State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee

To: Buck Olsen Loctn.:
To: Loctn.:
To: Loctn.:
From: Date:

[ ] Reply Optional Date Due: [ ] Reply Required Date Due: [ ] Info. Only

RECEIVED
DEC 29 1983
DIV. ENVIRONMENTAL PERMITTING

552 7270

TO: Jim Estler

THRU: Clair Fancy

FROM: Ed Palagyi EP

DATE: December 28, 1983

SUBJ: BACT - Pinellas County Resource Recovery Unit 3

Enclosed is a copy of the BACT determination for the third mass burn unit proposed to be installed at the Pinellas County Resource Recovery Facility. Your comments of October 25, 1983, that you made reference to in your memorandum of December 6, 1983, were received four weeks after the deadline date. Due to the workload at BAQM, we cannot always consider comments submitted after our established deadlines. In this case, however, the applicant had revised the original application and omitted several supplements, therefore, the late response was unavoidable.

Comments obtained from you and the Pinellas County local program were taken into consideration in the attached final BACT determination. I will explain what comments from both offices were considered and why or why not.

Your memorandum of October 25, 1983, will be discussed first and in the same order as presented.

1. The proposed emissions that were used in the air modeling excercises were considered as BACT limits. Air pollutants from the burning of municipal waste will vary from one geographical area to another as well as during the different seasons of a year. The emissions that indicate, by modeling, to have no significant impact to the ambient air were considered as BACT limits. Actual emissions from the Pinellas County existing units and other similar sized mass burn units were also taken into consideration.

2. The BACT clearinghouse information that you received was to show what pollutants had been considered by other states for a MW incinerator. I did not intend for you to evaluate the rational behind these determinations. My intent was not very clear and I will try to be more specific in the future.

3. The final BACT determination has actual rate limits for the pollutants NOx and CO. Stack testing would be the test method used to show compliance.

4. Hydrocarbons are not a regulated air pollutant and were not considered in this BACT determination. Incineration is a method of control for VOC emissions. The clearinghouse information, referred to earlier, lists VOC emissions for three of the seven facilities. In each case the annual emissions are less than 40 TPY and by our rules would not be considered in a BACT determination. (Significant emission VOC rate is 40 TPY, table 500-2 in 17-2.) Chlorides and acid gases are discussed in the final BACT determination.

The Pinellas County, Division of Air Quality submitted seven comments concerning the third mass burn unit. Each comment will be reviewed in the same order as presented in their letter of October 31, 1983.

1. This is a statement supporting the proposed 0.03 gr/dscf particulate emission limit.

2. This is a statement supporting the 83 lb/hr SO_2 emission limit as being reasonable and the recommendation for a stack test to determine compliance. A stack test will be required.

3. This statement discusses NOx and CO emissions. This input was considered in preparing the BACT rationale section of the determination. The recommendation was 0.6 lb NOx/million Btu heat input. An energy basis standard was not used due to the difficulty of obtaining a reliable HHV.

4. This statement agrees with the proposed control of Hg, Be, and Pb.

5. Chlorides are discussed in the final BACT determination.

6. This is a statement concerning fluoride emissions which are discussed in the final BACT.

7. This is a statement concerning hydrocarbon and VOC emissions. These two pollutants were not significant in this BACT determination.

In light of the above you can see that input from district and local programs are very important in preparation of a BACT determination, and are considered. Both you and Mr. Stowers are listed as review group members indicating that both of you submitted recommendations to be considered in the determination.

Please understand that many times a preliminary draft of a BACT determination is sent out with the clock running, and as you know day 45 approaches quickly, thus the importance of a comment deadline.

The enclosed BACT determination is for the Power Plant Siting certification, the draft of which is being reviewed. Please call me if you find the determination to be in need of additional information. There is still time to make changes.

EP/s
cc: Marshall Mott-Smith
Buck Oven
Jacob Stowers III, Pinellas County

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

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From: _____ Date: _____

Reply Optional [ ] Reply Required [ ] Info. Only [ ]
Date Due: _____ Date Due: _____

TO: Hamilton S. Oven, Jr.

FROM: Dan Williams

DATE: December 27, 1983

SUBJECT: Pinellas County Resource Recovery Project PA 83-18

In response to your memo of December 12, 1983, the following are the District's comments on Conditions of Certification:

I. Solid Waste Section: Last page of the Conditions of Certification XV "Status of Existing Permits" Paragraph A and B. Would it not be a better idea to state that Permit SO52-6612 is already null and void because the resource recovery facility is already in operation?

II. Air Section: Our concerns voiced in our memo of December 6, 1983 and October 25, 1983, to the BAQM and PCDEM letter to BAQM dated October 31, 1983, have not been addressed (see attached). Comments will not be provided until these concerns are adequately resolved.

Please let me know if we can be of any assistance.

JWE/scm

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

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Reply Optional [ ] Reply Required [ ] Info. Only [ ]
Date Due: _____ Date Due: _____

TO: Ed Palagyi

THROUGH: Bill Thomas and Dan Williams

FROM: Jim Estler

DATE: December 6, 1983

SUBJECT: Your Memo of November 16, 1983 Regarding The BACT Determination For the Pinellas County Resource Recovery Project

The "final draft" BACT does not address most of the issues raised by, nor does it incorporate most of the recommendations made by this office in our memo of October 25, 1983, or by the Pinellas County Department of Environmental Management in their letter of October 31, 1983. After having spent considerable time reviewing the application, it seems reasonable to request that BAQM provide a written explanation of why the comments of both offices were not considered. This explanation should be included as part of the BACT Determination Rationale.

Please indeavor to understand that we are not trying to be picky, however, we are the ones that have to live with and enforce the terms and conditions of the certification ultimately issued.

JWE/scm

cc: Marshall Mott-Smith

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Address

To: Buck Oven Loctn.: Permitting
To: _____ Loctn.: _____
To: _____ Loctn.: _____
From: Don Kell Date: 12/22/83
Reply Optional [ ] Reply Required [ ] Info. Only [ ]
Date Due: _____ Date Due: _____

TO: Buck Oven, Professional Engineer
Permitting

THROUGH: Rodney DeHan, Administrator RD
Groundwater Section

FROM: Don Kell, Engineer DDK
Groundwater Section

DATE: December 22, 1983

SUBJECT: Pinellas County Resource Recovery Project

We have no adverse comment regarding the Staff Report.

We agree with the language of the Conditions of Certification. Under the circumstances, this appears to be the best way to handle certification of the project.

When a firm plan is advanced for the Permanent Leachate Control System named, we would like to review that plan, as you have already suggested we do.

