HOPPING BOYD GREEN & SAMS
ATTORNEYS AND COUNSELORS
SUITE 420, FIRST FLORIDA BANK BUILDING
POST OFFICE BOX 6526
TALLAHASSEE, FLORIDA 32314
(904) 222-7500

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CAROLYN S. RAEPPLE

OF COUNSEL
W. ROBERT FOKES

December 23, 1985

BY HAND DELIVERY

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

Re: Collier County
Solid Waste Energy Recovery Facility
Application for Air Construction Permit

Dear Mr. Andrews:

Pursuant to our telephone conversation of December 19, 1985, on the referenced matter, please find enclosed the information you requested as conveyed to me by David Buff of KBN Engineering and Applied Sciences, Inc. after consultation with representatives of Collier County.

The County shares the concern I expressed in our telephone conversation in regard to potential delays in the permitting schedule as a result of providing more information at this date. I therefore wish to make clear that the submittal of the attached information is not intended, and should not be construed, as an indication that Collier County's permit applications, as supplemented by my letter of November 5, 1985, are in any way incomplete or insufficient. Rather, we are providing this information in the spirit of cooperation and with the understanding that it will not cause further delay but will assist you in finishing the preliminary determination for the permits in the very near future.

As you know, obtaining a notice of intent to issue from the Department before the end of this year remains a high priority with respect to the scheduling, contracting and financial aspects of this project.

Best wishes for the holidays,

Sincerely,

Peter C. Cunningham

PCC/gb

cc: Clair Fancy
Ed Svec
Neil Dorrill
Bob Fahey
David Buff
Bert Saunders, Esquire

Enclosure

12/20/85

1. Percentages of MSW, WW and tires burned.

The maximum capacity of the proposed facility is 850 tons per day (TPD) MSW/WW. During the initial year of operation (1989), the minimum amount of MSW will be about 420 TPD. This figure is based upon present MSW availability of about 395 TPD, and assuming an increase in available MSW of 4% per year. This is a very conservative estimate, as the actual increase in MSW in Collier County was 26% per year over the last two years.

WW and tires will make up the remainder of the total heat input to the facility. Since WW has generally the same heating value as MSW, the maximum WW input during the first year would be 430 TPD (i.e., 850 minus 420). Before being burned, the tires will be shredded into strips or pieces of approximately three inches or less. Tires have a heating value of approximately 15,000 Btus per pound, or about 3.33 times that of MSW/WW. The maximum input of tires assuming 420 TPD MSW and no WW input, would be about 157 TPD (577 TPD total input MSW and tires). These maximum potential inputs of WW and tires will decrease each year as more MSW becomes available. Typically, WW and tires will be burned in about a 3.33:1 ratio. Under these typical conditions and assuming the minimum MSW input of 420 TPD, WW input would be 262 TPD and input of tires would be 79 TPD (761 TPD total input due to all fuels). These typical amounts for WW and tires will decrease each year as additional MSW becomes available.

2. Dioxins.

Collier County is currently considering a mass-burn facility and a circulating fluidized bed facility. In the mass-burn facility, combustion zone temperatures will be in the range of 1800 to 1900° F. In the fluidized bed, combustion temperatures will be carefully controlled to 1550 to 1600° F. It is generally acknowledged that a combustion zone temperature of at least 1600° F with a residence time of at least 1.0 seconds is required to reduce dioxin emissions by 99%. The mass-burn facility being considered by Collier County will meet these minimum requirements. Although the fluidized bed operates at the minimum temperature necessary for efficient dioxin destruction, the residence time is on the order of 4 to 5 seconds, and the recirculation of larger uncombusted particles insures complete burnout of combustibles. In addition, the

fluidized bed operates at a more uniform temperature and has less cold spots within the furnace compared to a mass burn unit. Based on these characteristics, either system selected should provide adequate destruction of dioxins and other organic compounds.

ATTACHMENT 1

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS

SUITE 420, LEWIS STATE BANK BUILDING
POST OFFICE BOX 6526
TALLAHASSEE, FLORIDA 32314
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CAROLYN S. RAEPPLE

OF COUNSEL
W. ROBERT FOKES

November 5, 1985

DER

NOV 5 1985

BAQM

BY HAND DELIVERY

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

Re: Collier County
Solid Waste Energy Recovery Facility
Application for Air Construction Permit

Dear Clair:

I am writing on behalf of Collier County in response to your letter of October 9, 1985, regarding the County's application for a permit to construct a solid waste energy recovery facility (SWERF). The paragraphs below provide responses to the correspondingly numbered paragraphs in your letter.

