



**LEE COUNTY**  
SOUTHWEST FLORIDA

**BOARD OF COUNTY COMMISSIONERS**

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July 21, 1999

Hamilton S. Oven, Jr.  
Administrator  
Siting Coordination Office  
Department of Environmental  
Protection  
2600 Blair Stone Road  
Twin Towers Office Building  
Tallahassee, Florida 32399

**RECEIVED**

AUG 06 1999

BUREAU OF AIR REGULATION

Re: Lee County Resource Recovery Facility;  
Case No. PA90-30

Dear Mr. Oven:

On behalf of Lee County, I am sending this letter to the Department of Environmental Protection because Lee County wishes to clarify and modify the conditions of certification for the Lee County Resource Recovery Facility (Facility). The County also wants to clarify and amend the PSD permit (No. PSD-FL-151 (A)) for the Facility, which is necessary to ensure that the PSD permit and the conditions of certification for the Facility are consistent with each other. More specifically, Lee County requests the Department to:

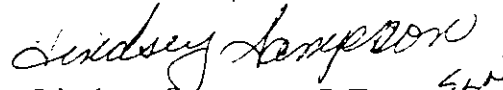
1. Clarify the testing and other requirements concerning the airborne emissions for the Facility;
2. Clarify the description of the fuels that may be used at the Facility;
3. Authorize the construction and operation of a yard waste processing facility on the certified site; and
4. Authorize the construction and operation of a materials recovery facility on the certified site.

Each of these items is discussed in more detail in the text that is attached hereto.

Enclosed with this letter is a check (No. 224197) from Lee County to the Department in the amount of \$10,000, which is to be used to pay the applicable DEP fee for a modification to the conditions of certification, pursuant to DEP Rule 62-17.293(1)(c)2., F.A.C. It is our understanding that a separate fee is not required for the changes to the Facility's PSD permit.

Please call me at (941) 479-8580 or call David S. Dee at (850) 681-0311 if you have any questions about the County's request.

Very truly yours,

  
Lindsey Sampson, P.E. *LSW*  
Deputy Director  
Solid Waste

cc: Clair Fancy (Certified Mail-Return Receipt)  
Susan Coughanour (Certified Mail-Return Receipt)  
Al Linero (Certified Mail-Return Receipt)  
Phil Barbaccia (Certified Mail-Return Receipt)  
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Tom Erickson (Certified Mail-Return Receipt)  
Larry Johnson  
David Owen  
David S. Dee

## **1.0 CLARIFICATIONS TO AIR PERMIT PSD-FL-151 AND CONDITIONS OF CERTIFICATION**

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Lee County requests the Florida Department of Environmental Protection ("DEP") to clarify or amend the conditions of certification and air permit ( PSD-FL-151) for the Facility. In general, the County requests changes to the conditions of certification and air permit so that these documents will be consistent, where necessary, with 40 CFR 60 Subpart Cb, which was adopted by reference in Rule 62-204.800(8)(b), F.A.C. The specific clarifications and/or amendments that Lee County proposes are:

- A. To eliminate the annual compliance test requirements for arsenic, beryllium, fluoride, sulfuric acid mist, ammonia, and volatile organic compounds (VOC);
- B. To change the annual compliance test requirement from two separate tests per unit for particulate matter/visible emissions (one for normal operation and one for soot blowing operation) to a single test of three runs per unit, with one run conducted during soot blowing operation and two runs conducted under normal operating conditions;
- C. To replace the general two-hour exemption for excess emissions during start-up, shutdown, and malfunctions with the industry specific three-hour exemption established by EPA in 40 CFR Section 60, Subpart Cb;
- D. To change the test method for mercury from EPA method 101A to EPA method 29, as required by DEP Rule 62-296.416(3)(d)1, F.A.C.;
- E. To reduce the permit limit for mercury from 140  $\mu\text{g}/\text{DSCM}$  to 70  $\mu\text{g}/\text{DSCM}$  or 85 percent reduction of mercury by weight, as required by DEP Rules 62-296.416(3)(a)1 and 62-204.800(8)(b), F.A.C.;
- F. To increase the allowable percentage of tires combusted from 3% to 7% of the total amount of waste processed; and
- G. To revise the roof temperature monitoring requirement

The County also would like DEP to clarify the description of the fuel that may be used at the Facility. The rationale for each one of the proposed changes is described in the following sections.

A. *Eliminate Annual Compliance Tests for Arsenic, Beryllium, Fluoride, Sulfuric Acid Mist, Ammonia, and VOC*

Pursuant to Specific Condition 3.c. of the Facility's PSD permit and Sections XIV.A.1.a and XIV.A.2.c of the Conditions of Certification, the Facility currently conducts annual compliance testing for arsenic, beryllium, fluoride, sulfuric acid mist, ammonia, and VOC. The County would like to eliminate the annual test requirement for these substances, based upon the Facility's previous compliance test results, which have repeatedly shown that the Facility's emissions are significantly below the permitted limits for these parameters and most are typically below detection limits. The results of the Facility's compliance tests have been summarized in Table 1.

The permit limits for arsenic, as given by Specific Condition 2.n. of the PSD permit and Specific Condition XIV.A.1.a (14) of the Conditions of Certification, are  $9.10 \times 10^{-6}$  lb/MMBtu,  $2.50 \times 10^{-3}$  lb/hr, and 0.01 ton/yr. As Table 1 shows, with the exception of Unit No. 2 during the 1998 test, arsenic emissions from the Facility have been consistently below the minimum detection limit. Even the highest emissions levels detected, for Unit No. 2 in 1998, are 90 percent less than the permit limits.

The permit limits for beryllium, as given by Specific Condition 2.l. of the PSD permit and Specific Condition XIV.A.1.a (12) of the Conditions of Certification, are  $1.35 \times 10^{-7}$  lb/MMBtu,  $3.70 \times 10^{-5}$  lb/hr, and  $1.47 \times 10^{-4}$  ton/yr. The test results for beryllium show only one value above the minimum detection limit, for Unit No. 2 in 1998, and this measurement was nearly 50 percent less than the permitted limit.