DK/cs

December 14, 1983

Mr. W. W. Dasher, Director
Public Works Operations
Dept. of Solid Waste Management
Post Office Box 21623
St. Petersburg, Florida 33742-1623

Dear Mr. Dasher:

In a preliminary review of your letter of December 9, 1983, concerning the hydrogeologic survey of the Resource Recovery Facility and adjacent lands, it would appear that no permits would be required for investigations on the certified RRF property. "Natural depressions" on adjacent properties may include jurisdictional wetlands where filling would require permits pursuant to Chapter 17-4, FAC.

It is suggested that Ardaman Associates contact the department's Southwest District Office in Tampa. Personnel from the district office can ascertain whether permits will be required for filling or drilling activities.

Sincerely,

Hamilton S. Oven, Jr., P.E.
Administrator
Power Plant Siting Section

HSO/sb

cc: Bill Hennessey
Gary Stephens

TO: Power Plant Siting Review Committee

FROM: Hamilton S. Oven, Jr.

DATE: December 12, 1983

SUBJECT: Pinellas County Resource Recovery Project
PA 83-18

Please review the attached report on the Pinellas RRF expansion and review and comment on the Conditions of Certification. Please comment by December 23, 1983.

December 12, 1983

Mr. W. K. Hennessey
Southwest District Manager
Department of Environmental Regulation
7601 Highway 301 North
Tampa, FL 33610

Re: Stormwater Management

Dear Mr. Hennessey:

Upon receipt of the water quality data submitted to the Department on October 27, 1983, the County directed its analytical consultant to take additional samples at various locations at the site. Enclosed are copies of the sample results and locater map. The purpose of this regimen was to attempt to identify a source(s) of the non-compliance parameters. The County and its consultants are currently evaluating these attached results. The selenium and cadmium analyses were inadvertently completed, using a detection limit which was too high; these parameters will be re-analyzed.

In the meantime, please be advised that no stormwater has been discharged from the site since the holding pond was pumped down, as described in my letter to the Department dated November 15, 1983. Today, the lake level is 6.65 feet, msl, which provided a 1.24 freeboard at the spillway to 28 Street.

As additional information is available, I will advise your office.

Very truly yours,

W. W. Dasher, Director
Public Works Operations

WWD:ltl
cc: Hamilton S. Oven w/att
Jim Andrews, HDR
bcc: W. Gray Dunlap, County Attorney
Gene E. Jordan, Dir, PS&U

cc Gary Stephens

BOARD OF COUNTY COMMISSIONERS

DEPARTMENT OF SOLID WASTE MANAGEMENT
2800 110TH AVENUE NORTH
ST. PETERSBURG, FLORIDA 33702
PHONE (813) 825-1565

P.O. BOX 21623
ST. PETERSBURG, FLORIDA 33742-1623

December 9, 1983

Mr. Hamilton S. Oven, Jr.
Administrator
Power Plant Siting Section
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301-8241

Re: Solid Waste Resource Recovery--Pinellas County

Dear Mr. Oven:

As you have been advised, Pinellas County has undertaken a hydrogeologic survey at the Resource Recovery Facility and adjacent lands as part of the feasibility determination for the proposed slurry wall. In the Scope of Work for Ardaman Associates, drilling will be conducted in "three typical natural depressions" (see Task 6, Appendix VIII, Third boiler PPSA). The drilling operations will require the placement of fill material in these depressions to serve as drilling platforms.

The exact locations of each depression to be affected in this manner are not known at this time. Conceivably, they could be within the existing certified site, and/or in the adjacent "non-PPSC" lands (e.g. sod farm). Aside from the standard drilling permits which will be obtained, it is requested that the Department review this project and advise the County as to relevant State of Florida regulations and permits which will be required.

Very truly yours,

W. W. Dasher, Director
Public Works Operations

Received DER
DEC 14 1983
RRS

WWD:pa
cc: W. K. Hennessey, Manager S/W Distr. DER
Gene E. Jordan, Dir., PW & U
W. Gray Dunlap, County Attorney
HDR

ination should occur at an effluent turbidity of 5 Nephelometric Turbidity Units or less.

3. Special Studies

Upon satisfactory demonstration to the Department that the number of viruses entering the towers in the effluent makeup from the upgraded Largo Plant can be reduced to an undetectable level with the use of a lesser amount of chlorination, the above requirement may be altered to 1.0 mg/l total chlorine residual after a fifteen minute contact time. This demonstration may occur through performance of special studies approved by the Department.

D. Water Discharges

1. Surface Water

a. Any discharges from the site stormwater/leachate treatment system via the emergency overflow structure which result from any event LESS than a ten-year, 24-hour storm (as defined by the U.S. Weather Bureau Technical Paper No. 40, or the DOT drainage manual, or similar documents) shall meet State Water Quality Standards, Chapter 17-3, FAC.

b. Sampling of water quality in the aeration pond, the cattail ponds, and an analysis of the tissues of the cattails utilized as part of the leachate/stormwater treatment system shall be conducted prior to pumping of leachate or stormwater through this system to verify background levels and concentrations of any metals, especially heavy metals, already present in the ponds or the vegetation. Within three months after commencement of stormwater/leachate pumping through this system, and quarterly thereafter, the pond waters and cattail tissues, as well as root detritus or other sediments on the bottom of the ponds shall again be sampled to determine the degree and effectiveness of heavy metal uptake treatment in this system, and for correlation with groundwater monitoring data. If analyses indicate that toxic levels of materials are present in the cattail tissues, root detritus, or other pond precipitates, then these materials shall be incinerated or otherwise removed from contact with the natural environment and groundwaters. Results of analyses conducted shall be sent to the Department for review of system effectiveness.

c. Leachate, stormwater, or other site wastewaters which are to be spray irrigated shall be treated to conform to any rules promulgated by the State for the land application of wastewaters in areas not commonly accessible to the public.

d. The permittee shall install and operate two continuous SO_2 monitors and one continuous wind direction and velocity monitor in the immediate vicinity of the site. The monitors shall be specifically located as designated by the DER and shall conform to 40 CFR 53. Monitoring shall begin upon commencement of operation.

4. Reporting

a. Two copies of the results of the stack tests shall be submitted within forty-five days of testing to the DER Southwest Florida District Office.

b. Stack monitoring shall be reported to the DER Southwest District Office on a quarterly basis in accordance with Section 17-2.710, FAC, and 40 CFR, Part 60, Section 60.7.

c. SO_2 monitoring shall be reported to the DER Southwest Florida District Office on a monthly basis.

B. Fuel

The Resource Recovery Facility shall utilize refuse such as garbage and trash (as defined in Chapter 17-7, FAC) as its fuel. Use of alternate fuels would necessitate modification of these Conditions of Certification.

C. Cooling Tower

1. Makeup Water Constituency

The Resource Recovery Facility shall utilize only treated sewage effluent or stormwater runoff from the stormwater holding pond as cooling tower makeup water. The effluent shall have received prior to use in the tower, as a minimum, secondary treatment, as well as treatment described in Condition XIV.C.2. below. Use of waters other than treated sewage effluent or site stormwater, i.e., higher quality potable waters or lower quality less-than-secondarily treated sewage effluent, will require a modification of conditions agreed to by the Southwest Florida Water Management District and the Department and must be approved by the Governor and Cabinet.

