(FOR INTERNAL USE ONLY)

State of Florida summary checklist for Title V permit applications

Facility Owner/Operator Name: Solid Waste Authority of Palm Beach Co.
Facility ID No.: 0990234 Site Name: _____
County: Palm Beach
application receipt date 07/17/02

I. Preliminary scanning of application submitted.

a. Was application submitted to correct permitting authority? Y ✓ N ___
b. Was an application filed? Y* ✓ N ___
c. Was the application filed timely? Y* ✓ N ___
d. Application format filed [check one].
Hard copy of official version of form? ___ ELSA? ___
A facsimile of official version of form? ___ Some combination? ✓
e. 4 copies (paper/electronic) submitted? Y ✓ N ___
f. Electronic diskettes protected/virus scanned/marked? Y ___ N ___ N/A ✓
by _____ date ___/___/___

g. Entire hard copy of Section I. provided (Pages 1-11 of form)? Y ✓ N ___
Facility identified (Page 1)? [if not complete a Page 1] Y* ✓ [Attached ___]
R.O. certification signed and dated (Page 2)? Y* ✓ N ___
P.E. certification signed and dated (Page 7)? Y* ✓ N ___

h. Any confidential information submitted? Y ___ N ✓
If yes, R.O. provided hard copy to us and EPA? Y* ___ N ___
If yes, hard copy locked up and note filed with application? Y* ___ N ___

i. Type of application filed.
TV renewal application only? Y ___ N ___
Initial TV application only? Y ___ N ___
All units demonstrated initial compliance? Y ___ N ✓
If, not included compliance plan? Y ___ N ✓ n/a
Any units subject to acid rain? Y ___ N ___

j. CAM Plan submitted? Y ___ N ✓

Note(s): [*] = mandatory.

Comment(s): _____

Reviewer's initials BB date 08/19/02 Concurrence initials _____ date ___/___/___

(FOR INTERNAL USE ONLY)

State of Florida summary checklist for Title V permit applications (cont'd)

II. Application logging.

ARMS Permit Number assigned 0990234-007-AV.

logged into ARMS by initials _____ date ___/___/___

III. Initial distribution of application.

a. Disposition of 4 paper/electronic copies submitted:

1- Clean originals to file? Y____ N____

1- ____ District Y____ N____

1- _____ County [affected local program]? Y____ N____

1- Permit engineer(s) _____, _____

b. Disposition of electronic files submitted:

copy placed onto PC? Y____ N____

c. Disposition of ELSA submitted:

version used [circle]: 1.0 1.1 1.2.1 1.3 1.3a 1.3b

Uploaded to EARS? Y____ N____

by _____ date ___/___/___

d. Electronic information submitted previewed? Y____ N____ N/A____

Comment(s):_____

{this checklist was developed from Rule 62-213.420(1)(b)2., F.A.C. and DARM policy}

6/19/02

Apcheck.doc

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF PERMIT

In the Matter of an
Application for Permit by:

Mr. John D. Booth, Executive Director
Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

DEP Permit No. 0990234-006-AC and PSD-FL-108F
North County Resource Recovery Site
Biosolids Pelletization Facility
Palm Beach County

/

Enclosed is the Final Permit Number 0990234-006-AC and PSD-FL-108F for the construction of a Biosolids Pelletization Facility (BPF) at the North County Resource Recovery Facility Site. The site is located at 7501 North Jog Road, West Palm Beach, Palm Beach County. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

for Trina L. Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT (including the Final permit) was sent by certified mail (*) and copies were sent by U.S. Mail or electronic mail before the close of business on 2/3/06 to the person(s) listed:

Mr. John D. Booth, SWA *
jbooth@swa.org

Mr. Alex H. Makled, P.E., CDM
makledah@cdm.com

Mr. Ray Schauer, SWA
rschauer@swa.org

Ms. Jill Grimaldi, CDM
GrimaldiJT@cdm.com

Mr. Kevin C. Leo, P.E., CDM
leokc@cdm.com

Mr. Steve Palmer, DEP, Siting Coordination Office
Steve.Palmer@dep.state.fl.us

Mr. Darrel Graziani, SED
Darrel.Graziani@dep.state.fl.us

Mr. James Stormer, PBCHD
Mr. John Bunyak, NPS
Mr. Gregg Worley, EPA

Clerk Stamp

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

Mary L Harry (Clerk) 2/3/06 (Date)

Final Determination

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility

January 25, 2006

Permit Type(s):	Air Construction Permit Prevention of Significant Deterioration
Permit Nos.:	0950137-006-AC and PSD-FL-108F Amendment to PA84-20
Project:	Biosolids Pelletization Facility

I. Public Notice.

An "Intent to Issue PSD Air Construction Permit" to the Solid Waste Authority (SWA) of Palm Beach County for the construction of a 675 wet tons of sludge per day Biosolids Pelletization Facility (BPF) at the North County Resource Recovery Facility Site was clerked on November 21, 2005. This site is located at 7501 North Jog Road, West Palm Beach in Palm Beach County.

The clerked package included the Department's Draft PSD Air Construction Permit, the "Intent to Issue PSD Air Construction Permit," the "Technical Evaluation and Preliminary Determination," and the "Public Notice of Intent to Issue PSD Air Construction Permit." The Department sent copies of the package to the persons listed.

The "Public Notice of Intent to Issue PSD Air Construction Permit" was published in the Palm Beach Post on November 29, 2005. The Draft air construction permit was available for public inspection at the Palm Beach County Health Department, the Department's Southeast District Office and the permitting authority's office in Tallahassee. Proof of publication of the "Public Notice of Intent to Issue PSD Air Construction Permit" was received on December 8, 2005. The 30-day public comment period ended on January 3, 2006.

II. Comment(s).

Comments were received from two respondents: the National Park Service and CDM. CDM submitted comments on behalf of the SWA and the New England Fertilizer Company (NEFCO), the contractor for the project. The Draft permit was changed in response to comments submitted. Responses to the comments were not considered significant enough to reissue the Draft permit and require another Public Notice. Listed below is a response to each comment in the order that each comment was received. The comments are not restated below {please see the original comment letters}. The responses are numbered and contain sufficient context for cross referencing to the original comments.

A. E-mail received December 2, 2005, from Dee Morse, National Park Service.

1. The Department acknowledges the comment.

B. Letter from Mr. Kevin C. Leo, P.E., CDM dated December 28, 2005, and received on January 3, 2006.

General Comments

1. The rated capacity for each dryer and RTO in terms of mmBtu/hour heat input have been corrected throughout the permit and Appendix BD Best Available Control Technology (BACT).

2. The reference from dual stacks to one stack with two flues is changed in the permit and Appendix BD.

Public Notice

3. The public notice was corrected prior to publication to reflect the correct facility-wide numbers. Table AP-1 Summary of Air Pollutants, which is a part of the permit was not affected by the error in the facility-wide PTE numbers that appeared in the public notice.

Technical Evaluation & Preliminary Determination

4. Page 10 of 16. No change is necessary to Table AP-1 Summary of Air Pollutants.

Draft PSD Permit

5. Page 6 of 14. Permitted Capacity. Demonstration of each emissions unit's operation rate is required {see Condition **C.4.**}. The specific methods of demonstration of the operation rates is left up to the owner or operator. The capacities referenced are the maximum operation rates allowed by physical design of the proposed project.

6. Page 10 of 14. Compliance Testing. Pursuant to the Department's rules on testing frequency, the testing frequency for SO2 will be every 5 years. The test requirement, test method and frequency of testing for SO2 is added to Condition **C.1.** As specified in this permit, the testing frequency for VOC and CO emissions is an initial demonstration only; the permit is revised to more clearly reflect this. No subsequent testing is required for VOC and CO provided the emission rates are achieved. {Please also see the related response in item 12. below.}

7. Page 10 of 14. Compliance Testing. Yes, the change is made. Under the NESHAP, testing is required within 90 days of the initial startup, not 180 days.

8. Page 10 of 14. Compliance Testing. Yes, the change is made. Method 6C is acceptable for SO2 compliance.

9. Page 10 of 14. Test Notification. Yes, the change is made. Notification under the NESHAP is required to be 30 days, not 15 days.

10. Page 11 of 14. Test Reports. The comment is not clear, no change was made.

Table AP-1 Summary of Air Pollutants

11. Table AP-1 Summary of Air Pollutants. Clarification of footnote 2. Yes, these are not standards for the emergency generator and cooling tower.

12. Table AP-1 Summary of Air Pollutants. Emission Limitations and Standards for SO2, CO and VOC. These three pollutants are tabulated below with potential emissions, each's respective significant emission rate (SER), whether or not air pollution control devices will be used along with the estimated control device efficiency. Exceedance of an SER triggers the applicability of BACT for that pollutant. Based on the emission estimations, the SERs were not exceeded.

Pollutant, Facility-wide	Potential, TPY	SER, TPY	SER Exceeded?	APCD?	Effic.
SO2	39.1	40	No	Yes	not claimed
CO	33.7	100	No	Yes	not stated
VOC	9.3	40	No	Yes	98%

"TPY" = tons per year.
"SER" = significant emission rate.
"APCD" = air pollution control device.
"Effic." = air pollution control device efficiency.

SO2

SO2 emissions are generated in the dryers from the combustion of the landfill gas assumed to have a sulfur content of 190 ppm. SO2 emissions are essentially uncontrolled and may fluctuate due to the sulfur content of landfill gas. SO2 emissions may be controlled in the venturi scrubber, however, no credit was used in the potential emission calculation. Potential SO2 emissions are very close to the significant emission rate. The calculated potential emissions for SO2 were 39.1 TPY, while the SER is 40 TPY. For this reason, an emission limitation is deemed appropriate along with a frequent test. Since the emission levels are less than "major" the testing frequency will be every 5 years.

CO & VOC

Both CO and VOC emissions are controlled. Proper operation of the regenerative thermal oxidizer (RTO), an air pollution control device, and good combustion practices can assure emissions are reduced. The majority of VOC and CO emissions at the BPF are generated by the dryers, specifically, 8.8 TPY of VOC and 29.5 TPY of CO. These levels are not significantly close to the respective SER's. However, it is assumed that VOC's are combusted by the dryer burners with an estimated efficiency of 98% followed by the RTO with a control device efficiency of 98%. The vendor guarantees the RTO's VOC removal efficiency, an emission rate of 1.00 lb/hour and an outlet methane concentration of 25 ppmv. It is not known whether or not VOC emissions exiting the dryer without consideration of further destruction in the RTO would exceed the SER. A CO emission rate of 3.37 lb/hour from each dryer was used from a similar unit and was represented as achievable by vendors. CO emissions are controlled by good combustion in the dryer and in the RTO. No control efficiency was provided for CO emissions. Good combustion and proper operation of the RTO should ensure that actual emissions are consistent with the emission estimates relied upon. Frequent testing could be required under the Department's rules. In lieu of frequent testing, a condition requiring the owner or operator to follow the Operation and Maintenance Manuals for the burners and the RTO is added to the permit to provide reasonable assurances. An initial demonstration of VOC and CO emissions is deemed appropriate.

In conclusion, the emission limitations in the permit for SO2, CO and VOC are established to verify the emission estimations relied upon are below each SER for BACT applicability. The relied upon emission estimates are from a similar facility, the Greater Lawrence Sanitary District (GLSD) project located in North Andover, Massachusetts. The GLSD facility is an NEFCO project. The emission estimates were provided by the applicant in Table E-4, Appendix E of the application. The GLSD facility's dryer RTO emissions are limited by permit for SO2, CO and VOC emissions. Similar sources in Florida have limitations on VOC emissions. The NEFCO guaranteed the emission rates of SO2, CO and VOC for this project. The Department needs reasonable assurances to confirm the vendor's guarantees. Rule 62-4.070(1)&(3), F.A.C., requires the Department to include conditions in permits to provide reasonable assure of compliance with Department standards and rules. The established limitations on these three pollutants along with the testing provides the Department reasonable assurances that PSD applicability is not triggered for these pollutants. The regulatory citations in the permit and Table AP-1 are changed from: Rule 62-4.070, F.A.C. to: Rule 62-4.070(1)&(3), F.A.C. and the source obligation regulatory citation of Rule 62-212.400(2)(g), F.A.C. is also added. Testing frequencies beyond the initial tests will be established in the Title V permit.

13. Add a footnote 3. Yes, the change is made. A footnote is added.

14. Updated site plan. The updated site plan is acknowledged.

15. Additional comments. The submitted "mark up" documents as Attachments 2 and 3 to the comments were also reviewed and minor changes were made. The use of natural gas as an alternate fuel is clarified.

    Added dry process rate references for sludge per day

III. Department Changes.

The following additional Department initiated changes were made.

Permit

1. Added the effective date of the permit on the signatory page.

2. Moved the expiration date.

3. Updated the emissions unit description for the dryer RTO trains.

4. Added a condition to require the daily sludge process rate to be monitored and recorded.

5. Added a condtion to clarify that the applicant proposed a Hg limit lower than the NESHAP.

6. Added a condition requiring the owner or operator to follow the Operation and Maintenance Manuals for the selected air pollution control technologies.

BACT Determination

1. Added cross references to Title V permits for existing similar sources.

B. Document(s) on file with the permitting authority:

- E-mail received December 2, 2005, from Dee Morse, National Park Service (attached).
- Letter received January 3, 2006, from Mr. Kevin C. Leo, P.E., CDM (attached).

IV. Conclusion.

In conclusion, the changes that have been made are insignificant in nature and do not impose additional public noticing requirements. The permitting authority hereby issues the Final Permit, with any changes noted above.

FINAL

PERMITTEE

Solid Waste Authority of Palm Beach County North County Resource Recovery Facility (NCRRF) 7501 North Jog Road West Palm Beach, Florida 33412-2414	**Permit No.:** 0950137-006-AC and PSD-FL-108F
	Facility ID No.: 0990234
	Project: Biosolids Pelletization Facility

PROJECT AND LOCATION

This permit authorizes the construction of a 675 wet tons per day of sludge (wtpd, at 20% solids) Biosolids Pelletization Facility (BPF).

The facility, North County Resource Recovery Facility (NCRRF), is located at 7501 North Jog Road, West Palm Beach, Palm Beach County. The UTM coordinates are Zone 17; 585.8 km E; 2960.2 km N.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the work specified in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

APPENDICES

The following appendices are attached as part of this permit.

Appendix GC - Construction Permit General Conditions
Appendix BD - BACT Determination
Table AP-1 Summary of Air Pollutants
Appendix 40 CFR 61 Subpart A - NESHAP General Provisions (version dated 05/06/04)
Appendix 40 CFR 61 Subpart E - NESHAP for Mercury (version dated 03/20/03)
Appendix SS-1, Stack Sampling Facilities

Effective Date: 2/2/06
Expiration Date: March 31, 2008

Michael G. Cooke, Director
Division of Air Resource Management

MGC/AAL/sms

FACILITY DESCRIPTION

The facility, North County Resource Recovery Facility (NCRRF), is located at 7501 North Jog Road, West Palm Beach, Palm Beach County. The UTM coordinates are Zone 17; 585.8 km E; 2960.2 km N. {See Figure No. 2-4 provided by the applicant showing the proposed site for this project}

This existing facility consists of a *very large* municipal waste combustor plant designed to process 2,000 tons per day (TPD) of municipal solid waste (MSW). This existing facility includes two boilers and two landfills, a Class I Landfill and a Class III Landfill, each with its own gas collection system and flare.

PROJECT

The permittee, Solid Waste Authority of Palm Beach County, proposes to construct a Biosolids Pelletization Facility (BPF) with a nominal capacity of 675 wet tons of sludge per day (wtpd, at 20% solids). The BPF will have two 337.5 wtpd process trains and related appurtenances. The proposed BPF will be located adjacent to the existing landfill. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as an alternate fuel. Each dryer has a rated capacity of 40 MMBTU/hr heat input {for either landfill or natural gas} plus an additional 2 MMBTU/hr heat input from each regenerative thermal oxidizer (RTO) for a total rated capacity of 84 MMBTU/hr heat input from the dryers and RTO.

Regulatory Classifications

Title III: The facility is identified as a major source of hazardous air pollutants (HAPs).

NESHAP: The proposed project will be subject to the requirements of the National Emission Standard for Hazardous Air Pollutants of 40 CFR 61 Subpart E, NESHAP for Mercury.

NESHAP: The facility operates one or more units subject to National Emission Standards for Hazardous Air Pollutants of 40 CFR 63.

MACT: A case-by-case MACT was not required.

Title IV: The facility operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

NSPS: The facility operates one or more units subject to New Source Performance Standards of 40 CFR 60.

Stationary Sources - Emission Standards in Chapter 62-296, F.A.C.: The facility operates one or more units subject to an emission standard.

RACT: The entire State of Florida is either classified as attainment or considered to be in attainment (i.e., unclassifiable) with respect to the NAAQS for all pollutants. In addition, Palm Beach County is not part of any maintenance areas for lead or PM. Therefore, the proposed projects are not subject to the Reasonably Available Control Technology (RACT) requirements for these pollutants in Rule 62-296, F.A.C. The NOx RACT provisions of Rule 62-296.500(b), FAC, do apply to facilities in Palm Beach County. However, new or modified NOx emitting facilities subject to major-source PSD permitting and preparing a BACT analysis are exempt from these requirements. Since the BPF will be meeting NOx BACT, these rules do not apply.

PSD: The facility is an existing PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

Power Plant Siting Act: This project was requested to be an amendment leading to the modification of the existing power plant siting certification PA84-20.

RELEVANT DOCUMENTS

- Permit PSD-FL-108E
- Power Plant Siting Act Certification PA84-20
- Current Title V Air Operation Permit 0990234-004-AV
- Department's Technical Evaluation & Preliminary Determination dated November 18, 2005
- Department's Final Determination dated January 25, 2006

GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, modify or operate this emissions unit shall be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (DEP), at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 and phone number 850/488-0114. Copies of these documents shall be submitted to the Compliance Authority.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications should be submitted to the compliance authority.
3. General Conditions: The owner and operator are subject to, and shall operate under, the attached General Conditions listed in *Appendix GC* of this permit. General Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of this project shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. Permit Expiration: For good cause, the permittee may request that this air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, and 62-210.300(1), F.A.C.]
6. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
7. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
8. Title V Permit: This permit authorizes construction of the proposed project and initial operation to determine compliance with Department rules. This project involves no changes in the descriptions, applicable requirements, or conditions of the facility Title V Operation Permit. The permittee is required to apply for a revised Title V operation permit following completion of the project.

The proposed new emissions units are:

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Cooling Tower Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2
-###	Cooling Tower Train #2
-###	Emergency Generator

CONSTRUCTION ACTIVITIES

1. Unconfined Particulate Matter Emissions: Pursuant to Rules 62-296.320(4)(c)1., 3. & 4., F.A.C., reasonable precautions to prevent emissions of unconfined particulate matter at the BPF include the following requirements consistent with current practices by the Solid Waste Authority:
    a. Pave all parking lots and permanent drives;
    b. Street sweep paved areas on a regular basis; and,
    c. Use a water truck to spray water on unpaved roads and active unpaved areas.

[Rule 62-296.320(4)(c)2., F.A.C.; and, items a., b., and c. proposed by the applicant.]

2. General Pollutant Emission Limiting Standards. Objectionable Odor Prohibited. No person shall cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

[Rule 62-296.320(2), F.A.C.]

Subsection A. This section addresses the following emissions units.

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2

The BPF will have two 337.5 wtpd {67.5 dry tpd} sludge drying trains Dryer Train #1 and #2, and related appurtenances. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as an alternate fuel. Each dryer has a rated capacity of 40 MMBTU/hr heat input {for either landfill or natural gas} plus an additional 2 MMBTU/hr heat input from each regenerative thermal oxidizer (RTO) for a total rated capacity of 84 MMBTU/hr heat input from the dryers and RTOs.

Dry low NOx burners and acid addition in the tray/condenser scrubber shall be used to control NOx emissions from each dryer's exhaust. A tray/condenser scrubber and a venturi scrubber shall be used to control PM emissions from each dryer's exhaust. The BPF shall also use a regenerative thermal oxidizer (RTO) on each dryer exhaust to control VOC emissions with an efficiency of 98%. The RTO also minimizes odors. VOC's are also combusted in the dryer burners with an estimated efficiency of 98%. CO emissions are controlled by good combustion in the dryer and in the RTO. Each dryer RTO train has its own flue within a shared single stack.

The following specific conditions apply to the emissions units listed above:

Essential Potential to Emit (PTE) Parameters

A.1. Permitted Capacity. The maximum process rate for each dryer train shall be 337.5 wet tons of sludge per day (wtpd, at 20% solids) or 67.5 dry tpd. The maximum process rate for the Biosolids Pelletization Facility (BPF) shall be 675 wet tons of sludge per day (wtpd, at 20% solids) or 135 dry tpd. The maximum heat input rate for each dryer and RTO are as follows:

E.U. ID No.		Landfill or Natural Gas
-###	Sludge Dryer Train #1	42 MMBtu/hour
-###	Sludge Dryer Train #2	42 MMBtu/hour

[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C.]

A.2. Methods of Operation - Fuels. The dryers shall be fired primarily by landfill gas with natural gas used as an alternate fuel.
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C.]

A.3. Hours of Operation. These emission units may operate continuously, i.e., 8,760 hours/year.
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C.]

Monitoring of Operations

A.4. The owner or operator shall monitor and record daily the sludge process rate for each dryer train. [Rule 62-4.070(1)&(3), F.A.C.]

Air Pollution Control Technologies

A.5. The owner or operator shall install, operate and maintain the selected air pollution control technologies, e.g., dry low NOx burners, exhaust gas recirculation system, tray scrubber/condenser scrubber, venturi scrubbers and RTOs.
[BACT Determination]

Operation and Maintenance Plans

A.6. The owner or operator shall follow the manufacturers' Operation and Maintenance Manuals for the selected air pollution control technologies, e.g., dry low NOx burners, exhaust gas recirculation system, tray scrubber/condenser scrubber, venturi scrubber and RTOs.
[BACT Determination]

Emission Limitations and Standards

A.7. Emissions from each dryer train shall not exceed the specific emission limitations and standards in **Table AP-1 Summary of Air Pollutants** attached to this permit.
[BACT Determination, Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.]

40 CFR 61 Subpart E, NESHAP for Mercury

A.8. The dryers shall comply with **Appendix 40 CFR 61 Subpart E - NESHAP for Mercury** attached to this permit.

A.9. Mercury emissions from each dryer RTO train shall not exceed 2.2 E-02 lb/24-hour period. {The Hg emissions standard under the NESHAP is 3.2 kg (7.1 lb)/24-hour period. The applicant proposed a limit which is much lower than the NESHAP standard.}
[Applicant Request, Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.]

40 CFR 61 Subpart A - NESHAP General Provisions

A.10. The dryers shall comply with **Appendix 40 CFR 61 Subpart A - General Provisions** attached to this permit.

Test Methods and Procedures

A.11. These emissions units are also subject to the conditions contained in **Subsection C. Common Conditions.**

Subsection B. This section addresses the following emissions units.

E.U. ID Nos.	Brief Description
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Cooling Tower Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2
-###	Cooling Tower Train #2
-###	Emergency Generator

Each biosolids dryer train will have the following additional air emissions sources: exhaust vent on one recycle material bin exhaust from one fertilizer pellet storage silo, and one cooling tower. All of these are potential sources of PM emissions. Each of two recycle material bins will be ventilated through a fugitive dust control baghouse and then through a building odor scrubber. Dusty air resulting from silo filling operations will be ducted to the recycle bin baghouses, mentioned above. Emissions from the cooling towers and emergency generator are uncontrolled.

The following specific conditions apply to the emissions units listed above:

Essential Potential to Emit (PTE) Parameters

B.1. Permitted Capacity. These emissions units are associated with the BPF. The maximum process/operation rates for the BPF associated emissions units are based on the 675 wet tons of sludge per day (wtpd, at 20% solids) or 135 dry tpd.
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C.]

B.2. Hours of Operation. These emission units may operate continuously, i.e., 8,760 hours/year.
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C.]

Air Pollution Control Technologies

B.3. The owner or operator shall install, operate and maintain fabric filters on each material recycle bin exhaust and each pellet storage silo exhaust to control PM emissions.
[BACT Determination]

Operation and Maintenance Plans

B.4. The owner or operator shall follow the manufacturer's Operation and Maintenance Manual for the fabric filters.
[BACT Determination]

Emission Limitations and Standards

B.5. Emissions from these emissions units shall not exceed the specific emission limitations and standards in **Table AP-1 Summary of Air Pollutants** attached to this permit.
[BACT Determination, Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.]

Test Methods and Procedures

B.6. These emissions units are also subject to the conditions contained in **Subsection C. Common Conditions.**

B.7. Minor PM Particulate Source Test Methods. The maximum permitted allowable particulate matter emission rate (gr/dscf) from the silos and material recycling bins are stated in **Table AP-1**. Because of the expense and complexity of conducting a stack test on minor sources of particulate matter, and because these sources are equipped with a baghouse, the Department pursuant to the authority granted under Rule 62-297.620(4), F.A.C., hereby establishes a visible emission limitation not to exceed an opacity of 5% in lieu of a particulate stack test. In accordance with Rule 62-297.620(4), minor particulate sources equipped with baghouses with visible emissions that are greater than or equal to 5 percent opacity may result in the permittee being required to perform a stack test in accordance with approved methods to verify compliance with the gr/dscf emission limits. The visible emissions test shall be conducted by a certified observer using Method 9 and the procedures in 40 CFR. 60.11 and Rule 62-297.320, F.A.C.
[Rule 62-297.620(4), F.A.C.]

Subsection C. Common Conditions

This section addresses the following emissions units.

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2

Test Methods and Procedures

C.1. Compliance Testing. This facility shall comply with all applicable requirements of Rule 62-297.310, F.A.C., General Compliance Test Requirements and 40 CFR 60.8. Performance Tests. Compliance with the emission limitations and standards shall be determined by using the following reference methods as described in 40 CFR 60, Appendix A and 40 CFR 61, Appendix B adopted by reference in Chapter 62-204, F.A.C. Initial tests for each pollutant shall be conducted within 60 days after achieving the maximum production rate, but not later than 90 days after the initial startup of such facility and at such other times as may be required by the Department or the EPA. The test methods are summarized below.

Method 5 Determination of Particulate Matter Emissions
Method 6C Determination of Sulfur Dioxide Emissions
Method 9 Visual Determination of the Opacity of Emissions
Method 7 Determination of Nitrogen Oxides Emissions
Method 10 Determination of Carbon Monoxide Emissions (I)
Method 25 Determination of Volatile Organic Compound Emissions (I)
Method 101A Determination of Particulate and Gaseous Mercury Emissions from Sewage Sludge Incinerators or **Method 105** Determination of Mercury in Wastewater Treatment Plant Sewage Sludge. The specific testing and sampling conditions as outlined in 40 CFR 61.53 and 61.54 shall be followed as described.

Note: "(I)" refers to an initial test only. The testing frequency for VOC and CO emissions is an initial demonstration only; no subsequent testing is required for VOC and CO provided the lb/hr emission rates stated in Table AP-1 are achieved in the initial test {see Rule 62-297.310(7)(a)4., F.A.C.} In lieu of frequent testing for VOC and CO emissions, the owner or operator shall follow the Operation and Maintenance Manuals for the dry low NOx burners and the RTOs.
[Chapter 297, F.A.C., Stationary Sources - Emissions Monitoring; and 40 CFR 60 Subpart A, and 40 CFR 61, Subpart A, General Provisions]

C.2. Test Notification. The owner or operator shall notify the Department, at least 30 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.
[Rule 62-297.310(7)9., F.A.C. and 40 CFR 61.13(c)]

C.3. Required Stack Sampling Facilities. When a mass emissions stack test is required, the permittee shall comply with the requirements contained in **Appendix SS-1, Stack Sampling Facilities**, attached to this permit.
[Rule 62-297.310(6), F.A.C.]

C.4. Determination of Process Variables.
(a) Required Equipment. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
(b) Accuracy of Equipment. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.
[Rule 62-297.310(5), F.A.C.]

C.5. Test Reports.
(a) The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.

(b) The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.
(c) The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.

11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.

12. The type, manufacturer and configuration of the sampling equipment used.

13. Data related to the required calibration of the test equipment.

14. Data on the identification, processing and weights of all filters used.

15. Data on the types and amounts of any chemical solutions used.

16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.

17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.

18. All measured and calculated data required to be determined by each applicable test procedure for each run.

19. The detailed calculations for one run that relate the collected data to the calculated emission rate.

20. The applicable emission standard, and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.

21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

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

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

G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

(a) A description of and cause of non-compliance; and
(b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

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

G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.

G.13 This permit also constitutes:

(a) Determination of Best Available Control Technology **(applicable to this project);**

(b) Determination of Prevention of Significant Deterioration **(applicable to this project);** and

(c) Compliance with New Source Performance Standards **(not applicable to this project).**

G.14 The permittee shall comply with the following:

(a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

(b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

(c) Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The person responsible for performing the sampling or measurements;
3. The dates analyses were performed;
4. The person responsible for performing the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

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

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility Site
PSD-FL-108F and 0990234-006-AC
Palm Beach County, Florida

BACKGROUND

Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Authorized Representative: Mr. John D. Booth, Executive Director

APPLICATION PROCESSING SCHEDULE

May 4, 2005	Received application to construct; incomplete.
July 15, 2005	Incompleteness letter.
August 30, 2005	Received additional information; application complete.

{Note: The applicant requested a modification to their original project submitted in July 2002. The applicant has withdrawn the lime recalcination part of the project and increased the biosolids pelletization rate from 400 wet TPD to 675 wet TPD.}

The applicant, Solid Waste Authority of Palm Beach County, proposes to construct a 675 wet tons of sludge per day (wtpd, at 20% solids) Biosolids Pelletization Facility (BPF). The BPF will have two 337.5 wtpd process trains and related appurtenances. The proposed BPF will be located adjacent to the existing landfill. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as an alternate fuel. Each dryer has a rated capacity of 40 MMBTU/hr heat input {for either landfill or natural gas} plus an additional 2 MMBTU/hr heat input from each regenerative thermal oxidizer (RTO) for a total rated capacity of 84 MMBTU/hr heat input from the dryers and RTO.

AIR POLLUTION CONTROL TECHNOLOGY REVIEW

Applicant's NOx and PM Review

Summary of NOx Control Technologies Reviewed by the Applicant

In Section 5 of the PSD permit application, the applicant provided a thorough review of NOx control technologies. The use of NOx controls will reduce NOx emissions by at least 50%. The applicant reviewed the following NOx control strategies: (1) low temperature SCR; (2) low temperature ozone oxidation; (3) multi-chemical wet scrubbing system; and, (4) low NOx burners with acid addition. The cost $/ton of NOx removed for each respective strategy is: (1) $17,700; (2) $29,900 (3) $20,200 and, (4) $2,900. The only technology determined to be technically and economically feasible is the low NOx burners with acid addition. The Greater Lawrence Sanitary

District and Massachusetts Water Resource Authority have low NOx burners on the dryer and RTO and acid addition to the condenser/scrubber. According to the applicant, no other controls were indicated in use by other biosolids suppliers.

Summary of PM Control Technologies Reviewed by the Applicant

In Section 5 of the PSD permit application, the applicant provided a thorough review of PM control technologies. A tray condenser/scrubber and exhaust gas recirculation is considered to be integral parts of the dryer system. The use of the tray condenser/scrubber will achieve 97% control. After the tray condenser/scrubber the exhaust stream is split with 75% of the stream being recycled back to the dryer. The remaining 25% of the exhaust stream goes to a venturi scrubber to remove particles prior to the regenerative thermal oxidizer (RTO) to prevent PM from clogging the heat exchanger media in the RTO. Control technologies were evaluated for the remaining 25% gas stream. The uses of three additional control technologies were evaluated: (1) fabric filter; (2) dry ESP; and, (3) wet ESP. The cost $/ton to remove PM from each of these technologies is respectively: (1) $26,700; (2) $31,600; and, (3) $29,400. According to the applicant, none of these additional control technologies are economically feasible.

The proposed BPF and combined flare maximum expected air pollutant emission rates, based on regulatory requirements, vendor information, and the results of the Best Available Control Technology (BACT) analysis are summarized in Section 5 of Volume II of the permit application.

In summary, the applicant proposes the use of dry low NOx burners with acid addition in the tray/condenser scrubber to control NOx emissions from each dryer's exhaust. The applicant proposes to use a tray/condenser scrubber and a venturi scrubber to control PM emissions from each dryer's exhaust. The BPF will also use a regenerative thermal oxidizer (RTO) on each dryer train exhaust to control VOC emissions and odors. Fabric filters will be used on each material recycle bin exhaust and each pellet storage silo exhaust to control PM emissions.