The permit limits for fluoride, as given by Specific Condition 2.j. of the PSD permit and Specific Condition XIV.A.1.a (10) of the Conditions of Certification, are 5 ppmdv @ 7% O<sub>2</sub>, 0.0035 lb/MMBtu, 0.96 lb/hr, and 3.8 ton/yr. As shown in Table 1, with the exception of Unit No. 1 measurements during the 1996 test and one Unit No. 2 value in 1998, fluoride emissions from the Facility have consistently been below the minimum detection limit. Even the highest emissions detected, on Unit No. 1 in 1996, are 96 percent less than the permit limits.

The permit limits for sulfuric acid mist ( $H_2SO_4$ ), as given by Specific Condition 2.i. of the PSD permit and Specific Condition XIV.A.1.a(9) of the Conditions of Certification, are 0.036 lb/MMBtu, 9.85 lb/hr, and 39.3 ton/yr. The test results for  $H_2SO_4$  given in Table 1 show only two testing dates, 1994 and 1998, with emission values greater than 7% of the permitted limits.  $H_2SO_4$  emissions from the Facility have been, on average, 98 percent less than the permitted limit, and even the highest emissions detected, for Unit No. 1 in 1998, was nearly 48 percent less than the permitted limit.

The permit limit for ammonia, as given by Specific Condition 2.p. of the PSD permit and Specific Condition XIV.A.1.a(16) of the Conditions of Certification, is 50 ppmv. As shown in Table 1, with the exception of the Unit No. 2 measurement during the 1996 test, ammonia emissions have been, on average, 98 percent less than the permitted limit. Even in 1996, emissions were nearly 96 percent less than the permitted limit.

The permit limits for VOC, as given by Specific Condition 2.g. of the PSD permit and Specific Condition XIV.A.1.a (7) of the Conditions of Certification, are 37 ppmv corrected to 7 percent  $O_2$ , 0.021 lb/MMBtu, 5.80 lb/hr, and 23 ton/yr. The test results for VOC given in Table 1 show that, with the exception of the 1995 test, VOC emissions from the Facility have consistently been below minimum detectable limits. Even in 1995, emissions for both Unit Nos. 1 and 2 were nearly 95 percent less than the permitted limit.

As shown on Table 1, the Facility's emissions of these parameters are either not detectable or only a small fraction of the concentrations allowed by the PSD permit and the Conditions of Certification. Given these values, the County believes it is unnecessary and unwarranted to continue to incur the cost of stack testing for these parameters. Therefore, the annual test requirements should be eliminated.

The County's request is consistent with EPA's approach to stack testing at similar resource recovery facilities, as reflected in EPA's New Source Performance Standards (NSPS) and Emission Guidelines (EG) for municipal waste combustors (MWC), 40 CFR 60, Subparts Eb and Cb, respectively. EPA's NSPS and EG do not require stack testing for these substances because these materials generally are not present in meaningful concentrations in the emissions from MWCs. Instead, EPA requires testing and monitoring of surrogate parameters. Lee County believes EPA's approach should be followed here, especially given the stack test data for Lee

County's Facility.

***B. Change the Annual Compliance Test Requirement for Particulate Matter/Visible Emissions***

Pursuant to Specific Condition 3.c. of the PSD permit, the Facility currently conducts two separate tests (three runs each) on its boiler units for particulate matter/visible emissions. One test is conducted during normal operations and one test is conducted under soot blowing conditions. On a day-to-day basis, however, each unit conducts soot blowing activities for less than 10 percent of the total time the boilers are operated. Annual compliance test results for particulate matter/visible emissions indicate no significant difference in particulate matter/visible emissions detected for soot blowing versus normal operations. These results are presented in Table 2.

Based on these facts, the County proposes to replace the current requirement of two separate tests per unit with a single test for each unit. This test would consist of three runs, with one run conducted during soot blowing operations and two runs conducted during normal operations. It is the opinion of the County that the results of such a test would satisfactorily represent the Facility's emissions under actual operating conditions.

***C. Replace DEP's General Two-Hour Exemption for Start-up, Shutdown, and Malfunctions with EPA's Industry-Specific Three-Hour Exemption***

Pursuant to Specific Condition 4.b. of the PSD permit, the Facility has a two-hour exemption for excess emissions due to start-up, shutdown, and equipment malfunctions, during which time emissions exceeding the standards given in Specific Condition 2 are allowable. However, EPA authorized a three-hour exemption period in 40 CFR Section 60.58b, which applies to the Facility by reference pursuant to 40 CFR Section 60.38b (Subpart Cb). EPA's three hour period for excess emissions is industry-specific and, therefore, is a more appropriate time period for start-up, shutdown, and malfunctions associated with municipal waste combustors, like Lee's Facility. Additionally, the PSD Permit is not consistent with Specific Condition XIV.A.3.b of the Facility's Conditions of Certification, which indicates that "The emission standards for this facility shall apply at all times except during periods of start-up, shut-

down, or malfunction, provided that the duration of start-up, shut-down, or malfunction shall not exceed three hours per occurrence.” The County, therefore, requests that its PSD permit be revised to replace DEP’s standard two-hour period in Specific Condition 4.b. with the EPA approved, industry-specific three hour period set forth in 40 CFR 60.58b and the Conditions of Certification.

**D. *Change Mercury Test Method for Mercury, Lead and Cadmium to EPA Method 29***

Specific Condition 3.a. of the PSD permit and Specific Condition XIV.A.2.a of the Conditions of Certification require the Facility to conduct annual mercury testing in accordance with EPA Method 101A. However, DEP Rule 62-296.416(3)(d)1, F.A.C., states that the test method for mercury shall be EPA Method 29, which was adopted by reference in Rule 62-204.800(8)(b), F.A.C. The County, therefore, requests that its PSD permit be revised to specify the use of EPA Method 29, consistent with the current DEP testing requirements for mercury.

EPA Method 29 also is required by EPA for lead and cadmium testing pursuant to 40 CFR 60, Subpart Cb. Therefore, the County would like DEP to modify the Facility’s PSD permit and Conditions of Certification to require the use of Method 29 for lead and cadmium.