2. Chlorination

Chlorine levels in the cooling tower makeup water shall continuously be monitored, prior to insertion in the cooling towers. Sewage effluent from the Northeast St. Petersburg wastewater treatment plant used as makeup shall be treated if necessary to maintain a 1.0 mg/liter total chlorine residual after fifteen minutes contact time. Makeup water from the Large Wastewater Treatment Plant shall be treated to maintain a 1.0 mg/liter free chlorine residual after fifteen minutes contact time. Chlor-

ination should occur at an effluent turbidity of 5 Nephelometric Turbidity Units or less.

3. Special Studies

Upon satisfactory demonstration to the Department that the number of viruses entering the towers in the effluent makeup from the upgraded Largo Plant can be reduced to an undetectable level with the use of a lesser amount of chlorination, the above requirement may be altered to 1.0 mg/l total chlorine residual after a fifteen minute contact time. This demonstration may occur through performance of special studies approved by the Department.

D. Water Discharges

1. Surface Water

a. Any discharges from the site stormwater/leachate treatment system via the emergency overflow structure which result from any event LESS than a ten-year, 24-hour storm (as defined by the U.S. Weather Bureau Technical Paper No. 40, or the DOT drainage manual, or similar documents) shall meet State Water Quality Standards, Chapter 17-3, FAC.

b. Sampling of water quality in the aeration pond, the cattail ponds, and an analysis of the tissues of the cattails utilized as part of the leachate/stormwater treatment system shall be conducted prior to pumping of leachate or stormwater through this system to verify background levels and concentrations of any metals, especially heavy metals, already present in the ponds or the vegetation. Within three months after commencement of stormwater/leachate pumping through this system, and quarterly thereafter, the pond waters and cattail tissues, as well as root detritus or other sediments on the bottom of the ponds shall again be sampled to determine the degree and effectiveness of heavy metal uptake treatment in this system, and for correlation with groundwater monitoring data. If analyses indicate that toxic levels of materials are present in the cattail tissues, root detritus, or other pond precipitates, then these materials shall be incinerated or otherwise removed from contact with the natural environment and groundwaters. Results of analyses conducted shall be sent to the Department for review of system effectiveness.

c. Leachate, stormwater, or other site wastewaters which are to be spray irrigated shall be treated to conform to any rules promulgated by the State for the land application of wastewaters in areas not commonly accessible to the public.

90

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DEPARTMENT OF SOLID WASTE MANAGEMENT
2800 110TH AVENUE NORTH
ST. PETERSBURG, FLORIDA 33702
PHONE (813) 825-1565

P.O. BOX 21623
ST. PETERSBURG, FLORIDA 33742-1623

December 7, 1983

Received DER

DEC 9 1983

P.P.S

Mr. Hamilton S. Oven, Jr.
Administrator
Power Plant Siting Section
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301-8241

Re: Acceptance Test Report--Pinellas County Plant

Dear Mr. Oven:

The enclosed Acceptance Test Report covering the Environmental Regulations Test at the Refuse to Energy Plant under the PPSC No. PA78-11 is submitted for your information and file. This should complete all documentation called for as a result of the Plant's acceptance testing program.

Yours very truly,

D. F. Acenbrack, Director
Solid Waste Management

ACE:pa
Encl:
cc: W. Gray Dunlap, County Attorney
Gene E. Jordan, Dir., PW & U
W. W. Dasher, Dir., PW Opns.
W. K. Hennessey, Manager, DER S/W Dist.

ENVIRONMENTAL SCIENCE
AND ENGINEERING, INC.

November 21, 1983

ESE No. 83 405 400

Mr. William Dasher
Director Public Works Operations
Pinellas County Solid Waste Department
2800 110th Avenue North
St. Petersburg, FL 33702

Dear Mr. Dasher:

Enclosed are the results of the seven grab samples collected by Jim Andrews on October 27, 1983.

The samples can be described as follows:

Sample #	ESE #	Identification
1	298700	110th St. Ditch @ Plant Ditch Outfall
2	298701	110th St. Ditch @ West Ditch Outfall
3	298702	110th St. Ditch @ Southward Bend
4	298703	28th St. Spillway
5	298704	28th St. Ditch 40 ft. Downstream of Spillway
6	298705	Drainage Ditch Behind Hdr Trailer
7	298706	Drainage Ditch South of Haul Road Culvert

Un-ionized ammonia (Storet #619) was calculated utilizing laboratory pH values and an estimated water temperature at 22°C, since no field measurements were available.

Please call me if you have any questions.

Sincerely,

Karen L Hatfield

Karen L. Hatfield
Project Manager

KLH:ceg

cc: Jim Andrews w/encl
HDR
P.O. Box 12744
Pensacola, FL 32575

ENVIRONMENTAL SCIENCE & ENGINEERING 11/22/83 STATUS: FINAL QC

PROJECT NUMBER 83405400
FIELD GROUP: PIN3
PARAMETERS: ALL SAMPLES: ALL

PROJECT NAME PINELLAS CO
PROJECT MANAGER: KAREN HATFIELD
FIELD GROUP LEADER: J.ANDREWS

		SAMPLE NUMBERS						
		1	2	3	4	5	6	7
PARAMETERS	STORET #	298700	298701	298702	298703	298704	298705	298706
DATE		10/27/83	10/27/83	10/27/83	10/27/83	10/27/83	10/27/83	10/27/83
TIME		0	0	0	0	0	0	0
NITROGEN,NH3+NH4,T (MG/L)	610	0.55	0.63	0.59	0.52	0.25	0.68	0.12
CHLORIDE (MG/L)	940	530	550	510	480	445	440	290
SELENIUM,TOTAL(UG/L)	1147	<60	<60	<60	<60	<60	<60	<60
PH,LAB(STD UNITS)	403	7.81	7.72	7.70	7.67	7.66	7.58	7.76
MERCURY,TOTAL(UG/L)	71900	<0.2	0.7	<0.2	0.3	0.4	<0.2	0.4
ZINC,TOTAL(UG/L)	1092	139.0	136.0	152.0	194.0	67.0	179.0	119.0
PHOS,T,ICAP(MG/L-P)	99914	2	2	1	1	0.6	0.9	0.3
CADMIUM,TOTAL(UG/L)	1027	<9.0	<9.0	<9.0	<9.0	<9.0	<9.0	<9.0
COPPER,TOTAL(UG/L)	1042	24.0	23.0	19.8	27.8	9.1	13.3	9.9
SILVER,TOTAL(UG/L)	1077	<9.0	<9.0	<9.0	<9.0	<9.0	<9.0	<9.0
IRON,TOTAL(UG/L)	1045	280	285	280	267	781	238	273
NICKEL,T,(UG/L)	1067	14	20	<10.0	<10.0	19	18	20
NITROG,NH3,UN-ION'D CALC(MG/L)	619	0.015	0.014	0.013	0.012	0.006	0.012	0.003
DISS. SOLIDS (MG/L)	70300	1770	1820	1790	1690	1560	1630	1110

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Date Due: _____	Date Due: _____	

TO: Buck Oven

THRU: C. H. Fancy

FROM: Tom Rogers and Bob King

DATE: December 1, 1983

SUBJ: Pinellas County Resource Recovery Facility

Attached, please find the final version of the air quality analysis for the subject facility completed in support of the power plant certification requirements. Please send us a copy of the final document released by your office.