Department's Preliminary NOx and PM BACT Determinations

Due to the limited information available in the RBLC database, similar projects were reviewed. Large metropolitan areas were researched due to large quantities of wastewater sludge generated used to produce pelletized biosolids.

In the response to request additional information dated August 16, 2005, the applicant provided a summary of projects around the country. The table lists the projects, location, air pollution control systems and startup year. All of the plants with drum dryers use a one or two stage scrubbing system. The larger biosolid facilities use RTOs. (See the **Table 1 Municipal Biosolids Dryer Plants in the USA** provided in the Response to Request for Additional Information dated August 16, 2005}

The applicant provided actual performance data summarizing key information from the Greater Lawrence Sanitary District project located in North Andover, Massachusetts which is very similar to the proposed project. The applicant's summary included a scaling of this project to this

operating project, e.g., size of unit, air pollutant emission rates, fuels, etc. This BPF project will be unique in that it will be the first biosolids drying facility to use landfill gas as its primary fuel. The control technologies proposed for this project are proven at the operating Greater Lawrence Sanitary District project. The Greater Lawrence Sanitary District project started up in 2003.

General manufacturer information for the BACT technology proposed specifically, the dry low NOx burners, tray scrubber/condenser scrubber, and venturi scrubber was also provided. The dry low NOx burners are Kinedizer® gas burners provided by Maxon Corporation, or equivalent. The scrubber manufacturer is SLY, Inc., or equivalent. The tray scrubber/condenser scrubber alone will reduce inlet PM at least 97% {See **Attachment 2 Manufacture's Product Literature** provided the Response to Request for Additional Information dated August 16, 2005}

The applicant provide information on 30 projects around the U.S. with 10 of the projects having start up dates between 2003 and 2006 {See the **Table 1 Municipal Biosolids Dryer Plants in the USA.**} This proposed project's control technologies are consistent with the few recent projects using dry low NOx burners and RTOs.

The Department accepts the applicant's proposed BACT technologies. The proposed control technology proposed for PM emissions is readily available and proven. The use of additional PM controls is not cost effective; the cost to remove additional PM is between $26,000 and $32,000 /ton. The proposed control technology for NOx emissions, specifically, dry low NOx burners, is readily available and is demonstrated in other types of stationary sources of air pollution. The use of dry low NOx burners with an estimated cost of $2,900/ton is cost effective. In general, a cost effectiveness value for NOx control is $18,000/ton.

BACT EMISSION LIMITATIONS AND STANDARDS

Department's Procedure

In accordance with Rule 62-212.400, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

- Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.
- All scientific, engineering, and technical material and other information available to the Department.
- The emission limiting standards or BACT determination of any other state.
- The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "Top-Down" approach, particularly when permits are issued by states acting on behalf of EPA. The Department considers Top-Down to be a useful tool, though not a unique or required approach to achieve a BACT under the State regulations. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category.

If it is shown that this level of control is technically or economically unfeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

NSPS AND NESHAP REVIEW

The NSPS and NESHAP federal regulations do not contain emission standards or limitations for NOx or PM/PM_{10}.

The BPF dryers are subject to the Hg (mercury) standard under the National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 61, Subpart E. The Hg emissions standard under the NESHAP is 3.2 kg (7.1 lb)/24-hour period which is equivalent to 1.296 TPY. The applicant proposed a limit of 2.2 E-02 TPY which is much lower than the NESHAP standard. Mercury emissions from both trains are limited to 8.08 E-03 TPY which is lower than the significant emission rate for Hg. The significant emission rate for Hg is 0.17 TPY. This facility is therefore not subject to BACT for Hg.

VE STANDARDS REVIEW

While the general VE standard in Rule 62-296.320, F.A.C., limits VE to 20% from each train's stack, a VE limit of 5% with the exception for 20% up to 3-minutes in 1-hour should be attainable; expected VE from such an emissions unit is 0%. The Greater Lawrence Sanitary District, City of Largo and the City of Tampa units meet a VE limit of 5%.

BACT Emission Limitations and Standards

The emission limitations and standards from three similar facilities were reviewed two of which are located in Florida. The three facilities reviewed were: (1) Greater Lawrence Sanitary District project located in North Andover, Massachusetts; (2) City of Largo and, (3) City of Tampa. Each 337.5 TPD dryer train of this project processes an equivalent 123,187 TPY of wet sludge. Emissions standards and limitations from these projects are summarized below.

(1) Greater Lawrence Sanitary District (GLSD). This wastewater treatment plant project is located in North Andover, Massachusetts. Each train at this facility processes approximately 24,800 TPY wet biosolids (the wet sludge moisture content is 70% per Massachusetts DEP). Emissions are controlled by tray scrubbers with acid addition, venturi scrubbers and RTOs. PM is limited to 0.64 pounds/hour; VE 5%, and NOx to 1.20 pounds/hour. The applicant scaled the emission limits from the GLSD by a factor of 3.78 to this project as follows: PM to 2.42 pounds/hour; and NOx to 4.54 pounds/hour.

(2) City of Largo. The City of Largo Wastewater Reclamation Facility located in Pinellas County, Florida operates two sludge dryer trains permitted under Permit Number 1030060-004-AV. The

facility was upgraded in 1991. Each train processes 36,455 TPY of wet sludge. Emissions are controlled by venturi scrubbers and an RTO. PM is limited to 3 pounds/hour; VE 5%, and VOC to 2.05 pounds/hour.

(3) City of Tampa. The City of Tampa Howard F. Curren AWT Plant located in Hillsborough County, Florida operates two sludge dryer trains permitted under Permit Number 0570373-012-AV. Each train processes 64,900 TPY of wet sludge. This facility began operations in 1990. Emissions are controlled by venturi scrubbers and an RTO. PM is limited to 10.3 pounds/hour; VE 5%, and VOC to 7.1 pounds/hour.

Based on the selected control technologies the BACT emission limitations and standards proposed for this project are shown in **Table AP-1 Summary of Air Pollutants**. BACT standards are established for PM/PM_{10}, opacity and NOx. Emissions from each train are calculated in the exhaust gases exiting the dryer and RTO. Establishment of a performance standard on the dry low NOx burners themselves was not possible due to the design of each train; NOx emissions are also formed in the RTO. A condition requiring the owner or operator to follow the Operation and Maintenance Manuals for the tray scrubber/condenser scrubber and the venturi scrubber is added to the permit to provide reasonable assurances.

Other Emission Limitations and Standards

Emissions of SO_2, CO and VOC are limited for reasonable assurances. Potential SO2 emissions are very close to the significant emission rate. The calculated potential emissions for SO2 were 39.1 TPY, while the SER is 40 TPY. For this reason, an emission limitation is deemed appropriate along with a frequent test. VOC and CO emission levels are not significantly close to the respective SER's. An initial demonstration of VOC and CO emissions is deemed appropriate to verify the vendor's guarantees. Proper operation of each regenerative thermal oxidizer (RTO), an air pollution control device, and good combustion practices can assure continued compliance. An initial demonstration of VOC and CO emissions is deemed appropriate. In lieu of frequent testing for VOC and CO emissions, a condition requiring the owner or operator to follow the Operation and Maintenance Manuals for the burners and the RTO is added to the permit to provide reasonable assurances.

Mercury is limited under the NESHAP and by the applicant's request. The applicant proposed a limit which is much lower than the NESHAP standard.

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Recommended By:

Scott M. Sheplak, P.E., Professional Engineer

02/01/06
Date

Reviewed By:

A. A. Linero, P.E. Administrator

2/1/06
Date

Air Permitting South Section
Bureau of Air Regulation
Division of Air Resource Management
State of Florida, Department of Environmental Protection
Mail Station #5505
2600 Blair Stone Road
Tallahassee, FL 32399

Recommended By:

for Trina L. Vielhauer, Chief
Bureau of Air Regulation

2/2/06
Date

Approved By:

Michael G. Cooke, Director
Division of Air Resource Management

2/2/06
Date

{Filename: PSD-FL-108F final BACT}

Table AP-1. Summary of Air Pollutants

Solid Waste Authority of Palm Beach County
North County Regional Resource Recovery Facility

Permit Nos.: 0990234-006-AC and PSD-FL-108F

				Emission Limitations and Standards [1]			Equivalent Emissions		
Emissions Unit	Pollutant(s)	Fuel(s) [3]	Hours	Standard(s)	lb/hr	TPY	lb/hr	TPY	Regulatory Citation(s)
	NOx								
Sludge Dryer Train #1		landfill gas	8760	-	5.60	24.5	5.60	24.55	BACT
Sludge Dryer Train #2		landfill gas	8760	-	5.60	24.5	5.60	24.55	BACT
				(subtotal		49.1		49.1)	BACT
Emergency Generator			500	-	-	-		3.4	BACT
								52.5	BACT
	PM/PM_{10} & Opacity								
Sludge Dryer Train #1		landfill gas	8760	5% opacity; except 20% for up to 3 minutes in 1-hour	2.42	10.6	2.42	10.6	BACT
Sludge Dryer Train #2		landfill gas	8760	5% opacity; except 20% for up to 3 minutes in 1-hour	2.42	10.6	2.42	10.6	BACT
				(subtotal		21.2		21.2)	BACT
Emergency Generator			8760	0.697 g/bhp-hr [2]	-	-		0.2	BACT
Material Bins & Silos		-	8760	0.010 gr/dscf, 5% opacity	-	-		0.6	BACT
Cooling Tower		-	8760	3333 ppm in drift [2]	-	-	0.06	0.274	BACT
								22.3	BACT
	SO_2								
Sludge Dryer Train #1		landfill gas	8760	190 ppmvd sulfur content [2]	4.45	19.5	4.45	19.5	Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.
Sludge Dryer Train #2		landfill gas	8760	190 ppmvd sulfur content [2]	4.45	19.5	4.45	19.5	"
					8.9	39	8.9	39	"
	CO								
Sludge Dryer Train #1		landfill gas	8760	-	3.37	14.75	3.37	14.75	Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.
Sludge Dryer Train #2		landfill gas	8760	-	3.37	14.75	3.37	14.75	"
					6.74	29.5	6.74	29.5	"
	VOC								
Sludge Dryer Train #1		landfill gas	8760	-	1	4.4	1	4.4	Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.
Sludge Dryer Train #2		landfill gas	8760	-	1	4.4	1	4.4	"
					2	8.8	2	8.8	"
	Hg								
Sludge Dryer Train #1		landfill gas	8760	2.2 E-02 lb/24-hour period			9.22 E-04	4.04 E-03	Applicant Request, Rule 62-4.070(1)&(3), F.A.C. and Rule 62-212.400(2)(g), F.A.C.
Sludge Dryer Train #2		landfill gas	8760	2.2 E-02 lb/24-hour period			9.22 E-04	4.04 E-03	"
								8.08 E-03	"

[1] standard unless otherwise noted.

[2] not a standard; a basis for a standard.

[3] natural gas is used as an alternate fuel.

Memorandum

Florida Department of
Environmental Protection

TO: Michael G. Cooke, Director DARM

THRU: Trina L. Vielhauer, Chief

THRU: A. A. Linero, P.E.

FROM: Scott M. Sheplak, P.E.

DATE: February 1, 2006

SUBJECT: Solid Waste Authority of Palm Beach County
North County RRF Site Modification
Biosolids Pelletization Facility
Final Pemit Nos. 0990234-006-AC and PSD-FL-108F

Attached for approval and signature is a final PSD permit modification for the construction of a biosolids pelletization facility (BPF) at the existing site.

This facility is a major PSD source. The proposed project is subject to PSD for emissions of NOx and PM/PM_{10} because the significant emission rates were exceeded. NOx emissions were 52.5 TPY and PM/PM_{10} emissions were 22.6/22.3 TPY. The significant emission rates are 40 TPY for NOx and 25/15 TPY for PM/PM_{10}. BACT standards are established for PM/PM_{10}, opacity and NOx. Emissions of SO_2, CO and VOC are limited for reasonable assurances.

The applicant proposes the use of dry low NOx burners with acid addition in the tray/condenser scrubber to control NOx emissions from each dryer's exhaust. The applicant proposes to use a tray/condenser scrubber and a venturi scrubber to control PM emissions from each dryer's exhaust. The BPF will also use a regenerative thermal oxidizer (RTO) on the dryer exhaust to control VOC emissions and odors. Fabric filters will be used on each material recycle bin exhaust and each pellet storage silo exhaust to control PM emissions.

This project is unique in that it will use acid addition in a tray/condenser scrubber. Comments from the applicant were received and addressed in the final determination.

We recommend your approval and signature.

Attachments

AAL/SMS

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. John D. Booth, Executive Director
Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Aurora Ortiz C. Date of Delivery 3/7/04

D. Is delivery address different from item 1? ☐ Yes
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To Mr. John D. Booth, Executive Director
Se Solid Waste Authority of Palm Beach County
Str 7501 North Jog Road
Cit West Palm Beach, Florida 33412-2414

PS Form 3800, May 2000 See Reverse for Instructions

CDM
1601 Belvedere Road, Suite 211 South
West Palm Beach, Florida 33406
tel: 561 689-3336
fax: 561 689-9713

December 28, 2005

Ms. Trina L. Vielhauer
Chief, Bureau of Air Regulation
Florida Department of Environmental Protection
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Subject: Solid Waste Authority of Palm Beach County
Proposed Biosolids Pelletization Facility
Modification of Conditions of Certification, PA84-20
Comments on Draft PSD Permit Issued

Dear Ms. Vielhauer:

The Solid Waste Authority of Palm Beach County (SWA) and CDM received the Florida Department of Environmental Protection's (FDEP) draft Prevention of Significant Deterioration (PSD) air construction permit modification including the Technical Evaluation and Preliminary Determination, FDEP's Intent to Issue PSD Air Construction Permit, and the Public Notice of Intent to Issue PSD Air Construction Permit. The following is a compilation of SWA's, CDM's and New England Fertilizer Company's (NEFCO) (contractor) comments on the draft.

General Comments Throughout All Documents

The application submitted by SWA, and the subsequent Request for Information (RAI) responses presented the potential emissions based on the rated capacity of each dryer train. The rated capacity of each dryer is 40 MMBTU/hr plus an additional 2 MMBTU/hr for the regenerative thermal oxidizer (for either landfill gas or natural gas). This brings the total rated capacity for each train to 42 MMBTU/hr, which equates to a rated capacity of 84 MMBTU/hr for the Biosolids Pelletization Facility as a whole. The draft documents refer to the rated capacities of 34.2 and 34.1 MMBTU/hr based on landfill gas and natural gas, respectively. These values are actually the emissions for each dryer under typical operating conditions. These values have been corrected throughout the draft documents.

The original application proposed two separate stacks on site, one for each train. However, it was determined that a single stack with two flues would better serve the project and provide

for more favorable dispersion of emission. This change was documented in the response to FDEP's RAI dated July 15, 2005, which was submitted to FDEP on August 16, 2005. References to the dual stacks have been corrected throughout the documents, as provided in the attachments to this letter.

Intent to Issue PSD Air Construction Permit

No comments.

Public Notice of Intent to Issue Air Construction Permit

As corrected by FDEP prior to the publication, the Maximum Potential Emissions are to be presented in the final permit as follows:

Pollutant	Maximum Potential Emissions	PSD Significant Emission Rate
NOX	52.5	40
PM/PM_{10}	22.6/22.3	25/15
SO_2	39	40
CO	33.7	100
VOC	9.3	40
Hg	8.08 E-03	0.17

Technical Evaluation and Preliminary Determination

Suggested corrections/changes are shown on the "track changes" version of the Technical Evaluation and Preliminary Determination document provided in **Attachment 1.**

Additional questions/clarifications are as follows:

Page 10 of 16 There are two tables on this page listing the major sources of NO_X and PM in Palm Beach County. The SWA facility listing in these tables shows "1121.2 + 85" tons/year for NOX and "73 + 29" tons/year for PM. A footnote should be added to indicate what the number after the "+" refers to. If this added number refers to the BPF facility, these numbers need to be corrected to be consistent with the tons/year values listed in Table AP-1.

Draft PSD Permit

Suggested corrections/changes to the Draft PSD are shown on the "track changes" version of the Draft PSD Permit document provided in **Attachment 2.**

Additional questions/clarifications are as follows:

Page 6 of 14 Condition A.1. Permitted Capacity: it appears that there are two permitted capacities: a). wet tons for each dryer train and b). MMBTU/hr for the landfill/natural gas usage. How is compliance going to be measured and determined for these conditions? Can the operator meet wet tons of sludge per day or does it need to be measured in dry tons? How will the sludge be measured and monitored? Will compliance be a daily weight average based upon sludge delivery? Is the hourly limit for landfill/natural gas based on a 4-hour block or 1 hour limit?

Page 10 of 14 Condition C.1. Compliance Testing: SWA understands that an initial compliance test is required. Will the subsequent compliance and performance tests be required annually, or once per five-year period, prior to renewal of the Title V Operating Permit?

Page 10 of 14 Condition C.1. Compliance Testing: This section requires that the initial compliance tests be conducted within 60 days after achieving maximum production rate, but not later than 180 days after initial startup. The NESHAP General Provisions, 40 CFR 61 Subpart A, cited in the permit's NESHAP Appendix, require, however, that the initial compliance tests be conducted within 90 days after initial startup (see paragraph near the bottom of Appendix (NESHAP) p. A-2.). Rule 62-297.310, F.A.C. does not specify when compliance testing must be conducted. Since the General Provisions of the NESHAP are more applicable to the BPF than the General Provisions from the NSPS (which appears to be the source of the 180-day time period), we suggest that this be changed to be consistent with the NESHAP language requiring testing within 90 days.

Page 10 of 14 Condition C.1. Compliance Testing lists methods for various parameters required as part of the initial start up testing. However, no method is listed for Sulfur Dioxide. If a Sulfur Dioxide standard is kept for this permit (see comments for Table AP-1), please confirm that Method 6C will be acceptable to FDEP for this parameter.

Page 10 of 14 Condition C.2. Test Notification: This section requires that the owner/operator notify FDEP at least 15 days prior to a compliance test. This is inconsistent with the General Provisions of the NESHAP, cited at the top of Appendix (NESHAP) page A-3, which requires a notice of at least 30 days. We suggest that the language in Condition C.2 be changed to 30 days.

Page 11 of 14 Condition C.5. Test Reports requires that test reports are to be submitted no later than 45 days after the last sampling run.

Appendix BD

Suggested corrections/changes to Appendix BD are shown on the "track changes" version of the Draft PSD Permit document provided in **Attachment 3**.

Table AP-1

Clarification of Footnote 2 for Emergency Generator and Cooling Tower: Under PM/PM_{10} & Opacity, the standards listed for the Emergency Generator and Cooling Tower are footnoted as a basis for a standard, but not a standard. In the next columns over, no lb/hr or TPY limits have been set for these pieces of equipment. SWA understands from the footnote and these blanks that there are no permit standards or emissions limits for the Emergency Generator and Cooling Tower. Is this correct?

Emissions Limits for SO_2, CO and VOC: The emissions limitations for all of the pollutants in this table, except for these three, are based on underlying requirements for BACT, or to meet the Mercury NESHAP. The only regulatory citation provided for the emissions limits for SO_2, CO and VOC is Rule 62-4.070, F.A.C., which is the Standards of Issuing or Denying Permits; this section is generic, and does not contain specific requirements for the BPF. The maximum potential emission rates for these three pollutants are all well below the PSD significant emission rates; dispersion modeling was performed for SO_2 and CO emissions from the BPF voluntarily, and not because it was required for the PSD analyses. In addition, the maximum potential VOC emission rate of 8.8 TPY for the BPF as a whole is below the Generic Exemption Threshold for a minor preconstruction permit in Rule 62-210.300(3)(b). SWA requests that a more specific regulatory basis be provided for the emissions limitations for SO_2, CO and VOC. If none can reasonably be provided, SWA requests that the emissions limitations be deleted from the permit for that pollutant.

Add Footnote No. 3: SWA requests that a footnote "3" be added to the Fuel(s) column stating that natural gas is an alternate fuel.

Additionally, there have been slight modifications to the site plan provided in the original application. A revised site plan is included in **Attachment 4** that now reflects the change to a

single stack with two flues, rather than the original two separate stacks. No other significant changes have been made to the site plan.

SWA and CDM would appreciate the opportunity to review the draft again once FDEP has addressed these questions and comments. Please feel free to contact our office if you require any further information.

Very truly yours,

Kevin C. Leo

Kevin C. Leo, P.E., BCEE
Project Manager
Camp Dresser & McKee Inc.

JG\de

Attachments: 1. Technical Evaluation & Preliminary Determination
2. Draft Permit No. 0950137-006-AC and PSD-FL-108F
3. Appendix BD- Best Available Control Technology Determination (BACT)
4. Sheet D-03- Main Level Process Plan

c: Steven L. Palmer, P.E., FDEP/Tallahassee
Al Linero, FDEP/Tallahassee
John D. Booth, P.E., DEE, SWA
Raymond H. Schauer, SWA
Marc C. Bruner, PhD, SWA
Patrick Carroll, SWA (w/enclosures – 4 copies)
Marybeth Morrison, SWA
Tom Tittle, FDEP Southeast District Office (w/enclosures – 2 copies)
Scott Burns, SFWMD (w/enclosures – 1 copy)
Jeaneanne Gettle, U.S. EPA (w/enclosures – 1 copy)
John O'Malley, PBC Health Department (w/enclosures – 1 copy)

File: 2678-39373-079(1)

ATTACHMENT 1

Technical Evaluation & Preliminary Determination

TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Solid Waste Authority of Palm Beach County

Facility ID No.: 0990234

PROJECT

DEP File No.: 0950137-006-AC and
PSD-FL-108F

Biosolids Pelletization Facility

COUNTY

Palm Beach County

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
Air Permitting South Section
Mail Station #5505, 2600 Blair Stone Road
Tallahassee, Florida 32399-2400

November 18, 2005

1. GENERAL PROJECT INFORMATION

Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Authorized Representative: Mr. John D. Booth, Executive Director

Application Processing Schedule

May 4, 2005 Received application to construct; incomplete.

July 15, 2005 Incompleteness letter.

August 30, 2005 Received additional information; application complete.

{Note: The applicant requested a modification to their original project submitted in July 2002. The applicant has withdrawn the lime recalcination part of the project and increased the biosolids pelletization rate from 400 wet TPD to 675 wet TPD.}

Relevant Documents

- Permit PSD-FL-108E
- Power Plant Siting Act Certification PA84-20
- Current Title V Air Operation Permit 0990234-004-AV
- Department's Technical Evaluation & Preliminary Determination dated [Month dayNovember 18, 2005]

2. FACILITY DESCRIPTION AND LOCATION

The facility, North County Resource Recovery Facility (NCRRF), is located at 7501 North Jog Road, West Palm Beach, Palm Beach County. The UTM coordinates are Zone 17; 585.8 km E; 2960.2 km N. {See **Figure No. 2-4** provided by the applicant showing the proposed site for this project}

This existing facility consists of a *very large* municipal waste combustor plant designed to process 2,000 tons per day (TPD) of municipal solid waste (MSW). This existing facility includes two boilers and two landfills, a Class I Landfill and a Class III Landfill, each with its own gas collection system and flare.

North County Resource Recovery Facility

http://www.swa.org/site/information and documents/ncrrf.htm

3. PROPOSED PROJECT

Proposed Activity

The applicant, Solid Waste Authority of Palm Beach County, proposes to construct a 675 wet tons of sludge per day (wtpd, at 20% solids) Biosolids Pelletization Facility (BPF). The BPF will have two 337.5 wtpd process trains and related appurtenances. The proposed BPF will be located adjacent to the existing landfill. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as a backup fuel. Each dryer has a rated capacity of 34.240 MMBTU/hr based on landfill gas or 34.140 MMBTU/hr based on natural gas. An additional 2 MMBtuMMBTU/hr is required for each regenerative thermal oxidizer (RTO) making the total design capacity of each train 42 MMBtu MMBTU/hr (84 MMBtu MMBTU/hr total for the BPF).

The BPF will help eliminate phosphorus loading of the Lake Okeechobee drainage basin and other environmentally sensitive basins in the area due to land application of wastewater sludge. Major metropolitan areas in the U.S. are pelletizing sludge rather than applying it to land.

The proposed activity is to begin as soon as possible and is scheduled to last 18 months. An expiration date of March 31, 2008, for this air construction permit should allow sufficient time to complete the required testing and to submit the test reports.

The proposed new emissions units are:

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Cooling Tower Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2
-###	Cooling Tower Train #2
-###	Emergency Generator

4. APPLICABLE REGULATIONS

Regulatory Classifications

Title III: The facility is identified as a major source of hazardous air pollutants (HAPs).

NESHAP: The proposed project will be subject to the requirements of the National Emission Standard for Hazardous Air Pollutants of 40 CFR 61 Subpart E, NESHAP for Mercury.

NESHAP: The facility operates one or more units subject to National Emission Standards for Hazardous Air Pollutants of 40 CFR 63.

MACT: A case-by case MACT was not required. Since neither the NCRRF or the proposed projects are constructed or reconstructed major sources of HAPs, this rule does not apply.

Title IV: The facility operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

NSPS: The facility operates one or more units subject to New Source Performance Standards of 40 CFR 60.

Stationary Sources - Emission Standards in Chapter 62-296, F.A.C.: The facility operates one or more units subject to an emission standard.

RACT: The entire State of Florida is either classified as attainment or considered to be in attainment (i.e., unclassifiable) with respect to the NAAQS for all pollutants. In addition, Palm Beach County is not part of any maintenance areas for lead or PM. Therefore, the proposed projects are not subject to the Reasonably Available Control Technology (RACT) requirements for these pollutants in Rule 62-296, F.A.C. The NOx RACT provisions of Rule 62-296.500(b), FAC, do apply to facilities in Palm Beach County. However, new or modified NOx emitting facilities subject to major-source PSD permitting and preparing a BACT analysis are exempt from these requirements. Since the BPF will be meeting NOx BACT, these rules do not apply.

PSD: The facility is an existing PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

Power Plant Siting Act: This project was requested to be an amendment leading to the modification of the existing power plant siting certification PA84-20.

Permit(s) Required

The Department requires the owner or operator of any emissions unit to obtain an appropriate permit prior to beginning construction, modification, or initial or continued operation, unless exempted pursuant to Department rule or statute. The Department has specific rules on when an air construction permit is required {see Rule 62-210.300(1), F.A.C.}, when an air operation permit is required {see Rule 62-210.300(2), F.A.C.} and when activity is exempt from permitting {see Rules 62-210.300(3) and 62-4.040, F.A.C.}. The proposed activity is not specifically exempted from permitting in Rules 62-210.300(3) or 62-4.040, F.A.C.

Air Construction Permit Required

The proposed activity involves the addition of an emissions unit which will result in an increase of actual emissions. The Department requires an air construction permit for the owner or operator to proceed with the proposed activity.

Prevention of Significant Deterioration (PSD) Applicability

The Department regulates major air pollution sources in accordance with Florida's Prevention of Significant Deterioration (PSD) Program, as defined in Rule 62-212.400, F.A.C. PSD preconstruction review is required in areas that are currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) for each regulated pollutant or areas designated as "unclassifiable" for such pollutants. A facility is considered "major" with respect to PSD if it emits or has the potential to emit:

≥ 250 tons per year of any regulated pollutant, or

≥ 100 tons per year of any regulated pollutant and belonging to one of 28 PSD Major Facility Categories, or

≥ 5 tons per year of lead.

This facility includes municipal incinerators, which belongs to the "List of 28 PSD Facility Categories" specified in Table 62-212.400-1, F.A.C. For facilities in the listed categories, the threshold for classification as a PSD major source is 100 tons per year. This facility is a PSD-major source of air pollution because the potential emissions of several pollutants are greater 100 tons per year. The proposed activity will be located in Palm Beach County, which is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS). As such, all new projects are reviewed for the applicability of PSD preconstruction review based on the PSD Significant Emission Rates (SER) specified in Table 62-212.400-2, F.A.C. Pollutant emissions from the project exceeding these rates are considered "significant" and subject to PSD preconstruction review. This means that the applicant must employ the Best Available Control Technology (BACT) to minimize emissions of each PSD-significant pollutant as well as evaluate the air quality impacts. Although a facility may be "major" with respect to PSD for only one regulated pollutant, the project may be subject to PSD preconstruction review for several PSD-significant pollutants.

The following table summarizes the applicant's PSD applicability analysis for this project.

Table 1. Summary of the Applicant's PSD Applicability

Pollutant	Net Increase, TPY[a]	PSD Threshold, TPY SER	Subject to PSD Review?
CO	33.7	100	No
NOx	52.5	40	Yes
SO_2	39.1	40	No
VOC	9.3	40	No
PM	22.6	25	No
PM_{10}	22.3	15	Yes
TRS compounds H_2S	0.00	10	No
Lead[b]	6.39E-03	0.60	No
Mercury[b]	8.08E-03	0.17	No
Total HAPs[c]	0.850.51[g1]	25	No

a. "TPY" means tons per year.
b. Equivalent TPY values are shown for these air pollutants; the actual rate values are in pounds per year
c. Total HAPs for case-by-case MACT applicability.

As shown in this table, the proposed project is subject to PSD preconstruction review for emissions of: NOx and PM_{10}. {For the detailed summary of emissions see the applicant's **Table 2-1 SWA Biosolids Pelletization Facility, and Class I Landfill Flares Proposed Maximum Potential Controlled Emission Rates and PSD Applicability** in Section 2 of the permit application.}

Applicant's PSD Applicabilty

The Class I Landfill's 1,800 scfm flare has been replaced by a 3,500 scfm flare. Two more flares, a 1,000 scfm flare and a 2,000 scfm flare will be added at the Class I Landfill in the next few years to handle gas generation at full build-out of the Landfill, and to allow for flow variability as the BPF draws up to 2,800 scfm of landfill gas. The flares are a separate project from the BPF, but are being considered in this PPSA because they meet the definition of "contemporaneous" projects in the Prevention of Significant Deterioration Rules (40 CFR 51.166 and 62-212.400, F.A.C.).

A modification to an existing major source is subject to PSD regulations if it is located in a PSD attainment area and it is a major modification. The project site and vicinity are currently considered to be in attainment with air quality standards for all PSD pollutants (40 CFR 81.310 and Rule 62-204, F. A.C.). A major modification is a physical change or a change in method of operation of a major source which would result in a "significant net emissions increase" of a regulated pollutant. In this case, the physical change is the addition of the BPF and the three flares.

Each proposed modification at the NCRRF site is required to take into account all other permitted air emission increases and decreases that have occurred in the 5 years prior to the proposed modification. Since the BPF and flares would all be built within 5 years of each other, they must be considered together in the PSD applicability determination. Similarly, the decommissioning of the existing 1,800 scfm flare at the Class I Landfill has already occurred and must be included with this project for permitting purposes. The rules for calculating the "net emissions increase" for these projects state that maximum potential emission rates be used for the new sources, and actual annual average emission rates (over the most recent 2 years) be used for the calculation of decreases for the decommissioned sources. Since the existing 1,800 scfm was decommissioned before the BPF had commenced full-scale operation, the SWA can take credit for the net reduction in emissions. The calculated net emissions increases for all PSD pollutants are shown in Table 2-1 of the permit application submitted to the Department's power plant siting office. The totals in Table 2-1 reflect that the flare emissions have been reduced by the amount of gas consumed by the BPF. The emissions from the now decommissioned 1,800 scfm flare have been subtracted from the total. The maximum potential annual emission rates presented in Table 2-1 for the new sources were calculated with the assumption that each unit could operate 365 days per year at 100 percent load. As explained in Section 2 of Volume II, three flares (3,500 scfm; 2,000 scfm; and 1,000 scfm each) are proposed to be installed at the Class I Landfill in the same 5-year period as these projects. The 3,500 scfm flare has already been installed and is in use. These three flares are exempt from PSD permitting. However, because they are contemporaneous projects with the BPF, their emission rates are included in the first total shown in Table 2-1. The second total in Table 2-1 shows that the net emissions increase for the BPF project alone would exceed the PSD "significant net emissions increase" threshold (Rule 62-212.400, F.A.C., Table 212.400-2) for nitrogen oxides (NOx) and particulate matter (PM). The proposed BPF project, therefore, is subject to PSD requirements, and a "major" modification to the NCRRF site's existing PSD permit must be prepared.

The SWA is required to apply for a major modification to their existing NCRRF Site PSD Permit due to the emissions increase from the new BPF. More specific details regarding the air emissions from the dryer stack can be found in the PSD permit application.

A detailed summary of the net emissions increases is found in the applicant's **Table 2-1 SWA Biosolids Pelletization Facility, and Class I Landfill Flares Proposed Maximum Potential Controlled Emission Rates and PSD Applicability Air Operation Permit Required**

The existing facility operates under a Title V permit. A revision to the Title V permit will be required to allow the operation of the proposed activity.