**E. *Reduce the Permit Limit for Mercury from 140 µg/DSCM to 70 µg/DSCM or 85 Percent Reduction of Mercury By Weight***

Pursuant to Specific Condition 2.m. of the PSD permit, the Facility’s mercury emissions shall be limited to 140 µg/DSCM at 7 percent oxygen or the Facility must achieve at least a 70 percent removal efficiency by weight. However, Rule 62-296.416(3)(a)1, F.A.C., provides that mercury emissions “shall not exceed 70 µg/DSCM of flue gas, corrected to 7 percent oxygen, or 20 percent by weight of the mercury in the flue gas upstream of the mercury control device (80 percent reduction by weight), whichever is less restrictive.” For facilities that are also subject to Rule 62-204.800(8)(b), F.A.C., the more restrictive mercury standard of 85 percent reduction shall apply. Therefore, the County requests DEP to update and reduce the permit limits for the Facility’s mercury emissions to (a) 70 µg/DSCM at 7 percent oxygen or (b) 85 percent removal efficiency by weight, whichever is less restrictive.



***F. Increase the Percentage of Tires Combusted from 3% to 7% of Total Waste Processed***

Pursuant to Specific Condition 4.f. of the PSD permit, the Facility is currently authorized to combust up to 3% (by weight) of used tires with the municipal solid waste. The County is aware of no requirement in Chapter 62 of the Florida Administrative Code, Chapter 40 of the Code of Federal Regulations, or any other rules or codes applicable to the Facility that would establish a specific limit on the percentage of times used as fuel. The Facility has experienced lower energy production during periods of heavy rainfall due to factors such as the lower HHV of the wet MSW, seasonal fluctuations in waste deliveries, and the rate at which waste is processed. An increase in the percentage of tires combusted would improve the combustion process and the efficiency of the Facility during these periods. In addition, the Facility already has the resources available to accommodate an increase in the feed rate of waste tires, including sufficient scrubber capacity for the reduction of sulfur dioxide. This increase would also aid in converting to energy the growing number of waste tires generated in southwest Florida.

The County, therefore, requests its PSD permit be amended to increase the allowable percentage of tires combusted from 3% to 7% (by weight) of the total amount of waste processed, based upon the Facility's monthly throughput, as measured at the Facility's scalehouse. Given the test results in Table 1 for SO<sub>2</sub> and HCl, the County is confident that the Facility can comply with its permit limits while using an increased number of tires as fuel.

***G. Revise the Roof Temperature Monitoring Requirement***

Specific Condition 4.a of the PSD permit and Condition XIV.A.3.a of the Conditions of Certification state:

During start-up procedures, propane gas shall be used to preheat the combustion zone to achieve a minimum furnace roof temperature and a minimum temperature of 1800 degrees F above the grate (at a height specified by the vendor) prior to the ignition of MSW. The appropriate minimum roof temperature shall be established by the Department, based on the test data collected during the facility's initial start-up operations, and shall be correlated to the minimum temperature of 1800 degrees F above

the grate.

These conditions also state:

During all shutdown procedures, propane gas shall be used to ensure that the temperature above the grate, as specified above, does not drop below 1800 degrees F and the roof temperature is maintained above the correlated minimum roof temperature while any MSW is burning.

Lee County is not aware of any promulgated rule or other standard which requires the roof temperature of the boiler unit to be monitored on a continuous basis as an indicator that an 1800 degree F grate temperature has been achieved. Lee County requests that these permit conditions be revised to be consistent with the requirements that are used by the Department for other similar facilities.

For example, the Hillsborough County Resource Recovery Facility's permits (PSD-FL-121(B); PA 83-19) as modified on June 28, 1999, state:

During boiler start-up, the auxiliary burners shall be operated at their maximum capacity prior to the introduction of MSW to the boilers, and shall remain in operation until the lime spray dryer and particulate control device are fully operational.

This language is sufficient to ensure that good operating practices are followed during periods of star-up and shutdown. Lee County believes the same language should be adopted for Lee County's Facility.

The Facility adheres to good combustion operating practices in accordance with 40 CFR Section 60.53b. The Facility operates and maintains continuous emissions monitors (CEMS) for oxygen, carbon monoxide, sulfur dioxide, oxides of nitrogen, opacity, and temperature in accordance with 40 CFR Section 60.58b and records and maintains the CEMS data in accordance with 40 CFR 60.59b. These steps ensure and verify continuous compliance with the emissions limitations in the Conditions of Certification. The Facility minimizes its airborne emissions by using front-end source separation and recycling programs, as well as post-combustion air pollution control systems.

Therefore, the County proposes that the term "fuel" should be clarified as follows:

"All solid waste except: hazardous waste, untreated medical waste, nuclear waste, and those special wastes as prohibited by law, such as lead acid batteries. The waste materials may be received as a mixture or as a single-item stream of household commercial, institutional or industrial discards (except industrial process waste)."

The County believes that the proposed clarifications to the description of "fuel" will have no significant adverse environmental impacts on the air emissions from the Facility or to the environment in general.

### *Natural Gas*

Because it appears that a natural gas transmission pipeline may be constructed within reasonable proximity to the Facility, the County requests that natural gas be approved as an acceptable auxiliary fuel for the Facility.

### **3.0 PROPOSED YARD WASTE PROCESSING OPERATION**

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#### ***Yard Waste Processing***

For the purposes of this document, "yard waste" means vegetative material resulting from landscaping maintenance or land clearing operations, including tree and shrub trimmings, grass clippings, palm fronds, trees, and tree stumps. Lee County plans to develop a yard waste processing operation primarily to produce mulch.

#### ***Process Description***

The basic mulching process is divided into three phases: staging; processing; and storage. Staging is where the yard waste is brought into the Facility, weighed, separated into categories, debagged, and shredded. Mulch can be immediately distributed after the initial shredding or it can be sent to processing. Processing is where the shredded material is placed in windrows, or piles, and allowed to sit and "cook", ridding it of any pathogens, seeds, insects, or other undesirable characteristics, for the amount of time necessary to attain the desired product. The final phase is storage, where the mulch can be stock piled to await distribution.

#### ***Existing Operation***

Currently Lee County has a contract with Gulf Disposal to operate a mulching facility at the Gulf Coast Landfill with a capacity of 17,000 cubic yards per year. The present facility utilizes a front-end loader to receive incoming yard waste that is both loose material and in plastic bags. The material is size reduced in a tub grinder, and then screened to remove the plastic remnants and the oversize fraction. It is then stockpiled, where it awaits distribution. The final product may be used as consumer mulch product, landfill cover, soil amendment, or for other similar purposes.