TR/BK/s

I. Impacts on Air Quality and Water Quality

1. Air Quality

a. Rule Applicability

The proposed site of the Pinellas County Resource Recovery Facility (RRF) is located in an area designated as nonattainment for ozone under 40 CFR 81.310 and Rule 17-2.410, Florida Administrative Code, and attainment under 40 CFR 81.310 and Rule 17-2.420, for all other criteria pollutants.

The maximum emissions for the proposed resource recovery facility and significant emission rates (40 CFR 52.21(b)(23) and Rule 17-2.500-2), in tons per year, are as follows:

Pollutant	Maximum Emission	Significant Emission Rate
Particulate Matter (PM)	109	25
Sulfur Dioxide (SO_2)	364	40
Nitrogen Oxides (NOx)	577	40
Carbon Monoxide (CO)	288	100
Hydrocarbons (HC)	58(1)	40(VOC)
Lead (Pb)	5.7	0.6
Mercury (Hg)	2.1	0.1
Beryllium (Be)	0.00025	0.004
Fluorides	19	3
Chlorides	764(2)	1 (Vinyl Chloride)

(1) non-methane HC emissions (VOC) will be less than 40 tons per year
(2) vinyl chloride emissions will be less than 1 ton per year

The proposed facility has the potential to emit more than 100 tons per year of one or more regulated pollutants and is, therefore, subject to review for prevention of significant deterioration (PSD) under 40 CFR 52.21 and Rule 17-2.500(5)(c). PSD review consists of a determination of best available control technology (BACT) and an air quality impact analysis for each attainment and noncriteria pollutant that would be emitted in a significant amount. For the proposed facility, PSD review is required for seven pollutants: PM, SO_2, NOx, CO, lead, mercury, and fluorides.

The proposed facility is not subject to nonattainment review for volatile organic compounds (VOC) because it is a minor source of this pollutant and the proposed increase will be less than 100 tons per year.

b. Control Technology Review

Based on an analysis of the economic, environmental, and energy impacts of the proposed project - the construction of a third Martin combustion unit, the Department has made a preliminary BACT determination for the boiler. The emission limits from the BACT determination are as follows:

Pollutant	Emission Limit
Particulate Matter	0.03 gr/dscf, corrected to 12 percent CO_2
Sulfur Dioxide	83 pounds per hour, maximum 3-hour average
Nitrogen Oxides	132 pounds per hour
Carbon Monoxide	66 pounds per hour
Lead	1.3 pounds per hour
Mercury	3200 grams per day*
Visible Emissions	10% opacity

* When more than 2,205 lb/day of municipal sewage sludge (dry basis) is fired, compliance with the mercury emission limit shall be demonstrated in accordance with 40 CFR 61, Method 101 Appendix B.

Compliance with the limitations for particulates, sulfur dioxide, visible emissions, and nitrogen oxides should be demonstrated in accordance with Florida Administrative Code Rule 17-2.700, DER Methods 5, 6, 9 and EPA Method 9 (40 CFR 60, Appendix A), respectively.

A continuous monitoring system to measure the opacity of emissions shall be installed, calibrated, and maintained in accordance with the provisions of Rule 17-2.710, Continuous Monitoring Requirements. The system must be installed and operational prior to compliance testing.

(1) BACT for Particulate Matter

The proposed mass burn combustion unit will have a charging rate of more than 50 tons per day, and is therefore, subject to the provisions of 40 CFR 60.50, Subpart E, New Source Performance Standards (NSPS). The NSPS for particulate matter emissions is a rate not to exceed 0.08 gr/dscf corrected to 12 percent CO_2. An electrostatic precipitator (ESP) will be installed to control particulate emissions. The two existing mass burn units have a permitted particulate emission limit not to exceed 0.08 gr/dscf (NSPS).

For the third unit, the applicant has proposed better control on particulate emissions than the 0.08 gr/dscf required by NSPS. The control equipment is an ESP capable of achieving the 0.03 gr/dscf particulate emission limit proposed by the County and accepted by the Departmenat as BACT. The baghouse is another control device capable of achieving the particulate emission limit determined as BACT, but was not recommended for two reasons: (1) the existing combustion units use ESPs, therefore, using an ESP will reduce the spare parts inventory; and (2) maintenance and operating personnel have experience with ESP control devices.

(2) BACT for Sulfur Dioxide

The Department has determined the limit for SO_2 emissions to be 83 pounds per hour. The amount of SO_2 generated when burning municipal type waste is less than the SO_2 emissions from the burning of distillate fuel oil containing 0.5 percent sulfur. The use of low sulfur fuel oil is considered one method of controlling SO_2 emissions, therefore, the installation of a flue gas desulfurization system is not warranted.

(3) BACT on Nitrogen Oxides

In the application, the applicant recommends that BACT is the use of proper boiler design and operating procedures. The proposed NOx emission rate is 132 pounds per hour as indicated in the air quality analysis. Annual emissions of NOx will be 577 tons. This level of control is judged to represent BACT.

During combustion of municipal solid waste, NOx is formed in high temperature zones in and around the furnace flame by oxidation of atmospheric nitrogen and nitrogen in the waste. The two primary variables that affect the formation of NOx are the temperature and the concentration of oxygen. Techniques such as the method of fuel firing, the distribution of combustion air between overfire and underfire air, exhaust gas recirculation and decreased heat release rates have been used to reduce NOx emissions. A few add-on control techniques such as the catalytic reduction with ammonia process and the thermal de-NOx are still experimental. None of these techniques are considered to be demonstrated technology for the proposed project.

(4) BACT on Carbon Monoxide

Carbon monoxide is a product of incomplete combustion by insufficient air supply. Incomplete combustion will also result in the emissions of solid carbon particulates in the form of smoke or soot and unburned and/or partially oxidized hydrocarbons. Incomplete combustion results in the loss of heat energy to the boiler. The Department agrees with the applicant that BACT is the use of state-of-the-art boiler controls to insure sufficient underfire and overfire air so that the

emissions of products of incomplete combustion are minimized. The proposed CO emission rate is 66 pounds per hour. This level of control is judged to represent BACT.