5. APPLICANT'S PROCESS/OPERATION DESCRIPTION

The New England Fertilizer Company (NEFCO) was selected to design, build and operate the project. **Figure 2-4 Process Flow Diagram** in the permit application is a process flow diagram of the drum drying system (DDS). The **Figure 2-3 Proposed Site Plan** is a site layout diagram showing the proposed location of the specific equipment.

Sludge will be delivered to the site in the form of cake sludge with 10 to 20 percent solids content. It is anticipated that the sludge will need to be hauled in dump trucks or trailer trucks that can easily be emptied. The truck will off- load into one of two 30 wet ton reclaim bins that will ultimately feed the two BPF trains.

The DDS uses a portion of the already-dried material as an additive to the dewatered sludge cake to get it past the sticky phase. When mixed, the cake, or "wet" material, coats the dried particles, or "recycled" material, to obtain a non-sticky mixture, usually in the 50 to 70 percent dry solids content range. The added benefit to this process is that the heat energy now needs only to be spent on removing moisture from the surface of each particle, while the core of the particle is already dry.

The evaporation process in the DDS actually takes place within the triple-pass rotating drum. The sludge is conveyed through the rotating drum via flights mounted on the drum walls, until such time as it is dry enough and, therefore, light enough to be lifted and pneumatically-conveyed out of the drum. DDS technology significantly limits over-drying of material, which is where odors are created. The high-speed airstream carries dried particles and the evaporated moisture. The DDS uses a two-stage separation process to remove the solids from the air. Following these stages, the airstream is more than 98 percent clear of particulates.

The material exiting the rotary valve following the separation devices is an agglomerate of particles of all sizes. Many beneficial reuse options require a uniform distribution of particle size. For this reason, it may be necessary to classify the particles by size prior to discharge as final product.

The final product is biosolids pellets, also referred to as pelletized sludge (see the picture below).

http://faculty.washington.edu/clh/leaddemoa.html

The DDS can use different types of fuels such as natural gas or landfill gas/methane. It is the intent of this design to use the landfill gas as the primary source with natural gas as a backup. The gas will fuel the burner to warm the recycled process air via a heat exchanger before it enters the furnace. The maximum heat input to each dryer is 34.240 MMBTU/hr based on landfill gas or 34.140 MMBTU/hr based on natural gas.

6. AIR POLLUTANT EMISSIONS AND CONTROLS

The Class I Landfill has an existing landfill gas collection and control system that combusts the gas in a 3,500 scfm open flare. During operation of the BPF, the flare will be "turned-down" and the Class I Landfill would supply the approximately 2,800 scfm of landfill gas needed by the BPF at the design capacity (84 MMBtu/hr of landfill gas with a heat content of 500 British thermal units per standard cubic feet (btu/scf). The landfill gas burners at the BPF will themselves serve as air pollution devices for controlling the emissions of non-methane organic compounds (NMOCs) from landfill gas. They will be designed to provide 98 percent destruction removal efficiency for NMOCs.

Hot combustion gases (about 841°F at the dryer inlet) will flow through a rotating drum with the biosolids, driving off water, and volatile organic compounds (VOCs). At the dryer exhaust end, a cyclonic separator will remove the pellets and heavier dust particles from the gas stream and send these to screens for size sorting. The exhaust gases, containing products of combustion (nitrogen oxide (NOx), carbon monoxide (CO), and sulfur dioxide (SO_2)), particulate matter (PM), and VOCs, will then go through a tray condenser and venturi scrubber. These devices will remove PM and some SO_2. The gases will then go through a RTO to combust the VOCs before exiting the exhaust stack.

The BPF will include a tray condenser/scrubber and venturi scrubber with cyclonic separator to remove PM_{10} and possible SO_2 along with a regenerative thermal oxidizer (RTO) to combust the VOCs before exiting the exhaust stack. The tray condenser/scrubber will also remove some NH_3. Particulate matter emissions from the screening operation , recycle material and the two pellet storage silos will be controlled by baghouses; the pellets will be conveyed to trucks in an enclosed area to minimize fugitive dust emissions.

Odors of wastewater origin are often formed as a result of bacterial action on wastes when insufficient dissolved oxygen is available to the bacteria or when anaerobic bacteria are part of the unit process as

anaerobic digestion. One way of treating this odor is to collect and treat the odorous gases. There are several methods of treatment for these odors. One such proven technology is wet scrubbing (absorption) by use of packed tower scrubbers. Two separate odor control systems are proposed for the facility. The odor control system will include packed tower scrubbers for the sludge receiving area and an RTO for reduction of odors from the process air train.

The packed tower scrubber receives air from the building area to be treated, which enters the bottom of the tower. A scrubbing liquid such as sodium hypochlorite is sprayed over the top of the packing material, creating a large liquid surface area at the liquid-gas interface. The odorous gas is absorbed by the scrubbing liquid and air, free of these contaminants, will either discharge to the atmosphere or to a second stage packed tower via a mist eliminator. The scrubbing liquid is captured in a sump at the bottom of the scrubber tower where it is pumped back to the top of the scrubber tower. The addition of sodium hydroxide and sodium hypochlorite solutions to the recycling scrubbing liquid will be required to provide a constant inflow of fresh scrubbing chemicals for optimum scrubber performance. Make-up water will be added continuously to maintain a constant water supply. Spent scrubbing liquid will overflow to the onsite wastewater pump station to be pumped to the East Central Regional Wastewater Treatment Facility (WWTF) for further treatment. Two 8-foot diameter tanks, one each for sodium hydroxide and sodium hypochlorite will be used for chemical storage. Both tanks will be surrounded by containment walls.

Each biosolids dryer train will have the following additional air emissions sources: exhaust vent on one recycle material bin exhaust from one fertilizer pellet storage silo, and one cooling tower. All of these are potential sources of PM emissions. Each of two recycle material bins will be ventilated through a fugitive dust control baghouse and then through a building odor scrubber. Dusty air resulting from silo filling operations will be ducted to the recycle bin baghouses, mentioned above. Emissions from the cooling towers and emergency generator are uncontrolled.

7. AVAILABLE INFORMATION

In addition to information provided and referenced in the application, the Department also relied on the following information resources:

RACT/BACT/LAER Clearinghouse (RBLC) database.
World Wide Web site searches.
Additional Information Response.

8. COMMENTS ON THE APPLICATION

Comments from the National Park Service or EPA Region 4.

As of the date of this report, none.

9. AIR QUALITY IMPACT ANALYSIS REVIEW

9.1 Introduction

The proposed project will increase emissions of two pollutants at levels in excess of PSD significant amounts: PM/PM_{10} and NO_X. PM_{10} and NO_X are criteria pollutants and have

national and state ambient air quality standards (AAQS), PSD increments, significant impact levels and de minimis monitoring levels defined for them.

9.2 Major Stationary Sources in Palm Beach County

The current largest stationary sources of air pollution in Palm Beach County are listed below. The information is from annual operating reports submitted to the Department.

Table 9.2.1 Major Sources of NO_X in Palm Beach County (2004)

Owner	Site Name	Tons per year
Florida Power & Light	Riviera	3807.7
Solid Waste Authority	**Palm Beach County**	1121.2 + ***85***
New Hope Power Partnership	Okeelanta Cogeneration Plant	871.7
Sugar Cane Growers Co-Op	Sugar Cane Growers Co-Op	860.6
Florida Power & Light	***West County Energy (proposed)***	***856***
U.S. Sugar Corp.	Bryant Mill	443.2
Osceola Farms	Osceola Farms	348.2
United Technologies Corp.	Pratt & Whitney Aircraft	238

Table 9.2.2. Major Sources of PM in Palm Beach County (2004)

Owner	Site Name	Tons per year
Florida Power & Light	Riviera Power Plant	923
Florida Power & Light	***West County Energy (proposed)***	***652***
Sugar Cane Growers Co-Op	Sugar Cane Growers Co-Op	440
Osceola Farms	Osceola Farms	287
US Sugar Corporation	Bryant Sugar Mill	260
Atlantic Sugar Association	Atlantic Sugar Mill	240
Solid Waste Authority	**Palm Beach County**	73 + ***29***

9.4 Air Quality and Monitoring in the Palm Beach County

The Palm Beach County Health Department operates twelve monitors at seven sites measuring PM_{10}, $PM_{2.5}$, ozone, CO, NO_2 and SO_2. The 2004 monitoring network is shown in the figure below.

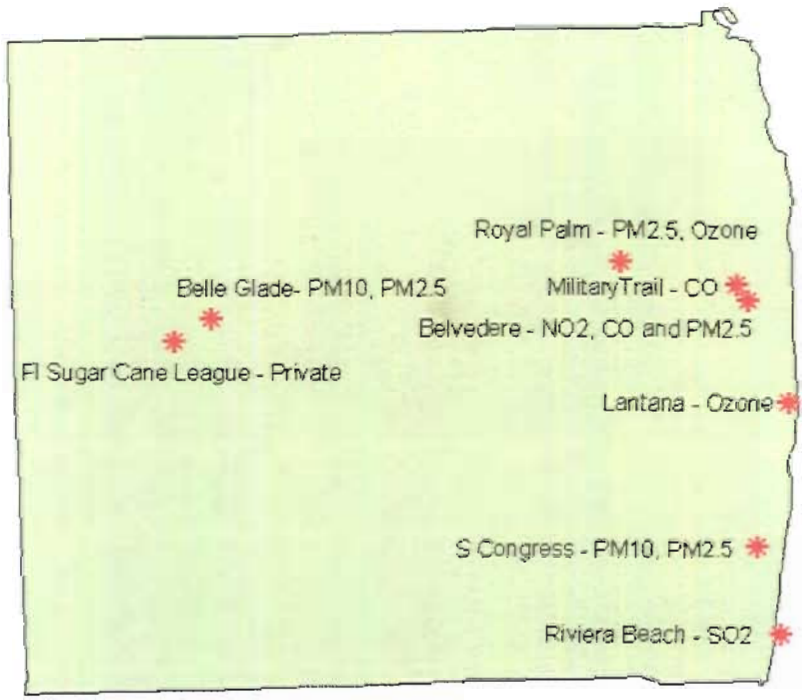


Figure 9.4. The Palm Beach County Health Department Ambient Air Monitoring Network

Measured ambient air quality information is summarized in the following table.

Table 9.4. Ambient Air Quality in Palm Beach County Nearest to Project Site (2004)

Pollutant	Location	Averaging Period	Ambient Concentration				
			High	2nd High	Mean	Standard	Units
PM_{10}	Delray Beach	24-hour	82	62		150 [a]	ug/m^3
		Annual			30*	50 [b]	ug/m^3
SO_2	Riviera Beach	3-hour	2	2		500 [a]	ppb
		24-hour	1	1		100 [a]	ppb
		Annual			1*	20 [b]	ppb
NO_2	Palm Beach	Annual			10*	53 [b]	ppb
CO	WPB Military Trail	1-hour	4	4		35 [a]	ppm
		8-hour	2	2		9 [a]	ppm
Ozone	Royal Palm Beach	1-hour	0.080	0.077		0.12 [C]	ppm
		8-hour	0.072	0.069		0.08 [C]	ppm

* The Mean does not satisfy summary criteria due to missing data.

a - Not to be exceeded more than once per year

b - Arithmetic mean
c - Not to be exceeded on more than an average of one day per year over a three-year period

The highest measured values of all pollutants are all less than the respective National Ambient Air Quality Standards (NAAQS). Based on local emission trends, it is not likely that ground-level concentrations will approach the NAAQS levels. The exception is ozone because it is formed from precursors that are clearly available (NO_X and VOC). The precursors are more available during drought years. The tendency to form ozone is accentuated by hot ambient temperature, high pressure, and relatively low wind speed.

9.5 Air Quality Impact Analysis

Significant Impact Analysis

Significant Impact Levels (SILs) are defined for PM/PM_{10}, and NO_X. A significant impact analysis is performed on each of these pollutants to determine if a project can cause an increase in ground level concentration greater than the SIL for each pollutant.

In order to conduct a significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. The models used in this analysis and any required subsequent modeling analyses are described below. The highest predicted short-term concentrations and highest predicted annual averages predicted by this modeling are compared to the appropriate SILs for the PSD Class I Everglades National Park (ENP) and the PSD Class II Areas (everywhere except the ENP).

The applicant, in an effort to model worst load conditions, included the three flares (not subject to PSD review) in their modeling analysis to determine whether the project would lead to a violation of the AAQS.

If this modeling at worst-load conditions shows ground-level increases less than the SILs, the applicant is exempted from conducting any further modeling. If the modeled concentrations from the project exceed the SILs, then additional modeling including emissions from all facilities or projects (multi-source modeling) is required to determine the proposed project's impacts compared to the AAQS or PSD increments.

The applicant's initial PM/PM_{10}, and NO_X, air quality impact analyses for this project indicated that maximum predicted impacts from all pollutants are less than the applicable SILs for the Class II area (i.e. all areas except ENP). These values are tabulated in the table below and compared with existing ambient air quality measurements from the local ambient monitoring network.

Table 9.5.1. Maximum Projected Air Quality Impacts from Biosolids Pelletization Facility (Including 3 Flares) for Comparison to the PSD Class II Significant Impact Levels

Pollutant	Averaging Time	Max Predicted Impact (ug/m^3)	Significant Impact Level (ug/m^3)	Baseline Concentrations (ug/m^3)	Ambient Air Standards (ug/m^3)	Significant Impact?
PM_{10}	Annual	0.3	1	~30	50	NO
	24-Hour	3.7	5	~82	150	NO
NO_2	Annual	0.9	1	~19	100	NO

It is obvious that maximum predicted impacts from the project are much less than the respective AAQS and the baseline concentrations in the area. They are also less than the respective significant impact levels that would otherwise require more detailed modeling efforts.

The applicant elected to do modeling for sulfur dioxide and carbon monoxide as well. The results showed concentrations less than the respective significant impact levels and AAQS as well.

The nearest PSD Class I area is the Everglades National Park (ENP) located about 128 km to the south-southwest of the project site. Maximum air quality impacts from the proposed project are summarized in the following table. The results of the initial PM/PM_{10}, and NO_X air quality impact analyses for this project indicated that maximum predicted impacts PM/PM_{10}, and NO_X are less than the applicable SILs for the Class I area. Therefore, no further detailed modeling efforts are required for these pollutants.

Maximum Air Quality Impacts from the Biosolids Pelletization Facility (Including Three Flares) Project for comparison to the PSD Class I SILs at ENP

The applicant also modeled to predict impacts at the Big Cypress National Preserve which is located approximately 112 km to the southwest of the facility. The modeled impacts are also less than the applicable SILs for the area.

Preconstruction Ambient Monitoring Requirements

A preconstruction monitoring analysis is done for those pollutants with listed de minimis impact levels. These are levels, which, if exceeded, would require pre-construction ambient monitoring. For this analysis, as was done for the significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. As shown in the following table, the maximum predicted impacts for all pollutants with listed de minimis impact levels were less than these levels. Therefore, no pre-construction monitoring is required for those pollutants.

Table 9.5.2. Maximum Air Quality Impacts for Comparison to the De Minimis Ambient Impact Levels.

Pollutant	Averaging Time	Max Predicted Impact (ug/m^3)	De Minimis Level (ug/m^3)	Baseline Concentrations (ug/m^3)	Impact Greater Than De Minimis?
PM_{10}	24-hour	4	10	~82	NO
NO_2	Annual	0.9	14	~19	NO

Based on the preceding discussions, the only additional detailed air quality analyses (inclusive of all sources in the area) required by the PSD regulations for this project are the following:

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

Models and Meteorological Data Used in the Air Quality Analysis

PSD Class II Area: The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project in the surrounding Class II Area. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. It incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition.

The ISCST3 model allows for the separation of sources, building wake downwash, and various other input/output parameters. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfied the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from West Palm Beach Airport. The 5-year period of meteorological data was from 1987 through 1991. This airport station was selected for use in the study because it is the closest primary weather station to the study area and is most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

In reviewing this permit application, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification should EPA revise the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators. A more detailed discussion of the required analyses follows.

PSD Class I Area: The California Puff (CALPUFF) dispersion model was used to evaluate the pollutant emissions from the proposed project in the Class I ENP and Big Cypress National Preserve beyond 50 km from the proposed project. The applicant used CALPUFF in the "screening" mode and therefore used the same meteorological data that was used for the ISCST model processed in a different manner.

CALPUFF is a non-steady state, Lagrangian, long-range transport model that incorporates Gaussian puff dispersion algorithms. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, line, area, and volume sources.

The CALPUFF model has the capability to treat time-varying sources, is suitable for modeling domains from tens of meters to hundreds of kilometers, and has mechanisms to handle rough or complex terrain situations. Finally, the CALPUFF model is applicable for inert pollutants as well as pollutants that are subject to linear removal and chemical conversion mechanism.

9.6 Additional Impacts Analysis

Impact on Soils, Vegetation, and Wildlife:

The maximum ground-level concentrations predicted to occur for PM_{10} and NO_X as a result of the proposed project, including background concentrations and all three flares (not subject to PSD), will be considerably less than the respective AAQS. Since the project impacts are either less than significant or considerably less than the AAQS, it is reasonable to assume the impacts on soils, vegetation, or wildlife will be minimal or insignificant.

As part of the Additional Impact Analysis, Air Quality Related Values (AQRV) are evaluated with respect to the Class I area. This includes the analysis of sulfur and nitrogen deposition. The CALPUFF model is also used in this analysis to produce quantitative impacts. The results of the analysis show that nitrogen and sulfur deposition rates are below the significant impact levels (0.01 kg/ha/yr) determined by the National Park Service for the ENP.

According to the applicant, the predicted deposition rates of sulfur and nitrogen (0.0003 and 0.0001 kg/ha/yr respectively) impacts are still much less than the buffering capacities of the soils in the ENP and much less than the observed deposition rates existing in the area.

Impact on Visibility:

The applicant submitted a regional haze analysis for the ENP and the Big Cypress National Preserve. The analysis included modeling from the CALPUFF model. The Visibility Analysis showed that the proposed project will be well below the visibility threshold of 5% in change in light extinction for both sensitive areas.

Growth-Related Impacts Due to the Proposed Project:

According to the applicant, the proposed project will add approximately 13 new permanent employees. This increase will not result in significant commercial and residential growth near the project. Few new permanent employees will cause no significant impact on the local area.

Growth-Related Air Quality Impacts since 1977:

According to the applicant, the population of Palm Beach County has more than doubled since the late seventies. This population currently works in the Trade, Transportation and Utilities sector, which includes the retail industry and the Professional and Business Services sector mostly.

Although, the population has increased greatly, the air pollution trends do not show an increase in pollutant concentrations with this population growth. The county is in attainment with the NAAQS.

Despite the growth in Southeast Florida, air quality has improved as evidenced by the redesignation of the Tri-County (Broward, Miami-Dade, and Palm Beach) area to attainment status with respect to the ozone standard.

10. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete PSD permit application, reasonable

assurances provided by the applicant, the draft determinations of Best Available Control Technology (BACT), review of the air quality impact analysis, and the conditions specified in the draft permit.

Deborah Nelson is the project meteorologist responsible for reviewing and validating the air quality impact analysis. She may be contacted at deborah.nelson@dep.state.fl.us and 850/921-9537.

Scott M. Sheplak is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer by telephone 850/921-9537 or e-mail Scott.Sheplak@dep.state.fl.us in the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

(Filename: PSD-FL-108F TEPD)

ATTACHMENT 2

Draft Permit No. 0950137-006-AC and PSD-FL-108F

DRAFT

PERMITTEE

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility (NCRRF)
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Permit No.: 0950137-006-AC and PSD-FL-108F
Expires: March 31, 2008
Facility ID No.: 0990234
Project: Biosolids Pelletization Facility

PROJECT AND LOCATION

This permit authorizes the construction of a 675 wet tons per day of sludge (wtpd, at 20% solids) Biosolids Pelletization Facility (BPF).

The facility, North County Resource Recovery Facility (NCRRF), is located at 7501 North Jog Road, West Palm Beach, Palm Beach County. The UTM coordinates are Zone 17; 585.8 km E; 2960.2 km N.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the work specified in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

APPENDICES

The following appendices are attached as part of this permit.

Appendix GC - Construction Permit General Conditions
Appendix BD - BACT Determination
Table AP-1 Summary of Air Pollutants
Appendix 40 CFR 61 Subpart A - NESHAP General Provisions (version dated 05/06/04)
Appendix 40 CFR 61 Subpart E - NESHAP for Mercury (version dated 03/20/03)
Appendix SS-1, Stack Sampling Facilities

Michael G. Cooke, Director
Division of Air Resource Management

FACILITY DESCRIPTION

The facility, North County Resource Recovery Facility (NCRRF), is located at 7501 North Jog Road, West Palm Beach, Palm Beach County. The UTM coordinates are Zone 17; 585.8 km E; 2960.2 km N. {See Figure No. 2-4 provided by the applicant showing the proposed site for this project}

This existing facility consists of a *very large* municipal waste combustor plant designed to process 2,000 tons per day (TPD) of municipal solid waste (MSW). This existing facility includes two boilers and two landfills, a Class I Landfill and a Class III Landfill, each with its own gas collection system and flare.

PROJECT

The permittee, Solid Waste Authority of Palm Beach County, proposes to construct a BPF with a nominal capacity of 675 wet tons of sludge per day (wtpd, at 20% solids) Biosolids Pelletization Facility (BPF). The BPF will have two 337.5 wtpd process trains and related appurtenances. The proposed BPF will be located adjacent to the existing landfill. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as a backup fuel. Each dryer has a rated capacity of 34.240 MMBTU/hr based on landfill gas or 34.140 MMBTU/hr based on natural gas. An additional 2 MMBTU/hr is required for each regenerative thermal oxidizer (RTO) making the total design capacity of each train 42 MMBTU/hr (84 MMBTU/hr total for the BPF).

Regulatory Classifications

Title III: The facility NCRRF is identified as a major source of hazardous air pollutants (HAPs).

NESHAP: The proposed project will be subject to the requirements of the National Emission Standard for Hazardous Air Pollutants of 40 CFR 61 Subpart E, NESHAP for Mercury.

NESHAP: The facility operates one or more units subject to National Emission Standards for Hazardous Air Pollutants of 40 CFR 63.

MACT: A case-by case MACT was not required. Since neither the NCRRF or the proposed projects are constructed or reconstructed major sources of HAPs, this rule does not apply.Because the proposed BPF project is not by itself a major source of HAPs, this rule does not apply.

Title IV: The facility operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

NSPS: The facility operates one or more units subject to New Source Performance Standards of 40 CFR 60.

Stationary Sources - Emission Standards in Chapter 62-296, F.A.C.: The facility operates one or more units subject to an emission standard.

RACT: The entire State of Florida is either classified as attainment or considered to be in attainment (i.e., unclassifiable) with respect to the NAAQS for all pollutants. In addition, Palm Beach County is not part of any maintenance areas for lead or PM. Therefore, the proposed projects are not subject to the Reasonably Available Control Technology (RACT) requirements for these pollutants in Rule 62-296, F.A.C. The NOx RACT provisions of Rule 62-296.500(b), FAC, do apply to facilities in Palm

Beach County. However, new or modified NOx emitting facilities subject to major-source PSD permitting and preparing a BACT analysis are exempt from these requirements. Since the BPF will be meeting NOx BACT, these rules do not apply.

PSD: The facility is an existing PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

Power Plant Siting Act: This project was requested to be an amendment leading to the modification of the existing power plant siting certification PA84-20.

RELEVANT DOCUMENTS

- Permit PSD-FL-108E
- Power Plant Siting Act Certification PA84-20
- Current Title V Air Operation Permit 0990234-004-AV
- Department's Technical Evaluation & Preliminary Determination dated [Month dayNovember 18, 2005]

GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, modify or operate this emissions unit shall be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (DEP), at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 and phone number 850/488-0114. Copies of these documents shall be submitted to the Compliance Authority.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications should be submitted to the compliance authority. The Southeast District DEP will serve as Compliance Authority.
3. General Conditions: The owner and operator are subject to, and shall operate under, the attached General Conditions listed in *Appendix GC* of this permit. General Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of this project shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. Permit Expiration: For good cause, the permittee may request that this air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, and 62-210.300(1), F.A.C.]
6. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
7. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
8. Title V Permit: This permit authorizes construction of the proposed project and initial operation to determine compliance with Department rules. This project involves no changes in the descriptions, applicable requirements, or conditions of the facility Title V Operation Permit. The permittee is required to apply for a revised Title V operation permit following completion of the project.

The proposed new emissions units are:

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Cooling Tower Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2
-###	Cooling Tower Train #2
-###	Emergency Generator

CONSTRUCTION ACTIVITIES

1. Unconfined Particulate Matter Emissions: Pursuant to Rules 62-296.320(4)(c)1., 3. & 4., F.A.C., reasonable precautions to prevent emissions of unconfined particulate matter at the BPF include the following requirements consistent with current practices by the Solid Waste Authority:
   a. Pave all parking lots and permanent drives;
   b. Street sweep paved areas on a regular basis; and,
   c. Use a water truck to spray water on unpaved roads and active unpaved areas.

[Rule 62-296.320(4)(c)2., F.A.C.; and, items a., b., and c. proposed by the applicant.]

2. General Pollutant Emission Limiting Standards. Objectionable Odor Prohibited. No person shall cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

[Rule 62-296.320(2), F.A.C.]

Subsection A. This section addresses the following emissions units.

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2

The BPF will have two 337.5 wtpd sludge drying trains Dryer Train #1 and #2, and related appurtenances. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as a backup fuel. Each dryer has a rated capacity of 34.240 MMBTU/hr based on landfill gas or 34.140 MMBTU/hr based on natural gas. An additional 2 MMBtu/hr is required for each regenerative thermal oxidizer (RTO) making the total design capacity of each train 42 MMBTU/hr (84 MMBTU/hr total for the BPF).

Dry low NOx burners and acid addition in the tray/condenser scrubber will be used to control NOx emissions from each dryer's exhaust. A tray/condenser scrubber and a venturi scrubber will be used to control PM emissions from each dryer's exhaust. The BPF will also use a regenerative thermal oxidizer (RTO) on each dryer exhaust to control VOC emissions and odors. Each dryer train has its own stackflue[g1] within a single shared stack.

The following specific conditions apply to the emissions units listed above:

Essential Potential to Emit (PTE) Parameters

A.1. Permitted Capacity. The maximum process rate for each dryer train shall be 337.5 wet tons of sludge per day (wtpd, at 20% solids), or 67.5 tons per day of sludge on a dry solids throughput basis. The maximum process rate for the Biosolids Pelletization Facility (BPF) shall be 675 wet tons of sludge per day (wtpd, at 20% solids), or 135 dry tons of sludge per day on a dry solids throughput basis. The maximum heat input rates for the dryers are as follows:

E.U. ID No.		Landfill Gas	Natural Gas
-###	Sludge Dryer Train #1	34.242 MMBtu/hour	34.142 MMBtu/hour
-###	Sludge Dryer Train #2	34.242 MMBtu/hour	34.142 MMBtu/hour

[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C. and PSD-FL-108F]

A.2. Methods of Operation - Fuels. The dryers shall be fired primarily by landfill gas with natural gas used as an alternate backup fuel.
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C. and PSD-FL-108F]

A.3. Hours of Operation. These emission units may operate continuously, i.e., 8,760 hours/year.
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C. and PSD-FL-108F]

Emission Limitations and Standards

A.4. Emissions from each the dryer trains' stack shall not exceed the specific emission limitations and standards in **Table AP-1 Summary of Air Pollutants** attached to this permit. [BACT Determination and Rule 62-4.070, F.A.C.]

40 CFR 61 Subpart E, NESHAP for Mercury.

A.5. The dryers shall comply with **Appendix 40 CFR 61 Subpart E - NESHAP for Mercury** attached to this permit.

40 CFR 61 Subpart A - NESHAP General Provisions

A.6. The dryers shall comply with **Appendix 40 CFR 61 Subpart A - General Provisions** attached to this permit.

Test Methods and Procedures

A.7. These emissions units are also subject to the conditions contained in **Subsection C. Common Conditions.**

Subsection B. This section addresses the following emissions units.

E.U. ID Nos.	Brief Description
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Cooling Tower Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2
-###	Cooling Tower Train #2
-###	Emergency Generator

Each biosolids dryer train will have the following additional air emissions sources: exhaust vent on one recycle material bin exhaust from one fertilizer pellet storage silo, and one cooling tower. All of these are potential sources of PM emissions. Each of two recycle material bins will be ventilated through a fugitive dust control baghouse and then through a building odor scrubber. Dusty air resulting from silo filling operations will be ducted to the recycle bin baghouses, mentioned above. Emissions from the cooling towers and emergency generator are uncontrolled.

The following specific conditions apply to the emissions units listed above:

Essential Potential to Emit (PTE) Parameters

B.1. Permitted Capacity.
These emissions units are associated with the Biosolids Pelletization Facility (BPF). The maximum process/operation rates for the BPF associated emissions units are based on the 675 wet tons of sludge per day (wtpd, at 20% solids), or 135 tons of sludge per day on a dry solids throughput basis..
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C. and PSD-FL-108F]

B.2. Hours of Operation. These emission units may operate continuously, i.e., 8,760 hours/year.
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C. and PSD-FL-108F]

Emission Limitations and Standards

B.3. Emissions from these emissions units shall not exceed the specific emission limitations and standards in **Table AP-1 Summary of Air Pollutants** attached to this permit. [BACT Determination and Rule 62-4.070, F.A.C.]

Test Methods and Procedures

B.4. These emissions units are also subject to the conditions contained in **Subsection C. Common Conditions.**

B.5. Minor PM Particulate Source Test Methods. The maximum permitted allowable particulate matter emission rate (gr/dscf) from the silos and material recycling bins are stated in **Table AP-1**. Because of the expense and complexity of conducting a stack test on minor sources of particulate matter, and because these sources are equipped with a baghouse, the Department pursuant to the

authority granted under Rule 62-297.620(4), F.A.C., hereby establishes a visible emission limitation not to exceed an opacity of 5% in lieu of a particulate stack test. In accordance with Rule 62-297.620(4), minor particulate sources equipped with baghouses with visible emissions that are greater than or equal to 5 percent opacity may result in the permittee being required to perform a stack test in accordance with approved methods to verify compliance with the gr/dscf emission limits. The visible emissions test shall be conducted by a certified observer using Method 9 and the procedures in 40 CFR. 60.11 and Rule 62-297.320, F.A.C.
[Rule 62-297.620(4), F.A.C.]

Subsection C. Common Conditions

This section addresses the following emissions units.

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2

Test Methods and Procedures

C.1. Compliance Testing. Compliance with the emission limitations and standards shall be determined by using the following reference methods as described in 40 CFR 60, Appendix A and 40 CFR 61, Appendix B adopted by reference in Chapter 62-204, F.A.C. The tests shall be conducted within 60 days after achieving the maximum production rate, but not later than 180 days after the initial startup of such facility and at such other times as may be required by the Department or the EPA.

Unless other methods are proposed to and approved by the Department, the following test methoeds shall be used for compliance testing on both BPF dryer trains.
Method 5 Determination of Particulate Matter Emissions from Stationary Sources (I) and (A).
Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources (I) and (A).
Method 7 Determination of Nitrogen Oxides Emissions from Stationary Sources (I) and (A).
Method 10 Determination of Carbon Monoxide Emissions from Stationary Sources (I).
Method 25 Determination of Volatile Organic Compound Emissions from Stationary Sources (I).
Method 101A Determination of Particulate and Gaseous Mercury Emissions from Sewage Sludge Incinerators (I) and (A) or Method 105 Determination of Mercury in Wastewater Treatment Plant Sewage Sludge (I) and (A). Specific Testing and sampling conditions as outlined in 40 CFR 61.53 and 61.54 shall be followed as described.

This facility shall comply with all applicable requirements of Rule 62-297.310, F.A.C. General Compliance Test Requirements and 40 CFR 60.8. Performance Tests
[Chapter 297 F.A.C., Stationary Sources - Emissions Monitoring; and 40 CFR 60 Subpart A, and 40 CFR 61, Subpart A, General Provisions]

C.2. Test Notification. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.
[Rule 62-297.310( )9., F.A.C.]

C.3. Required Stack Sampling Facilities. When a mass emissions stack test is required, the permittee shall comply with the requirements contained in **Appendix SS-1, Stack Sampling Facilities**, attached to this permit.

[Rule 62-297.310(6), F.A.C.]

C.4. Determination of Process Variables.
(a) Required Equipment. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
(b) Accuracy of Equipment. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.
[Rule 62-297.310(5), F.A.C.]

C.5. Test Reports.
(1) (a) The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.