#### ***Proposed Operation***

The proposed new yard waste operation will be very similar to the existing mulching facility at the Gulf Coast Landfill, but the proposed yard waste operation will be more cost-effective for the residents of Lee County because it will combine existing material weighing and accounting operations and because it will be performed by the County, which does not need to earn a profit.

### ***Location and Land Area Requirements***

The future yard waste processing operation for Lee County will be situated in the northwest corner of the 155-acre tract of land that is zoned as Industrial Planned Development (IPD) in the original Power Plant Site Certification application. (Figure 1). The land allotted for this proposed operation is approximately 13 acres. To the north and west is a large wooded area, with a conservation easement of approximately 21 acres to the south/southeast, and the existing Facility structures to the east. Lee County owns all of the land surrounding the proposed yard waste processing operation.

### ***Site Requirements***

The land area for the yard waste processing operation will be large enough to accommodate an entire year's volume of incoming material. Typical processing site capacities for a mulching facility require 1 acre per 1,500 to 3,000 tons per year of mulch processed. The yard waste processing operation is estimated to process approximately 40,000 tons annually, which equates to a land area of approximately 13.4 acres.

The proposed site will allow room for the three operational phases of mulching: staging; processing; and storage. A typical formula used in mulch production, to allocate space, utilizes the following percentages:

1. 25% for the staging area
2. 75% for the processing and storage area.

Of the total 13 acres, approximately 4 acres will be designated for staging. The function of the staging area is allow for receiving, unloading, inspecting, debugging, mixing, and grinding yard waste. This area will allow for trucks to enter and exit.

There will be approximately 9.0 acres for processing, where windrow construction occurs, and for storage, where stockpiling of material will occur during and after any decomposition process.

### ***Setbacks***

All local zoning and environmental requirements relating to setbacks and buffers will be met. In the last five years, there have been no reported adverse effects on the environment from yard waste

## 2.0 CLARIFICATION OF THE DESCRIPTION OF FUEL

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Lee County requests DEP to clarify the description of the fuels that may be used in the Facility. Subsection XIV. B. of the Conditions of Certification states:

“The SWERF (Facility) shall utilize refuse such as garbage and trash (as defined in Chapter 17-7, F.A.C.) as its fuel. Use of alternate fuels except for distillate fuel oil or natural gas in the startup burners would necessitate modification of these Conditions of Certification. Refuse as fuel shall not include “hazardous waste” as defined in Chapter 17-30, F.A.C. The alternate fuel, which may be used distillate oil, shall not contain more than 0.3% sulfur by weight and shall not be used more than required during boiler startup or shutdown.”

Subsection E. states that “No suspected or known hazardous, toxic, or infectious wastes as defined by Federal, State, or local statutes, rules, regulations, or ordinances shall be burned or landfilled at the site.”

Subsection A.3.f. states that the following materials are restricted at the Facility:

- biohazardous waste
- sewage sludge
- hazardous waste

The Conditions of Certification are out-of-date and need to be revised, consistent with DEP’s current practices and current definition of “fuel” for MWCs. Chapter 17-7 has been replaced. “Garbage and trash” do not adequately describe the fuel accepted at the Facility.

Lee County has accepted and will continue to accept a wide variety of materials that fit within the broad state and federal definitions of MSW. In general, all solid waste will be accepted at the Facility for disposal, except hazardous waste, untreated medical waste, nuclear waste, and those special wastes that are prohibited by law, such as lead acid batteries. These materials may be received either as a mixture or as a single-item stream of household, commercial, institutional, or industrial discards (except industrial process wastes).

operations regarding setback requirements. This is based on industry experience and stated in the Florida Organics Recyclers Association Handbook of Best Management Practices for Recycling Yard Trash in Florida.

### ***Buffers***

All yard waste facilities should have buffers, such as distance, vegetation (trees), bodies of water, and/or structures, to properly control potential dust and odors. These buffers depend upon the location of the facility, materials received, and site management. Lee County owns approximately 300 acres of land surrounding the proposed site for the yard waste processing facility, which will provide a sufficient buffer to ensure on-site control of dust and odors.

### ***Ingress and Egress to the Yard Waste Operation***

Presently, there is a tire processing area located approximately 60 feet to the east of the proposed yard waste operation area, which is serviced by a paved road from within the Facility. An extension of this road will be constructed to the yard waste operation.

The road will be designed to support the anticipated vehicle types and volumes. It will also be designed to minimize any delay or back-up of vehicles entering and exiting the facility. A circular traffic flow design into the facility will allow adequate turning and dumping areas. The road will also be sufficient for shipments of mulch from the processing area.

### ***Percolation***

The yard waste operation will be conducted in an area made up of native soils and soil fill material (similar to native soils) with a surface cover of mulch material. The material receiving area and the processing equipment area will have a surface cover of crushed rock, asphalt, or shell. The minimum distance between the surface soils and the water table will be 2-5 feet.

### ***Slope***

The surface of the site will be graded to avoid standing pools of water. Lee County will provide fill sufficient to achieve a slope between 1% and 3%.

### ***Processing Operation***

#### ***Staging***

As material is received at the yard waste processing operation, it will first be weighed at the existing Facility scale house, to ensure proper recording and managing. Incoming materials will be identified and directed to separate areas designated for different types of waste. For example, some materials may need grinding, while others may not require this process.

#### ***Size Reduction***

The initial grinding of material will result in a size reduction of approximately two thirds, leaving one third the volume of the initial volume of material. By placing the material into windrows, further compaction will result in the material being approximately one fourth of the initial incoming volume.

#### ***Processing Times***

The required processing time is dependent upon the desired end product. Fresh mulch takes only the time needed to grind and screen it before it is completely processed. Sanitized mulch must go through the windrow process for a time period sufficient to attain the heat necessary to destroy seeds, pathogens, plant propagules, insects, and other unwanted characteristics of fresh mulch. Piles should remain 8 to 12 feet high in the case of mulch with low nitrogen content. Since the carbon content is high in the material that will be processed at the Lee County facility, the piles may be slightly higher.