1. The Collier County SWERF will be designed with a maximum capacity not to exceed 850 tons per day of waste (425 tons per day for each of the two units). This represents a slight increase over the maximum capacity stated in the original permit application. A revised Table B-3 indicating emission rates with the 850 tons per day capacity is provided as Attachment "A". The higher capacity results in a very small (6.25%) increase in the short-term air pollutant emission rates (pounds per hour) for the facility as compared to those stated in the original application. The annual emissions of the facility indicated in the revised Table B-3 are identical to those stated in the original application because a more realistic capacity factor of 94%, rather than 100%, has been assumed. Collier County is accordingly prepared to accept a restriction limiting operation of each unit to 8245 hours per year. Revised figures for several other process parameters to reflect the 850 tons per day capacity are set forth in Attachment "B". KBN

Engineering and Applied Sciences, Inc. has evaluated the effects of the slight increase in capacity on the air quality impact analysis presented in the original application. Making the conservative assumption of a 6.25% increase in the air quality impacts (corresponding to a 6.25% increase in short-term emission rates), none of the conclusions of the air quality analysis, including visibility impacts, would change. Specifically, no further monitoring or modeling would be required. Moreover, any increase in air quality impacts associated with the higher capacity would, in fact, be less than 6% because of the increased flue gas volume (and associated plume rise).

2. Collier County seeks permits authorizing construction of two SWERF units to be fueled by up to 850 tons per day of either municipal solid waste or refuse derived fuel (and/or wood waste).

3. The expected emissions from the firing of the refuse derived fuel, if chosen, are set forth in revised Table B-3 (Attachment "A").

4. The firing of up to 100% wood waste as a supplemental fuel is addressed in the original application. While it is not expected that the SWERF will fire 100% wood waste on any long-term basis, as it would not be economically advantageous to do so, Collier County seeks permits that will allow 100% wood waste firing whenever necessary.

5. Since a vendor has not yet been selected for the Collier County SWERF, neither an electrostatic precipitator nor a fabric filter has been ruled out. Consequently, no manufacturer's guarantee is available at this time. Whichever option is selected, the vendor will be required to substantiate the long-term reliability and operation of the device, and guarantee particulate matter emission levels no greater than those achievable with an electrostatic precipitator.

6. No air pollution control devices other than those identified in the original permit application are proposed for the Collier County SWERF. The County does not believe that a scrubber or other device to control "acid gas" emissions is needed or warranted for the facility, for the reasons set forth below.

With respect to sulfur dioxide emissions, adequate control is provided by the low sulfur content of the fuel and the expected maximum emission rate is equivalent to burning low sulfur coal or oil. Both short-term and annual sulfur dioxide emissions from the SWERF are relatively low, and associated air quality impacts will be minimal. Therefore, an expensive sulfur dioxide control system for the SWERF would be unjustified and wasteful.

With respect to hydrogen chloride (HCl) emissions, it should first be noted that: (1) HCl is not a regulated pollutant under the Clean Air Act or under Chapter 17-2, Florida Administrative Code; and (2) no emission limiting standards or ambient air quality standards have been established for HCl. Moreover, with the low level of HCl emissions expected for the SWERF, and the absence of any basis for concern with respect to the resulting ambient air concentrations (see Attachment D, Section 3.0 of the original application), a device to control HCl emissions is not justified for the proposed facility.

With respect to hydrogen fluoride (HF) emissions, no federal or State emission limiting standards for this pollutant applicable to municipal incinerators or SWERFs have been established. The low level of HF emissions expected from the Collier County SWERF would result in extremely low concentrations of HF in the ambient air. The table provided as Attachment "C" hereto shows maximum ambient HF concentrations predicted to result from the Collier County SWERF in comparison to several state ambient air quality standards for HF. The extremely low ambient concentrations predicted to result from the proposed facility make it clear that a device to control HF emissions from the proposed SWERF would be unnecessary and unjustified.

I trust that the information provided herein will allow the Department to find Collier County's permit application to be complete. As you know, receipt of a permit to construct the proposed SWERF prior to the end of this year remains critical to the financial feasibility of this project.

On behalf of Collier County, I would like to express our appreciation for the Department's continued cooperation and assistance in this matter. Please do not hesitate to call me if you or your staff have any questions.

Sincerely,

Peter C. Cunningham

PCC/gb

cc: Ed Svec
Larry George
Robert E. Fahey
David Buff

Attachments

Table B-3. Emission Rates of Regulated Air Pollutants from the Proposed Collier County SWERF, and PSD Significant Emission Rates.