(b) The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.
(c) The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.
11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.

15. Data on the types and amounts of any chemical solutions used.

16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.

17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.

18. All measured and calculated data required to be determined by each applicable test procedure for each run.

19. The detailed calculations for one run that relate the collected data to the calculated emission rate.

20. The applicable emission standard, and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.

21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

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

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

G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

(a) A description of and cause of non-compliance; and
(b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

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

G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.

G.13 This permit also constitutes:

(a) Determination of Best Available Control Technology (not applicable to project);

(b) Determination of Prevention of Significant Deterioration (not applicable to project); and

(c) Compliance with New Source Performance Standards (not applicable to project).

G.14 The permittee shall comply with the following:

(a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

(b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

(c) Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The person responsible for performing the sampling or measurements;
3. The dates analyses were performed;
4. The person responsible for performing the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

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

ATTACHMENT 3

Appendix BD- Best Available Control Technology Determination (BACT)

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility Site
PSD-FL-108F and 0990234-006-AC
Palm Beach County, Florida

BACKGROUND

Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Authorized Representative: Mr. John D. Booth, Executive Director

APPLICATION PROCESSING SCHEDULE

May 4, 2005	Received application to construct; incomplete.
July 15, 2005	Incompleteness letter.
August 30, 2005	Received additional information; application complete.

{Note: The applicant requested a modification to their original project submitted in July 2002. The applicant has withdrawn the lime recalcination part of the project and increased the biosolids pelletization rate from 400 wet TPD to 675 wet TPD.}

The applicant, Solid Waste Authority of Palm Beach County, proposes to construct a 675 wet tons of sludge per day (wtpd, at 20% solids) Biosolids Pelletization Facility (BPF). The BPF will have two 337.5 wtpd process trains and related appurtenances. The proposed BPF will be located adjacent to the existing landfill. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as a backup fuel. Each dryer has a rated capacity of 34.240 MMBTU/hr based on landfill gas or 34.140 MMBTU/hr based on natural gas. An additional 2 MMBtu/hr is required for each regenerative thermal oxidizer (RTO) making the total design capacity of each train 42 MMBtu (84 MMBtu total for the BPF).

AIR POLLUTION CONTROL TECHNOLOGY REVIEW

Applicant's NOx and PM Review

Summary of NOx Control Technologies Reviewed by the Applicant

In Section 5 of the PSD permit application, the applicant provided a thorough review of NOx control technologies. The use of NOx controls will reduce NOx emissions by at least 50%. The applicant reviewed the following NOx control strategies: (1) low temperature SCR; (2) low temperature ozone oxidation; (3) multi-chemical wet scrubbing system; and, (4) low NOx burners with acid addition. The cost $/ton of NOx removed for each respective strategy is: (1) $17,700; (2) $29,900 (3) $20,200 and, (4) $2,900. The only technology determined to be technically and economically feasible is the low NOx burners with acid addition. The Greater Lawrence Sanitary

District and Massachusetts Water Resource Authority have low NOx burners on the dryer and RTO and acid addition to the condenser/scrubber. According to the applicant, no other controls were indicated in use by other biosolids suppliers.

Summary of PM Control Technologies Reviewed by the Applicant

In Section 5 of the PSD permit application, the applicant provided a thorough review of PM control technologies. A tray condenser/scrubber and exhaust gas recirculation is considered to be integral parts of the dryer system. The use of the tray condenser/scrubber will achieve 97% control. After the tray condenser/scrubber the exhaust stream is split with 75% of the stream being recycled back to the dryer. The remaining 25% of the exhaust stream goes to a venturi scrubber to remove particles prior to the regenerative thermal oxidizer (RTO) to prevent PM from clogging the heat exchanger media in the RTO. Control technologies were evaluated for the remaining 25% gas stream. The uses of three additional control technologies were evaluated: (1) fabric filter; (2) dry ESP; and, (3) wet ESP. The cost $/ton to remove PM from each of these technologies is respectively: (1) $26,700; (2) $31,600; and, (3) $29,400. According to the applicant, none of these additional control technologies are economically feasible.

The proposed BPF and combined flare maximum expected air pollutant emission rates, based on regulatory requirements, vendor information, and the results of the Best Available Control Technology (BACT) analysis are summarized in Section 5 of Volume II of the permit application.

In summary, the applicant proposes the use of dry low NOx burners with acid addition in the tray/condenser scrubber to control NOx emissions from each dryer's exhaust. The applicant proposes to use a tray/condenser scrubber and a venturi scrubber to control PM emissions from each dryer's exhaust. The BPF will also use a regenerative thermal oxidizer (RTO) on the dryer exhaust to control VOC emissions and odors. Fabric filters will be used on each material recycle bin exhaust and each pellet storage silo exhaust to control PM emissions.

Department's Preliminary NOx and PM BACT Determinations

Due to the limited information available in the RBLC database, similar projects were reviewed. Large metropolitan areas were researched due to large quantities of wastewater sludge generated used to produce pelletized biosolids.

In the response to request additional information dated August 16, 2005, the applicant provided a summary of projects around the country. The table lists the projects, location, air pollution control systems and startup year. All of the plants with drum dryers use a one or two stage scrubbing system. The larger biosolid facilities use RTOs. (See the **Table 1 Municipal Biosolids Dryer Plants in the USA** provided in the Response to Request for Additional Information dated August 16, 2005}

The applicant provided actual performance data summarizing key information from the Greater Lawrence Sanitary District project located in North Andover, Massachusetts which is very similar to the proposed project. The applicant's summary included a scaling of this project to this

operating project, e.g., size of unit, air pollutant emission rates, fuels, etc. This BPF project will be unique in that it will be the first biosolids drying facility to use landfill gas as its primary fuel. The control technologies proposed for this project are proven at the operating Greater Lawrence Sanitary District project. The Greater Lawrence Sanitary District project started up in 2003.

General manufacturer information for the BACT technology proposed specifically, the dry low NOx burners, tray scrubber/condenser scrubber, and venturi scrubber was also provided. The dry low NOx burners are Kinedizer® gas burners provided by Maxon Corporation, or equal. The scrubber manufacturer is by SLY, Inc., or equal. The tray scrubber/condenser scrubber alone will reduce inlet PM at least 97% {See **Attachment 2 Manufacture's Product Literature** provided the Response to Request for Additional Information dated August 16, 2005}

The applicant provide information on 30 projects around the U.S. with 10 of the projects having start up dates between 2003 and 2006 {See the **Table 1 Municipal Biosolids Dryer Plants in the USA.**} This proposed project's control technologies are consistent with the few recent projects using dry low NOx burners and RTOs.

The department accepts the applicant's proposed BACT technologies. The proposed control technology proposed for PM emissions is readily available and proven. The use of additional PM controls is not cost effective; the cost to remove additional PM is between $26,000 and $32,000 /ton. The proposed control technology for NOx emissions, specifically, dry low NOx burners, is readily available and is demonstrated in other types of stationary sources of air pollution. The use of dry low NOx burners with an estimated cost of $2,900/ton is cost effective. In general, a cost effectiveness value for NOx control is $18,000/ton.

BACT EMISSION LIMITATIONS AND STANDARDS

Department's Procedure

In accordance with Rule 62-212.400, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

- Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.
- All scientific, engineering, and technical material and other information available to the Department.
- The emission limiting standards or BACT determination of any other state.
- The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "Top-Down" approach, particularly when permits are issued by states acting on behalf of EPA. The Department considers Top-Down to be a useful tool, though not a unique or required approach to achieve a BACT under the State regulations. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category.

If it is shown that this level of control is technically or economically unfeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

NSPS AND NESHAP REVIEW

The NSPS and NESHAP federal regulations do not contain emission standards or limitations for NOx or PM/PM_{10}.

The BPF dryer is subject to the mercury standard under the National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 61, Subpart E. The mercury emissions standard under the NESHAP is 3.2 kg (7.1 lb) of mercury per 24-hour period. This is equivalent to 1.296 TPY. The applicant proposed a limit of 8.08 E-03 TPY which is much lower than the NESHAP and the significant emission rate for Hg. This facility is not subject to BACT requirements for mercury (Hg).

VE STANDARDS REVIEW

While the general VE standard in Rule 62-296.320, F.A.C., limits VE to 20% from each train's stack, a VE limit of 5% with the exception for 20% up to 3-minutes in 1-hour should be attainable; expected VE from such an emissions unit is 0%. The Greater Lawrence Sanitary District, City of Largo and the City of Tampa units meet a VE limit of 5%.

BACT Emission Limitations and Standards

The emission limitations and standards from three similar facilities were reviewed, two of which are located in Florida. The three facilities reviewed were: (1) Greater Lawrence Sanitary District project located in North Andover, Massachusetts; (2) City of Largo and, (3) City of Tampa. Each 337.5 TPD dryer train of this project processes an equivalent 123,187 TPY of wet sludge. Emissions standards and limitations from these projects are summarized below.

(1) Greater Lawrence Sanitary District (GLSD). This wastewater treatment plant project is located in North Andover, Massachusetts. Each train at thisThis facility processes approximately 13,870 TPY24,800 TPY wet dry biosolids (the wet sludge moisture content is 70% per Massachusetts DEP). Emissions are controlled by tray scrubbers with acid addition, venturi scrubbers and RTOs. PM is limited to 0.64 pounds/hour; VE 5%, and NOx to 1.20 pounds/hour. The applicant scaled the emission limits from the GLSD by a factor of 3 3.78 to this project as follows: PM to 2.42 pounds/hour; and NOx to 4.54 pounds/hour.

(2) City of Largo. The City of Largo Wastewater Reclamation Facility located in Pinellas County, Florida operates two sludge dryer trains. The facility was upgraded in 1991. Each train processes

143,13836,455 TPY of wet sludge. Emissions are controlled by venturi scrubbers and an RTO. PM is limited to 3 pounds/hour; VE 5%, and VOC to 2.05 pounds/hour.

(3) City of Tampa. The City of Tampa Howard F. Curren AWT Plant located in Hillsborough County, Florida operates two sludge dryer trains. Each train processes 13,24864,900 TPY of wet sludge. This facility began operations in 1990. Emissions are controlled by venturi scrubbers and an RTO. PM is limited to 10.3 pounds/hour; VE 5%, and VOC to 7.1 pounds/hour.

Based on the selected control technologies the BACT emission limitations and standards proposed for this project are shown in **Table AP-1 Summary of Air Pollutants**. BACT standards are established for PM/PM_{10}, opacity and NOx. Emissions of SO_2, CO, VOC and Hg are limited for reasonable assurances. Emissions from each train are calculated in the exhaust gases exiting the dryer and RTO. Establishment of a performance standard on the dry low NOx burners themselves was not possible due to the design of each train; NOx emissions are also formed in the RTO.

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Recommended By:

Scott M. Sheplak, P.E., Permit Engineer

Date

Reviewed By:

A. A. Linero, P.E. Administrator

Date

Air Permitting South Section
Bureau of Air Regulation
Division of Air Resource Management
State of Florida, Department of Environmental Protection
Mail Station #5505
2600 Blair Stone Road
Tallahassee, FL 32399

Recommended By:

Trina L. Vielhauer
Bureau of Air Regulation

Date

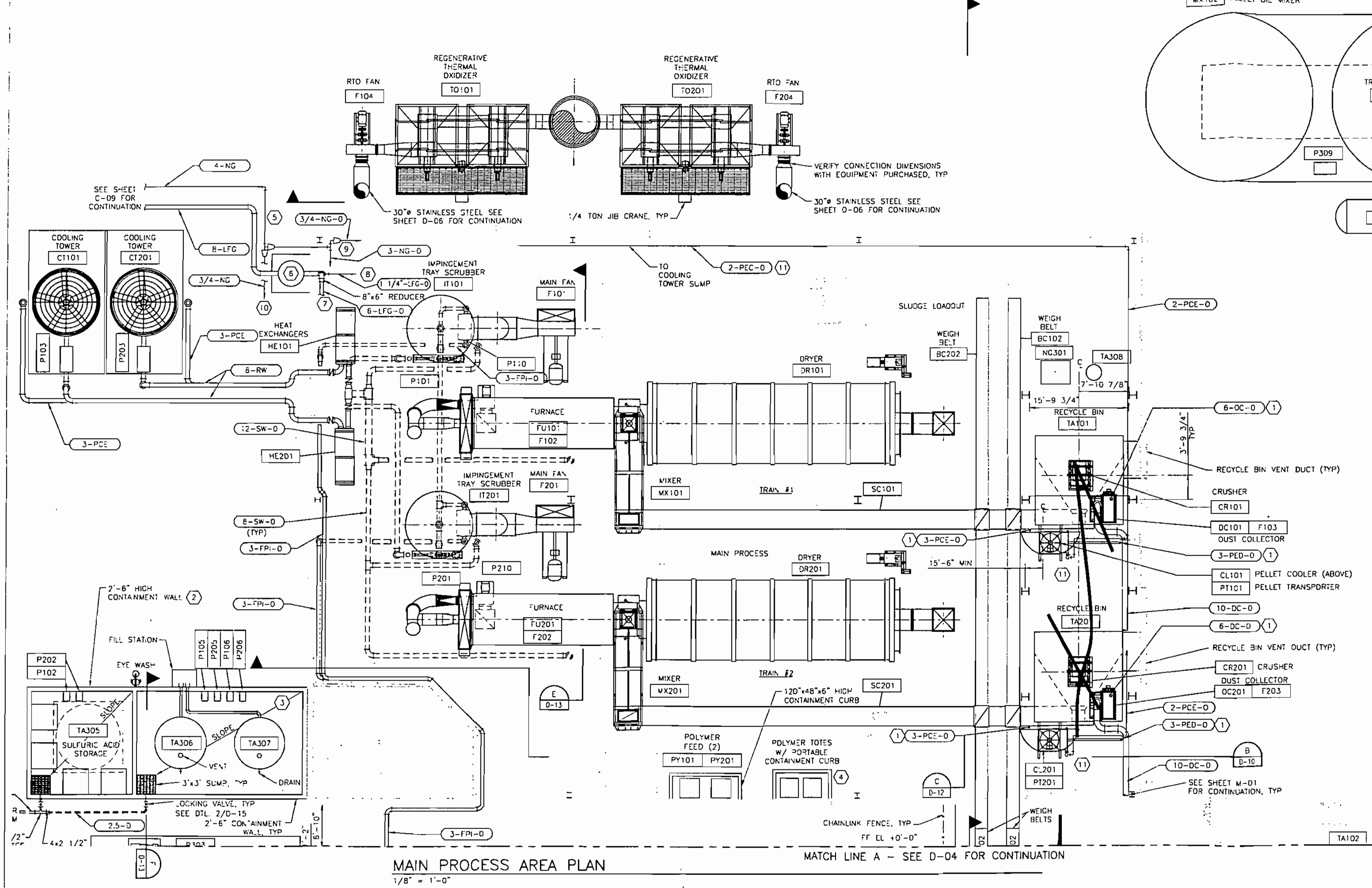
Approved By:

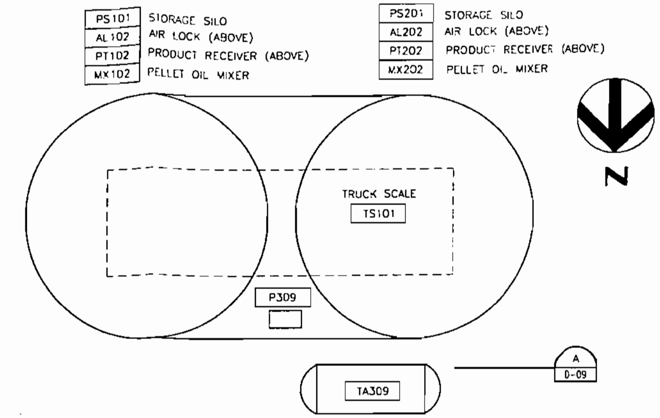
Michael G. Cooke, Director
Division of Air Resource Management

Date

ATTACHMENT 4

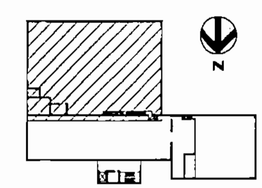
Sheet D-03- Main Level Process Plan





KEY NOTES:

1. SEE SHEET D-06 FOR CONTINUATION.
2. COAT SECONDARY CONTAINMENT AREA WITH TNEMEC SYSTEM FOR 98% SULFURIC ACID. SEE COATING MFGR'S RECOMMENDATIONS FOR APPLICATION.
3. SEE STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR ROOF DETAILS OVER CHEMICAL STORAGE AREA.
4. PORTABLE CONTAINMENT CURB FURNISHED BY POLYMER SUPPLIER.
5. SUPPLY METER AND GAS REGULATOR TO BE FURNISHED AND LOCATED BY THE GAS COMPANY.
6. CONDENSATE KNOCKOUT DRUM FOR LANDFILL GAS SUPPLY LINE TO BE INSTALLED ON CONCRETE EQUIPMENT PAD. FIELD LOCATE.
7. ROUTE 6" LANDFILL GAS LINE TO BOTH FURNACE/DRYER UNITS. SEE SHEET Y-10.
8. ROUTE 1 1/4" & 1" LANDFILL GAS LINE TO BOTH RTO'S. SEE SHEET Y-10.
9. ROUTE 3" & 3/4" NATURAL GAS LINES TO FURNACE AND RTO'S. SEE SHEET Y-10.
10. ROUTE 3/4" NATURAL GAS LINE TO HOT WATER HEATER (PWH101). SEE SHEET Y-10.
11. ROUTE 2" PCE LINE FROM EACH PELLET COOLER UP ALONG EXTERIOR BUILDING WALL ABOVE ALL GARAGE DOORS TO COOLING TOWER SUMPS. MAINTAIN 1/8" PER FOOT SLOPE FROM HIGH POINT NEAR EACH PELLET COOLER.



KEY PLAN

MATCH LINE A – SEE D-04 FOR CONTINUATION

MAIN PROCESS AREA PLAN

1/8" = 1'-0"

HDR

HDR ENGINEERING INC.
6190 GOLDEN HILLS DRIVE
MINNEAPOLIS, MN 55416
TEL 763-591-5400

ISSUE	DATE	DESCRIPTION
	11/22/05	90% REVIEW
	9/28/05	60% REVIEW
	8/26/05	30% REVIEW

		CHK BY:
PROJECT MANAGER	E. DeLaFOREST	
ARCHITECTURAL	S. BIRCH	
STRUCTURAL	W. KIAHON	
CIVIL	R. TRAVIS	
PROCESS	E. DeLaFOREST	DH
MECHANICAL	B. SPOTT	
ELECTRICAL	L. SMITH	
PROJECT NUMBER	000000000024020	

PE NAME: Edward J. DeLaForest
PE # 62369
CA # 4213

BIOSOLIDS PROCESSING FACILITY

SWA Solid Waste Authority of Palm Beach County

MAIN LEVEL PROCESS PLAN

FILENAME	000-03
SCALE	1/8" = 1'-0"

SHEET D-03

CDM®

consulting • engineering • construction • operations

Department of
Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

August 16, 2002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Donald L. Lockhart
Executive Director
Solid Waste Authority of Palm Beach Co.
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Re: DEP File No. 0990234-006-AC (PSD-FL-108E)
Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility Modifications

Dear Mr. Lockhart:

The Department received your application for the construction of a 2,300 scfm back up flare, a lime recalcination facility (LRF), and a biosolids pelletization facility (BPF) in West Palm Beach, Palm Beach County, Florida on June 17, 2002. Based on a technical review, the application is incomplete. Pursuant to Rules 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C., please submit the following information, including all assumptions, reference materials and calculations:

1. Volume II - Page I.Part 5-1 and I. Part 7-1of the application under Description of Proposed Project or Alterations and/or Application Comment, it states that this application is also for " the addition of a flare for the Class I landfill with a design flow rate of 3,500 scfm". However, the following application section did not include information about this unit. On Volume III, page 1-8 of the Project Overview and Summary of Air Quality Impacts states that a separate air permit will be submitted for this 3,500 scfm flare. Please explain this discrepancy.
2. Volume II: Appendices G, H, J, K, L and M. Please submit this information.
3. What type of flare will be the proposed 2,300 scfm flare (steam-assisted, nonassisted, air-assisted, open, closed, etc)?
4. Submit the PM recalculation as soon as the design of the cross-bar cooler is complete.
5. Provide a detailed description of the control equipment for each facility. Include a detailed engineering design specification of the control devices (baghouse, ESP, RTO, venturi, etc) used at each facility.

6. How many cooling towers will be installed?
7. Proposed BACT Analysis:
   - Expand the BACT analysis to include the social and economic impact of the application of each chosen technology. Rule 62-212.400(6) F.A.C.
   - Provide energy, environmental and economic costs of each proposed technology. It appears that all the Tables with these data are missing from Volume III, Section 4. Rule 62.212.400 (6) F.A.C.
   - Provide the BACT determinations of any other state. Rule 62-212.400 (6) F.A.C
8. Air Quality Analysis: Please submit all air dispersion modeling input and output files on CDs. Review of the air quality analysis will begin when these files are received.

Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature.

If there are any questions, please call or e-mail Teresa Heron. Matters regarding modeling issues should be directed to Cleve Holladay (meteorologist) at 850/921-8986 and e-mail cleve.holladay@dep.state.fl.us . Matters regarding the technical information may be directed to Teresa Heron (review Engineer) at 850/921-9529 and e-mail teresa.heron@dep.state.fl.us

Sincerely,

A. A. Linero, P.E. Administrator
New Source Review Section

AAL/th

cc: Tom Tittle, DEP SED
Alex Makled, P.E., CDM
Jeaneanne Gettle, EPA
John Bunyak, NPS
Steve Palmer, DEP PPSO

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Donald L. Lockhart
Executive Director
Solid Waste Authority of
Palm Beach County
7501 North Jog Road
West Palm Beach, FL
33412-2414

COMPLETE THIS SECTION ON DELIVERY

A. Received by *(Please Print Clearly)* R Murphy — B. Date of Delivery 8/21/03

C. Signature
X R Murphy ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. 7001 0320 0001 3692 8031

PS Form 3811, July 1999 Domestic Return Receipt 102595-00-M-0952

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To Donald L. Lockhart
Street, Apt. No.; or PO Box No. 7501 N. Jog Rd.
City, State, ZIP+4 W. Palm Bch., FL 33412-2414

PS Form 3800, January 2001 See Reverse for Instructions

7001 0320 0001 3692 8031

SWA
SOLID WASTE AUTHORITY

YOUR PARTNER FOR
SOLID WASTE SOLUTIONS

December 5, 2005

Ms. Trina L. Vielhauer
Chief, Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Ms. Vielhauer:

Enclosed please find one (1) original Proof of Publication from the Palm Beach Post for the Solid Waste Authority's Biosolids Pelletization Project.

If you have any questions or need any further information, please feel free to contact me at (561) 615-4571.

Sincerely,

Patrick D. Carroll
Assistant Director

Enc.
Cc: Scott Sheplack

THE PALM BEACH POST

Published Daily and Sunday
West Palm Beach, Palm Beach County, Florida

PROOF OF PUBLICATION

STATE OF FLORIDA
COUNTY OF PALM BEACH

Before the undersigned authority personally appeared **Wendy Elliott,** who on oath says that she is **Classified Advertising Supervisor** of The Palm Beach Post, a daily and Sunday newspaper published at West Palm Beach in Palm Beach County, Florida; that the attached copy of advertising, being **Notice** in the matter of **DEP0990234-006-AC & PSD-FL-108F** in the --- Court, was published in said newspaper in the issues of **November 29, 2005.**

Affiant further says that the said The Post is a newspaper published at West Palm Beach, in said Palm Beach County, Florida, and that the said newspaper has heretofore been continuously published in said Palm Beach County, Florida, daily and Sunday and has been entered as second class mail matter at the post office in West Palm Beach, in said Palm Beach County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she/he has neither paid nor promised any person, firm or corporation any discount rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Wendy Elliott

Sworn to and subscribed before this 30th day of November, A.D. 2005

Karen M. McClinton

Personally known **XX** or Produced Identification _____
Type of Identification Produced _____

Karen M. McClinton
Commission # DD359566
Expires: NOV. 15, 2008
Bonded Thru
Atlantic Bonding Co., Inc.

NO. 4675480
PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. 0990234-006-AC and PSD-FL-108F
Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Biosolids Pelletization Facility
Palm Beach County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification to Solid Waste Authority of Palm Beach County, to modify its existing PSD construction permit for the North County Resource Recovery Facility located at 7501 North Jog Road, West Palm Beach, Palm Beach County. A Best Available Control Technology (BACT) determination was required for nitrogen oxides (NOx) and particulate matter (PM) emissions pursuant to Rule 62-212.400, F.A.C., and 40 CFR 52.21. The applicant's mailing address is: 7501 North Jog Road, West Palm Beach, Florida 33412-2414.

This permitting action is for the construction of a Biosolids Pelletization Facility (BPF) at the North County Resource Recovery Facility Site in Palm Beach County. The BPF will primarily combust landfill gas generated from the nearby landfill and use natural gas as a back up fuel in two 337.5 wet ton per day drum dryers to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets.

The applicant proposes the use of dry low NOx burners and acid addition in the tray/condenser scrubber to control NOx emissions from each dryer's exhaust. The applicant proposes to use a tray/condenser scrubber and a venturi scrubber to control PM emissions from each dryer's exhaust. The BPF will also use a regenerative thermal oxidizer (RTO) on the dryer exhaust to control VOC emissions and odors. Fabric filters will be used on each material recycle bin exhaust and each pellet storage silo exhaust to control PM emissions.

According to the applicant, the combined maximum emissions from this project in tons per year are summarized below:

Pollutant
NOX
Maximum Potential Emissions
52.5
PSD Significant Emission Rate
40
Pollutant
PM/PM10
Maximum Potential Emissions
22.6/22.3
PSD Significant Emission Rate
25/15
Pollutant
SO2
Maximum Potential Emissions
39
PSD Significant Emission Rate
40
Pollutant
CO
Maximum Potential Emissions
33.7
PSD Significant Emission Rate
100
Pollutant
VOC
Maximum Potential Emissions
9.3
PSD Significant Emission Rate
40
Pollutant
Hg
Maximum Potential Emissions
8.08 E-03
PSD Significant Emission Rate
0.17

An air quality impact analysis was required for nitrogen oxides (NOx) and PM/PM10. According to the applicant, maximum predicted air quality impacts due to emissions from the proposed project for nitrogen oxides (NOx) and PM/PM10 are less than the significant impact levels applicable to PSD Class II Areas (i.e., areas outside of the Everglades National Park). Therefore, an increment consumption analysis was not required. The project has no significant impact on the PSD Class I Everglades National Park area. Based on the required analyses, the Department has reasonable assurance that the proposed project will not cause or contribute to a violation of any state or federal ambient air quality standard.

The Department will issue the FINAL Permit, in accordance with the conditions of the DRAFT Permit, unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

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

Dept. of Environmental Protection
Bureau of Air Regulation
Suite 4,
111 S. Magnolia Drive
Tallahassee, Florida 32301
Telephone: 850/488-0114
Fax: 850/922-6979

Division of Environmental Science and Engineering
Palm Beach County
Health Department
901 Evernia Street
West Palm Beach, Florida 33401
Telephone: 561/355-3070
Fax: 561/355-2442

Dept. of Environmental Protection
Southeast District
400 North Congress Avenue
West Palm Beach, Florida 33401
Telephone: 561/681-6600
Fax: 561/681-6755

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact Scott M. Sheplak, P.E. at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/921-9532, for additional information. The draft permit, technical evaluation and preliminary determination can be accessed at the following web site www.dep.state.fl.us/air/permitting/construct/htm.

PUB: The Palm Beach Post
November 29, 2005

The Department will accept written comments and requests for public meetings concerning the proposed permit issuance action for a period of 30 (thirty) days from the date of publication of this Public Notice of Intent to Issue PSD Permit. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit modification and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

This PSD permitting action is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501-519, F.S.). If a petition for an administrative hearing on the Department's Intent to Issue is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3).

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person

Memorandum

Florida Department of
Environmental Protection

TO: Trina L. Vielhauer

THRU: A. A. Linero, P.E.

FROM: Scott M. Sheplak, P.E.

DATE: November 18, 2005

SUBJECT: Solid Waste Authority of Palm Beach County
North County RRF Site Modification
Biosolids Pelletization Facility
0990234-006-AC and PSD-FL-108F

ARMS Day 90 = 11/28/05

Attached for approval and signature is a draft PSD permit modification for the PSD permit for the construction of a biosolids pelletization facility (BPF). With this latest request the applicant modified their original project submitted in July 2002; the applicant has withdrawn the lime recalcination part of the project and increased the biosolids pelletization rate from 400 wet TPD to 675 wet TPD.

This facility is a major PSD source. The proposed project is subject to PSD for emissions of NOx and PM/PM_{10} because the significant emission rates were exceeded. NOx emissions were 52.5 TPY and PM/PM_{10} emissions were 22.6/22.3 TPY. The significant emission rates are 40 TPY for NOx and 25/15 TPY for PM/PM_{10}. BACT standards are established for PM/PM_{10}, opacity and NOx. Emissions of SO_2, CO, VOC and Hg are limited for reasonable assurances.

The applicant proposes the use of dry low NOx burners with acid addition in the tray/condenser scrubber to control NOx emissions from each dryer's exhaust. The applicant proposes to use a tray/condenser scrubber and a venturi scrubber to control PM emissions from each dryer's exhaust. The BPF will also use a regenerative thermal oxidizer (RTO) on the dryer exhaust to control VOC emissions and odors. Fabric filters will be used on each material recycle bin exhaust and each pellet storage silo exhaust to control PM emissions.

An air quality analysis was performed by the applicant and verified by Debbie Nelson.

We recommend your approval and signature.

Attachments

AAL/SMS

Department of Environmental Protection

Jeb Bush
Governor

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

Colleen M. Castille
Secretary

November 18, 2005

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

John D. Booth, Executive Director
Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Re: DEP File No. 0990234-006-AC and PSD-FL-108F
North County Resource Recovery Site
Biosolids Pelletization Facility

Dear Mr. Booth:

Enclosed is one copy of the Draft air construction permit modification for the North County Resource Recovery Site to construct the above mentioned emissions units. This site is located at 7501 North Jog Road, West Palm Beach, Palm Beach County. The Technical Evaluation and Preliminary Determination, the Department's Intent to Issue PSD Air Construction Permit and the Public Notice of Intent to Issue PSD Air Construction Permit are also included.

The Public Notice of Intent to Issue PSD Air Construction Permit must be published one time only, as soon as possible, in the legal advertisement section of a newspaper of general circulation in the area affected, pursuant to the requirements Chapter 50, Florida Statutes. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit modification.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, Air Permitting South Section at the above letterhead address. If you have any other questions, please contact Mr. Scott M. Sheplak, P.E. at 850/921-9532 or Mr. Linero at 850/921-9523.

Sincerely,

Trina L. Vielhauer, Chief,
Bureau of Air Regulation

TLV/AAL/sms

Enclosures

In the Matter of an
Application for Permit by:

John D. Booth, Executive Director
Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

DEP File No. 0990234-006-AC and PSD-FL-108F
Biosolids Pelletization Facility

INTENT TO ISSUE PSD AIR CONSTRUCTION PERMIT

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

The applicant, Solid Waste Authority of Palm Beach County, applied on May 4, 2005 (completed on August 30, 2005), to the Department for a PSD permit for the construction of a 675 wet tons of sludge per day (wtpd, at 20% solids) Biosolids Pelletization Facility (BPF) at the North County Resource Recovery Facility Site, Palm Beach County.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a PSD construction permit is required.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, 62-297, F.A.C and 40 CFR 52.21.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue PSD Permit. The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the notice to be published as soon as possible after notification by the Department of its intended action. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax 850/ 922-6979). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the final permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed permit issuance action for a period of 30 (thirty) days from the date of publication of the enclosed Public Notice. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If

comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

This PSD permitting action is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501-519, F.S.). If a petition for an administrative hearing on the Department's Intent to Issue is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3).

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above. Mediation is not available in this proceeding.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a

variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.