#### ***Storage***

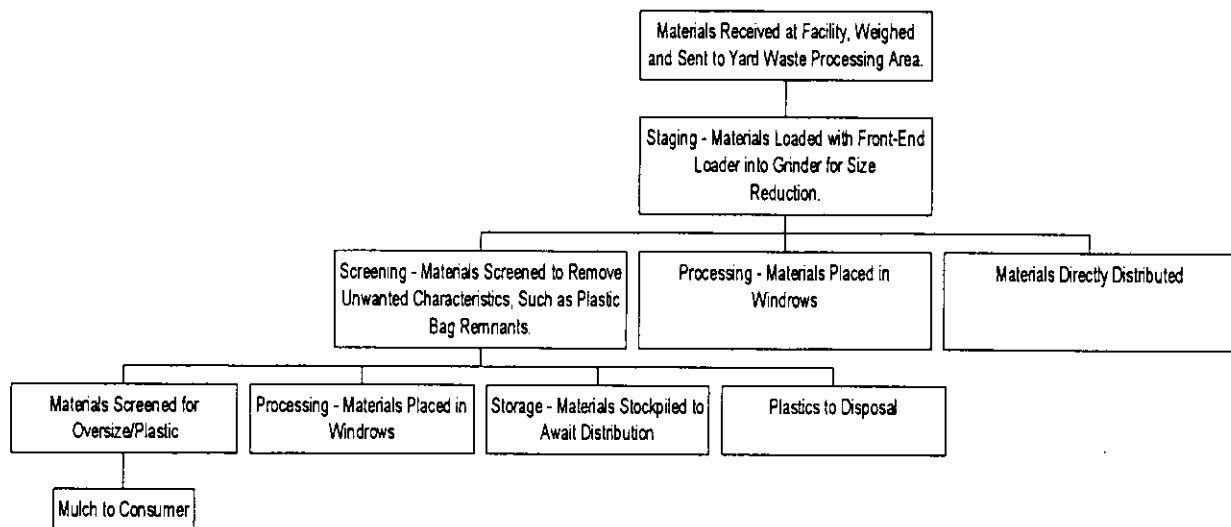
Storage area depends on the amount and type of material being received, the products to be produced, the size of the facility, and the proximity to neighboring properties. The proposed yard waste operation will be receiving mostly carbonaceous material and producing only mulch. Therefore, odors will be minimal and buffers are sufficient based on the location of the proposed operation. With material that is predominantly carbonaceous, no turning is necessary and processing time is expeditious. Processing windrows can be left in place for long periods of time, as well as the stockpiled material in the storage area.



### *Process Schematic*

Figure 2 provides a schematic for the proposed yard waste processing operation.

**Figure 2: Lee County Yard Waste Processing Operation**



### *Storm Water Runoff Considerations*

To accommodate the storm water runoff from the proposed yard waste operation, a storm water Retention Pond (Pond No.4) is proposed to be constructed on the northwest portion of the Site. Currently, it is planned that Pond No.4 will be retention only and will maintain adequate storage capacity to retain post development flow from a 25-year, 72-hour storm. The yard waste operation is proposed to create an additional 13.0 acres of storm water runoff area. The proposed Receiving/Grinding Area will have a 4-acre impervious surface area. The proposed Yard Waste Processing/Storage Area will have a 9 acre pervious surface area comprised predominantly of mulch. To provide adequate storage, Pond No.4 will need to meet the following requirements:

- 10-year, 24 hour storm: A storage capacity of 4.3 Ac.-ft below stage elevation 23.8

ft. NGVD.

- 25-year, 72 hour storm: A storage capacity of 8.7 Ac. -ft. below the lowest elevation of the 13.0 acre yard waste processing operation.

The 100-year, 72 hour storm was not considered because no buildings are planned to be constructed at the yard waste processing operation. Due to existing contours and length of overland flow, flooding of current structures at the Facility is not expected to occur as a result of the development of the yard waste processing operation.

Pond No. 4 will be constructed in the lowest lying area in close proximity to the proposed yard waste receiving/grinding area. To accommodate the post development flow from a 25 year, 72 hour storm, Pond No. 4 is currently planned to be 1.5 to 2.2 acres with an average depth of approximately 4.0 to 6.0 feet. Emergency spillway(s) will be constructed at the highest stage elevation to allow a controlled runoff in the event the pond's capacity is reached. Final depth and surface area of Pond No. 4 are dependent upon final elevations of the 13.0 acre yard waste processing area and depth to groundwater.

The actual design of the pond will be determined after the County receives conceptual approval for the yard waste facility. The detailed design will be submitted to DEP and the South Florida Water Management District at least 30 days before the commencement of construction.

## **4.0 PROPOSED MATERIALS RECOVERY FACILITY**

In Lee County's "Application for Power Plant Certification" (dated June, 1990), Section 5.4.1 "Solid Waste", the County noted that a materials recovery facility (MRF) would be incorporated in the County's solid waste management program. The County now wishes to relocate its MRF to an area adjacent to the County's resource recovery facility.

### ***Existing Operation***

Currently Lee County's MRF is located in North Fort Myers. The MRF is housed in a 45,000 square feet building and consists of two process lines that handle fiber and commingled recyclables. Figure 3 represents the present and proposed flow of materials at the MRF. Corrugated cardboard, phone books, magazines, and newspaper are separated on the fiber line. Steel cans, aluminum cans, plastics (PET, HDPE, and mixed), and glass (clear, brown, and green) are sorted on the commingled line. The MRF has 40 employees who operate the facility from 7:30 a.m. to 6:00 p.m., Monday through Friday, and process an average of 115 tons per day of recyclables.

### ***Proposed Location***

Lee County proposes to relocate its existing MRF to an area within the northeast quadrant of the Solid Waste Energy Recovery Facility Site, immediately north of the Facility's fenced boundary. (See Fig. 1).

### ***Location and Land Area Requirements***

Relocation of the existing MRF will enable all of the major components of the Lee County solid waste management system to be situated in one location. This approach will reduce impacts on highways, allow for the coordinated use of the County's personnel and equipment, and allow the County to use a single set of scales.