(5) BACT on Lead

Lead emissions from the boiler occur because this element is present in varying amounts in the solid waste. The inlet temperature of the ESP is estimated at 425-475 °F. At these temperatures the lead emissions should not be in a vaporous state, and will be removed by the ESP as particulate.

(6) BACT on Mercury

The mercury emission limit is the National Emission Standard for Hazardous Air Pollutants (NESHAPs), 40 CFR 61.50, Subpart E, for municipal waste water sludge incineration plants. The proposed source would be subject to the provisions of NSPS, 40 CFR 60.150, Sewage Treatment Plants, if more than 2,205 pounds per day (dry basis) municipal sewage sludge is charged. The Department has determined the emission limit for mercury to be 3,200 grams per day applicable only when more than 2,205 pounds per day municipal sewage sludge (dry basis) is charged into the mass burn combustion unit.

(7) BACT on PVC and Hydrogen Fluoride

The combustion of plastics can result in the emission of acid gases, such as hydrogen chloride and hydrogen fluoride. Burning polyvinyl chloride (PVC), of all the polymers, has been implicated as causing the most serious disposal problem due to the release of HCl gas. This problem has long been realized resulting in other polymers being used in packaging. Burning polypropylene and polystyrene, for example, produce carbon monoxide and the monomer styrene.

Both HCl and HF are hydrogen halides and are soluble in water. A water scrubbing system will remove approximately 75% of the HF gases. The Department does not believe the air quality impact due to HF emissions justifies the cost of installing a wet scrubber system.

(8) BACT on Visible Emissions

The visible emissions limit of 10% opacity is based on operating data from the two existing units.

c. Air Quality Impacts

As noted in section I. 1. a., the proposed source at the Pinellas County RRF will result in significant emissions of the criteria pollutants PM, SO_2, NOx, CO and lead, and of the non-criteria pollutants mercury and fluorides.

The air quality impact analysis required for these pollutants includes:

- An analysis of existing air quality;
- A PSD increment analysis (for PM and SO_2 only);
- An Ambient Air Quality Standards (AAQS) analysis;
- An analysis of impacts on soils, vegetation, visibility, acid rain, and 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 in accordance with EPA-approved methods. The PSD increment and AAQS analyses depend on air quality modeling carried out in accordance with EPA guidelines.

Based on these required analyses, the department has reasonable assurance that the proposed source at the Pinellas County RRF, as described in this report and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any PSD increment or ambient air quality standard. A discussion of the modeling methodology and required analyses follows:

(1) Modeling Methodology

Two EPA-approved dispersion models, the Single Source CRSTER model and the Industrial Source Complex Short-term (ISCST) model, were used in the air quality impact analysis. Both of these models relate ground-level concentrations at some distance to pollutant emissions of some inert gas or small particles from a point source by imposing a Gaussian solution to the steady-state mass conservation equation. The CRSTER model, which is confined by the colocation of all point sources, was used to identify the critical years of meteorology. The ISCST model, which allows for separation of sources and several other features, such as the inclusion of downwash, was used to refine the anlaysis.

The surface and upper air meteorological data used in these models were National Weather Service data collected at Tampa, Florida, during the period 1970-1974. Since five years of data were used, the highest, second-high short-term predicted concentrations may be used to compare with the appropriate ambient standard or PSD increment.

The stack parameters and emission rates used in evaluating the ambient impacts are contained in Table I-1 and Table I-2, respectively. Only for the pollutants SO_2 and PM were all the sources evaluated. Total ambient air quality impacts were based on the modeled impacts plus the monitored "background" concentrations.

(2) 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 department approval is given. An exemption to this requirement can be obtained if the maximum air quality impact, as determined through modeling, is less than a pollutant-specific deminimus concentration. In addition, if current monitoring data already exist and these data are representative of the proposed source area, then at the discretion of the department these data may be used.

The predicted maximum air quality impacts of the proposed project (Unit 3) for each of the seven pollutants subject to review are given in Table I-3 along with the monitoring deminimus levels. From this table it is seen that PM, NOx, CO, and Hg have maximum air impacts less than the deminimus level; therefore no preconstruction monitoring is required. Sufficient data in the area of the source already exist for SO_2 and Pb to define existing air quality for these pollutants. The department did not require additional monitoring for these pollutants. Although fluorides are subject to monitoring requirements, no EPA-approved method currently exists to measure ambient concentration of this pollutant.

Table I-4 shows the monitored ambient air quality levels for the most recent complete year (1982) for all the criteria pollutants, including the required data for SO_2 and Pb. These data were collected from existing monitors in Pinellas County.

(3) PSD Increment Analysis

The Pinellas County RRF is located in an area where the Class II PSD increments apply. The facility is also located approximately 75 kilometers from the Class I Chassahowitzka National Wilderness Area. As such as analysis of the impact on this area must be performed.

A PSD increment analysis is required for the pollutants SO_2 and PM only. The PSD increments represent the amount that new sources in the area may increase ambient ground-level concentrations of these pollutants for various time averages. At no time, however, can the increased loading of these pollutants into the atmosphere from these new sources cause or contribute to a violation of the ambient air quality standards.

For the Pinellas County RRF the proposed Unit 3 along with the previously built Units 1 and 2 all consume PSD increment. In addition, several other new sources in the area have been identified which may interact with the Pinellas County RRF in

consuming the allowed PSD increments. These sources are the McKay Bay RRF and the TECO Big Bend power plant.

Atmospheric dispersion modeling was performed, as discussed previously, taking into account only those new sources which consume PSD increment. The results of this modeling are summarized in Table I-5.

The impact of these sources on the nearest Class I area was not explicitly modeled. The models used in this air quality analysis are not appropriate for predicting ground-level concentrations beyond 50 kilometers. However, the impact on the Class I area may be extrapolated from the modeling results showing the proposed Unit 3 impact on the two distant nonattainment areas. An SO_2 nonattainment area is located near Tarpon Springs approximated 23.5 kilometers from the Pinellas County RRF. The impacts of Unit 3 alone on this area are 2.2 ug/m^3, 3-hour average; 0.3 ug/m^3, 24-hour average; and 0.02 ug/m^3, annual average. These values are less than significant for impacts on nonattainment areas and would be much less at the distance of the Class I area. A PM nonattainment area is located in Tampa, 14.4 kilometers from the RRF. Here, the impacts of Unit 3 alone are 0.01 ug/m^3, 24-hour average and 0.006 ug/m^3, annual average. Again, these impacts are less than significant for nonattainment areas and the concentrations would be much less at the distance of the Class I area. Table I-5 indicates the results of all the PSD increment modeling.

(4) AAQS Analysis

Given existing air quality in the area of the Pinellas County RRF, the proposed Unit 3 emissions are not expected to cause or contribute to a violation of an AAQS. The results of the AAQS analysis are contained in Table I-6.