Trina L. Vielhauer
Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue PSD Air Construction Permit (including the Public Notice of Intent to Issue PSD Air Construction Permit, Technical Evaluation and Preliminary Determination, and the Draft permit modification) was sent by certified mail with an e-mailed version (*) and copies were mailed by e-mail before the close of business on 11/21/05 to the person(s) listed:

Mr. John D. Booth, SWA *
jbooth@swa.org

Mr. Ray Schauer, SWA
rschauer@swa.org

Mr. Kevin C. Leo, P.E., CDM
leokc@cdm.com

Mr. Steve Palmer, DEP, Siting Coordination Office
Steve.Palmer@dep.state.fl.us

Mr. James Stormer, PBCHD

Mr. John Bunyak, NPS

Mr. Alex H. Makled, P.E., CDM
makledah@cdm.com

Ms. Jill Grimaldi, CDM
GrimaldiJT@cdm.com

Mr. Darrel Graziani, SED
Darrel.Graziani@dep.state.fl.us

Mr. Gregg Worley, EPA

Clerk Stamp

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

(Clerk) 11/21/05 (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 0990234-006-AC and PSD-FL-108F

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Biosolids Pelletization Facility
Palm Beach County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification to Solid Waste Authority of Palm Beach County, to modify its existing PSD construction permit for the North County Resource Recovery Facility located at 7501 North Jog Road, West Palm Beach, Palm Beach County. A Best Available Control Technology (BACT) determination was required for nitrogen oxides (NOx) and particulate matter (PM) emissions pursuant to Rule 62-212.400, F.A.C., and 40 CFR 52.21. The applicant's mailing address is: 7501 North Jog Road, West Palm Beach, Florida 33412-2414.

This permitting action is for the construction of a Biosolids Pelletization Facility (BPF) at the North County Resource Recovery Facility Site in Palm Beach County. The BPF will primarily combust landfill gas generated from the nearby landfill and use natural gas as a back up fuel in two 337.5 wet ton per day drum dryers to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets.

The applicant proposes the use of dry low NOx burners and acid addition in the tray/condenser scrubber to control NOx emissions from each dryer's exhaust. The applicant proposes to use a tray/condenser scrubber and a venturi scrubber to control PM emissions from each dryer's exhaust. The BPF will also use a regenerative thermal oxidizer (RTO) on the dryer exhaust to control VOC emissions and odors. Fabric filters will be used on each material recycle bin exhaust and each pellet storage silo exhaust to control PM emissions.

According to the applicant, the combined maximum emissions from this project in tons per year are summarized below:

Pollutant	ximum Potential Emissions	PSD Significant Emission Rate
NOX	52.5	40
PM/PM_{10}	22.6/22.3	25/15
SO_2	39	40
CO	29.5	100
VOC	8.8	40
Hg	8.08 E-03	0.17

An air quality impact analysis was required for nitrogen oxides (NOx) and PM/PM_{10}. According to the applicant, maximum predicted air quality impacts due to emissions from the proposed project for nitrogen oxides (NOx) and PM/PM_{10} are less than the significant impact levels applicable to PSD Class II Areas (i.e., areas outside of the Everglades National Park). Therefore, an increment consumption analysis was not required. The project has no significant impact on the PSD Class I Everglades National Park area. Based on the required analyses, the Department has reasonable assurance that the proposed project will not cause or contribute to a violation of any state or federal ambient air quality standard.

The Department will issue the FINAL Permit, in accordance with the conditions of the DRAFT Permit, unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed permit issuance action for a period of 30 (thirty) days from the date of publication of this Public Notice of Intent to Issue PSD Permit. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit modification and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

This PSD permitting action is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501-519, F.S.). If a petition for an administrative hearing on the Department's Intent to Issue is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3).

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

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

Dept. of Environmental Protection
Bureau of Air Regulation
Suite 4, 111 S. Magnolia Drive
Tallahassee, Florida 32301
Telephone: 850/488-0114
Fax: 850/922-6979

Division of Environmental Science and Engineering
Palm Beach County Health Department
901 Evernia Street
West Palm Beach, Florida 33401
Telephone: 561/355-3070
Fax: 561/355-2442

Dept. of Environmental Protection
Southeast District
400 North Congress Avenue
West Palm Beach, Florida 33401
Telephone: 561/681-6600
Fax: 561/681-6755

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact Scott M. Sheplak, P.E. at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/921-9532, for additional information. The draft permit, technical evaluation and preliminary determination can be accessed at the following web site www.dep.state.fl.us/air/permitting/construct.htm.

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Solid Waste Authority of Palm Beach County

Facility ID No.: 0990234

PROJECT

DEP File No.: 0950137-006-AC and
PSD-FL-108F

Biosolids Pelletization Facility

COUNTY

Palm Beach County

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
Air Permitting South Section
Mail Station #5505, 2600 Blair Stone Road
Tallahassee, Florida 32399-2400

November 18, 2005

1. GENERAL PROJECT INFORMATION

Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Authorized Representative: Mr. John D. Booth, Executive Director

Application Processing Schedule

May 4, 2005 Received application to construct; incomplete.

July 15, 2005 Incompleteness letter.

August 30, 2005 Received additional information; application complete.

{Note: The applicant requested a modification to their original project submitted in July 2002. The applicant has withdrawn the lime recalcination part of the project and increased the biosolids pelletization rate from 400 wet TPD to 675 wet TPD.}

Relevant Documents

- Permit PSD-FL-108E
- Power Plant Siting Act Certification PA84-20
- Current Title V Air Operation Permit 0990234-004-AV
- Department's Technical Evaluation & Preliminary Determination dated [Month day, 2005]

2. FACILITY DESCRIPTION AND LOCATION

The facility, North County Resource Recovery Facility (NCRRF), is located at 7501 North Jog Road, West Palm Beach, Palm Beach County. The UTM coordinates are Zone 17; 585.8 km E; 2960.2 km N. {See **Figure No. 2-4** provided by the applicant showing the proposed site for this project}

This existing facility consists of a *very large* municipal waste combustor plant designed to process 2,000 tons per day (TPD) of municipal solid waste (MSW). This existing facility includes two boilers and two landfills, a Class I Landfill and a Class III Landfill, each with its own gas collection system and flare.

North County Resource Recovery Facility

http://www.swa.org/site/information and documents/ncrrf.htm

3. PROPOSED PROJECT

Proposed Activity

The applicant, Solid Waste Authority of Palm Beach County, proposes to construct a 675 wet tons of sludge per day (wtpd, at 20% solids) Biosolids Pelletization Facility (BPF). The BPF will have two

337.5 wtpd process trains and related appurtenances. The proposed BPF will be located adjacent to the existing landfill. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as a backup fuel. Each dryer has a rated capacity of 34.2 MMBTU/hr based on landfill gas or 34.1 MMBTU/hr based on natural gas. An additional 2 MMBtu/hr is required for each regenerative thermal oxidizer (RTO) making the total design capacity of each train 42 MMBtu (84 MMBtu total for the BPF).

The BPF will help eliminate phosphorus loading of the Lake Okeechobee drainage basin and other environmentally sensitive basins in the area due to land application of wastewater sludge. Major metropolitan areas in the U.S. are pelletizing sludge rather than applying it to land.

The proposed activity is to begin as soon as possible and is scheduled to last 18 months. An expiration date of March 31, 2008, for this air construction permit should allow sufficient time to complete the required testing and to submit the test reports.

The proposed new emissions units are:

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Cooling Tower Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2
-###	Cooling Tower Train #2
-###	Emergency Generator

4. APPLICABLE REGULATIONS

Regulatory Classifications

Title III: The facility is identified as a major source of hazardous air pollutants (HAPs).

NESHAP: The proposed project will be subject to the requirements of the National Emission Standard for Hazardous Air Pollutants of 40 CFR 61 Subpart E, NESHAP for Mercury.

NESHAP: The facility operates one or more units subject to National Emission Standards for Hazardous Air Pollutants of 40 CFR 63.

MACT: A case-by case MACT was not required. Since neither the NCRRF or the proposed projects are constructed or reconstructed major sources of HAPs, this rule does not apply.

Title IV: The facility operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

NSPS: The facility operates one or more units subject to New Source Performance Standards of 40 CFR 60.

Stationary Sources - Emission Standards in Chapter 62-296, F.A.C.: The facility operates one or more units subject to an emission standard.

RACT: The entire State of Florida is either classified as attainment or considered to be in attainment (i.e., unclassifiable) with respect to the NAAQS for all pollutants. In addition, Palm Beach County is not part of any maintenance areas for lead or PM. Therefore, the proposed projects are not subject to the Reasonably Available Control Technology (RACT) requirements for these pollutants in Rule 62-296, F.A.C. The NOx RACT provisions of Rule 62-296.500(b), FAC, do apply to facilities in Palm Beach County. However, new or modified NOx emitting facilities subject to major-source PSD permitting and preparing a BACT analysis are exempt from these requirements. Since the BPF will be meeting NOx BACT, these rules do not apply.

PSD: The facility is an existing PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

Power Plant Siting Act: This project was requested to be an amendment leading to the modification of the existing power plant siting certification PA84-20.

Permit(s) Required

The Department requires the owner or operator of any emissions unit to obtain an appropriate permit prior to beginning construction, modification, or initial or continued operation, unless exempted pursuant to Department rule or statute. The Department has specific rules on when an air construction permit is required {see Rule 62-210.300(1), F.A.C.}, when an air operation permit is required {see Rule 62-210.300(2), F.A.C.} and when activity is exempt from permitting {see Rules 62-210.300(3) and 62-4.040, F.A.C.}. The proposed activity is not specifically exempted from permitting in Rules 62-210.300(3) or 62-4.040, F.A.C.

Air Construction Permit Required

The proposed activity involves the addition of an emissions unit which will result in an increase of actual emissions. The Department requires an air construction permit for the owner or operator to proceed with the proposed activity.

Prevention of Significant Deterioration (PSD) Applicability

The Department regulates major air pollution sources in accordance with Florida's Prevention of Significant Deterioration (PSD) Program, as defined in Rule 62-212.400, F.A.C. PSD preconstruction review is required in areas that are currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) for each regulated pollutant or areas designated as "unclassifiable" for such pollutants. A facility is considered "major" with respect to PSD if it emits or has the potential to emit:

≥ 250 tons per year of any regulated pollutant, or

≥ 100 tons per year of any regulated pollutant and belonging to one of 28 PSD Major Facility Categories, or

≥ 5 tons per year of lead.

This facility includes municipal incinerators, which belongs to the "List of 28 PSD Facility Categories" specified in Table 62-212.400-1, F.A.C. For facilities in the listed categories, the

threshold for classification as a PSD major source is 100 tons per year. This facility is a PSD-major source of air pollution because the potential emissions of several pollutants are greater 100 tons per year. The proposed activity will be located in Palm Beach County, which is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS). As such, all new projects are reviewed for the applicability of PSD preconstruction review based on the PSD Significant Emission Rates (SER) specified in Table 62-212.400-2, F.A.C. Pollutant emissions from the project exceeding these rates are considered "significant" and subject to PSD preconstruction review. This means that the applicant must employ the Best Available Control Technology (BACT) to minimize emissions of each PSD-significant pollutant as well as evaluate the air quality impacts. Although a facility may be "major" with respect to PSD for only one regulated pollutant, the project may be subject to PSD preconstruction review for several PSD-significant pollutants.

The following table summarizes the applicant's PSD applicability analysis for this project.

Table 1. Summary of the Applicant's PSD Applicability

Pollutant	Net Increase, TPY[a]	PSD Threshold, TPY SER	Subject to PSD Review?
CO	33.7	100	No
NOx	52.5	40	Yes
SO_2	39.1	40	No
VOC	9.3	40	No
PM	22.6	25	No
PM_{10}	22.3	15	Yes
TRS compounds H_2S	0.00	10	No
Lead[b]	6.39E-03	0.60	No
Mercury[b]	8.08E-03	0.17	No
Total HAPs[c]	0.85	25	No

a. "TPY" means tons per year.
b. Equivalent TPY values are shown for these air pollutants; the actual rate values are in pounds per year
c. Total HAPs for case-by-case MACT applicability.

As shown in this table, the proposed project is subject to PSD preconstruction review for emissions of: NOx and PM_{10}. {For the detailed summary of emissions see the applicant's **Table 2-1 SWA Biosolids Pelletization Facility, and Class I Landfill Flares Proposed Maximum Potential Controlled Emission Rates and PSD Applicability** in Section 2 of the permit application.}

Applicant's PSD Applicabilty

The Class I Landfill's 1,800 scfm flare has been replaced by a 3,500 scfm flare. Two more flares, a

1,000 scfm flare and a 2,000 scfm flare will be added at the Class I Landfill in the next few years to handle gas generation at full build-out of the Landfill, and to allow for flow variability as the BPF draws up to 2,800 scfm of landfill gas. The flares are a separate project from the BPF, but are being considered in this PPSA because they meet the definition of "contemporaneous" projects in the Prevention of Significant Deterioration Rules (40 CFR 51.166 and 62-212.400, F.A.C.).

A modification to an existing major source is subject to PSD regulations if it is located in a PSD attainment area and it is a major modification. The project site and vicinity are currently considered to be in attainment with air quality standards for all PSD pollutants (40 CFR 81.310 and Rule 62-204, F. A.C.). A major modification is a physical change or a change in method of operation of a major source which would result in a "significant net emissions increase" of a regulated pollutant. In this case, the physical change is the addition of the BPF and the three flares.

Each proposed modification at the NCRRF site is required to take into account all other permitted air emission increases and decreases that have occurred in the 5 years prior to the proposed modification. Since the BPF and flares would all be built within 5 years of each other, they must be considered together in the PSD applicability determination. Similarly, the decommissioning of the existing 1,800 scfm flare at the Class I Landfill has already occurred and must be included with this project for permitting purposes. The rules for calculating the "net emissions increase" for these projects state that maximum potential emission rates be used for the new sources, and actual annual average emission rates (over the most recent 2 years) be used for the calculation of decreases for the decommissioned sources. Since the existing 1,800 scfm was decommissioned before the BPF had commenced full-scale operation, the SWA can take credit for the net reduction in emissions. The calculated net emissions increases for all PSD pollutants are shown in Table 2-1 of the permit application submitted to the Department's power plant siting office. The totals in Table 2-1 reflect that the flare emissions have been reduced by the amount of gas consumed by the BPF. The emissions from the now decommissioned 1,800 scfm flare have been subtracted from the total. The maximum potential annual emission rates presented in Table 2-1 for the new sources were calculated with the assumption that each unit could operate 365 days per year at 100 percent load. As explained in Section 2 of Volume II, three flares (3,500 scfm; 2,000 scfm; and 1,000 scfm each) are proposed to be installed at the Class I Landfill in the same 5-year period as these projects. The 3,500 scfm flare has already been installed and is in use. These three flares are exempt from PSD permitting. However, because they are contemporaneous projects with the BPF, their emission rates are included in the first total shown in Table 2-1. The second total in Table 2-1 shows that the net emissions increase for the BPF project alone would exceed the PSD "significant net emissions increase" threshold (Rule 62-212.400, F.A.C., Table 212.400-2) for nitrogen oxides (NOx) and particulate matter (PM). The proposed BPF project, therefore, is subject to PSD requirements, and a "major" modification to the NCRRF site's existing PSD permit must be prepared.

The SWA is required to apply for a major modification to their existing NCRRF Site PSD Permit due to the emissions increase from the new BPF. More specific details regarding the air emissions from the dryer stack can be found in the PSD permit application.

A detailed summary of the net emissions increases is found in the applicant's **Table 2-1 SWA Biosolids Pelletization Facility, and Class I Landfill Flares Proposed Maximum Potential**

Controlled Emission Rates and PSD Applicability Air Operation Permit Required

The existing facility operates under a Title V permit. A revision to the Title V permit will be required to allow the operation of the proposed activity.

5. APPLICANT'S PROCESS/OPERATION DESCRIPTION

The New England Fertilizer Company (NEFCO) was selected to design, build and operate the project. **Figure 2-4 Process Flow Diagram** in the permit application is a process flow diagram of the drum drying system (DDS). The **Figure 2-3 Proposed Site Plan** is a site layout diagram showing the proposed location of the specific equipment.

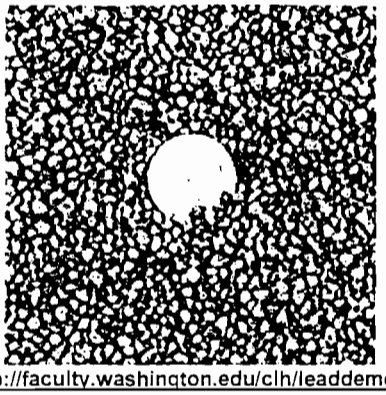
Sludge will be delivered to the site in the form of cake sludge with 20 percent solids content. It is anticipated that the sludge will need to be hauled in dump trucks or trailer trucks that can easily be emptied. The truck will off- load into one of two 30 wet ton reclaim bins that will ultimately feed the two BPF trains.

The DDS uses a portion of the already-dried material as an additive to the dewatered sludge cake to get it past the sticky phase. When mixed; the cake, or "wet" material, coats the dried particles, or "recycled" material, to obtain a non-sticky mixture, usually in the 50 to 70 percent dry solids content range. The added benefit to this process is that the heat energy now needs only to be spent on removing moisture from the surface of each particle, while the core of the particle is already dry.

The evaporation process in the DDS actually takes place within the triple-pass rotating drum. The sludge is conveyed through the rotating drum via flights mounted on the drum walls, until such time as it is dry enough and, therefore, light enough to be lifted and pneumatically-conveyed out of the drum. DDS technology significantly limits over-drying of material, which is where odors are created. The high-speed airstream carries dried particles and the evaporated moisture. The DDS uses a two-stage separation process to remove the solids from the air. Following these stages, the airstream is more than 98 percent clear of particulates.

The material exiting the rotary valve following the separation devices is an agglomerate of particles of all sizes. Many beneficial reuse options require a uniform distribution of particle size. For this reason, it may be necessary to classify the particles by size prior to discharge as final product.

The final product is biosolids pellets, also referred to as pelletized sludge (see the picture below).



http://faculty.washington.edu/clh/leaddemoa.html

The DDS can use different types of fuels such as natural gas or landfill gas/methane. It is the intent of this design to use the landfill gas as the primary source with natural gas as a backup. The gas will fuel the burner to warm the recycled process air via a heat exchanger before it enters the furnace. The maximum heat input to each dryer is 34.2 MMBTU/hr based on landfill gas or 34.1 MMBTU/hr based on natural gas.

6. AIR POLLUTANT EMISSIONS AND CONTROLS

The Class I Landfill has an existing landfill gas collection and control system that combusts the gas in a 3,500 scfm open flare. During operation of the BPF, the flare will be "turned-down" and the Class I Landfill would supply the approximately 2,800 scfm of landfill gas needed by the BPF at the design capacity (84 MMBtu/hr of landfill gas with a heat content of 500 British thermal units per standard cubic feet (btu/scf). The landfill gas burners at the BPF will themselves serve as air pollution devices for controlling the emissions of non-methane organic compounds (NMOCs) from landfill gas. They will be designed to provide 98 percent destruction removal efficiency for NMOCs.

Hot combustion gases (about 841°F at the dryer inlet) will flow through a rotating drum with the biosolids, driving off water, and volatile organic compounds (VOCs). At the dryer exhaust end, a cyclonic separator will remove the pellets and heavier dust particles from the gas stream and send these to screens for size sorting. The exhaust gases, containing products of combustion (nitrogen oxide (NOx), carbon monoxide (CO), and sulfur dioxide (SO_2)), particulate matter (PM), and VOCs, will then go through a tray condenser and venturi scrubber. These devices will remove PM and some SO_2. The gases will then go through a RTO to combust the VOCs before exiting the exhaust stack.

The BPF will include a tray condenser/scrubber and venturi scrubber with cyclonic separator to remove PM_{10} and possible SO_2 along with a regenerative thermal oxidizer (RTO) to combust the VOCs before exiting the exhaust stack. The tray condenser/scrubber will also remove some NH_3. Particulate matter emissions from the screening operation , recycle material and the two pellet storage silos will be controlled by baghouses; the pellets will be conveyed to trucks in an enclosed area to minimize fugitive dust emissions.

Odors of wastewater origin are often formed as a result of bacterial action on wastes when insufficient dissolved oxygen is available to the bacteria or when anaerobic bacteria are part of the unit process as

anaerobic digestion. One way of treating this odor is to collect and treat the odorous gases. There are several methods of treatment for these odors. One such proven technology is wet scrubbing (absorption) by use of packed tower scrubbers. Two separate odor control systems are proposed for the facility. The odor control system will include packed tower scrubbers for the sludge receiving area and an RTO for reduction of odors from the process air train.

The packed tower scrubber receives air from the building area to be treated, which enters the bottom of the tower. A scrubbing liquid such as sodium hypochlorite is sprayed over the top of the packing material, creating a large liquid surface area at the liquid-gas interface. The odorous gas is absorbed by the scrubbing liquid and air, free of these contaminants, will either discharge to the atmosphere or to a second stage packed tower via a mist eliminator. The scrubbing liquid is captured in a sump at the bottom of the scrubber tower where it is pumped back to the top of the scrubber tower. The addition of sodium hydroxide and sodium hypochlorite solutions to the recycling scrubbing liquid will be required to provide a constant inflow of fresh scrubbing chemicals for optimum scrubber performance. Make-up water will be added continuously to maintain a constant water supply. Spent scrubbing liquid will overflow to the onsite wastewater pump station to be pumped to the East Central Regional Wastewater Treatment Facility (WWTF) for further treatment. Two 8-foot diameter tanks, one each for sodium hydroxide and sodium hypochlorite will be used for chemical storage. Both tanks will be surrounded by containment walls.

Each biosolids dryer train will have the following additional air emissions sources: exhaust vent on one recycle material bin exhaust from one fertilizer pellet storage silo, and one cooling tower. All of these are potential sources of PM emissions. Each of two recycle material bins will be ventilated through a fugitive dust control baghouse and then through a building odor scrubber. Dusty air resulting from silo filling operations will be ducted to the recycle bin baghouses, mentioned above. Emissions from the cooling towers and emergency generator are uncontrolled.

7. AVAILABLE INFORMATION

In addition to information provided and referenced in the application, the Department also relied on the following information resources:

RACT/BACT/LAER Clearinghouse (RBLC) database.
World Wide Web site searches.
Additional Information Response.

8. COMMENTS ON THE APPLICATION

Comments from the National Park Service or EPA Region 4.

As of the date of this report, none.

9. AIR QUALITY IMPACT ANALYSIS REVIEW

9.1 Introduction

The proposed project will increase emissions of two pollutants at levels in excess of PSD significant amounts: PM/PM_{10} and NO_X. PM_{10} and NO_X are criteria pollutants and have

national and state ambient air quality standards (AAQS), PSD increments, significant impact levels and de minimis monitoring levels defined for them.

9.2 Major Stationary Sources in Palm Beach County

The current largest stationary sources of air pollution in Palm Beach County are listed below. The information is from annual operating reports submitted to the Department.

Table 9.2.1 Major Sources of NO_X in Palm Beach County (2004)

Owner	Site Name	Tons per year
Florida Power & Light	Riviera	3807.7
Solid Waste Authority	**Palm Beach County**	1121.2 + ***85***
New Hope Power Partnership	Okeelanta Cogeneration Plant	871.7
Sugar Cane Growers Co-Op	Sugar Cane Growers Co-Op	860.6
Florida Power & Light	***West County Energy (proposed)***	***856***
U.S. Sugar Corp.	Bryant Mill	443.2
Osceola Farms	Osceola Farms	348.2
United Technologies Corp.	Pratt & Whitney Aircraft	238

Table 9.2.2. Major Sources of PM in Palm Beach County (2004)

Owner	Site Name	Tons per year
Florida Power & Light	Riviera Power Plant	923
Florida Power & Light	***West County Energy (proposed)***	***652***
Sugar Cane Growers Co-Op	Sugar Cane Growers Co-Op	440
Osceola Farms	Osceola Farms	287
US Sugar Corporation	Bryant Sugar Mill	260
Atlantic Sugar Association	Atlantic Sugar Mill	240
Solid Waste Authority	**Palm Beach County**	73 + ***29***

9.4 Air Quality and Monitoring in the Palm Beach County

The Palm Beach County Health Department operates twelve monitors at seven sites measuring PM_{10}, $PM_{2.5}$, ozone, CO, NO_2 and SO_2. The 2004 monitoring network is shown in the figure below.

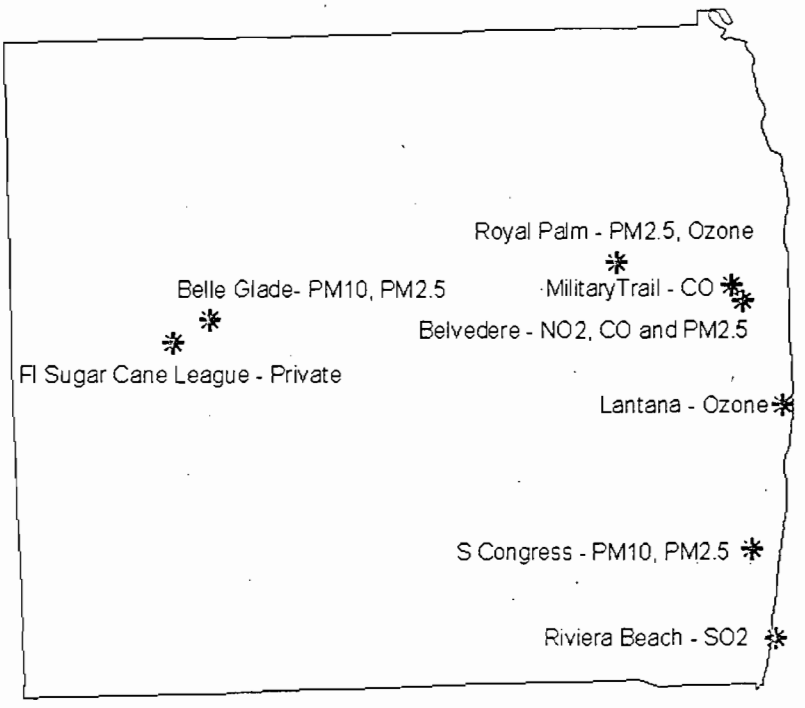


Figure 9.4. The Palm Beach County Health Department Ambient Air Monitoring Network

Measured ambient air quality information is summarized in the following table.

Table 9.4. Ambient Air Quality in Palm Beach County Nearest to Project Site (2004)

Pollutant	Location	Averaging Period	Ambient Concentration				
			High	2nd High	Mean	Standard	Units
PM_{10}	Delray Beach	24-hour	82	62		150 [a]	ug/m^3
		Annual			30*	50 [b]	ug/m^3
SO_2	Riviera Beach	3-hour	2	2		500 [a]	ppb
		24-hour	1	1		100[a]	ppb
		Annual			1*	20 [b]	ppb
NO_2	Palm Beach	Annual			10*	53 [b]	ppb
CO	WPB Military Trail	1-hour	4	4		35 [a]	ppm
		8-hour	2	2		9 [a]	ppm
Ozone	Royal Palm Beach	1-hour	0.080	0.077		0.12 [C]	ppm
		8-hour	0.072	0.069		0.08 [C]	ppm

* The Mean does not satisfy summary criteria due to missing data.

a - Not to be exceeded more than once per year

b - Arithmetic mean
c - Not to be exceeded on more than an average of one day per year over a three-year period

The highest measured values of all pollutants are all less than the respective National Ambient Air Quality Standards (NAAQS). Based on local emission trends, it is not likely that ground-level concentrations will approach the NAAQS levels. The exception is ozone because it is formed from precursors that are clearly available (NO_X and VOC). The precursors are more available during drought years. The tendency to form ozone is accentuated by hot ambient temperature, high pressure, and relatively low wind speed.

9.5 Air Quality Impact Analysis

Significant Impact Analysis

Significant Impact Levels (SILs) are defined for PM/PM_{10}, and NO_X. A significant impact analysis is performed on each of these pollutants to determine if a project can cause an increase in ground level concentration greater than the SIL for each pollutant.

In order to conduct a significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. The models used in this analysis and any required subsequent modeling analyses are described below. The highest predicted short-term concentrations and highest predicted annual averages predicted by this modeling are compared to the appropriate SILs for the PSD Class I Everglades National Park (ENP) and the PSD Class II Areas (everywhere except the ENP).

The applicant, in an effort to model worst load conditions, included the three flares (not subject to PSD review) in their modeling analysis to determine whether the project would lead to a violation of the AAQS.

If this modeling at worst-load conditions shows ground-level increases less than the SILs, the applicant is exempted from conducting any further modeling. If the modeled concentrations from the project exceed the SILs, then additional modeling including emissions from all facilities or projects (multi-source modeling) is required to determine the proposed project's impacts compared to the AAQS or PSD increments.

The applicant's initial PM/PM_{10}, and NO_X, air quality impact analyses for this project indicated that maximum predicted impacts from all pollutants are less than the applicable SILs for the Class II area (i.e. all areas except ENP). These values are tabulated in the table below and compared with existing ambient air quality measurements from the local ambient monitoring network.

Table 9.5.1. Maximum Projected Air Quality Impacts from Biosolids Pelletization Facility (Including 3 Flares) for Comparison to the PSD Class II Significant Impact Levels

Pollutant	Averaging Time	Max Predicted Impact (ug/m^3)	Significant Impact Level (ug/m^3)	Baseline Concentrations (ug/m^3)	Ambient Air Standards (ug/m^3)	Significant Impact?
PM_{10}	Annual	0.3	1	~30	50	NO
	24-Hour	3.7	5	~82	150	NO
NO_2	Annual	0.9	1	~19	100	NO

It is obvious that maximum predicted impacts from the project are much less than the respective AAQS and the baseline concentrations in the area. They are also less than the respective significant impact levels that would otherwise require more detailed modeling efforts.

The applicant elected to do modeling for sulfur dioxide and carbon monoxide as well. The results showed concentrations less than the respective significant impact levels and AAQS as well.

The nearest PSD Class I area is the Everglades National Park (ENP) located about 128 km to the south-southwest of the project site. Maximum air quality impacts from the proposed project are summarized in the following table. The results of the initial PM/PM_{10}, and NO_X air quality impact analyses for this project indicated that maximum predicted impacts PM/PM_{10}, and NO_X are less than the applicable SILs for the Class I area. Therefore, no further detailed modeling efforts are required for these pollutants.

Maximum Air Quality Impacts from the Biosolids Pelletization Facility (Including Three Flares) Project for comparison to the PSD Class I SILs at ENP

The applicant also modeled to predict impacts at the Big Cypress National Preserve which is located approximately 112 km to the southwest of the facility. The modeled impacts are also less than the applicable SILs for the area.

Preconstruction Ambient Monitoring Requirements

A preconstruction monitoring analysis is done for those pollutants with listed de minimis impact levels. These are levels, which, if exceeded, would require pre-construction ambient monitoring. For this analysis, as was done for the significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. As shown in the following table, the maximum predicted impacts for all pollutants with listed de minimis impact levels were less than these levels. Therefore, no pre-construction monitoring is required for those pollutants.

Table 9.5.2. Maximum Air Quality Impacts for Comparison to the De Minimis Ambient Impact Levels.

Pollutant	Averaging Time	Max Predicted Impact (ug/m^3)	De Minimis Level (ug/m^3)	Baseline Concentrations (ug/m^3)	Impact Greater Than De Minimis?
PM_{10}	24-hour	4	10	~82	NO
NO_2	Annual	0.9	14	~19	NO

Based on the preceding discussions, the only additional detailed air quality analyses (inclusive of all sources in the area) required by the PSD regulations for this project are the following:

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

Models and Meteorological Data Used in the Air Quality Analysis

PSD Class II Area: The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project in the surrounding Class II Area. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. It incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition.

The ISCST3 model allows for the separation of sources, building wake downwash, and various other input/output parameters. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfied the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from West Palm Beach Airport. The 5-year period of meteorological data was from 1987 through 1991. This airport station was selected for use in the study because it is the closest primary weather station to the study area and is most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

In reviewing this permit application, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification should EPA revise the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators. A more detailed discussion of the required analyses follows.

PSD Class I Area: The California Puff (CALPUFF) dispersion model was used to evaluate the pollutant emissions from the proposed project in the Class I ENP and Big Cypress National Preserve beyond 50 km from the proposed project. The applicant used CALPUFF in the "screening" mode and therefore used the same meteorological data that was used for the ISCST model processed in a different manner.

CALPUFF is a non-steady state, Lagrangian, long-range transport model that incorporates Gaussian puff dispersion algorithms. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, line, area, and volume sources.

The CALPUFF model has the capability to treat time-varying sources, is suitable for modeling domains from tens of meters to hundreds of kilometers, and has mechanisms to handle rough or complex terrain situations. Finally, the CALPUFF model is applicable for inert pollutants as well as pollutants that are subject to linear removal and chemical conversion mechanism.

9.6 Additional Impacts Analysis

Impact on Soils, Vegetation, and Wildlife:

The maximum ground-level concentrations predicted to occur for PM_{10} and NO_X as a result of the proposed project, including background concentrations and all three flares (not subject to PSD), will be considerably less than the respective AAQS. Since the project impacts are either less than significant or considerably less than the AAQS, it is reasonable to assume the impacts on soils, vegetation, or wildlife will be minimal or insignificant.