The proposed MRF encompasses a total area of approximately 100,000 square feet as shown in Figure 1. Approximately 50,000 square feet will be used for the MRF building, which will house the sorting and processing equipment, and will provide a tipping floor and storage areas within the structure. This will be a "free-standing" structure, rather than one that requires the structural support

from walls. The building will be designed for future expansion and the relocation of equipment as the recycling business changes.

The remaining area will be paved for the storage of roll-off containers, personnel parking and other rolling stock associated with the operation.

### *Site Requirements*

The proposed MRF site has access to necessary utilities including sewer, water, and electricity from the Facility. Based on historical power generation and export data, the in-plant electric usage has been on the order of 90,000 kWh/day, and the export has been on the order of 500,000 kWh/day. Therefore, all of the electrical needs for the MRF, which is approximately 300-350 kWh/day, will be provided from in-house power produced by the combustion of refuse at the Facility.

Access to the MRF will be provided from the extension of a paved two-lane road which presently serves the Facility. All internal roadways are designed to minimize cross-traffic conflicts between trucks. The location of the MRF allows for the continuance of existing traffic patterns.

### *Process Operation*

Initially the MRF will have approximately 40 employees. There will be approximately 35 workers hand-sorting goods. Conveyors will carry waste through a magnetic separator, screens, an air classifier, and glass crushers. While the overall process will remain virtually the same as the present operation, specific equipment and the layout of such equipment will need to remain flexible so that the MRF can respond to changes in recycling markets. As the waste stream composition changes, gradual adjustments in processing may occur (e.g., reducing the number of hand sorters in a station, or eliminating a station altogether, and/or adding automation).

Trucks bringing in recyclables will enter the Facility, as do other trucks presently bringing in municipal solid waste (MSW). The trucks with recyclables will be tared, so that an exit trip to the scale house will not be required, and will not delay the traffic flow. The incoming trucks will enter the MRF and off-load their contents on the fully enclosed tipping floor. The tipping floor will be large enough to allow an adequate buffer between rates of materials delivery and processing. It will also be large enough to eliminate awkward truck maneuvers. The floor will be designed at a uniform grade with minimal special equipment foundations, which will allow configuration changes or

replacements as necessary.

A "bobcat" loader will place the recyclable materials in the hoppers for commingled and fiber materials, respectively. (See Figure 3). The fiber waste stream will travel down one straight-line conveyor, where approximately 12-15 sorters will hand separate the paper products and any rejects. The commingled waste stream will travel down a separate conveyor. The commingled waste stream will go through a magnetic separator to remove the ferrous materials, a shaker screen to remove "fines", an air classifier to separate plastics, an eddy current to separate aluminum cans, and a hand-sorting line to separate plastics and glass.

The MRF will operate Monday through Friday, from 7:30 a.m. to 6:00 p.m., and will have a daily throughput of up to 200 tons. After the waste streams are sorted, the fiber recyclables, plastics, aluminum, and steel will be baled for storage and shipment, while the crushed glass will be placed in roll-off containers. Forklifts will be utilized for moving, storing, and loading the bales of recyclables.

### *Stormwater Runoff Considerations*

The expansion of the MRF is anticipated to create approximately 2.3 acres of additional impervious areas. Stormwater runoff will be diverted to the existing stormwater retention ponds located in the northeast portion of the Site—i.e., Storm Water Retention Pond No.1 (Pond No. 1) and Storm Water Retention Pond No.2 (Pond No.2). Stormwater control features such as diversion berms and conveyance channels may be constructed to divert run-off to the appropriate ponds.

Pond No.1 currently retains run-off from 31.6 acres, of which 1.6 acres are impervious (Raytheon Stormwater Management Calculations, 8/19/92). An additional 1.1 acres, all impervious, will be routed to Pond No.1. In the event of a 100-year, 72 hour storm, Pond No.1 is adequately sized to prevent flooding at the minimum floor elevation of 25.0 ft National Geologic Vertical Datum (NGVD).

Currently 14.8 acres, including 1.3 acres impervious, are routed to Pond No.2 (Raytheon Stormwater Management Calculations, 8/19/92). Due to the construction of the MRF, an additional 1.2 acres, all impervious, will be routed to Pond No.2. Pond No.2 has adequate capacity to prevent flooding of surrounding structures at a basin stage elevation of 25.0 ft. NGVD.

The minimum road elevation is 23.8 ft. NGVD. Additional storage capacity below stage

elevation 23.8 ft. NGVD may be required on both Ponds No.1 and No.2 in the event of a 10-year, 24 hour storm. Current calculations show both ponds provide marginal protection to roadways. Another option available is to construct a berm along the roadway low point to prevent facility storm water runoff flooding of the roadway.

The actual design of the stormwater management facilities will be determined after the County receives conceptual approval for the MRF. The detailed design will be submitted to DEP and the South Florida Water Management District at least 30 days before the commencement of construction on the MRF.

**TABLE 1**  
**ANNUAL COMPLIANCE TEST RESULTS<sup>1,2</sup> FOR ARSENIC, BERYLLIUM, FLUORIDE,**  
**SULFURIC ACID MIST, AMMONIA, AND VOC'S**  
**Lee County Solid Waste Energy Recovery Facility**