Of the pollutants subject to PSD review only the criteria pollutants SO_2, PM, CO, NO_2, and Pb have an AAQS to compare with. All sources listed in Table I-1 were modeled to determine the maximum ground-level impacts for SO_2 and PM. For CO, NO_2, and Pb only the three units at the Pinellas County RRF were modeled to determine the maximum ground-level concentrations resulting from this facility.

The total impact on ambient air is obtained by adding a "background" concentration to the maximum modeled concentrations. This "background" concentration takes into account all sources of the particular pollutant in question that were not explicitly modeled. A conservative estimate of these "background" concentrations is given by the second highest monitored concentration as listed in Table I-4. This is a conservative estimate because sources used in the modeling may have contributed to the monitored value and this would be contributing doubly to the total impact.

(5) Analysis of Impacts on Soils, Vegetation, Visibility, and Acid Rain and Growth-Related Air Quality Impacts

(a) Impact on Soils and Vegetation

The maximum ground-level concentrations predicted to occur as a result of emissions from the proposed project in conjunction with all other sources, including a background concentration, will be below all applicable AAQS including the secondary standards designed to protect public welfare-related values. No soils or species of vegetation highly sensitive to these emissions in the concentrations predicted are known to occur in the site vicinity, or in the Chasshowitzka Class I area.

(b) Impact on Visibility

A level I visibility screening analysis was performed to determine if any impact may occur in the Class I area. The analysis showed that there was no potential for an adverse impact on visibility in this area.

(c) Acid Rain Impact

The increased emissions of SO_2 and NOx, precursors to possible acid formation and subsequent acidic rain, from the proposed Unit 3 project are relatively small. In comparison with the emissions of these pollutants from nearby power plants the increased loading due to the proposed project is inconsequential. Thus, no adverse impact on the acidity of rainfall is expected as a result of this project.

(d) Growth-Related Air Quality Impacts

The construction of the proposed Unit 3 will require between 200 and 300 persons. Nearly all will be from the local area. The project is not expected to stimulate any additional growth or shift the nature of projected growth to the extent that an air quality impact will result.

(e) 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 proposed project the building height is 35.4 meters and the building width is 35.0 meters. Thus definition (2) above leads to a GEP stack height of 87.9 meters.

Due to the proximity of the facility to an airport, the stack height cannot be built to the GEP height. The applicant has addressed the possible increased ground-level concentrations (as a result of aerodynamic effects of the nearby building) by including a downwash mechanism in the modeling.

TO: Tom Rogers and Bob King

FROM: Hamilton S. Oven, Jr.

DATE: November 28, 1983

SUBJECT: Pinellas County RRF

Other than a few typographical errors, the draft air quality report is highly satisfactory. Please submit a final copy.

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee

To: Buck Oven Loctn.: _____
To: _____ Loctn.: _____
To: _____ Loctn.: _____
From: _____ Date: _____
Reply Optional [ ] Reply Required [ ] Info. Only [ ]
Date Due: _____ Date Due: _____

TO: Buck Oven

THRU: Clair Fancy

FROM: Tom Rogers and Bob King

DATE: November 21, 1983

SUBJ: Pinellas County RRF, Air Quality Analysis

Attached please find a draft of the air quality report for the subject facility. We will finalize the report after you have made your comments.

TR/BK/s

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee		
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
From: _____	Date: _____	
Reply Optional [ ]	Reply Required [ ]	Info. Only [ ]
Date Due: _____	Date Due: _____	

TO: Jim Estler

FROM: Ed Palagyi EP

DATE: November 16, 1983

SUBJ: BACT Determination for Pinellas Resource Recovery

Enclosed is the final draft of the BACT determination for the Pinellas County resource recovery modifications.

Your comments and recommendations and those received from other sectors of our environmental family were included in the review process. This input was appreciated.

Now, one more time, you are asked to review this BACT determination. The response period will end December 1, 1983. No response is necessary unless there is some aspect of this project that was overlooked which should be considered in this determination.

EP/s

D.E.R.

NOV 18 1983

SOUTHWEST DISTRICT
TAMPA

Best Available Control Technology (BACT) Determination
Public Works and Utilities
Pinellas County

The applicant plans to construct a third municipal solid waste fired boiler to increase the throughput of the existing resource recovery facility located in Pinellas County, Florida. The proposed mass burn Martin combustion system will be similar to the two existing units. The new unit will be capable of incinerating 1050 tons per day of municipal waste, and will increase the solid waste processing capacity of the facility to 3150 tons per day.

The proposed mass burn unit is designed for a heat input of 411 million Btu per hour based upon a waste heat content of 5000 Btu per pound. This added unit will increase the processing throughput of the facility to allow incineration of the solid waste expected to be generated over the next ten years.

Potential Air Pollutant Emissions (ton/year)

Particulate	- 109	(25)*
Sulfur Dioxide	- 577	(40)*
Nitrogen Oxides	- 577	(40)*
Carbon Monoxide	- 288	(100)*
Lead	- 58	(0.6)*
Beryllium	- .0002	(.0004)*
Mercury	- 2.1	(0.1)*
Hydrogen Fluride	- 28	(3)*

* Regulated Air Pollutants - Significant Emission Rates. Florida Administrative Code Rule 17-2.500, Table 500-2

The steam generated will be used to produce electrical power for distribution into the peninsula grid system. The new source is being reviewed according to Florida Administrative Code Chapter 17-17, Electrical Power Plant Siting and Rule 17-2.500, Prevention of Significant Deterioration. The Bureau of Air Quality Management is performing the air quality review and the BACT determination for the siting committee. The certification number for the existing facility is PA 78-11.

<u>BACT Determination Requested by the Applicant:</u>

An electrostatic precipitator (ESP) will be installed to control the discharge of particulate matter at 0.03 gr/dscf, or less, corrected to 12% CO_2. The ESP will also control lead, beryllium and mercury emissions. Sulfur dioxide emissions will be limited by firing municipal waste, a low sulfur content fuel. Burner design and operating procedures will the methods used to limit NOx emissions.

Burner controls will installed to minimize the emission of CO due to incomplete combustion.

Date of Receipt of a BACT Application:

September 7, 1983

Date of Publication with Florida Administrative Weekly:

September 16, 1983

Review Group Members:

Bob King - New Source Review Section
Clair Fancy - Central Air Permitting
Tom Rogers - Air Modeling Section
Jim Estler - SW District Office
Jacob Stowers - Pinellas County DEM

BACT Determination by DER:

Pollutant	Emission Limits
Particulates	0.03 grains/dscf, corrected to 12 percent CO_2
Sulfur dioxide	83/pounds/hour
Nitrogen Oxides	132 pounds/hour
Carbon Monoxide	66 pounds/hour
Lead	1.3 pounds/hour
Mercury	3200 grams/day [1]
Visible Emissions	10% opacity

[1] When more than 2205 lb/day of municipal sewage sludge is fired, compliance with the mercury emission limit shall be demonstrated in accordance with 40 CFR 61, Method 101 Appendix B.