As part of the Additional Impact Analysis, Air Quality Related Values (AQRV) are evaluated with respect to the Class I area. This includes the analysis of sulfur and nitrogen deposition. The CALPUFF model is also used in this analysis to produce quantitative impacts. The results of the analysis show that nitrogen and sulfur deposition rates are below the significant impact levels (0.01 kg/ha/yr) determined by the National Park Service for the ENP.

According to the applicant, the predicted deposition rates of sulfur and nitrogen (0.0003 and 0.0001 kg/ha/yr respectively) impacts are still much less than the buffering capacities of the soils in the ENP and much less than the observed deposition rates existing in the area.

Impact on Visibility:

The applicant submitted a regional haze analysis for the ENP and the Big Cypress National Preserve. The analysis included modeling from the CALPUFF model. The Visibility Analysis showed that the proposed project will be well below the visibility threshold of 5% in change in light extinction for both sensitive areas.

Growth-Related Impacts Due to the Proposed Project:

According to the applicant, the proposed project will add approximately 13 new permanent employees. This increase will not result in significant commercial and residential growth near the project. Few new permanent employees will cause no significant impact on the local area.

Growth-Related Air Quality Impacts since 1977:

According to the applicant, the population of Palm Beach County has more than doubled since the late seventies. This population currently works in the Trade, Transportation and Utilities sector, which includes the retail industry and the Professional and Business Services sector mostly.

Although, the population has increased greatly, the air pollution trends do not show an increase in pollutant concentrations with this population growth. The county is in attainment with the NAAQS.

Despite the growth in Southeast Florida, air quality has improved as evidenced by the redesignation of the Tri-County (Broward, Miami-Dade, and Palm Beach) area to attainment status with respect to the ozone standard.

10. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete PSD permit application, reasonable

assurances provided by the applicant, the draft determinations of Best Available Control Technology (BACT), review of the air quality impact analysis, and the conditions specified in the draft permit.

Deborah Nelson is the project meteorologist responsible for reviewing and validating the air quality impact analysis. She may be contacted at deborah.nelson@dep.state.fl.us and 850/921-9537.

Scott M. Sheplak is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer by telephone 850/921-9537 or e-mail Scott.Sheplak@dep.state.fl.us in the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

{Filename: PSD-FL-108F TEPD}

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility Site
PSD-FL-108F and 0990234-006-AC
Palm Beach County, Florida

BACKGROUND

Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Authorized Representative: Mr. John D. Booth, Executive Director

APPLICATION PROCESSING SCHEDULE

May 4, 2005	Received application to construct; incomplete.
July 15, 2005	Incompleteness letter.
August 30, 2005	Received additional information; application complete.

{Note: The applicant requested a modification to their original project submitted in July 2002. The applicant has withdrawn the lime recalcination part of the project and increased the biosolids pelletization rate from 400 wet TPD to 675 wet TPD.}

The applicant, Solid Waste Authority of Palm Beach County, proposes to construct a 675 wet tons of sludge per day (wtpd, at 20% solids) Biosolids Pelletization Facility (BPF). The BPF will have two 337.5 wtpd process trains and related appurtenances. The proposed BPF will be located adjacent to the existing landfill. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as a backup fuel. Each dryer has a rated capacity of 34.2 MMBTU/hr based on landfill gas or 34.1 MMBTU/hr based on natural gas. An additional 2 MMBtu/hr is required for each regenerative thermal oxidizer (RTO) making the total design capacity of each train 42 MMBtu (84 MMBtu total for the BPF).

AIR POLLUTION CONTROL TECHNOLOGY REVIEW

Applicant's NOx and PM Review

Summary of NOx Control Technologies Reviewed by the Applicant

In Section 5 of the PSD permit application, the applicant provided a thorough review of NOx control technologies. The use of NOx controls will reduce NOx emissions by at least 50%. The applicant reviewed the following NOx control strategies: (1) low temperature SCR; (2) low temperature ozone oxidation; (3) multi-chemical wet scrubbing system; and, (4) low NOx burners with acid addition. The cost $/ton of NOx removed for each respective strategy is: (1) $17,700; (2) $29,900 (3) $20,200 and, (4) $2,900. The only technology determined to be technically and economically feasible is the low NOx burners with acid addition. The Greater Lawrence Sanitary

District and Massachusetts Water Resource Authority have low NOx burners on the dryer and RTO and acid addition to the condenser/scrubber. According to the applicant, no other controls were indicated in use by other biosolids suppliers.

Summary of PM Control Technologies Reviewed by the Applicant

In Section 5 of the PSD permit application, the applicant provided a thorough review of PM control technologies. A tray condenser/scrubber and exhaust gas recirculation is considered to be integral parts of the dryer system. The use of the tray condenser/scrubber will achieve 97% control. After the tray condenser/scrubber the exhaust stream is split with 75% of the stream being recycled back to the dryer. The remaining 25% of the exhaust stream goes to a venturi scrubber to remove particles prior to the regenerative thermal oxidizer (RTO) to prevent PM from clogging the heat exchanger media in the RTO. Control technologies were evaluated for the remaining 25% gas stream. The uses of three additional control technologies were evaluated: (1) fabric filter; (2) dry ESP; and, (3) wet ESP. The cost $/ton to remove PM from each of these technologies is respectively: (1) $26,700; (2) $31,600; and, (3) $29,400. According to the applicant, none of these additional control technologies are economically feasible.

The proposed BPF and combined flare maximum expected air pollutant emission rates, based on regulatory requirements, vendor information, and the results of the Best Available Control Technology (BACT) analysis are summarized in Section 5 of Volume II of the permit application.

In summary, the applicant proposes the use of dry low NOx burners with acid addition in the tray/condenser scrubber to control NOx emissions from each dryer's exhaust. The applicant proposes to use a tray/condenser scrubber and a venturi scrubber to control PM emissions from each dryer's exhaust. The BPF will also use a regenerative thermal oxidizer (RTO) on the dryer exhaust to control VOC emissions and odors. Fabric filters will be used on each material recycle bin exhaust and each pellet storage silo exhaust to control PM emissions.

Department's Preliminary NOx and PM BACT Determinations

Due to the limited information available in the RBLC database, similar projects were reviewed. Large metropolitan areas were researched due to large quantities of wastewater sludge generated used to produce biosolids.

In the response to request additional information dated August 16, 2005, the applicant provided a summary of projects around the country. The table lists the projects, location, air pollution control systems and startup year. All of the plants with drum dryers use a one or two stage scrubbing system. The larger biosolid facilities use RTOs. (See the **Table 1 Municipal Biosolids Dryer Plants in the USA** provided in the Response to Request for Additional Information dated August 16, 2005}

The applicant provided actual performance data summarizing key information from the Greater Lawrence Sanitary District project located in North Andover, Massachusetts which is very similar to the proposed project. The applicant's summary included a scaling of this project to this

operating project, e.g., size of unit, air pollutant emission rates, fuels, etc. This BPF project will be unique in that it will be the first biosolids drying facility to use landfill gas as its primary fuel. The control technologies proposed for this project are proven at the operating Greater Lawrence Sanitary District project. The Greater Lawrence Sanitary District project started up in 2003.

General manufacturer information for the BACT technology proposed specifically, the dry low NOx burners, tray scrubber/condenser scrubber, and venturi scrubber was also provided. The dry low NOx burners are Kinedizer® gas burners provided by Maxon Corporation. The scrubber manufacturer is SLY, Inc. The tray scrubber/condenser scrubber alone will reduce inlet PM at least 97% {See **Attachment 2 Manufacture's Product Literature** provided the Response to Request for Additional Information dated August 16, 2005}

The applicant provide information on 30 projects around the U.S. with 10 of the projects having start up dates between 2003 and 2006 {See the **Table 1 Municipal Biosolids Dryer Plants in the USA.**} This proposed project's control technologies are consistent with the few recent projects using dry low NOx burners and RTOs.

The department accepts the applicant's proposed BACT technologies. The proposed control technology proposed for PM emissions is readily available and proven. The use of additional PM controls is not cost effective; the cost to remove additional PM is between $26,000 and $32,000 /ton. The proposed control technology for NOx emissions, specifically, dry low NOx burners, is readily available and is demonstrated in other types of stationary sources of air pollution. The use of dry low NOx burners with an estimated cost of $2,900/ton is cost effective. In general, a cost effectiveness value for NOx control is $18,000/ton.

BACT EMISSION LIMITATIONS AND STANDARDS

Department's Procedure

In accordance with Rule 62-212.400, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

- Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.
- All scientific, engineering, and technical material and other information available to the Department.
- The emission limiting standards or BACT determination of any other state.
- The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "Top-Down" approach, particularly when permits are issued by states acting on behalf of EPA. The Department considers Top-Down to be a useful tool, though not a unique or required approach to achieve a BACT under the State regulations. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category.

If it is shown that this level of control is technically or economically unfeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

NSPS AND NESHAP REVIEW

The NSPS and NESHAP federal regulations do not contain emission standards or limitations for NOx or PM/PM_{10}.

The BPF dryer is subject to the mercury standard under the National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 61, Subpart E. The mercury emissions standard under the NESHAP is 3.2 kg (7.1 lb) of mercury per 24-hour period. This is equivalent to 1.296 TPY. The applicant proposed a limit of 8.08 E-03 TPY which is much lower than the NESHAP and the significant emission rate for Hg. This facility is not subject to BACT requirements for mercury (Hg).

VE STANDARDS REVIEW

While the general VE standard in Rule 62-296.320, F.A.C., limits VE to 20% from each train's stack, a VE limit of 5% with the exception for 20% up to 3-minutes in 1-hour should be attainable; expected VE from such an emissions unit is 0%. The Greater Lawrence Sanitary District, City of Largo and the City of Tampa units meet a VE limit of 5%.

BACT Emission Limitations and Standards

The emission limitations and standards from three similar facilities were reviewed two of which are located in Florida. The three facilities reviewed were: (1) Greater Lawrence Sanitary District project located in North Andover, Massachusetts; (2) City of Largo and, (3) City of Tampa. Each 337.5 TPD dryer train of this project processes an equivalent 123,187 TPY of sludge. Emissions standards and limitations from these projects are summarized below.

(1) Greater Lawrence Sanitary District (GLSD). This wastewater treatment plant project is located in North Andover, Massachusetts. This facility processes approximately 13,870 TPY dry biosolids (the wet sludge moisture content is 70% per Massachusetts DEP). Emissions are controlled by tray scrubbers with acid addition, venturi scrubbers and RTOs. PM is limited to 0.64 pounds/hour; VE 5%, and NOx to 1.20 pounds/hour. The applicant scaled the emission limits from the GLSD by a factor of 3 to this project as follows: PM to 2.42 pounds/hour; and NOx to 4.54 pounds/hour.

(2) City of Largo. The City of Largo Wastewater Reclamation Facility located in Pinellas County, Florida operates two sludge dryer trains. The facility was upgraded in 1991. Each train processes

143,138 TPY of wet sludge. Emissions are controlled by venturi scrubbers and an RTO. PM is limited to 3 pounds/hour; VE 5%, and VOC to 2.05 pounds/hour.

(3) City of Tampa. The City of Tampa Howard F. Curren AWT Plant located in Hillsborough County, Florida operates two sludge dryer trains. Each train processes 13,248 TPY of wet sludge. This facility began operations in 1990. Emissions are controlled by venturi scrubbers and an RTO. PM is limited to 10.3 pounds/hour; VE 5%, and VOC to 7.1 pounds/hour.

Based on the selected control technologies the BACT emission limitations and standards proposed for this project are shown in **Table AP-1 Summary of Air Pollutants**. BACT standards are established for PM/PM_{10}, opacity and NOx. Emissions of SO_2, CO, VOC and Hg are limited for reasonable assurances. Emissions from each train are calculated in the exhaust gases exiting the dryer and RTO. Establishment of a performance standard on the dry low NOx burners themselves was not possible due to the design of each train; NOx emissions are also formed in the RTO.

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Recommended By:

Scott M. Sheplak, P.E., Permit Engineer

Date

Reviewed By:

A. A. Linero, P.E. Administrator

Date

Air Permitting South Section
Bureau of Air Regulation
Division of Air Resource Management
State of Florida, Department of Environmental Protection
Mail Station #5505
2600 Blair Stone Road
Tallahassee, FL 32399

Recommended By:

Trina L. Vielhauer
Bureau of Air Regulation

Date

Approved By:

Michael G. Cooke, Director
Division of Air Resource Management

Date

Table AP-1. Summary of Air Pollutants

Solid Waste Authority of Palm Beach County
North County Regional Resource Recovery Facility

				Emission Limitations and Standards [1]			Equivalent Emissions		
Emissions Unit	**Pollutant(s)**	**Fuel(s)**	**Hours**	**Standard(s)**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**Regulatory Citation(s)**
	NOx								
Sludge Dryer Train #1		landfill gas	8760	-	5.60	24.5	5.60	24.55	BACT
Sludge Dryer Train #2		landfill gas	8760	-	5.60	24.5	5.60	24.55	BACT
				{subtotal		49.1		49.1}	BACT
Emergency Generator			8760	-	-	-	-	3.4	BACT
								52.5	BACT
	PM/PM_{10} & Opacity								
Sludge Dryer Train #1		landfill gas	8760	5% opacity; except 20% for up to 3 minutes in 1-hour	2.42	10.6	2.42	10.6	BACT
Sludge Dryer Train #2		landfill gas	8760	5% opacity; except 20% for up to 3 minutes in 1-hour	2.42	10.6	2.42	10.6	BACT
				{subtotal		21.2		21.2}	BACT
Emergency Generator			8760	0.697 g/bhp-hr [2]	-	-	-	0.2	BACT
Material Bins & Silos		-	8760	0.010 gr/dscf, 5% opacity	-	-	-	0.6	BACT
Cooling Tower		-	8760	3333 ppm in drift [2]	-	-	0.06	0.274	BACT
								22.3	BACT
	SO_2								
Sludge Dryer Train #1		landfill gas	8760	190 ppmvd sulfur content [2]	4.45	19.5	4.45	19.5	Rule 62-4.070, F.A.C.
Sludge Dryer Train #2		landfill gas	8760	190 ppmvd sulfur content [2]	4.45	19.5	4.45	19.5	Rule 62-4.070, F.A.C.
					8.9	39	8.9	39	Rule 62-4.070, F.A.C.
	CO								
Sludge Dryer Train #1		landfill gas	8760	-	3.37	14.75	3.37	14.75	Rule 62-4.070, F.A.C.
Sludge Dryer Train #2		landfill gas	8760	-	3.37	14.75	3.37	14.75	Rule 62-4.070, F.A.C.
					6.74	29.5	6.74	29.5	Rule 62-4.070, F.A.C.
	VOC								
Sludge Dryer Train #1		landfill gas	8760	-	1	4.4	1	4.4	Rule 62-4.070, F.A.C.
Sludge Dryer Train #2		landfill gas	8760	-	1	4.4	1	4.4	Rule 62-4.070, F.A.C.
					2	8.8	2	8.8	Rule 62-4.070, F.A.C.
	Hg								
Sludge Dryer Train #1		landfill gas	8760	2.2 E-02 lb/24-hour period			9.22 E-04	4.04 E-03	Rule 62-4.070, F.A.C.
Sludge Dryer Train #2		landfill gas	8760	2.2 E-02 lb/24-hour period			9.22 E-04	4.04 E-03	Rule 62-4.070, F.A.C.
								8.08 E-03	Rule 62-4.070, F.A.C.

[1] standard unless otherwise noted.

[2] not a standard; a basis for a standard.

Table 2-1 SWA Biosolids Pelletization Facility, and Class I Landfill Flares Proposed Maximum Potential Controlled Emission Rates and PSD Applicability

PSD Pollutant		Biosolids Pelletizing Facility (BPF)					Flares		BPF and Flares TOTAL [e]	BPF Only TOTAL	PSD Significant Net Emissions Increase [f]
		Two Rotary Dryers [a]	Two Recycle Bins with Baghouse [b]	Two Cooling Towers [c]	Emergency Generator Engine	BPF Subtotal (tons/year)	3,500-scfm, 1,000-scfm, and 2,000-scfm Flares [d]	Existing 1,800-scfm Flare to be Replaced [d]			
Carbon Monoxide (CO)	Basis	3.37 lb/hr each	---	---	8.5 g/bhp-hr each	---	0.37 lb/MMBtu	750 lb/10^6 dscf CH_4			
	Tons/Year	*29.5*	—	—	*4.19*	*33.7*	*362.7*	*-101.6*	**261.1**	33.7	100
Nitrogen Oxides (NO_x)	Basis	5.60 lb/hr each	---	---	6.9 g/bhp-hr each	---	0.068 lb/MMBtu	40 lb/10^6 dscf CH_4			
	Tons/Year	*49.1*	—	—	*3.4*	*52.5*	*38.0*	*-5.4*	**85.1**	**52.5**	40
Sulfur Dioxide (SO_2)	Basis	4.45 lb/hr each	---	---	0.183 g/bhp-hr each	---	190 ppmv sulfur in gas	190 ppmv sulfur in gas			
	Tons/Year	*39.0*	—	—	*0.09*	*39.1*	*30.7*	*-8.6*	**61.2**	39.1	40
Particulate Matter (total) (PM)	Basis	2.42 lb/hr each	0.010 gr/dscf actual	3333 ppm in drift	0.697 g/bhp-hr each	---	17 lb/10^6 dscf CH_4	17 lb/10^6 dscf CH_4			
	Tons/Year	*21.2*	*0.6*	*5.50E-01*	*2.00E-01*	*22.6*	*9.1*	*-2.3*	**29.4**	22.6	25
Particulate Matter < 10 Microns (PM_{10})	Basis	2.42 lb/hr each	0.010 gr/dscf actual	3333 ppm in drift	0.697 g/bhp-hr each	---	17 lb/10^6 dscf CH_4	17 lb/10^6 dscf CH_4			
	Tons/Year	*21.2*	*0.6*	*2.74E-01*	*2.00E-01*	*22.3*	*9.1*	*-2.3*	**29.1**	**22.3**	15
Volatile Organic Compounds (VOC)	Basis	1.0 lb/hr each	---	---	0.97 g/bhp-hr each	---	98% DRE	98% DRE			
	Tons/Year	*8.8*	—	—	*0.48*	*9.3*	*2.4*	*-0.7*	11.0	9.3	40
Lead (Pb)	Basis	7.3E-04 lb/hr each	---	---	—	—	---	---			
	Tons/Year	*6.39E-03*	—	—	—	*6.39E-03*	—	—	6.39E-03	6.39E-03	*0.6*
Mercury (Hg)	Basis		---	---	---	---	---	---			
	Tons/Year	*8.08E-03*	—	—	—	*8.08E-03*	—	—	8.08E-03	8.08E-03	0.1 [g]
Hydrogen Sulfide (H_2S)	Basis	---	---	---	---	---	---	---			
	Tons/Year	—	---	—	—	*0.00*	---	—	0.00	0.00	10
Total Hazardous Air Pollutants (HAPs)	Tons/Year	0.51	---	---	---	*0.51*	0.48	-0.14	0.85	0.51	25 [g]

Notes: See Section 4 and Appendix E for bases and calculations. Section 4 also describes air pollution control equipment. For conservatism, all PM is assumed to be PM10.

(a) Biosolids dryer emission rates are from upper-bound vendor estimates (see Appendix E) for all pollutants except NOx and total HAPs. NOx emission rate is BACT for a low-NOx burner (see Section 5). Total HAP emission rates are based on AP-42 for landfill gas, and on vendor estimates of sludge metals content.

(b) PM emission rates from the biosolids pellet recycle bin are based on vendor-guaranteed PM outlet concentration for baghouse and design air flow rate.

(c) PM emission rate is based on AP-42 for cooling towers, and design water circulation rate.

(d) Flare emission rate calculations are based on AP-42 for all pollutants. The flares are required to achieve a 98% destruction removal efficiency (DRE) for NMOC. 3-flare total shown is net of the 2,800 scfm gas flow to the BPF, except for CO. For CO, all gas is shown going to the flares.

(e) The flares only combust landfill gas not being used by the BPF. Therefore, the total maximum potential emission rates are not the sum of the maximum potential emission rates of the the BPF, and 3 Flares, but are based on the worst-case operating condition for each pollutant. The worst case for CO and total HAPs is all landfill gas going to the Flares with the BPF not operating. For all other pollutants the worst case is the BPF operating at capacity, with the Flares combusting only the remaining gas flow rate of 3,700 scfm. The total also reflects the reduction in actual emissions resulting from decomissioning the existing 1,800-scfm flare.

(f) Rule 62-212.400, F.A.C., Table 212.400-2.

(g) The Clean Air Act Amendments Section 112(b)(6) exempts listed HAPs from PSD review.

Table 1 Municipal Biosolids Dryer Plants in the USA

No.	Facility or Owner	Location	APC Systems	Start-up Year
1	Hillsborough County Water Department	Tampa, FL	Tray scrubber, venturi scrubber, RTO	2006
2	Archie Elledge WWTP	Winston-Salem, NC	Tray scrubber, venturi scrubber, RTO	2006
3	Encina Water Pollution Control Facility	Carlsbad, CA	Tray scrubber, venturi scrubber, RTO	2006
4	Bonita Springs Utilities - East Water Reclamation Facility	Bonita Springs, FL	Tray scrubber, venturi scrubber, RTO	2006
5	City of Corona	Corona, CA	Spray tower scrubber, venturi scrubber, RTO	2006
6	Town of Cary, NC - South Cary Water Reclamation Facility	Cary, NC	Tray scrubber, venturi scrubber	2005
7	Pierce County WWTP	Pierce County, WA	Tray scrubber, venturi scrubber	2005
8	Sacramento WWTP	Sacramento, CA	Tray scrubber, venturi scrubber, RTO	2004
9	Greater Lawrence Sanitary District WWTP	North Andover, MA	Tray scrubber with acid addition, venturi scrubber, RTO	2003
10	City of Honolulu	Honolulu, Hawaii	Tray scrubber, venturi scrubber	2003
11	Pinellas County Utilities	St. Petersburg, FL	Tray scrubber, venturi scrubber	2002
12	Jacksonville Electric Authority	Jacksonville, FL	Tray scrubber, venturi scrubber	2001
13	Louisville & Jefferson County Metropolitan Sanitary District	Louisville, KY	Tray scrubber, venturi scrubber	2001
14	City of Leesburg	Leesburg, VA	Tray scrubber, venturi scrubber	2001
15	Escambia County Utility Authority	Pensacola, FL	Tray scrubber	2000
16	Aiken County Public Service Auth. - Horse Creek WWTP	Aiken County, SC	Tray scrubber, venturi scrubber	2000
17	Blue Lake WWTP - Metropolitan Council Environmental Services	Minneapolis, MN	Packed tower scrubber with acid addition, venturi scrubber, RTO	1998
18	City of Sumter - Pocotaligo WWTP	Sumter, SC	Tray scrubber, venturi scrubber	1997
19	Ocean County Utility Authority	Bayville, NJ	Tray scrubber, venturi scrubber	1997
20	Town of Amherst WWTP	Amherst, NY	Tray scrubber, venturi scrubber	1997
21	Upper Occoquan Sewage Authority	Occoquan, VA	Packed tower scrubber, thermal oxidation	1997
22	Back River WWTP	Baltimore, MD	Packed tower scrubber, thermal oxidation	1995
23	Brazos River Authority WWTP	Waco, TX	Tray scrubber, venturi scrubber	1995
24	New York City	NYC, NY Bronx Borough	Venturi scrubber with acid addition, RTO	1993
25	Massachusetts Water Resources Authority	Quincy, MA	Packed tower scrubber with acid addition, RTO	1991 upgr 1999
26	Hagerstown WWTP	Hagerstown, MD	Venturi scrubber, RTO	1990
27	Howard F. Curren WWTP	Tampa, FL	Venturi scrubber, RTO	1990
28	Cobb County WWTP	Cobb County, GA	Venturi scrubber, mist chamber scrubber	1980
29	City of Largo	Largo, FL	Venturi scrubber, RTO	1976 upgr 1991
30	Clayton County WWTP	Clayton County, GA	Packed tower scrubber	1976

Department of
Environmental Protection

Jeb Bush
Governor

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

Colleen M. Castille
Secretary

P.E. Certification Statement

Permittee:
Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility (NCRRF)

Permit No.: 0950137-006-AC and PSD-FL-108F

Project type: Air Construction Permit
Biosolids Pelletization Facility

I HEREBY CERTIFY *that the engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise, e. g., the air quality impact analysis (including but not limited to the electrical, mechanical, structural, hydrological, and geological features).*

Scott M. Sheplak, P.E. — Date
Registration Number: 48866

Permitting Authority:
Department of Environmental Protection
Bureau of Air Regulation
111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 850/921-9532
Fax: 850/921-9533

DRAFT

PERMITTEE

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility (NCRRF)
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Permit No.: 0950137-006-AC and PSD-FL-108F
Expires: March 31, 2008
Facility ID No.: 0990234
Project: Biosolids Pelletization Facility

PROJECT AND LOCATION

This permit authorizes the construction of a 675 wet tons per day of sludge (wtpd, at 20% solids) Biosolids Pelletization Facility (BPF).

The facility, North County Resource Recovery Facility (NCRRF), is located at 7501 North Jog Road, West Palm Beach, Palm Beach County. The UTM coordinates are Zone 17; 585.8 km E; 2960.2 km N.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the work specified in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

APPENDICES

The following appendices are attached as part of this permit.

Appendix GC - Construction Permit General Conditions
Appendix BD - BACT Determination
Table AP-1 Summary of Air Pollutants
Appendix 40 CFR 61 Subpart A - NESHAP General Provisions (version dated 05/06/04)
Appendix 40 CFR 61 Subpart E - NESHAP for Mercury (version dated 03/20/03)
Appendix SS-1, Stack Sampling Facilities

Michael G. Cooke, Director
Division of Air Resource Management

FACILITY DESCRIPTION

The facility, North County Resource Recovery Facility (NCRRF), is located at 7501 North Jog Road, West Palm Beach, Palm Beach County. The UTM coordinates are Zone 17; 585.8 km E; 2960.2 km N. {See Figure No. 2-4 provided by the applicant showing the proposed site for this project}

This existing facility consists of a *very large* municipal waste combustor plant designed to process 2,000 tons per day (TPD) of municipal solid waste (MSW). This existing facility includes two boilers and two landfills, a Class I Landfill and a Class III Landfill, each with its own gas collection system and flare.

PROJECT

The permittee, Solid Waste Authority of Palm Beach County, proposes to construct a 675 wet tons of sludge per day (wtpd, at 20% solids) Biosolids Pelletization Facility (BPF). The BPF will have two 337.5 wtpd process trains and related appurtenances. The proposed BPF will be located adjacent to the existing landfill. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as a backup fuel. Each dryer has a rated capacity of 34.2 MMBTU/hr based on landfill gas or 34.1 MMBTU/hr based on natural gas.

Regulatory Classifications

Title III: The facility is identified as a major source of hazardous air pollutants (HAPs).

NESHAP: The proposed project will be subject to the requirements of the National Emission Standard for Hazardous Air Pollutants of 40 CFR 61 Subpart E, NESHAP for Mercury.

NESHAP: The facility operates one or more units subject to National Emission Standards for Hazardous Air Pollutants of 40 CFR 63.

MACT: A case-by case MACT was not required. Since neither the NCRRF or the proposed projects are constructed or reconstructed major sources of HAPs, this rule does not apply.

Title IV: The facility operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

NSPS: The facility operates one or more units subject to New Source Performance Standards of 40 CFR 60.

Stationary Sources - Emission Standards in Chapter 62-296, F.A.C.: The facility operates one or more units subject to an emission standard.

RACT: The entire State of Florida is either classified as attainment or considered to be in attainment (i.e., unclassifiable) with respect to the NAAQS for all pollutants. In addition, Palm Beach County is not part of any maintenance areas for lead or PM. Therefore, the proposed projects are not subject to the Reasonably Available Control Technology (RACT) requirements for these pollutants in Rule 62-296, F.A.C. The NOx RACT provisions of Rule 62-296.500(b), FAC, do apply to facilities in Palm Beach County. However, new or modified NOx emitting facilities subject to major-source PSD permitting and preparing a BACT analysis are exempt from these requirements. Since the BPF will be meeting NOx BACT, these rules do not apply.

PSD: The facility is an existing PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

Power Plant Siting Act: This project was requested to be an amendment leading to the modification of the existing power plant siting certification PA84-20.

RELEVANT DOCUMENTS

- Permit PSD-FL-108E
- Power Plant Siting Act Certification PA84-20
- Current Title V Air Operation Permit 0990234-004-AV
- Department's Technical Evaluation & Preliminary Determination dated [Month day, 2005]

GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, modify or operate this emissions unit shall be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (DEP), at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 and phone number 850/488-0114. Copies of these documents shall be submitted to the Compliance Authority.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications should be submitted to the compliance authority.
3. General Conditions: The owner and operator are subject to, and shall operate under, the attached General Conditions listed in *Appendix GC* of this permit. General Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of this project shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. Permit Expiration: For good cause, the permittee may request that this air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, and 62-210.300(1), F.A.C.]
6. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
7. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
8. Title V Permit: This permit authorizes construction of the proposed project and initial operation to determine compliance with Department rules. This project involves no changes in the descriptions, applicable requirements, or conditions of the facility Title V Operation Permit. The permittee is required to apply for a revised Title V operation permit following completion of the project.

The proposed new emissions units are:

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Cooling Tower Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2
-###	Cooling Tower Train #2
-###	Emergency Generator

CONSTRUCTION ACTIVITIES

1. Unconfined Particulate Matter Emissions: Pursuant to Rules 62-296.320(4)(c)1., 3. & 4., F.A.C., reasonable precautions to prevent emissions of unconfined particulate matter at the BPF include the following requirements consistent with current practices by the Solid Waste Authority:
   a. Pave all parking lots and permanent drives;
   b. Street sweep paved areas on a regular basis; and,
   c. Use a water truck to spray water on unpaved roads and active unpaved areas.

[Rule 62-296.320(4)(c)2., F.A.C.; and, items a., b., and c. proposed by the applicant.]

2. General Pollutant Emission Limiting Standards. Objectionable Odor Prohibited. No person shall cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

[Rule 62-296.320(2), F.A.C.]

Subsection A. This section addresses the following emissions units.

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2

The BPF will have two 337.5 wtpd sludge drying trains Dryer Train #1 and #2, and related appurtenances. Each dryer train at the BPF will combust landfill gas generated from the nearby landfill in a rotary drum dryer to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets. Natural gas will be used as a backup fuel. Each dryer has a rated capacity of 34.2 MMBTU/hr based on landfill gas or 34.1 MMBTU/hr based on natural gas.

Dry low NOx burners and acid addition in the tray/condenser scrubber will be used to control NOx emissions from each dryer's exhaust. A tray/condenser scrubber and a venturi scrubber to control PM emissions from each dryer's exhaust. The BPF will also use a regenerative thermal oxidizer (RTO) on each dryer exhaust to control VOC emissions and odors. Each dryer train has its own stack.

The following specific conditions apply to the emissions units listed above:

Essential Potential to Emit (PTE) Parameters

A.1. Permitted Capacity. The maximum process rate for each dryer train shall be 337.5 wet tons of sludge per day (wtpd, at 20% solids). The maximum process rate for the Biosolids Pelletization Facility (BPF) shall be 675 wet tons of sludge per day (wtpd, at 20% solids). The maximum heat input rates for the dryers are as follows:

E.U. ID No.		Landfill Gas	Natural Gas
-###	Sludge Dryer Train #1	34.2 MMBtu/hour	34.1 MMBtu/hour
-###	Sludge Dryer Train #2	34.2 MMBtu/hour	34.1 MMBtu/hour

[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C. and PSD-FL-108F]

A.2. Methods of Operation - Fuels. The dryers shall be fired primarily by landfill gas with natural gas used as a backup fuel.
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C. and PSD-FL-108F]

A.3. Hours of Operation. These emission units may operate continuously, i.e., 8,760 hours/year.
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C. and PSD-FL-108F]

Emission Limitations and Standards

A.4. Emissions from each dryer train stack shall not exceed the specific emission limitations and standards in **Table AP-1 Summary of Air Pollutants** attached to this permit. [BACT Determination and Rule 62-4.070, F.A.C.]

40 CFR 61 Subpart E, NESHAP for Mercury.

A.5. The dryers shall comply with **Appendix 40 CFR 61 Subpart E - NESHAP for Mercury** attached to this permit.

40 CFR 61 Subpart A - NESHAP General Provisions

A.6. The dryers shall comply with **Appendix 40 CFR 61 Subpart A - General Provisions** attached to this permit.