| Pollutant | Maximum Emission Factor (lb/ton) | | | Maximum Emission Rate (lb/hr)* | | | Maximum Annual Emissions (Tons/Year)** | PSD Significant Emission Rate (Tons/Year) |
|---|---|---|---|---|---|---|---|---|
| | MSW | RDF | WW | MSW | RDF | WW | | |
| Particulate Matter | 0.815 | 0.815 | 0.815 | 28.9 | 28.9 | 28.9 | 119 | 25 |
| Sulfur Dioxide | 6.3 | 5.9 | 0.2 | 223.1 | 209.0 | 7.1 | 920 | 40 |
| Nitrogen Oxides | 7.2 | 5.0 | 2.8 | 255.0 | 177.1 | 99.2 | 1051 | 40 |
| Carbon Monoxide | 5.0 | 5.0 | 54.0+ | 177.1 | 177.1 | 1912.5++ | 730 | 100 |
| Vol. Org. Cmpds. | 0.5 | 0.5 | 1.76 | 17.7 | 17.7 | 62.3 | 257 | 40 |
| Lead | 0.3 | 0.2 | 0.00104 | 10.6 | 7.1 | 0.037 | 43.8 | 0.6 |
| Mercury | 0.013 | 0.010 | --- | 0.46 | 0.35 | --- | 1.9 | 0.1 |
| Beryllium | 0.000056 | 0.000056 | 0.0000040 | 0.0020 | 0.0020 | 0.00014 | 0.0083 | 0.0004 |
| Fluorides | 0.23 | 0.23 | --- | 8.15 | 8.15 | --- | 33.6 | 3 |
| Sulfuric Acid | 0.077 | 0.077 | --- | 2.73 | 2.73 | --- | 11.3 | 7 |
| Hydrogen Chloride | 6.2 | 6.2 | --- | 219.6 | 219.6 | --- | 905.3 | NA |
| Inorganic Arsenic | 0.0088 | 0.0088 | 0.000244 | 0.31 | 0.31 | 0.0086 | 1.3 | 0 |

* Based upon 850 TPD charging rate
** Based upon 8,245 hours per year operation per boiler
\+ Maximum emission factor is shown. The expected average emission factor is 4.5 lb/ton.
++ Maximum hourly emissin is shown. The expected average emission rate is 150.0 lb/hr.

ATTACHMENT B

Revised Process Parameters

| | |
|---|---|
| Total process input rate:<br>(Ref. pg. 4 of 12) | 70,833 lb/hr MSW/wood waste<br>(total two units) |
| Product weight:<br>(Ref. pg. 4 of 12) | 220,000 lb/hr steam<br>(total two units) |
| Maximum Heat Input:<br>(Ref. pg. 5 of 12) | 354.2 MM Btu/hr<br>(total two units) |

ATTACHMENT C

| | HF Concentration ($ug/m^3$) | | |
|---|---|---|---|
| | Annual Average | Monthly Average | 24-Hour Average |
| State of Maryland AAQS | --- | --- | 1.2 |
| State of New York AAQS | --- | 0.8 | 2.85 |
| State of Kentucky AAQS | | | |
| Primary | 400 | --- | 800 |
| Secondary | --- | 0.5 | 2.86 |
| Maximum Impact of Collier County SWERF | 0.03 | 0.09* | 0.3 |

* Estimated by multiplying annual average by a factor of three (3).

STATE OF FLORIDA

# DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

October 9, 1985

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Robert E. Fahey, Director
Solid Waste Department
3301 Tamiami Trail East
Naples, Florida 33962

Dear Mr. Fahey:

The Bureau of Air Quality Management has received your application to construct two resource recovery units. After reviewing the application, we have determined the application is incomplete for the following reasons:

1. Will the facility be designed to combust 600 or 800 tons per day of waste?

2. Will the incinerators be fueled by municipal solid waste or refuse derived fuel?

3. What are the expected emissions from the firing of refuse derived fuel, if chosen?

4. What is the maximum percentage of wood waste that will be fired?

5. Will an electrostatic precipitator or a fabric filter be used as a control device? Provide a manufacturer's statement of efficiency and design parameters.

6. Will any other control devices be used (i.e., scrubber for acid gas)?

When all the requested information is received, we will resume processing your application. If you have any questions, please write to me at the above address or call Ed Svec, Review Engineer, at (904)488-1344.

Sincerely,

for C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/ES/s

cc: David Knowles
Peter Cunningham
David Buff

P 408 533 624

**RECEIPT FOR CERTIFIED MAIL**

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

*(See Reverse)*

| | |
|---|---|
| Sent to Mr. Robert E. Fahey | |
| Street and No. | |
| P.O., State and ZIP Code | |
| Postage | $ |
| Certified Fee | |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to whom and Date Delivered | |
| Return Receipt Showing to whom, Date, and Address of Delivery | |
| TOTAL Postage and Fees | $ |
| Postmark or Date | |

10-10-85

PS Form 3800, Feb. 1982

PS Form 3811, July 1983

**SENDER:** Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Mr. Robert E. Fahey
Solid Waste Dept.
3301 Tamiami Trail East
Naples, FL 33962-4977

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number
P 408 533 624

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
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6. Signature – Agent
X