Compliance with the limitations for particulates, sulfur oxides and nitrogen oxides will be demonstrated in accordance with Florida Administrative Code Rule 17-2.700, DER Methods, 1,2,3,5,6 and 40 CFR 60, Appendix A; Method 7.
Compliance with the opacity limit shall be demonstrated in accordance with Florida Administrative Code Rule 17-2.700(6)(2)9., DER Method 9.

A continuous monitoring system to measure the opacity of emissions shall be installed, calibrated, and maintained in accordance with the provisions of Rule 17-2.710 - Continuous

Monitoring Requirements. The CEM must be installed and operational prior to compliance testing.

BACT Determination Rationale

The proposed mass burn combustion unit will have a charging rate more than 50 tons per day, and therefore, subject to the provisions of 40 CFR 60.50, Subpart E, New Source Performance Standards (NSPS). The NSPS for paraticulate matter emissions is a rate not to exceed 0.08 grains/dscf corrected to 12 percent CO_2. The applicant has proposed to limit particulate emissions rate not to exceed 0.03 grains/dscf corrected to 12 percent CO_2. An electrostatic precipitator (ESP) will be installed to control particulate emissions at the proposed rate. The two existing mass burn units have a permitted particulate emission limit not to exceed 0.08 grains/dscf (NSPS).

The Department agrees that the use of an ESP is an air pollution control technology currently capable of achieving the 0.03 grain/dscf particulate emission limit, and is considered BACT for this source. The baghouse is another control device capable of achieving the particulate emission limit determned as BACT, but was not recommended for two reasons; 1) the existing combustion units use ESPs, therefore the spare parts inventory is minimized, 2) maintenance and operating personnel have experience with this type of control device.

The mercury emission limit is the National Emission Standard for Hazardous Air Pollutants (NESHAPs), 40 CFR 61.50, Subpart E, for municipal waste water sludge incineration plants. The proposed source would be subject to the provisions of NSPS, 40 CFR 60.150, Sewage Treatment Plants, if more than 2205 pounds per day (dry basis) of municipal sewage sludge is charged. The Department has determined the emission limit for mercury to be 3200 grams per day applicable only when more than 2205 pounds per day (dry basis) of municipal sewage sludge is charged into the mass burn combustion unit. The Department has determined the limit for SO_2 emissions to be 83 pounds per hour. The amount of SO_2 generated when burning municipal type waste is less than the SO_2 emissions from the burning of distillate fuel oil containing 0.5 percent sulfur and the use of low sulfur fuel oil is considered one method of controlling SO_2 emissions, therefore, the installation of a flue gas desulfurization system is not warranted.

The combustion of plastics can result in the emission of acid gases, such as hydrogen chloride and hydrogen fluoride. Polyvinyl chloride (PVC), of all the polymers, has been implicated as causing the most serious disposal problem due to the release of HCl gas when burning. This problem has long been realized resulting in other polymers being used in packaging.

Polypropylene and polystyrene, for example, produce carbon monoxide or the monomer styrene when burned.

Both HCl and HF are a hydrogen halide and soluble in water. A water scrubbing system will remove approximately 75% of the HF gases. The Department does not believe the air quality impact due to HF emissions justifies the cost of installing a wet scrubber system.

During combustion of municipal solid waste, NO_x is formed in high temperature zones in and around the furnace flame by oxidation of atmospheric nitrogen and nitrogen in the waste. The two primary variables that affect the formation of NO_x are the temperature and the concentration of oxygen. Techniques such as the method of fuel firing, the distribution of combustion air between overfire and underfire air, exhaust gas recirculation and decreased heat release rates have been used to reduce No_x emissions. A few add-on control techniques such as the catalytic reduction with ammonia process and the thermal de-NO_x are still experimental. None of these techniques are considered to be demonstrated technology for the proposed project.

In their application, the applicant contents that BACT is the use of proper boiler design and operating procedures. The proposed NO_x emission rate is 132 pounds per hour as indicated in their air quality analysis. Annual emissions of NO_x will be 577 tons. This level of control is judged to represent BACT.

Lead emissions from the incinerator occur because this element is present in varying amounts in the solid waste. The inlet temperature of the ESP is estimated at 425-475 °F. At these temperatures the lead emissions should be in a non vaporous state, and will be removed in the ESP along with the rest of the particulates.

The visible emissions opacity limit is based on operating data from the two existing units.

Carbon monoxide is a product of incomplete combustion where there is insufficient air. Incomplete combustion will also result in the emissions of solid carbon particulates in the form of smoke or soot and unburned and/or partially oxidized hydrocarbons. Incomplete combustion results in the loss of heat energy to the boiler. The Department agrees with the applicant that BACT is the use of state-of-the-art boiler controls to insure sufficient underfire and overfire air so that the emissions of products of incomplete combustion are minimized. The proposed CO emission rate is 66 pounds per hour. This level of control is judged to represent BACT.

Details of the Analysis May be Obtained by Contacting:

Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended by:

_____
C. H. Fancy, Deputy Bureau Chief

Date: _____

Approved:

_____
Victoria J. Tschinkel, Secretary

Date: _____

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DEPARTMENT OF SOLID WASTE MANAGEMENT
2800 110TH AVENUE NORTH
ST. PETERSBURG, FLORIDA 33702
PHONE (813) 825-1565

P.O. BOX 21623
ST. PETERSBURG, FLORIDA 33742-1623

November 15, 1983

Mr. W. K. Hennessey, District Manager
State Department of Environmental Regulation
Southwest District Office
7601 Highway 301, North
Tampa, FL 33610-9544

Re: Stormwater Management

Dear Mr. Hennessey:

With further information concerning the above with particular attention to the introduction of the report under Mr. Jordan's response of November 15, 1983, to Mr. Hamilton S. Oven, P.E., please be advised that our pumping of the 20-acre holding pond has allowed a 1.4'+ freeboard in the holding pond and ditches. Recharge is minimal.

The pump is available at Solid Waste, with our intention to pump as required to maintain this additional freeboard. Any discharge into the 28 Street ditch will be minimized, except during major rainfalls.