Test Methods and Procedures

A.7. These emissions units are also subject to the conditions contained in **Subsection C. Common Conditions.**

Subsection B. This section addresses the following emissions units.

E.U. ID Nos.	Brief Description
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Cooling Tower Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2
-###	Cooling Tower Train #2
-###	Emergency Generator

Each biosolids dryer train will have the following additional air emissions sources: exhaust vent on one recycle material bin exhaust from one fertilizer pellet storage silo, and one cooling tower. All of these are potential sources of PM emissions. Each of two recycle material bins will be ventilated through a fugitive dust control baghouse and then through a building odor scrubber. Dusty air resulting from silo filling operations will be ducted to the recycle bin baghouses, mentioned above. Emissions from the cooling towers and emergency generator are uncontrolled.

The following specific conditions apply to the emissions units listed above:

Essential Potential to Emit (PTE) Parameters

B.1. Permitted Capacity.
These emissions units are associated with the Biosolids Pelletization Facility (BPF). The maximum process/operation rates for the BPF associated emissions units are based on the 675 wet tons of sludge per day (wtpd, at 20% solids).
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C. and PSD-FL-108F]

B.2. Hours of Operation. These emission units may operate continuously, i.e., 8,760 hours/year.
[Rules 62-4.160(2) and 62-210.228(PTE), F.A.C. and PSD-FL-108F]

Emission Limitations and Standards

B.3. Emissions from these emissions units shall not exceed the specific emission limitations and standards in **Table AP-1 Summary of Air Pollutants** attached to this permit. [BACT Determination and Rule 62-4.070, F.A.C.]

Test Methods and Procedures

B.4. These emissions units are also subject to the conditions contained in **Subsection C. Common Conditions.**

B.5. Minor PM Particulate Source Test Methods. The maximum permitted allowable particulate matter emission rate (gr/dscf) from the silos and material recycling bins are stated in **Table AP-1**. Because of the expense and complexity of conducting a stack test on minor sources of particulate matter, and because these sources are equipped with a baghouse, the Department pursuant to the

authority granted under Rule 62-297.620(4), F.A.C., hereby establishes a visible emission limitation not to exceed an opacity of 5% in lieu of a particulate stack test. In accordance with Rule 62-297.620(4), minor particulate sources equipped with baghouses with visible emissions that are greater than or equal to 5 percent opacity may result in the permittee being required to perform a stack test in accordance with approved methods to verify compliance with the gr/dscf emission limits. The visible emissions test shall be conducted by a certified observer using Method 9 and the procedures in 40 CFR. 60.11 and Rule 62-297.320, F.A.C.
[Rule 62-297.620(4), F.A.C.]

Subsection C. Common Conditions

This section addresses the following emissions units.

E.U. ID Nos.	Brief Description
-###	Sludge Dryer Train #1
-###	Sludge Dryer Train #2
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #1
-###	Recycle Material Bin & Pellet Storage Silo for Sludge Dryer Train #2

Test Methods and Procedures

C.1. Compliance Testing. Compliance with the emission limitations and standards shall be determined by using the following reference methods as described in 40 CFR 60, Appendix A and 40 CFR 61, Appendix B adopted by reference in Chapter 62-204, F.A.C. The tests shall be conducted within 60 days after achieving the maximum production rate, but not later than 180 days after the initial startup of such facility and at such other times as may be required by the Department or the EPA.
Method 5 Determination of Particulate Matter Emissions from Stationary Sources (I) and (A).
Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources (I) and (A).
Method 7 Determination of Nitrogen Oxides Emissions from Stationary Sources (I) and (A).
Method 10 Determination of Carbon Monoxide Emissions from Stationary Sources (I).
Method 25 Determination of Volatile Organic Compound Emissions from Stationary Sources (I).
Method 101A Determination of Particulate and Gaseous Mercury Emissions from Sewage Sludge Incinerators (I) and (A) or Method 105 Determination of Mercury in Wastewater Treatment Plant Sewage Sludge (I) and (A). Specific Testing and sampling conditions as outlined in 40 CFR 61.53 and 61.54 shall be followed as described.

This facility shall comply with all applicable requirements of Rule 62-297.310, F.A.C. General Compliance Test Requirements and 40 CFR 60.8. Performance Tests
[Chapter 297 F.A.C., Stationary Sources - Emissions Monitoring; and 40 CFR 60 Subpart A, and 40 CFR 61, Subpart A, General Provisions]

C.2. Test Notification. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.
[Rule 62-297.310( )9., F.A.C.]

C.3. Required Stack Sampling Facilities. When a mass emissions stack test is required, the permittee shall comply with the requirements contained in **Appendix SS-1, Stack Sampling Facilities**, attached to this permit.
[Rule 62-297.310(6), F.A.C.]

C.4. Determination of Process Variables.
(a) Required Equipment. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
(b) Accuracy of Equipment. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.
[Rule 62-297.310(5), F.A.C.]

C.5. Test Reports.
(1) (a) The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.

(b) The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.
(c) The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.
11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.

15. Data on the types and amounts of any chemical solutions used.

16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.

17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.

18. All measured and calculated data required to be determined by each applicable test procedure for each run.

19. The detailed calculations for one run that relate the collected data to the calculated emission rate.

20. The applicable emission standard, and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.

21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

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

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

G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

(a) A description of and cause of non-compliance; and
(b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

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

G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.

G.13 This permit also constitutes:

(a) Determination of Best Available Control Technology (not applicable to project);

(b) Determination of Prevention of Significant Deterioration (not applicable to project); and

(c) Compliance with New Source Performance Standards (not applicable to project).

G.14 The permittee shall comply with the following:

(a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

(b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

(c) Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The person responsible for performing the sampling or measurements;
3. The dates analyses were performed;
4. The person responsible for performing the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

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

Appendix 40 CFR 61 Subpart A – NESHAP General Provisions
(version dated 05/06/04)

Prohibited Activities.
(a) After the effective date of any standard, no owner or operator shall construct or modify any stationary source subject to that standard without first obtaining written approval from the Administrator in accordance with this subpart, except under an exemption granted by the President under section 112(c)(2) of the Act. Sources, the construction or modification of which commenced after the publication date of the standards proposed to be applicable to the sources, are subject to this prohibition.

(b) After the effective date of any standard, no owner or operator shall operate a new stationary source subject to that standard in violation of the standard, except under an exemption granted by the President under section 112(c)(2) of the Act.

(c) Ninety days after the effective date of any standard, no owner or operator shall operate any existing source subject to that standard in violation of the standard, except under a waiver granted by the Administrator under this part or under an exemption granted by the President under section 112(c)(2) of the Act.

(d) No owner or operator subject to the provisions of this part shall fail to report, revise reports, or report source test results as required under this part.
[40 CFR 61.05]

Notification of Startup.
(a) The owner or operator of each stationary source which has an initial startup after the effective date of a standard shall furnish the Administrator with written notification as follows:

(1) A notification of the anticipated date of initial startup of the source not more than 60 days nor less than 30 days before that date.

(2) A notification of the actual date of initial startup of the source within 15 days after that date.

(b) If any State or local agency requires a notice which contains all the information required in the notification in 40 CFR 61.09(a), sending the Administrator a copy of that notification will satisfy 40 CFR 61.09(a).
[40 CFR 61.09]

Compliance with Standards and Maintenance Requirements.
(a) Compliance with numerical emission limits shall be determined by emission tests established in 40 CFR 61.13 unless otherwise specified in an individual subpart.

(b) Compliance with design, equipment, work practice or operational standards shall be determined as specified in an individual subpart.

(c) The owner or operator of each stationary source shall maintain and operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the source.

(d) (1) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions of a pollutant from a source at least equivalent to the reduction in emissions of that pollutant from that source achieved under any design, equipment, work practice or operational standard, the Administrator will publish in the Federal Register a notice permitting the use of the alternative means for purposes of compliance with the standard. The notice will restrict the permission to the source(s) or category(ies) of sources on which the alternative means will achieve equivalent emission reductions. The notice may condition permission on requirements related to the operation and maintenance of the alternative means.

(2) Any notice under 40 CFR 61.12(d)(1) shall be published only after notice and an opportunity for a hearing.

(3) Any person seeking permission under this subsection shall, unless otherwise specified in the applicable subpart, submit a proposed test plan or the results of testing and monitoring, a description of the procedures followed in testing or monitoring, and a description of pertinent conditions during testing or monitoring.

(e) For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this part, nothing in this part shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed. [40 CFR 61.12]

Emission Tests and Waiver of Emission Tests.

(a) If required to do emission testing by an applicable subpart and unless a waiver of emission testing is obtained under this section, the owner or operator shall test emissions from the source-

(1) Within 90 days after the effective date, for an existing source or a new source which has an initial startup date before the effective date; or

(2) Within 90 days after initial startup, for a new source which has an initial startup date after the effective date.

(b) The Administrator may require an owner or operator to test emissions from the source at any other time when the action is authorized by section 114 of the Act.

(c) The owner or operator shall notify the Administrator of the emission test at least 30 days before the emission test to allow the Administrator the opportunity to have an observer present during the test.

(d) If required to do emission testing, the owner or operator of each new source and, at the request of the Administrator, the owner or operator of each existing source shall provide emission testing facilities as follows:

(1) Sampling ports adequate for test methods applicable to each source.

(2) Safe sampling platform(s).

(3) Safe access to sampling platform(s).

(4) Utilities for sampling and testing equipment.

(5) Any other facilities that the Administrator needs to safely and properly test a source.

(e) Each emission test shall be conducted under such conditions as the Administrator shall specify based on design and operational characteristics of the source.

(f) Unless otherwise specified in an applicable subpart, samples shall be analyzed and emissions determined within 30 days after each emission test has been completed. The owner or operator shall report the determinations of the emission test to the Administrator by a registered letter sent before the close of business on the 31st day following the completion of the emission test.

(g) The owner or operator shall retain at the source and make available, upon request, for inspection by the Administrator, for a minimum of 2 years, records of emission test results and other data needed to determine emissions.

(h) (1) Emission tests shall be conducted as set forth in this section, the applicable subpart and appendix B unless the Administrator-

(i).Specifies or approves the use of a reference method with minor changes in methodology; or

(ii) Approves the use of an alternative method; or

(iii) Waives the requirement for emission testing because the owner or operator of a source has demonstrated by other means to the Administrator's satisfaction that the source is in compliance with the standard.

(2) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative method, he may require the use of a reference method. If the results of the reference and alternative methods do not agree, the results obtained by the reference method prevail.

(3) The owner or operator may request approval for the use of an alternative method at any time, except-

(i) For an existing source or a new source that had an initial startup before the effective date, any request for use of an alternative method during the initial emission test shall be submitted to the Administrator within 30 days after the effective date, or with the request for a waiver of compliance if one is submitted under 40 CFR 60.10(b); or

(ii) For a new source that has an initial startup after the effective date, any request for use of an alternative method during the initial emission test shall be submitted to the Administrator no later than with the notification of anticipated startup required under 40 CFR 60.09.

(i) (1) Emission tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the standard, or the source is being operated under a waiver or compliance, or the owner or operator has requested a waiver of compliance and the Administrator is still considering that request.

(2) If application for waiver of the emission test is made, the application shall accompany the information required by 40 CFR 61.10 or the notification of startup required by 40 CFR 61.09, whichever is applicable. A possible format is contained in appendix A to this part.

(3) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later cancelling the waiver. The cancellation will be made only after notice is given to the owner or operator of the source.

[40 CFR 61.13]

Monitoring Requirements.

(a) Unless otherwise specified, this section applies to each monitoring system required under each subpart which requires monitoring.

(b) Each owner or operator shall maintain and operate each monitoring system as specified in the applicable subpart and in a manner consistent with good air pollution control practice for minimizing emissions. Any unavoidable breakdown or malfunction of the monitoring system should be repaired or adjusted as soon as practicable after its occurrence. The Administrator's determination of whether acceptable operating and maintenance procedures are being used will be based on information which may include, but not be limited to, review of operating and maintenance procedures, manufacturer recommendations and specifications, and inspection of the monitoring system.

(c) When required by the applicable subpart, and at any other time the Administrator may require, the owner or operator of a source being monitored shall conduct a performance evaluation of the monitoring system and furnish the Administrator with a copy of a written report of the results within 60 days of the evaluation. Such a performance evaluation shall be conducted according to the applicable specifications and procedures described in the applicable subpart. The owner or operator of the source shall furnish the Administrator with written notification of the date of the performance evaluation at least 30 days before the evaluation is to begin.

(d) When the effluents from a single source, or from two or more sources subject to the same emission standards, are combined before being released to the atmosphere, the owner or operator shall install a monitoring system on each effluent or on the

combined effluent. If two or more sources are not subject to the same emission standards, the owner or operator shall install a separate monitoring system on each effluent, unless otherwise specified. If the applicable standard is a mass emission standard and the effluent from one source is released to the atmosphere through more than one point, the owner or operator shall install a monitoring system at each emission point unless the installation of fewer systems is approved by the Administrator.

(e) The owner or operator of each monitoring system shall reduce the monitoring data as specified in each applicable subpart. Monitoring data recorded during periods of unavoidable monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in any data average.

(f) The owner or operator shall maintain records of monitoring data, monitoring system calibration checks, and the occurrence and duration of any period during which the monitoring system is malfunctioning or inoperative. These records shall be maintained at the source for a minimum of 2 years and made available, upon request, for inspection by the Administrator.

(g) (1) Monitoring shall be conducted as set forth in this section and the applicable subpart unless the Administrator-

(i) Specifies or approves the use of the specified monitoring requirements and procedures with minor changes in methodology;
or

(ii) Approves the use of alternatives to any monitoring requirements or procedures.

(2) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring method, the Administrator may require the monitoring Requirements and procedures specified in this part.
[40 CFR 61.14]

Availability of Information.
The availability to the public of information provided to, or otherwise obtained by, the Administrator under this part shall be governed by part 2 of this chapter.
[40 CFR 61.16]

State Authority.

(a) This part shall not be construed to preclude any State or political subdivision thereof from --

(1) Adopting and enforcing any emission limiting regulation applicable to a stationary source, provided that such emission limiting regulation is not less stringent than the standards prescribed under this part; or

(2) Requiring the owner or operator of a stationary source to obtain permits, licenses, or approvals prior to initiating construction, modification, or operation of the source.
[40 CFR 61.17]

Circumvention.
No owner or operator shall build, erect, install, or use any article machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous dilutants to achieve compliance with a visible emissions standard, and the piecemeal carrying out of an operation to avoid coverage by a standard that applies only to operations larger than a specified size.
[40 CFR 61.19]

Appendix 40 CFR 61 Subpart E - NESHAP for Mercury
(version dated 03/20/03)

Emission Standard for Mercury.
(b) Emissions to the atmosphere from sludge drying plants that process wastewater treatment plant sludges shall not exceed 3.2 kg (7.1 lb) of mercury per 24-hour period. [40 CFR 61.52]

Stack Sampling.
(d) Sludge incineration and drying plants (1)Unless a waiver of emission testing is obtained under 40 CFR 61.13, each owner or operator of a source subject to the standard in 61.52(b) shall test emissions from that source. Such tests shall be conducted in accordance with the procedures set forth either in 51.53(d) or in 61.54.

(2) Method 101A in appendix B to this part shall be used to test emissions as follows:

(i) The test shall be performed within 90 days of the effective date of these regulations in the case of an existing source or a new source which has an initial startup date preceding the effective date.

(ii) The test shall be performed within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(3)The Administrator/Department shall be notified in writing at least 30 days prior to an emission test, so that he may at his option observe the test.

(4)Samples shall be taken over such a period or periods as are necessary to determine accurately the maximum emissions which will occur in a 24-hour period. No changes shall be made in the operation which would potentially increase emissions above the level determined by the most recent stack test, until the new emission level has been estimated by calculation and the results reported to the Administrator.

(5)All samples shall be analyzed and mercury emissions shall be determined within 30 days after the stack test. Each determination shall be reported to the Administrator by a registered letter dispatched within 15 calendar days following the date such determination
is completed.

(6)Records of emission test results and other data needed to determine total emissions shall be retained at the source and shall be made available, for inspection by the Administrator, for a minimum of 2 years.
[40 CFR 61.53]

Sludge Sampling.
(a)As an alternative means for demonstrating compliance with 40 CFR 61.52(b), an owner or operator may use Method 105 of 40 CFR 61 Appendix B and the procedures specified in this section.

(1)A sludge test shall be conducted within 90 days of the effective date of these regulations in the case of an existing source or a new source which has an initial startup date preceding the effective date, or;

(2)A sludge test shall be conducted within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(b)The Administrator shall be notified at least 30 days prior to a sludge sampling test, so that he may at his option observe the test.

(c) Sludge shall be sampled according to paragraph (c)(1), sludge charging rate for the plant shall be determined according to paragraph (c)(2), and the sludge analysis shall be performed according to paragraph (c)(3) of this section.

(1) The sludge shall be sampled according to Method 105-Determination of Mercury in Wastewater Treatment Plant Sewage Sludges. A total of three composite samples shall be obtained within an operating period of 24 hours. When the 24-hour operating period is not continuous, the total sampling period shall not exceed 72 hours after the first grab sample is obtained. Samples shall not be exposed to any condition that may result in mercury contamination or loss.

(2)The maximum 24-hour period sludge incineration or drying rate shall be determined by use of a flow rate measurement device that can measure the mass rate of sludge charged to the incinerator or dryer with an accuracy of ±5 percent over its operating range. Other methods of measuring sludge mass charging rates may be used if they have received prior approval by the Administrator.

(3) The sampling, handling, preparation, and analysis of sludge samples shall be accomplished according to Method 105 in 40 CFR 61 Appendix B of this part.

(d) The mercury emissions shall be determined by use of the following equation:

$$EHg = MQ\ Fsm(avg)/1000$$

where:
EHg=Mercury emissions, g/day.
M=Mercury concentration of sludge on a dry solids basis, μg/g.
Q=Sludge changing rate, kg/day.
Fsm=Weight fraction of solids in the collected sludge after mixing.
1000=Conversion factor, kg $\mu g/g^2$.

(e) No changes in the operation of a plant shall be made after a sludge test has been conducted which would potentially increase emissions above the level determined by the most recent sludge test, until the new emission level has been estimated by calculation and the results reported to the Administrator.

(f) All sludge samples shall be analyzed for mercury content within 30 days after the sludge sample is collected. Each determination shall be reported to the Administrator by a registered letter dispatched within 15 calendar days following the date such determination is completed.

(g) Records of sludge sampling, charging rate determination and other data needed to determine mercury content of wastewater treatment plant sludges shall be retained at the source and made available, for inspection by the Administrator, for a minimum of 2 years.
[40 CFR 61.54]

Monitoring of Emissions and Operations.

(a) Wastewater treatment plant sludge incineration and drying plants. All the sources for which mercury emissions exceed 1.6 kg (3.5 lb) per 24-hour period, demonstrated either by stack sampling according to Sec. 61.53 or sludge sampling according to Sec. 61.54, shall monitor mercury emissions at intervals of at least once per year by use of Method 105 of Appendix B or the procedures specified in Sec. 61.53(d) (2) and (4). The results of monitoring shall be reported and retained according to Sec. 61.53(d)(5) and (6) or Sec. 61.54(f) and (g).

(c) As an alternative to the monitoring, recordkeeping, and reporting requirements in paragraphs (b)(2) through (8) of this section, an owner or operator may develop and submit for the Administrator's review and approval a plant-specific monitoring plan. To be approved, such a plan must ensure not only compliance with the emission limits of § 61.52(a) but also proper operation and maintenance of emissions control systems. Any site-specific monitoring plan submitted must, at a minimum, include the following:

(1) Identification of the critical parameter or parameters for the hydrogen stream and for the end-box ventilation stream that are to be monitored and an explanation of why the critical parameter(s) selected is the best indicator of proper control system performance and of mercury emission rates.

(2) Identification of the maximum or minimum value of each parameter (e.g., degrees temperature, concentration of mercury) that is not to be exceeded. The level(s) is to be directly correlated to the results of a performance test, conducted no more than 180 days prior to submittal of the plan, when the facility was in compliance with the emission limits of § 61.52(a).

(3) Designation of the frequency for recording the parameter measurements, with justification if the frequency is less than hourly. A longer recording frequency must be justified on the basis of the amount of time that could elapse during periods of process or control system upsets before the emission limits would be exceeded, and consideration is to be given to the time that would be necessary to repair the failure.

(4) Designation of the immediate actions to be taken in the event of an excursion beyond the value of the parameter established in paragraph (c)(2) of this section.

(5) Provisions for reporting, semiannually, parameter excursions and the corrective actions taken, and provisions for reporting within 10 days any significant excursion.

(6) Identification of the accuracy of the monitoring device(s) or of the readings obtained.

(7) Recordkeeping requirements for certifications and calibrations.

[40 CFR 61.55]

Delegation of Authority of NESHAP 40 CFR 61 Subpart E.

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: Sections 61.53(c)(4) and 61.55(d). The authorities not delegated to States listed are in addition to the authorities in the General Provisions, Subpart A of 40 CFR Part 61, that will not be delegated to States: Sections 61.04(b), 61.12(d)(1), and 61.13(h)(1)(ii).
[40 CFR 61.56]

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Mr. John D. Booth, Executive Director
Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

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X [signature] ☐ Agent ☑ Addressee

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Department of Environmental Protection

Jeb Bush
Governor

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

Colleen M. Castille
Secretary

July 15, 2005

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John Booth
Executive Director
Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412

Re: Incompleteness Letter
File Number 0990234-007-AC, PSD-FL-108F

Dear Mr. Booth:

Our power plant sitting office of the department received your application on May 4, 2005 to modify the subject PSD permit. The stated purpose application was to modify the application submitted October 2003. After review, it has been determined that the application is incomplete. In order to continue processing your application, the department will need the additional information requested below. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. You submitted DEP Form No. 62-210.900(3) – Application for Air Permit – Non Title V source. You need to use DEP Form No. 62-210.900(1) – Application for Air Permit – Long form for this application since it is subject to PSD review.

2. In the application you indicated the BACT review was performed based on recently permitted biosolids dryer facilities. You identified 3 facilities in your application. Are other major metropolitan cities in the country using similar facilities? A brief web search indicated facilities in California and New York.

3. For the BACT technology you propose, please provide actual performance data summarizing information like size of unit, air pollutant emission rates, fuels, etc. Please provide general manufacturer information for the BACT technology you propose specifically, the dry low NOx burners, tray scrubber/condenser, and venture scrubber.

4. Rule 62-212.400(3)(h)(5), Florida Administrative Code (F.A.C.) states that an application must include information relating to the air quality impacts of, and the nature and extent of, all general, commercial, residential, industrial and other growth which has occurred since August 7, 1977, in the area the facility or modification would affect. Please satisfy this rule.

5. In Section 8 of the application, an analysis of soil and vegetation was done with respect to Deposition. Please complete the analysis by including pollution impacts to soils and vegetation particular to the

region of the proposed plant. Are there any particularly sensitive species impacted from pollutants being released by the proposed facility? Please include wildlife in your analysis.

The Department has not received comments from the National Park Service and the EPA regarding the modeling analyses completed for this project. Comments will be forwarded to you once they are received.

The department will resume processing your application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a department construction permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to department requests for additional information of an engineering nature. For any material changes to the application, please include a new certification statement by the authorized representative or responsible official. You are reminded that Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days or provide a written request for an additional period of time to submit the information.

If you should have any questions, please contact me at 850/921-9532.

Sincerely,

for Scott M. Sheplak, P.E.
Air Permitting South Section
Bureau of Air Regulation
Mail Station #5505
2600 Blair Stone Road
Tallahassee, FL 32399
Scott.Sheplak@dep.state.fl.us

copy to: Alex H. Makled, P.E., CDM. via e-mail (MAKLEDATL@CDM.COM)
Ray Schauer, SWA via e-mail (rschauer@swa.org)
Jill T. Grimaldi, CDM via e-mail (Grimaldi JT@cdm.com
Darrel J. Graziani, P.E., SED, via e-mail (Darrel.Graziani@dep.state.fl.us)
Steve Palmer, P.E., DEP Siting Office, via e-mail (Steve.Palmer@dep.state.fl.us)

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1. Article Addressed to:

Mr. John Booth
Executive Dir.
Solid Waste Auth. of Palm Beach County
7501 North Jog Rd.
West Palm Beach, FL 33412

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Mr. John Booth, Solid Waste Auth.
Street, Apt. No.; or PO Box No.
7501 B, Jog Rd.
City, State, ZIP+4
W. Palm Beach, FL 33412

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CDM
1601 Belvedere Road, Suite 211 South
West Palm Beach, Florida 33406
tel: 561 689-3336
fax: 561 689-9713

October 28, 2004

Ms. Teresa Heron
Emissions Monitoring Section
Division of Air Resources Management
Bureau of Air Regulation-Air Permitting South
2600 Blair Stone Road, MS#5505
Tallahassee, FL 32399-2400

Subject: Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Class I Landfill
FDEP Facility No. 0990234
Initial Performance Testing Report - 3,500 scfm flare

Dear Ms. Heron:

Transmitted herewith is one original Initial Performance Testing Report for the new 3,500 scfm flare at the North County Resource Recovery Facility (NCRRF) Class I Landfill. This report was prepared in accordance with the New Source Performance Standards (NSPS), 40 CFR 60.757 (g), Permit PSD-FL-108(D) and Air Permit No. 0990234-008-AC.

This submittal fulfills Section 2 - Condition No. 7, Air Permit No. 0990234-008-AC, which requires SWA to submit compliance test results to the "Permitting Authority" (Florida Department of Environmental Protection (FDEP) Tallahassee) with copies to the "Compliance Authority" (FDEP Southeast District) at least 90 days prior to the expiration of the permit. With this submittal the Title V air operation permit application submitted on October 14, 2003 can be deemed "complete" and we look forward to receiving the draft Title V air operation permit from FDEP.

Please note that this Report was already submitted by SWA to the Compliance Authority, and to the Palm Beach County Health Department on October 8, 2004 to meet the 45-day regulatory deadline, as required by Common Condition No. 18, Appendix C, of Air Permit No. 0990234-008-AC.

If you have any questions or would like additional information, please do not hesitate to contact me at our office.

Very truly yours,

FOR:

Kevin C. Leo, P.E.
Project Manager
Camp Dresser & McKee Inc.

N:\2678\WL2122.doc

Attachment

c: Scott Sheplack, FDEP Tallahassee
Laxmana Tallam, FDEP SE District
James Stormer, PBCHD
Bob Worobel, SWA
Mary Beth Morrison, SWA

File: 2678-37912-101.DN

Summary Report

LANDFILL GAS MANAGEMENT SYSTEM ANNUAL OPERATIONAL TESTING REPORT – 2004

NORTH COUNTY RESOURCE RECOVERY FACILITY
Class I and Class III Landfills
Palm Beach County, Florida

PREPARED FOR:
The Solid Waste Authority of Palm Beach County
West Palm Beach, Florida

IN ASSOCIATION WITH:
Camp Dresser & Mckee, Inc.

WET PROJECT No: 204519
October 2004

WASTE ENERGY TECHNOLOGY, LLC

ENVIRONMENTAL MANAGEMENT
ENGINEERS & CONTRACTORS

FORT WALTON BEACH, FLORIDA

WASTE ENERGY TECHNOLOGY, LLC

11 Tupelo Avenue, S.E. • Fort Walton Beach, Florida 32548-5414
Tel (850) 243-0033 • Fax (850) 243-0077

LANDFILL GAS MANAGEMENT SYSTEM
ANNUAL OPERATIONAL TESTING REPORT-2004
FOR
NORTH COUNTY RESOURCE RECOVERY FACILITY
CLASS I AND CLASS III LANDFILLS
PALM BEACH COUNTY, FLORIDA

October 2004

Prepared for:

Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412
(561) 640-4000

In Association With:

Camp Dresser & McKee, Inc.
1601 Belvedere Road
Suite 211, South
West Palm Beach, FL 33406
(561) 689-3336

Prepared by:

Waste Energy Technology, LLC
11 Tupelo Avenue, SE
Fort Walton Beach, Florida 32548
(850) 243-0033

WET Project No: 204519

LANDFILL GAS MANAGEMENT SYSTEM
ANNUAL OPERATIONAL TESTING REPORT-2004
FOR
NORTH COUNTY RESOURCE RECOVERY FACILITY
CLASS I AND CLASS III LANDFILLS
PALM BEACH COUNTY, FLORIDA

TABLE OF CONTENTS

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LANDFILL GAS MANAGEMENT SYSTEM
ANNUAL OPERATIONAL TESTING REPORT-2004
FOR
NORTH COUNTY RESOURCE RECOVERY FACILITY
CLASS I AND CLASS III LANDFILLS
PALM BEACH COUNTY, FLORIDA

STATEMENT OF CERTIFICATION BY PROFESSIONAL ENGINEER

I hereby certify, based on the information and belief formed after reasonable inquiry, that the information included in the attached documents is true, complete, and accurate.

Waste Energy Technology, LLC
Certificate of Authorization No.: 8780

Matthew H. Zinke
10/07/04

Matthew H. Zinke, P.E.
Director of Engineering
Florida P.E. # 57642

STATEMENT OF CERTIFICATION BY RESPONSIBLE OFFICIAL

I, the undersigned, am the owner or authorized representative of the facility addressed in this report. I hereby certify, based on the information and belief formed after reasonable inquiry, that the information included in the attached documents is true, complete, and accurate.

Solid Waste Authority of Palm Beach County

for John D. Booth, Executive Director — Date: 10/8/04

INTRODUCTION

The Solid Waste Authority of Palm Beach County (SWA) operates a comprehensive waste disposal facility at its Jog Road location known as the North County Resource Recovery Facility (NCRRF) of Palm Beach County. The Florida Department of Environmental Protection (FDEP) issued permit amendment PSD-FL-108(D) on May 7, 1999, to the landfills operating permit for operation of a landfill gas collection system to control emissions from the NCRRF Class I and Class III landfills. The permit amendment allows for an upgrade of the blower motors for each landfill gas flare from a permitted flow rate of 900 scfm to a permitted flow rate of 1800 scfm. The permit amendment also clarifies previous permit conditions and removes a limitation on the sulfur content of the landfill gas. This permit amendment will supersede the previous permit modification, PSD-FL-108(B), which is dated February 20, 1996. The previous permit's specific conditions have been replaced entirely with the May 7, 1999 permit amendment specific conditions, which have been included as Appendix 1. Subsequent to the May 7, 1999 permit amendment, the FDEP issued Final Air Permit No. 0990234-008-AC, which addresses the decommissioning of the 1800 scfm Class I Flare and startup of a new 3500 scfm Class I Flare (see Appendix 1).

This startup occurred on June 9, 2004, and all collected landfill gas from the Class I Landfill is now routed to this flare. This annual operational testing report also serves as the initial performance test report for the new 3500 scfm Class I Flare. SWA retained Waste Energy Technology, LLC (WET) to perform the annual operational testing as specified in the above referenced FDEP permit amendment Specific Conditions.

PERMIT SPECIAL CONDITIONS REVIEW

Permit No. 0990234-008-AC Emissions Unit Specific Conditions A.6 and B.9 address the annual operating testing requirements for the Class I Flare. PSD-FL-108(D) Permit Specific Conditions 4(f)(1), 4(f)(3), 4(f)(4), and 5 address the annual operational testing requirements for the Class III Flare. The above conditions require visible emissions testing, the field collection of gas samples followed by laboratory analysis, and the determination of the landfill gas flow rate.

OPERATIONAL ASSESSMENT

LFG extraction monitoring of the Class I and Class III landfill gas collection systems was accomplished during the week of August 23, 2004. The FDEP Southeast District office was given written notice of this scheduled compliance testing; see notification letter dated July 23, 2004

included as Appendix 2. WET arrived onsite August 24, 2004, to verify steady state flow conditions and methane concentrations in preparation for permit compliance gas sampling and flow analysis. On August 25, 2004, South Florida Environmental Services (SFES), under a subcontract to WET, collected gas samples on the Class I & Class III Flares while WET performed the visible emissions testing and collected flow data. This field testing and laboratory analysis provide the basis for compliance with the following annual permit specific conditions:

Class I Flare	
Specific Condition B.9(1) :	Compliance Testing of Visible Emissions
Specific Condition B.9(3) :	Compliance Testing of Input Gas Net Heating Value
Specific Condition B.9(4)-(6) :	Compliance Testing of Flare Tip Exit Velocity
Specific Condition A.6:	Compliance Testing of Input Gas Total Sulfur Content
Class III Flare	
Specific Condition No. 4(f)(1) :	Compliance Testing of Visible Emissions
Specific Condition No. 4(f)(3) :	Compliance Testing of Input Gas Net Heating Value
Specific Condition No. 4(f)(4) :	Compliance Testing of Flare Tip Exit Velocity
Specific Condition No. 5:	Compliance Testing of Input Gas Total Sulfur Content

Concurrently with the collection of this field data and gas samples, WET recorded LFG system operating data to include Blower Flare Station gas composition (percent methane and oxygen), gas temperatures, and blower inlet and outlet pressures.