7. Date of Delivery
10-15-85

8. Addressee's Address *(ONLY if requested and fee paid)*

NAPLES FL OCT 15 1985 USPO

DOMESTIC RETURN RECEIPT

KBN

September 26, 1985
85001

DER

OCT 8 1985

BAQM

Mr. Larry George
Florida Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, FL 32301-8241

RE: Proposed Collier County Solid Waste Energy Recovery Facility Air Construction Permit Application

Dear Larry:

In reference to the above captioned air construction permit application for Collier County, and in response to your verbal request, the following information and analysis is provided concerning Prevention of Significant Deterioration (PSD) ambient air monitoring analysis requirements. The Florida Department of Environmental Regulation (DER) and U.S. Environmental Protection Agency (EPA) require an analysis of existing air quality for any pollutant subject to PSD requirements and which has an ambient impact greater than the PSD de minimis air quality impact levels. For criteria pollutants, this analysis is to include ambient air monitoring data as deemed necessary by DER. For the proposed Collier County solid waste energy recovery facility (SWERF), both lead (Pb), and fluorides (Fl) are required to undergo these analyses.

The EPA document entitled "Ambient Monitoring Guidelines for Prevention of Significant Deterioration" (EPA-450/4-80-012, 1980) provides guidance in meeting the PSD monitoring requirements. The guideline document states that "no preconstruction monitoring data will generally be required if the ambient air quality concentration before construction is less than the significant monitoring concentrations". To demonstrate that existing air quality levels in the vicinity of the proposed Collier County SWERF are below de minimis levels, an analysis of existing Pb and Fl air quality was conducted. The analysis and results are presented below for each pollutant.

Lead

There are no known sources of Pb emissions in Collier County. Permitted air pollution sources within the county include several asphalt and concrete batch plants, a pathological incinerator (Humane Society), and a small oil refinery (Exxon). This refinery is located 60 miles east of Naples. None of these sources are located within 7 km of the proposed Collier County SWERF. As a result, the Pb air quality in the vicinity of the Collier County SWERF is expected to be representative of remote, background levels, and below the air quality de minimis level of 0.1 ug/$m^3$, 24-hour average.

KBN ENGINEERING AND APPLIED SCIENCES, INC.
P. O. Box 14288 5700 SW 34th Street Gainesville, FL 32604 904/375-8000

Ambient air monitoring for Pb has not been conducted in Collier County. The nearest such monitor is located in the northwestern portion of Dade County (site 0860-021, Thompson Park). Data from this monitor showed quarterly arithmetic averages of 0.1, 0.0, 0.0 and 0.1 ug/$m^3$ for the four quarterly periods in 1984. The Pb air quality levels at the site of the proposed Collier County SWERF, because of its remote location, are expected to be lower than at the Dade County site, which is influenced by urban and industrial development.

Based upon the above analysis, it is concluded that the Pb air quality at the Collier County site is currently below the de minimis air quality levels. Therefore, there is no need to conduct preconstruction PSD monitoring for Pb, and it is requested that the proposed facility be exempt from such monitoring.

Fluorides

There are no known sources of Fl in Collier County. As a result, the Fl air quality is expected to be representative of remote, background levels. Ambient monitoring data for Fl in Collier County is not known to exist. The absence of any known existing sources of Fl in the county renders such monitoring as unnecessary. Based upon these considerations, it is concluded that the Fl air quality in the vicinity of the proposed Collier County SWERF is presently below de minimis air quality levels. As a result, there is no need to conduct preconstruction PSD monitoring for Fl, and it is requested that the proposed facility be exempt from such monitoring.

If you have any questions concerning this analysis, or require additional information, please do not hesitate to call me at 904/375-8000.

Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer

DAB/msb

cc: Mr. Peter Cunningham
Mr. Robert E. Fahey

*Board of County Commissioners*
COLLIER COUNTY GOVERNMENT COMPLEX
SOLID WASTE DEPARTMENT
BUILDING D



September 16, 1985

Ed Svec
Air Permitting Engineer
Florida Department of Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301

Subject: Asbestos Disposal, Air Quality Permit

Dear Mr. Svec:

Collier County is committed to continue County operation of the landfill facility associated with the proposed resource recovery plant. Any asbestos wastes would not knowingly be processed through the resource recovery facility, but would be landfilled.

Several buildings here at the complex were recently renovated to remove asbestos. The Ft. Myers DER Office tracked each load to the landfill and required identification of the location of burial, both vertical and horizontal, for future reference. It is anticipated that any future asbestos disposal would be regulated in the same manner.

Please advise this office if additional information or assurance are necessary.

Sincerely,

Robert E. Fahey
Director

REF/jhc

cc: T. Kuck
N. Dorrill
R. McCormick
L. Tatman
P. Cunningham

3301 TAMIAMI TRAIL EAST NAPLES, FLORIDA 33962-4977 813-774-8999