Very truly yours,

W. W. Dasher, Director
Public Works Operations

WWD:lt
cc: Hamilton S. Oven, P.E., HDR
Jim Andrews, HDR

cc Gary Kuhl-SWFWMD

BOARD OF COUNTY COMMISSIONERS

PINELLAS COUNTY, FLORIDA

DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING - OPERATIONS - SOLID WASTE - WATER - SEWER
315 COURT STREET
CLEARWATER, FLORIDA 33516
Phone: (813) 462-3251

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November 14, 1983

Received DER

NOV 21 1983

PPS

Mr. Hamilton S. Oven, Jr., P.E.
Administrator, Power Plant Siting Section
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Dear Mr. Oven:

In response to your letter of October 19, please find enclosed the following documents:

1. Study for the proposed use of stormwater as cooling water.

2. Stormwater drainage system plans at the Resource Recovery Facility.

In the past few months the plant has become operational and the many site and drainage improvements discussed in the original PPSC application have been installed. Since then, it has been observed that high intensity, short duration storms can tax on-site stormwater storage facilities. To assess compliance with Condition of Certification XIV D.1, the County began sampling stormwater discharges from the site and analyzing them for Chapters 17-3 and 17-25 parameters. When it was learned that a particular discharge contained chemical constitutents which exceeded allowable concentrations for Class III waters, the County immediately notified the District office of the Department, as per Conditions of Certification II (see letter from W. W. Dasher to E. G. Snipes, October 27, 1983). Since that date more sampling regimens have been conducted and the analytical results are forthcoming. We will continue to apprise District personnel of these results as we receive them.

Regarding a long term solution to stormwater management at the plant, be advised we are currently evaluating a system to supplement cooling tower

continued.....

BOARD OF COUNTY COMMISSIONERS
PINELLAS COUNTY, FLORIDA
315 COURT STREET
CLEARWATER, FLORIDA 33516

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BRUCE TYNDALL

October 31, 1983

Mr. Hamilton Oven, Jr., P.E.
Department of Environmental Regulation
Power Plant Siting Section
2600 Blair Stone Road
Tallahassee, FL 32301-8241

RE: Pinellas County Resource Recovery Project - Phase II PA-83-18
DOAH Case Number 83-2355

Dear Mr. Oven:

The Pinellas County, Division of Air Quality has reviewed the above noted application with regard to air quality impact. The revised application was received September 15, 1983 and the missing supplements to the appendices were received September 30, 1983.

The proposed third unit, a mass-burn Martin combustion system, is similiar to the existing units. The capacity, heat input and design/operational characteristics are all similiar to the other two units. The proposed/estimated air emissions and the expected ambient air quality impacts contained in the BACT and Air Quality Analysis sections of the application are addressed as follows:

1. The BACT determination for particulate emissions proposed by the applicant is 0.03 gr/dscf, corrected to 12% CO_2. The NSPS TSP emissions limits established by Florida and EPA for incinerators of this size and type are 0.08 gr/dscf corrected to 50% EA. Previous EPA and FDER BACT determinations for similiar units (the Dade Co. RRF and the existing two units of Pinellas County RRF) established the NSPS limits as BACT for those units. The proposed controls (four field ESP) will surpass these requirements for particulate emissions as well as aiding in the increased control of lead, beryllium and particulate mercury. Based upon the available information included in the application the modeling analysis does not appear to indicate a problem with TSP impacts of the project even with the downwash scenario of the ISCST model. The existing TSP monitoring facilities should be adequate for this project.

2. A BACT determination and emissions limitations for SO_2 were not proposed by the applicant. As stated in the application, use of low sulfur fuel is considered to meet BACT for SO_2 emissions from municipal incinerators.

The expected sulfur content is less than .2%. The expected emission rate of 1.9 lb/Ton MSW (83 lb/hr) is well below the limit imposed on electric utility steam generating units classified as Resource Recovery Facilities in 40 CFR, Subpart Da, Section 60.43a(d) which allows 1.2 lb/MMBTU heat input (or approximate 493 lb/hr for this unit). Therefore, the emission rate of 1.2 lb/MMBTU of head input should be the applicable limiting standard. Again it is expected that the existing monitoring data systems should be sufficient for this project in order to monitor compliance and evaluate ambient impacts. It may, however, be prudent to also require SO_2 stack sampling analysis, during the annual compliance testing which will be required for particulates, as a means of certifying compliance with the standard imposed. Modeling appears to indicated no significant problems associated with the impacts of the project.

3. The NO_X and CO emissions are stated to be controlled by "state-of-the-art" boiler design and operation. This is requested as BACT by the applicant. Again, no expressed emission limitation is proposed for these criteria pollutants. Neither, is it discussed how the critical elements for proper combustion parameters will be monitored to "control" the emissions of these pollutants. If this project were compared to a solid fuel fired steam generator as above (40 CFR Subpart Da) the allowed emission rate would be 0.6 lb NO_X/MMBTU heat input, and/or 65% reduction of the potential combustion concentration. This would yield an allowable rate of 246 lb/hr for this unit (at a firing rate of 411 MMBTU/hr heat input). The expected emission rate is 132 lb/hr. While this is only slightly more than half of an allowable rate the aspect of achieving 65% reduction of the potential concentration should be addressed via detailed analysis if feasible. Continuous in-stack monitoring may be applied if deemed necessary for compliance assurance purposes. The modeled expected impacts for NO_X and CO do not appear to indicate a significant problem. The Certification document and/or BACT determination should prescribe the specific emissions limiting standard of 0.6 lb NO_X/MMBTU heat input.

4. The control of particulate lead, beryllium and mercury are effected by the ESP. The expected levels of mercury and beryllium emissions are well below the De Minimus levels established under PSD. However, lead exceeds the De Minimus impact level by .15 ug/m^3. The modeling indicates that the likelihood of an exceedance is only slight. It is expected that the existing ambient monitoring analysis will provide adequate compliance assurance.

cont.

5. The notably high expected emissions of chlorides is not addressed in the analysis of impacts. Comment should be provided regarding possible control and limiting emissions. It is the largest in quantity pollutant being emitted. If burner design and operation can be utilized as the "control" for "unburned" plastics and other chloride sources then it should be discussed in the proposal.

6. While fluoride emissions exceed the PSD De Minimus levels the expected ambient air impact as well as the impact on soils and vegetation are considered slight. The monitoring and/or stack analysis for fluorides is not considered necessary for this source at this time.

7. The expected level of hydrocarbon emissions is 58 T/yr. Combined with hydrocarbon emissions from the existing two units this facility is a major source. Considering that Pinellas County is still technically an ozone non-attainment area, an emission limitation should be established for the facility. Additional controls are impracticle but a limiting standard could be set. The means of verifying compliance would have to be decided upon; i.e. whether stack analysis or continuous monitoring are feasible.

It should be noted that the comments above regarding modeling aspects of the application are solely based on the limited information provided for review. The detailed study of the modeling should be addressed by BAQM personnel.

The limited resources and capabilities of this agency prohibit a more detailed analysis of this project. As the local agency it was felt that some comment should be provided on the project regardless of our affiliation with the project applicant. If there are any questions regarding this review or if further comment is required please contact this office at SUNCOM 570-4761.

Sincerely,

William M. Davis

For Jacob F. Stowers III, Director
Department of Environmental Management

JFS/wn

cc: DER S.W. District
Ed Palaygi - BAQM