POLLUTANT	ANNUAL COMPLIANCE TEST RESULTS									
	October 1994		October 1995		June 1996		June 1997		June 1998	
	Unit No.1	Unit No. 2	Unit No. 1	Unit No. 2	Unit No. 1	Unit No. 2	Unit No. 1	Unit No. 2	Unit No. 1	Unit No. 2
<b>Arsenic</b> Permit Limits: 9.1E-06 lb/MMBtu 2.5E-03 lb/hr 0.01 ton/yr	< 1.58E-7	< 1.5E-7	< 4.05E-7	< 3.94E-7	< 1.77E-7	< 1.5E-7	< 3.41E-7	< 5.5E-7	< 4.26E-7	5.90E-07
	< 4.35E-5	< 4.29E-5	< 1.05E-4	< 1.01E-4	< 4.78E-5	< 3.92E-5	< 8.94E-5	< 1.43E-4	< 1.16E-4	1.53E-04
	< 1.84E-4	< 1.8E-4	< 4.6E-4	< 4.41E-4	< 1.84E-4	< 1.53E-4	< 3.63E-4	< 5.8E-4	< 4.2E-4	5.80E-04
<b>Beryllium</b> Permit Limits: 1.35E-07 lb/MMBtu 3.7E-07 lb/hr 1.47E-04 ton/yr	< 1.5E-8	< 1.6E-8	< 4.05E-8	< 3.94E-8	< 4.42E-8	< 4.61E-8	< 8.80E-8	< 8.9E-8	< 8.0E-8	< 8.02E-8
	< 4.3E-6	< 4.3E-6	< 1.05E-5	< 1.01E-5	< 1.20E-5	< 1.21E-5	< 2.31E-5	< 2.3E-5	< 2.16E-5	< 2.08E-6
	< 1.9E-5	< 1.9E-5	< 4.6E-5	< 4.41E-5	< 4.59E-5	< 4.75E-5	< 9.38E-5	< 9.36E-5	< 7.80E-5	7.87E-05
<b>Fluoride</b> Permit Limits: 5 ppmdv @ 7% O <sub>2</sub> 0.0035 lb/MMBtu 0.96 lb/hr 3.8 ton/yr	< 0.044	< 0.053	< 0.0303	< 0.0311	0.18	< 0.046	< 0.104	< 0.116	< 0.11	< 0.11
	< 1.5E-8	< 1.6E-8	< 2.15E-5	< 2.21E-5	0.00013	< 0.000036	< 7.39E-5	< 8.28E-5	< 7.8E-5	< 7.75E-5
	< 4.3E-6	< 4.3E-6	< 0.00541	< 0.00531	0.034	< 0.009	< 0.0199	< 0.0209	< 0.02	< 0.02
	< 1.9E-5	< 1.9E-5	< 0.024	< 0.023	0.13	< 0.037	< 0.081	< 0.085	< 0.072	0.08
<b>VOC's (Total Hydrocarbons)</b> Permit Limits: 37 ppmdv @ 7% O <sub>2</sub> 0.021 lb/MMBtu 5.8 lb/hr 23 ton/yr	< 2.0	< 2.0	1.91	2.04	< 1.7	< 1.6	< 0.335	< 0.351	< 0.366	< 0.378
	< 2.7E-3	< 2.9E-3	0.000858	0.000914	< 0.0028	< 0.0027	< 2.01E-4	< 2.1E-4	< 2.19E-4	< 2.26E-4
	< 0.8	< 0.9	0.217	0.222	< 0.8	< 0.7	< 0.0536	< 0.0523	< 0.060	< 0.060
	< 3.3	< 3.8	0.95	0.97	< 2.9	< 2.7	< 0.22	< 0.2	< 0.22	< 0.23
<b>Sulfuric Acid Mist</b> Permit Limits: 9.85 lb/hr 39.3 ton/yr 0.036 lb/MMBtu	3.2	3.1	< 0.0368	< 0.0358	0.5	0.68	0.39	0.469	5.23	3.65
	14	14	< 0.16	< 0.16	1.9	2.7	1.58	1.91	18.9	13.8
	0.012	0.012	< 1.47E-4	< 1.47E-4	0.0019	0.0026	0.0015	0.00198	0.02	0.013
<b>Ammonia</b> Permit Limits: 50 ppmdv	0.91	1.25	0.756	0.705	0.86	2.1	1.43	1.15	0.93	0.52

<sup>1</sup> Based on compliance test reports previously submitted to the Florida Department of Environmental Protection.

<sup>2</sup> A value preceded by the "<" symbol indicates results which are below minimum detectable limits.

**TABLE 2**

**ANNUAL COMPLIANCE TEST RESULTS<sup>1</sup> FOR PARTICULATE MATTER (NORMAL AND SOOTBLOWING CONDITIONS)  
Lee County Solid Waste Energy Recovery Facility**

