
TRS	-53.3	10
Pb	-0.16	0.6
Be	-0.012	0.004
H ₂ SO ₄	-5.8	7

Rule 17-2.500(2)(f)(3) of the Florida Administrative Code (F.A.C.) requires a BACT review for all regulated pollutants emitted in an amount equal to or greater than the significant emission rates listed in the previous table. The NO_x emissions from the smelt dissolving tank and the multiple effect evaporators are negligible and will not be considered as part of the BACT analysis.

BACT Determination Requested by the Applicant

<u>Pollutant</u>	<u>Determination</u>
NO _x	180 ppm (corrected to 8% oxygen)

Date of Receipt of a BACT Application

September 11, 1989

Review Group Members

This determination was based upon comments received from the applicant and the Stationary Source Control Section.

BACT Determination Procedure

In accordance with Florida Administrative Code Chapter 17-2, Air Pollution, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the 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 Best Available Control Technology pursuant to Section 169, 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 source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source 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 Analysis

A review of recent BACT determinations for nitrogen oxides from kraft recovery boilers indicates that the emission rate proposed by the applicant does not represent BACT. The rationale for establishing BACT at a lower than proposed level is presented as follows:

The applicant has indicated that an emission rate of 180 ppm corrected to 8% oxygen is representative of BACT taking into consideration guarantees common to all potential manufacturers, the black liquor fuel analysis, and performance deterioration based on a 24-hour average.

A review of the BACT/LAER Clearinghouse indicates a wide range of NOx limitations. Although several of the most recent BACT determinations range from 50-80 ppm corrected to 8% oxygen, none of the facilities listed utilize NOx reduction systems operating downstream from a kraft recovery boiler. However, in keeping with the "top down" BACT analysis, "add on" control equipment will be evaluated as part of the analysis.

The two types of control that are typically utilized for NOx reduction are selective catalytic reduction (SCR) and Thermal De NOx. Each of these technologies utilizes ammonia injection as the means to react with and thereby reduce the concentrations of NOx in the gas stream. Although these technologies have not been utilized for this type of application the economics of using such equipment should be addressed.

The applicant has indicated that using Thermal DeNOx as a control increase for NOx results in a cost of \$2,000 per ton of NOx reduced. Although this cost is not excessive compared to recent BACT determinations in which NOx removal was justified at costs up to approximately \$4,500 per ton, the use of Thermal DeNOx as a control measure has not been demonstrated on Kraft recovery boilers and hence has not been seriously considered as BACT for recent determinations. Similarly SCR has not been used in Kraft recovery boiler applications and should not be considered as BACT for these facilities.

Although "add on" NOx controls have not been utilized for kraft recovery boilers, a survey of the most recent BACT determinations indicates that kraft recovery boiler manufacturers are capable of limiting NOx emissions to surprisingly low levels (generally 53 to 75 ppm @ 8% oxygen) by equipment design.

Discussions with the BACT coordinators from other states which have pulp and paper industry indicate that all of the known manufacturers of kraft recovery boilers have proposed or agreed to meet NOx emission limitations which fall within the range discussed above. Although many of these facilities were just recently permitted and have yet to be constructed and tested, there is sufficient data available to suggest that these limitations can indeed be met.

In a technical study completed by the National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI), several large kraft recovery furnaces (boilers) were tested for NOx emissions. The publication entitled "A Study of Nitrogen Oxides Emissions from Large Kraft Recovery Furnaces" provides evidence that NOx emissions can be held to levels which are now being proposed by kraft recovery boiler manufacturers.

The NCASI report focused on the NOx emissions from four large kraft recovery boilers, with three of the units being located in the southeastern United States. The size of the units tested ranged from firing rates of 3.18 - 4.06 million pounds of black liquor solids (BLS) per day. This is comparable to the proposed kraft recovery boiler which has a firing of 4.1 million pounds of BLS per day.

Based on the NOx emission studies completed, the NCASI report concluded the following:

- 1) NOx emissions from large kraft recovery boilers were not size dependent.
- 2) NOx emissions ranged from 0.06 to 0.11 lbs/million Btu heat input.

Based on the applicant's maximum BLS input of 4.1×10^6 lb/day (170,833.3 lb/hr) a comparison of the proposed NOx emission limit can be made with the NCASI test results.

The applicant has estimated the maximum hourly NOx emission to be 369.3 pounds. Taking this into account with the BLS heating value of 4,522 Btu per pound, the calculated emission rate on a heat input basis is approximately 0.48 lbs per million Btu. This emission level ranges from approximately 4 to 8 times greater than that observed by the NCASI study.

Environmental Impact Analysis

A review of the NOx impacts associated with the proposed kraft recovery boiler installation indicates that there will be a reduction in the maximum annual impact. This reduction in the NOx impact will be attributed to the replacement of the three old recovery boilers which are now exhibiting higher impacts than what will be expected for the new unit.

BACT Determination by DER:

Based on the information presented in this analysis, the Department has determined that BACT should be established as follows:

<u>Pollutant</u>	<u>Emission Limit</u>
NOx	75 ppm by volume, corrected to 8% oxygen

This NOx emission limitation is representative of the levels that are being proposed in recent applications as BACT for kraft recovery boilers supplied by all known manufacturers. In addition, this level is supported by the NCASI report which showed NOx emissions ranging from 37 to 60 ppm, corrected to 8% oxygen, for all of the facilities tested over a three hour period.

Details of the Analysis May be Obtained by Contacting:

Barry Andrews, P.E., BACT Coordinator
Department of Environmental Regulation
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

Dale Twachtmann, Secretary
Dept. of Environmental Regulation

Date 1989

Date 1989