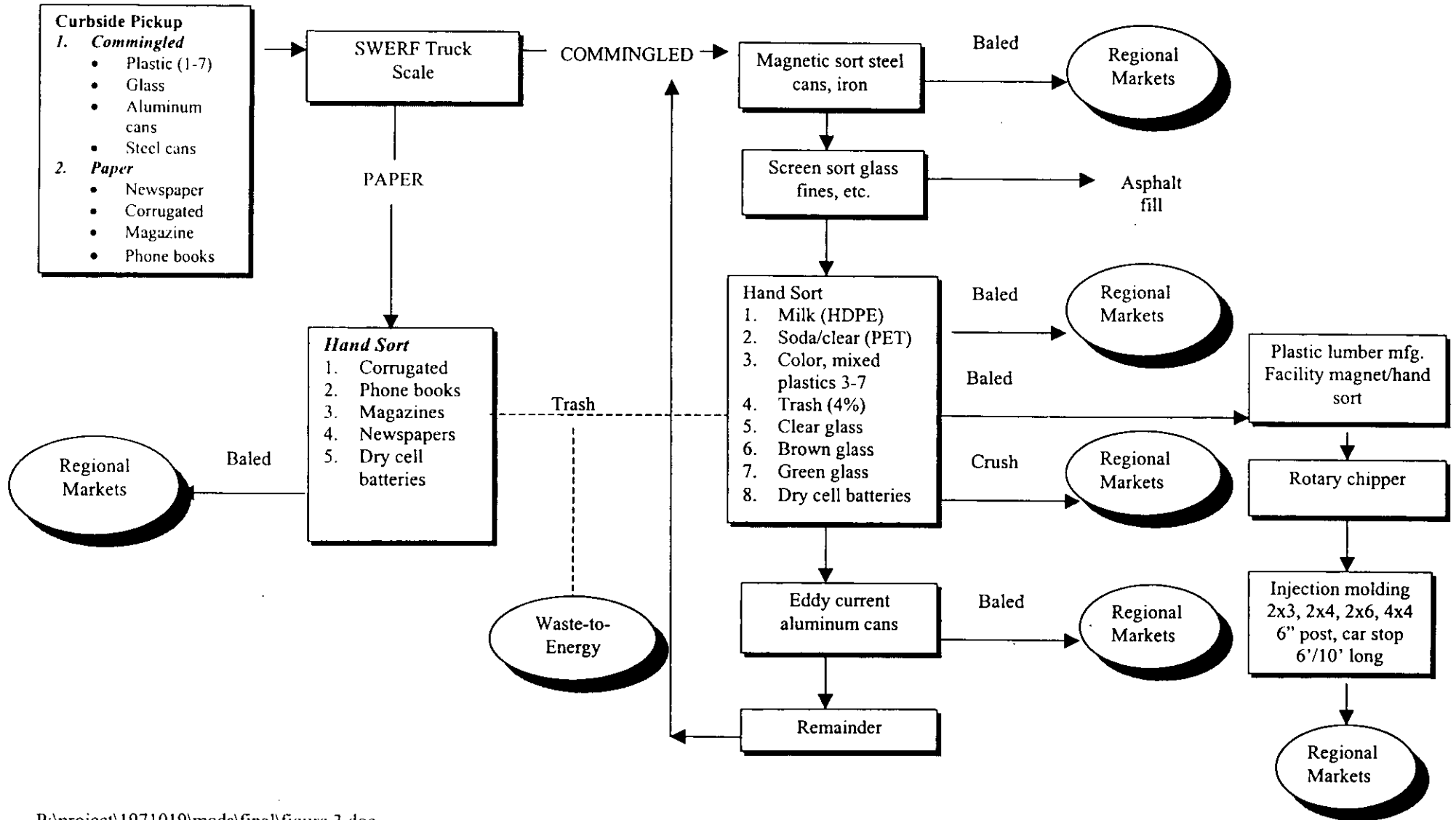
POLLUTANT	ANNUAL COMPLIANCE TEST RESULTS									
	October 1994		October 1995		June 1996		June 1997		June 1998	
	Unit No.1	Unit No. 2	Unit No. 1	Unit No. 2	Unit No. 1	Unit No. 2	Unit No. 1	Unit No. 2	Unit No. 1	Unit No. 2
<b>Particulate Matter</b>										
<i>Permit Limits:</i> 0.01 gr/dscf @ 7% O <sub>2</sub>	0.0006	0.0007	1.09E-03	5.05E-04	0.0005	0.0018	0.00162	0.00199	0.004	0.003
5.34 lb/hr	0.297	0.369	0.578	0.267	0.259	0.976	0.905	1.07	2.29	1.49
21.3 ton/yr	1.34	1.64	2.5	1.2	0.99	3.82	3.7	4.3	8.27	5.62
<b>Particulate Matter (under normal soot blowing conditions)</b>										
<i>Permit Limits:</i> 0.01 gr/dscf @ 7% O <sub>2</sub>	0.0009	0.0006	0.00345	0.00204	0.0001	0.0002	0.00158	0.00159	0.004	0.002
5.34 lb/hr	0.5	0.35	1.82	1.05	0.073	0.094	0.783	0.848	1.98	1.19
21.3 ton/yr	2.05	1.47	8	4.6	0.28	0.37	3.2	3.5	7.14	4.5

<sup>1</sup> Based on compliance test reports previously submitted to the Florida Department of Environmental Protection.



FIGURE 3

MATERIALS RECOVERY FACILITY





LEEE COUNTY COMMISSIONERS

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEC 26 1997

SITING COORDINATION

AL ✓  
copy to Susan

P.O. Box 398  
Fort Myers, Florida 33902-0398  
(941) 335-2111  
(941) 479-8181

Writer's Direct Dial Number

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One  
December 19, 1997

R. St. Cerny  
Two

Three

W. Coy  
Four

Albion  
Five

J. Stilwell  
Manager

. Yaeger  
Attorney

. Parker  
Learning

Mr. Hamilton Oven  
Florida Department of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

RE: Lee County Waste To Energy Plant

Dear Mr. Oven:

PSD-FI-151

Lee County is considering several additions to our integrated solid waste management system that will provide better efficiencies through consolidation of our facilities. In addition, we are looking at other options that will enhance the cost effectiveness of the system through additional revenues and reduced cost. Several of these options will require a modification to our Power Plant Site Certification while other options appear to us to be simple additions or changes that will not require modification to the conditions of certification.

The following list summarizes the items that we are considering. We recognize that the items involving construction may require permits from the Water Management District, DEP, and/or other applicable agencies even if no modifications to the conditions are required.

1. Provide modifications for one (or both) furnace to combust landfill gas. It is anticipated that the gas will be collected, compressed and dried at the Gulf Coast Landfill and sent through a pipeline approximately three miles to the facility.
2. Change the annual testing requirement for arsenic, beryllium, and fluoride from an annual basis to once every five years. Testing for these parameters has consistently shown no measurable quantities at the Lee County facility.
3. Increase the percentage of tires permitted to be combusted from 3% to 5% of the total amount of waste combusted.
4. Provide for the acceptance and combustion of additional homogenous solid waste at the facility that may be generated by manufacturers or other entities. Waste that is generally found in all municipal solid waste but may require specific documentation regarding the handling and ultimate disposal is anticipated to be accepted.

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BUREAU OF AIR REGULATION

5. Provide for the construction of a small household hazardous waste collection and transfer facility on the site. This facility will complement our existing central collection facility by providing citizens a location to drop off certain household wastes. It is planned that this waste will be accepted "by appointment only" during certain hours of the week. This facility will be manned during all acceptance periods.
6. Eliminate the requirement for annual VOC testing at the stack.
7. Allow for an area at the site to mulch and process yard waste and other horticultural material in order to produce soil supplements, mulch, and/or wood fuel stock.
8. Allow for the construction of an onsite material recovery facility (MRF) for the purpose of separating, processing, and packaging recyclable materials ready to be shipped to buyers.
9. Allow for the construction of a facility to recover nonferrous metal from the ash and/or process and densify ferrous metals in order to increase marketability.

We are currently preparing a site plan that shows the various planned facilities in relation to the plant and will forward that drawing to you. We would like to meet with you and discuss these items within the next few weeks particularly regarding the items that will require a modification to the conditions.

Please call me if you have any questions.

Sincerely,



Lindsey J. Sampson, P.E.  
Director  
Solid Waste Management

LJS/h

cc: L. Johnson  
D. Owen  
T. Eriksen  
"Chip" Colette  
D. Dee