Results of the WET field analysis for the annual Specific Conditions B.9(1), B.9(4)-(6), No. 4(f)(1), and No. 4(f)(4) are presented in the report titled "Utility Flare System Compliance Study," dated August 24-25, 2004 by WET, and is included as Appendix 3 to this document. This appendix also includes copies of the field operational data recorded by WET and the visible emissions testing. The results of the landfill gas laboratory analysis performed by SFES for the annual Specific Conditions B.9(3), A.6, No. 4(f)(3), and No. 5 are included in the report titled "Sulfur Content and Net Heating Value Test Program," dated August 25, 2004. This report has been included as Appendix 4 to this document.

A summary of the field and laboratory testing results are presented in Table 1 on the page 4, and a summary of the special permit condition test methods, permit limits, and measured results are presented in Table 2.

CONCLUSIONS

Based on the results of the study, the NCRRF Class I and Class III landfill gas collection and flaring systems are currently operating in compliance with the FLDEP permits 0990234-008-AC and PSD-FL-108 (D).

Table 1: Flare Inlet Gas Testing - Summary of Testing Results

August 24-25, 2004	Class I	Class III
Pipe Duct Diameter	12.000 in.	7.981 in.
Pipe Duct Area	0.7854 sf	0.3474 sf
Pipe Duct Average Gas Velocity, ft/sec	23.32 ft/sec	35.39 ft/sec
Average Gas Temperature, Deg. F, (wet / dry bulb)	138.0 F / 153.07 F	100.0 F / 110.4 F
Average Gas Moisture, % volume	17.90 %	6.04 %
Average Gas Pressure, in. Hg	30.08 in Hg	30.20 in Hg
Barometric Pressure, in. Hg	30.06 in Hg	30.06 in Hg
Average Gas Volumetric Flow Rate:		
@ Field Conditions, acfm	1098.95 acfm	737.74 acfm
@ Standard Conditions, scfm	951.59 scfm	689.33 scfm
@ Dry Standard Conditions, dscfm	781.20 dscfm	647.71 dscfm
Flare Tip Diameter, inches	15.624 in.	6.000 in.
Flare Tip Area, sf	1.3314 sf	0.1963 sf
Flare Tip Exit Velocity, fps	11.91 fps	58.51 fps
Net Heating Value, Btu/scf	449.81 Btu/scf	309.87 Btu/scf
Maximum Permitted Exit Velocity, fps	89.71 fps	61.44 fps
Gas Composition by Laboratory Analysis: For determination of Net Heating Value		
Methane, % by volume	44.00%	30.00%
Carbon Dioxide, % by volume	27.00%	27.00%
Nitrogen, % by volume	24.00%	38.00%
Oxygen, % by volume	3.40%	4.40%
Gas Composition Field Analysis:		
Methane, % by volume	54%	33%

Table 2: Flare Inlet Permit Testing - Summary of Permit Requirements and Results

	Permit Test Method	Permit Limits	Measured Results			
Flare Inlet Test location			**Class I**	**Pass/Fail**	**Class III**	**Pass/Fail**
Date			8/24/04		8/25/04	
Flare Flow Rate	Pitot Tube	3500/1800 scfm	951.59 scfm	**Pass**	689.33 scfm	**Pass**
Net Heating Value	40 CFR 60.18(f)	200 Btu/scf minimum	449.81 Btu/scf	**Pass**	309.87 Btu/scf	**Pass**
	i.e. ASTM D1946-77 and ASTM D2382-76					
Flare Tip Exit Velocity	40 CFR 60.18(f)	Vmax fps @ HT Btu/scf				
-Class I		89.71 @ 449.81 Btu/scf	11.91 ft/sec	**Pass**		
-Class III		61.44 @ 309.87 Btu/scf			58.51ft/sec	**Pass**
Sulfur Content	ASTM D1072-90	None	225.0 ppm	**n/a**	64.85 ppm	**n/a**
Visible Emissions	EPA Method 22	5 minute maximum during 2 hour observation	0 min.	**Pass**	0 min.	**Pass**
-Pilot Flame Thermocouple Temperature, Deg F			1083 F		734 F	

APPENDIX 1

Permit Conditions

NCRRF Permit No.: PSD-FL-108 (D)
and
Final Air Permit No.: 0990234-008-AC

Department of
Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

May 7, 1999

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Donald L. Lockhart, Executive Director
Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Re: DEP File No. 0990234-002-AC, PSD-FL-108(D)
North County Resource Recovery Facility
Class I and III Landfill Gas Flare Upgrade

The applicant, Solid Waste Authority of Palm Beach County, applied on September 21, 1998, to the Department for an air construction permit for its Class I and III Landfill Gas Flare Upgrade located at the North County Resource Recovery Facility, 7501 North Jog Road, West Palm Beach, Palm Beach County. This permitting action will supersede the previous permit modification, PSD-FL-108(B), dated February 20, 1996, clerked February 21, 1996. The modification is to upgrade the blower motors for each landfill gas flare (emissions units 003 and 004) from a permitted flow rate of 900 scfm to a permitted flow rate of 1800 scfm. The Department has reviewed the applicant's request. The conditions of permit modification PSD-FL-108(B) are hereby replaced entirely with the following specific conditions.

New Specific Conditions:

1. Hours of Operation: These emissions units may operate continuously, i.e., 8,760 hours/year. [Rule 62-210.200, F.A.C., Definitions-potential to emit (PTE)]

2. Landfill Gas Collection and Control: The owner or operator shall comply with the applicable requirements of 40 CFR 60 Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills. [Rule 62-204.800(7)(b), F.A.C., and 40 CFR 60 Subpart WWW]

3. Landfill Gas Flow Rate: The owner or operator shall not allow more than 1800 scfm of landfill gas to be directed to each flare. The actual flow rate shall be determined for each flare on a monthly average basis by dividing the measured flow by the hours that each flare was operated each month. Compliance with this limitation shall be by measuring landfill gas flows to each flare and recording flows with a totalizing meter. Records of the totalizing meter values shall be recorded in an operators log monthly, or whenever the meter is reset for any purpose, whichever is more frequent. The owner or operator shall maintain a strip chart recorder to record the flow rate to each flare as a backup device in the event that the totalizer meter is not functioning; the strip chart recorder shall also be used in conjunction with an operators log to document the hours each month that each flare was operated. [Rule 62-4.070(3), F.A.C., and request of the applicant]

4. Pursuant to 40 CFR 60.18 General Control Device Requirements: The owner or operator shall comply with the following requirements for flares. [Note: The numbering of the rule has been preserved in the following condition for ease of reference.]

   (c) (1) Flares shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph (f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

   (2) Flares shall be operated with a flame present at all times, as determined by the methods specified in paragraph (f).

(3) Flares shall be used only with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is non-assisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (f).

(4) (iii) Nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), less than the velocity, Vmax, as determined by the method specified in paragraph (f)(5), and less than 122 m/sec (400 ft/sec) are allowed.

(d) Owners or operators of flares used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices.

(e) Flares used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

(f) (1) Reference Method 22 shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours and shall be used according to Method 22.

(2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

(3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C;

K = Constant, 1.740×10^{-7} (1/ppm) (g mole/scm) (MJ/kcal) where the standard temperature for (g mole/scm) is 20°C;

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946–77 (Incorporated by reference as specified in 40 CFR 60.17); and

H_i = Net heat of combustion of sample component i, kcal/ g mole at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382–76 (incorporated by reference as specified in 40 CFR 60.17) if published values are not available or cannot be calculated.

(4) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.

(5) The maximum permitted velocity, Vmax, for flares complying with paragraph (c)(4)(iii) shall be determined by the following equation.

$$\text{Log10 (Vmax)} = (HT+28.8)/31.7$$

Vmax = Maximum permitted velocity, M/sec

28.8 = Constant

31.7 = Constant

HT = The net heating value as determined in paragraph (f)(3).

[Rule 62-204.800(7)(b), F.A.C., and 40 CFR 60.18]

5. Reporting Requirements: The owner or operator shall annually determine and report the actual exit velocity of each flare using the methods specified in 40 CFR 60.18. The owner or operator shall annually analyze and report the sulfur content of the landfill gas directed to each flare using ASTM Method D1072-90, or later method. The actual exit velocity and sulfur content shall be reported to the Department as an attachment to the facility's annual operating report. [Rule 62-4.070(3), F.A.C., and requirement of previous PSD FL-108(B), dated February 20, 1996, clerked February 21, 1996]

A copy of this letter shall be filed with the referenced permit and shall become part of the permit. This permit modification is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit modification) has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Howard L. Rhodes, Director
Division of Air Resources
Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this permit modification was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 5-11-99 to the person(s) listed:

Donald L. Lockhart *
Alex H. Makled, P.E., CDM
Steve Palmer, DEP, Siting Coordination Office
Isidore Goldman, P.E., SED
James Stormer, PBCHD
Gregg Worley, EPA
John Bunyak, NPS

Clerk Stamp

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

Kimi Tibbs 5-11-99
(Clerk) (Date)

FILE OF PERMIT BINDER

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit by:

Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Authorized Representative:
John D. Booth, Executive Director

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Air Permit No. 0990234-008-AC
3500 scfm Open Flare Project

Enclosed is Final Air Permit No. 0990234-008-AC, which authorizes the construction of new 3500 scfm flare to combust landfill gas collected from the existing Class I Landfill. The new flare will replace an existing 1800 scfm open flare at the North County Resource Recovery Facility located in Palm Beach County, Florida. As noted in the attached Final Determination, only minor changes and clarifications were made. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty (30) days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Trina L Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit (including the Final permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 3/24/04 to the persons listed:

Mr. John D. Booth, SWA*
Mr. Marc Bruner, SWA
Mr. Alex H. Makled, Camp Dresser & McKee Inc.
Ms. Jill Grimaldi, Camp Dresser & McKee Inc.
Mr. James Stormer, PBCHD
Mr. Tom Tittle, SED
Mr. Gregg Worley, EPA Region 4
Mr. John Bunyak, NPS

Clerk Stamp

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

Mary D Aubrey (Clerk) 3/24/04 (Date)

FINAL DETERMINATION

PERMITTEE

Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Authorized Representative:
John D. Booth, Executive Director

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation - Air Permitting South
2600 Blair Stone Road, MS #5505
Tallahassee, Florida, 32399-2400

PROJECT

Air Permit No. 0990234-008-AC
North County Resource Recovery Facility

This permit authorizes the construction of a new 3500 scfm flare to combust landfill gas collected at the existing Class I Landfill. The new equipment will be installed at the existing North County Resource Recovery Facility, which is located in Palm Beach County, Florida

NOTICE AND PUBLICATION

The Department distributed an "Intent to Issue Permit" package on February 6, 2004. The applicant published the "Public Notice of Intent to Issue" in The Palm Beach Post on February 18, 2004. The Department received the proof of publication on February 25, 2004. No petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed.

COMMENTS

No comments on the Draft Permit were received from the public, the Department's Southeast District Office, the Palm Beach County Health Department or the applicant.

CONCLUSION

Only minor revisions were made to correct typographical errors. The final action of the Department is to issue the permit with the changes described above.

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

PERMITTEE:

Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412-2414

Authorized Representative:
John D. Booth, Executive Director

North County Resource Recovery Facility
Air Permit No. 0990234-008-AC
Facility ID No. 0990234
SIC No. 49
Permit Expires: January 30, 2005

PROJECT AND LOCATION

This permit authorizes the construction of a new 3500 scfm flare to combust landfill gas collected at the existing Class I Landfill. The new equipment will be installed at the existing North County Resource Recovery Facility, which is located at 7501 North Jog Road in West Palm Beach, Palm Beach County, Florida. The UTM coordinates are Zone 17, 585.8 km East, and 2960.2 km North.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.) as well as Title 40 Parts 60 and 63 of the Code of Federal Regulations. The permittee is authorized to install the proposed equipment in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

CONTENTS

Michael G. Cooke, Director
Division of Air Resources Management

3/22/04
(Date)

FACILITY AND PROJECT DESCRIPTION

The Solid Waste Authority operates the existing North County Resource Recovery Facility, which is a large municipal waste combustor plant designed to process 2000 tons per day of municipal solid waste (MSW). In general, the plant includes two MSW-fired boilers, a Class I Landfill, a Class III Landfill, landfill gas collection and flaring, the processing and storage of refuse-derived fuel, and the processing of oversized bulk waste. This project will add the following emissions unit.

ID	Emission Unit Description
008	New 3500 scfm open flare in Class I Landfill to replace existing 1800 scfm flare

{Permitting Note: In addition, the existing 1800 scfm flare (Emissions Unit 003) at the Class I Landfill will be permanently shutdown as the result of this project.}

REGULATORY CLASSIFICATION

Title III: The facility is identified as a major source of hazardous air pollutants (HAP).

Title IV: The facility has no units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The facility is a PSD-major facility in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility includes units subject to federal New Source Performance Standards.

NESHAP: The facility includes units subject to federal National Emission Standards for Hazardous Air Pollutants.

Siting: The facility is subject to the Electric Power Plant and Transmission Line Siting Act in accordance with the requirements of Part II in Chapter 403, F.S. and Chapter 62-17, F.A.C.

RELEVANT DOCUMENTS

The permit application and additional information received to make it complete are not a part of this permit; however, the information is specifically related to this permitting action and is on file with the Department.

APPENDICES

Appendix A. Citation Formats

Appendix B. General Conditions

Appendix C. Common Conditions

Appendix D. NESHAP Subpart AAAA Requirements

Appendix E. Summary Tables for NSPS Subpart WWW and NESHAP AAAA Requirements

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, modify, or operate air emissions units at this facility shall be submitted to the Bureau of Air Regulation of the Florida Department of Environmental Protection (Department) at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. Copies of all such documents shall also be submitted to the Compliance Authorities listed below.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resources Section of the Department's Southeast District Office at 400 North Congress Avenue, West Palm Beach, Florida 33416-5425. Copies of all such documents shall also be submitted to the Air Pollution Control Section of the Palm Beach County Health Department at P.O. Box 29, West Palm Beach, Florida 33402-0029.

3. Appendices: The following Appendices are attached as part of this permit: Appendix A (Citation Format); Appendix B (General Conditions); Appendix C (Common Conditions); Appendix D (NESHAP Subpart AAAA Requirements); and Appendix E (Summary Tables for NSPS Subpart WWW and NESHAP AAAA Requirements).

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and Title 40, Part 60 of the Code of Federal Regulations (CFR), adopted by reference in Rule 62-204.800, F.A.C. The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permits or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. EU-008 – New 3500 scfm Open Flare

This section of the permit addresses the following new emissions unit.

Emissions Unit No. 008
New 3500 scfm open flare will be installed in the Class I Landfill to replace the existing 1800 scfm flare.

A. CONSTRUCTION REQUIREMENTS

A.1. New 3500 scfm Flare: The permittee is authorized to install a new 3500 scfm open flare designed to combust landfill gas collected from the existing Class I Landfill. The new flare is described as an open candlestick, non-steam-assisted flare and will replace the existing 1800 scfm flare. The purpose of the new flare is to provide sufficient landfill gas collection and destruction for final build out of the existing facility. The new flare shall be designed in accordance with the EPA criteria established in 40 CFR 60.18 and shall comply with the emissions standards and requirements for landfill gas disposal in utility "candle-type" flares as specified in 40 CFR 60 Subpart WWW and 40 CFR 63 Subpart AAAA. The following summarizes the preliminary design of the flare and is provided for informational purposes only.

- *Model*: The preliminary design calls for a Model CF1440I12 blower and open flare system manufactured by LFG Specialties. The new flare is described as an open candlestick, non-steam-assisted flare.
- *Landfill Gas Flow Rate*: 607 to 3644 scfm
- *Design Combustion Temperature*: 1400° F
- *Minimum Destruction Efficiency*: At least 98% assuming a minimum of 30% methane composition.
- *Design Heat Input Rate*: Approximately 105 MMBtu per hour when assuming a constant heating value for the landfill gas of 500 MMBtu per million cubic feet of gas at the design capacity of 3500 scfm. Note that gas flow rates and heating values may be subject to substantial fluctuations.
- *Design Gas Composition*: 40-60% methane with the remainder as carbon dioxide and inerts
- *Flare Size*: 14 inch tip; 44 feet overall flare height
- *Turndown Ratio*: 6:1

The permittee shall provide any updated information within 60 days of installing the new equipment. The Department recognizes the preliminary nature of this information and may subsequently approve "equivalent" equipment capable of complying with the permit requirements

[Applicant Request; 40 CFR 63, Subpart WWW; NESHAP Subpart AAAA]

A.2. Permitted Capacity: No more than a monthly average of 3500 scfm of landfill gas shall be directed to the new flare. *{Permitting Note: Assuming a constant heating value for the landfill gas of 500 MMBtu per million cubic feet of gas, the design heat input rate at this capacity is 105 MMBtu per hour. Note that landfill gas flow rates as well as heating values may be subject to substantial fluctuations.}* [Rule 62-210.200(PTE), F.A.C.]

A.3. Restricted Operation: The hours of operation of the flare are not limited (8760 hours per year). [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

A.4. Shutdown of Existing 1800 scfm Flare: The permittee shall permanently shutdown the existing 1800 scfm flare (Emissions Unit 003) within 30 days of commencing operation of the new 3500 scfm flare. [Design; Rules 62-4.070(3) and Rule 212.400, F.A.C.]

A.5. Monitoring: Before commencing operation, the permittee shall install a totalizing meter to continuously measure and record gas flow to the flare. Records of the totalizing meter shall be recorded in an

operators' log on at least a monthly basis or whenever the meter is reset for any purpose. Records shall be available for review within 10 days of the following month. A strip chart recorder shall be installed to continuously record the flow rate as a backup device in the event that the totalizing meter is not properly functioning. The strip chart record shall also be used in conjunction with the operators' log to document the monthly hours of operation for the flare. Before commencing operation, the permittee shall also install a device to continuously monitor the flare combustion temperature. Such devices shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's written recommendations. [Rule 62-4.070(3), F.A.C.]

A.6. Reporting: Annually, the permittee shall sample and analyze the landfill gas for sulfur content in accordance with ASTM Method D1072-90 or later method. The actual exit velocity and sulfur content of the landfill gas shall be reported to the Compliance Authority as an attachment to the facility's Annual Operating Report. *{Permitting Note: This was a previous requirement for the existing 1800 scfm flare in Permit No. PSD-FL-108(B).}* [Rule 62-4-070(3), F.A.C.]

B. General Control Device Requirements for Flares in 40 CFR 60.18

B.1. Opacity: Flares shall be designed for, and operated with, no visible emissions as determined by the methods specified in 40 CFR 60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [Rule 62-296.800, F.A.C.; 40 CFR 60.18(c)(1)]

B.2. Flame: Flares shall be operated with a flame present at all times, as determined by the methods specified in 40 CFR 60.18(f). [Rule 62-296.800, F.A.C.; 40 CFR 60.18(c)(2)]

B.3. Gas Heating Value: Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is non-assisted. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f). [Rule 62-296.800, F.A.C.; 40 CFR 60.18(c)(3)]

B.4. Velocity

(i) Steam-assisted and non-assisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than 18.3 m/sec (60 ft/sec), except as provided in 40 CFR 60.18(c)(4)(ii) and 40 CFR 60.18(c)(4)(iii).

(ii) Steam-assisted and non-assisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

(iii) Steam-assisted and non-assisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than the velocity, Vmax, as determined by the method specified in 40 CFR 60.18(f)(5), and less than 122 m/sec (400 ft/sec) are allowed.

[Rule 62-296.800, F.A.C.; 40 CFR 60.18(c)(4)]

B.5. Air-Assisted Flares: Air-assisted flares shall be designed and operated with an exit velocity less than the velocity, Vmax, as determined by the method specified in 40 CFR 60.18(f)(6). [Rule 62-296.800, F.A.C.; 40 CFR 60.18(c)(5)]

B.6. Flare Types: Flares used to comply with this section shall be steam-assisted, air-assisted, or non-assisted. [Rule 62-296.800, F.A.C.; 40 CFR 60.18(c)(6)]

B.7. Monitoring: Owners or operators of flares used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices. [Rule 62-296.800, F.A.C.; 40 CFR 60.18(d)]

B.8. Operation: Flares used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them. [Rule 62-296.800, F.A.C.; 40 CFR 60.18(e)]

B.9. Demonstrating Compliance

(1) Reference Method 22 shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours and observations shall be conducted using EPA Method 22.

(2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

(3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$HT = K \sum_{i=1}^{n} CiHi$$

where:

HT = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of off-gas is based on combustion at 25° C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20° C;

K = Constant, 1.740×10^{-7} (1/ppm) (g-mole/scm) (MJ/kcal) where the standard temperature for (g-mole/scm) is 20° C;

Ci = Concentration of sample component "i" in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 (Incorporated by reference as specified in 40 CFR 60.17); and

Hi = Net heat of combustion of sample component "i", kcal/g-mole at 25° C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 (incorporated by reference as specified in 40 CFR 60.17) if published values are not available or cannot be calculated.

(4) The actual exit velocity of a flare shall be determined by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.

(5) The maximum permitted velocity, Vmax, for flares complying with 40 CFR 60.18(c)(4)(iii) shall be determined by the following equation.

$$\text{Log10 (Vmax)} = (HT + 28.8) / 31.7$$

Where:

Vmax = Maximum permitted velocity, m/sec
28.8 = Constant
31.7 = Constant
HT = The net heating value as determined in 40 CFR 60.18(f)(3).

(6) The maximum permitted velocity, Vmax, for air-assisted flares shall be determined by the following equation.

Vmax = 8.706 + 0.7084 (HT)

Where:

Vmax = Maximum permitted velocity, m/sec
8.706 = Constant
0.7084 = Constant
HT = The net heating value as determined in 40 CFR 60.18(f)(3).

[40 CFR 60.18(f) and Rule 62-296.800, F.A.C.]

C. NSPS Requirements for Flares at Landfills in 40 CFR 60 Subpart WWW

C.1. Subpart WWW: The new flare shall comply with all applicable requirements for flares specified in 40 CFR 60 Subpart WWW, including the General Provisions of Subpart A for all NSPS sources. These requirements are already included in the current Title V air operation permit. *{Permitting Note: Appendix E provides summary tables for the requirements of NSPS Subpart WWW and NESHAP AAAA.}*

[40 CFR 60, Subpart WWW; Rule 62-296.800, F.A.C.; Title V Air Permit No. 0990234-004-AV]

D. NESHAP Requirements for Flares at Landfills in 40 CFR 63 Subpart AAAA

D.1. Subpart AAAA: The new flare shall comply with all applicable requirements for flares specified in 40 CFR 63, Subpart AAAA, including the General Provisions of Subpart A for all NESHAP sources. These requirements are not yet included in the current Title V air operation permit. Therefore, the standardized conditions are attached as Appendix D to this permit for completeness. *{Permitting Note: Appendix E provides summary tables for the requirements of NSPS Subpart WWW and NESHAP AAAA.}*

[40 CFR 63, Subpart AAAA; Rule 62-296.800, F.A.C.]

APPENDIX 2

FLDEP Permit Compliance Testing Notification

FILE 3600

SWA
SOLID WASTE AUTHORITY
YOUR PARTNER FOR
SOLID WASTE SOLUTIONS

July 23, 2004

Mr. Laxmana Tallam
Florida Department of Environmental Protection
400 North Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: **Annual Testing Class III Landfill Flare & Initial Compliance Testing 3500 scfm Class I Landfill Flare**
North County Resource Recovery Facility (NCRRF)
Title V Air Permit 0990234-001-AV
Air Permit No. 0990234-008-AC

Dear Laxmana:

This letter serves as additional notice to 7/22/04 email to the FDEP Southeast District office that the annual testing of the Class III landfill flare and initial compliance testing of the new 3500 scfm Class I landfill flare at the North County Resource Recovery Facility (NCRRF) will be performed on August 24th- 25th , 2004. Waste Energy Technology will be conducting the testing.

If you have any questions or comments regarding the testing program, please contact Mary Beth Morrison at (561) 640-4000 ext.4613.

Sincerely,

John D. Booth, P.E., DEE
Executive Director

Cc Jim Stormer, PBCHD
Mark Hammond, SWA
Marc Bruner, SWA
Ray Schauer, SWA
Mark McLean, SWA
Bob Worobel, SWA
Alex H. Makled, CDM
Yanice Mercado, CDM

APPENDIX 3

Utility Flare System Compliance Study
Waste Energy Technology, LLC
August 24-25, 2004

WASTE ENERGY TECHNOLOGY, LLC

11 Tupelo Avenue, S.E. • Fort Walton Beach, Florida 32548-5414
Tel (850) 243-0033 • Fax (850) 243-0077

UTILITY FLARE SYSTEM COMPLIANCE STUDY

Performed by

WASTE ENERGY TECHNOLOGY, LLC

At the

Solid Waste Authority of Palm Beach County
Class I and Class III Flare Stacks
West Palm Beach, Florida
August 24-25, 2004

UTILITY FLARE SYSTEM COMPLIANCE STUDY
Performed by
WASTE ENERGY TECHNOLOGY, LLC
At the
Solid Waste Authority of Palm Beach County
Class I and Class III Flare Stacks
West Palm Beach, Florida
August 24-25, 2004

TABLE OF CONTENTS

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UTILITY FLARE SYSTEM COMPLIANCE STUDY
Performed by
WASTE ENERGY TECHNOLOGY, LLC
At the
Solid Waste Authority of Palm Beach County
Class I and Class III Flare Stacks
West Palm Beach, Florida
August 24-25, 2004

1.0 INTRODUCTION

A utility flare system test program was performed by Waste Energy Technology, LLC (WET), on the Southwest, Class I landfill area and the Northeast, Class III landfill area Flare Stacks at the Solid Waste Authority of Palm Beach County (SWA) in West Palm Beach, Florida, on August 24-25, 2004. The tests were authorized by Solid Waste Authority of Palm Beach County and performed by WET and its subcontractor South Florida Environmental Services (SFES). The purpose of this test program was to determine the landfill gas flare net heating value and sulfur content, flare tip exit velocity, and visible emissions during normal operating conditions.

Andy Rodgers and Luis Soto of WET were responsible for the overall coordination of the testing program, operation of the flares, visible emissions testing, and collection of all flow data. Dr. John Jallah and Francis Morlu of SFES were responsible for sampling the gas stream at the flares for net heating value and sulfur content. Mr. Bob Worobel and Mr. Tim Nothhelfer of the SWA were present to observe the testing.

2.0 DISCUSSION OF RESULTS

Table 2.1, listed below, summarizes the test conditions and calculation results for the work performed directly by WET. SFES work summary and results are provided under a separate cover. Source operation appeared normal during the entire test program.

2.1 Table of Test Conditions and Results

Plant: Solid Waste Authority of Palm Beach County	**Source: Class I and Class III Flare Stacks**	
Test Location	Class I Flare Inlet	Class III Flare Inlet
Source Condition	Normal	Normal
Date	8/24/04	8/25/04
Average Gas Volumetric Flow Rate:		
@ Actual Conditions, acfm	1098.95	737.74
@ Standard Conditions, scfm	951.59	689.33
@ Dry Standard Conditions, dscfm	781.20	647.71
Flare tip diameter, inches	15.624	6.000
Flare tip area, square feet	1.3314	0.1963
Average Gas Temperature, deg. F	153.07	110.4
Average Flue Gas Velocity, ft/sec	23.32	35.39
Flue Gas Moisture, percent by volume	17.90	6.04
Average Flue Pressure, in. Hg	30.08	30.20
Barometric Pressure, in. Hg	30.06	30.06
Net Heating Value: (From SFES Report)		
Btu/cubic meter	15885	10,943
Btu/scf	449.81	309.87
MJ/scm	16.75	11.54
Maximum Permitted Velocity:		
ft/sec	89.71	61.44
m/sec	27.34	18.73
Exit Velocity:		
ft/sec	11.91	58.51
m/sec	3.63	17.83

3.0 TEST PROCEDURES

All testing, sampling, analytical, and calibration procedures used for this test program were performed as described in the Code of Federal Regulations, Title 40, Part 60, Appendix A (40CFR60), Methods 1 through 4 and 22 and the latest revisions thereof. Where applicable, the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume III, Stationary Source Specific Methods, United States Environmental Protection Agency (USEPA) 600/4-77-027b was used to determine the precise procedures.

Calculations were performed by computer and by hand; an explanation of the nomenclature and calculations along with the complete test results are appended.

3.1 Volumetric Flowrate Determination

In order to determine the flare tip gas exit velocity, the volumetric flow rate was determined using reference Method 2.

Velocity pressures were determined by traversing the test locations with a standard pitot tube. Temperatures were measured using a K-type thermocouple with a calibrated digital temperature indicator. The molecular weight of the gas was determined through laboratory analysis, which is included in the report by SFES titled "Total Sulfur & Net Heating Value Test Program" and is included in Appendix Section 4. Sampling points utilized were determined using reference Method 1. A copy of the above mentioned data and subsequent calculations have been included as Appendix 3A.

3.2 Moisture (H_2O) Determination

Determining the moisture content in the gas stream is necessary to calculate the volumetric gas flow on a dry basis. For this purpose, WET used the wet bulb/dry bulb method. The data and calculations for determination of the moisture content are also included in Appendix 3A.

3.3 Visible Emissions Determination

Reference Method 22, 40CFR60, procedures were used to make a visual determination of visible emissions from the flare stacks. The method specifies that the qualified observer stand at a distance sufficient to provide a clear view of the emissions with the sun not directly in the observer's eyes. Observations were made immediately downstream of the flame, since smoke occurring within the flame, but not downstream of the flame, is not considered a smoke emission. Observations were made at 20-minute intervals with one (1) observer at each flare for the duration of the 2-hour time period. Copies of the visible emissions test reports are included as Appendix 3B. The observer, Andy Rodgers of WET, meets the requirements of

Method 22.

4.0 QUALITY ASSURANCE PROCEDURES

Waste Energy Technology, LLC recognizes the previously described reference methods to be very technique oriented and have attempted to minimize all factors which can increase error by implementing its Quality Assurance Program into every segment of its testing activities.

4.1 CALIBRATION PROCEDURES

PITOT TUBES

The pitot tubes used during this test program are fabricated according to the specification described and illustrated in the Code of Federal Regulations, Title 40, Part 60, Appendix A, Methods 1 through 5 as published in the Federal Register, Volume 42, No. 160; hereafter referred to by the appropriate method number. The pitot tubes comply with the alignment specifications in Method 2, Section 4, and the pitot tube assemblies are in compliance with specifications in the same section.

The pitot tubes are visually inspected for conformance to the dimensional criteria specified in EPA Method 2.

TEMPERATURE SENSING DEVICES

The k-type thermocouple used for temperature measurements is a certified thermometer and has been deemed efficient, accurate, and usable by the ITC Laboratory at the National Institute of Standards and Technology (NIST).

5.0 SAMPLE CALCULATIONS

Class I Flare Velocities

The exit velocity and maximum permitted velocity is calculated in the following manner:

$$\text{Exit Velocity (ft/sec)} = \frac{\text{Volumetric Flowrate (scfm)}}{\text{Flare Tip Area}} \times \frac{1 \text{ min}}{60 \text{ sec}}$$

Maximum Permitted Velocity (m/sec) as per 40CFR60, Section 60.18

$$\log_{10}(V_{MAX}) = \frac{H_T + 28.8}{31.7}$$

Where H_T = Net Heat Value of Landfill Gas, MJ/sm^3

28.8 and 31.7 = Constants

Example Calculation of the Class I flare stack maximum permitted velocity

$$\log_{10}(V_{MAX}) = \frac{16.75 + 28.8}{31.7}$$

Where: Net Heating Value by Lab Analysis = 15,885 Btu/sm^3
or 449.81 Btu/scf (35.31 Btu/sm^3 = 1 Btu/scf)
or 16.75 MJ/sm^3 (200 Btu/scf = 7.45 MJ/sm^3)

V_{MAX} = 27.35 m/sec

$$\frac{27.35 \text{ m/sec}}{0.3048} = 89.71 \text{ ft/sec}$$

Where: 0.3048 meters = 1 ft.

Exit Velocity

Example Calculation of Class I flare stack

Flare Tip Area: 1.3314 ft^2

Flow Rate: 951.59 scfm

$$\frac{951.59 \text{ scfm}}{1.3314 \text{ ft}^2} \times \frac{1 \text{ min}}{60 \text{ sec}} = 11.91 \text{ ft/sec}$$

11.91 ft/sec x 0.3048 = 3.63 m/sec

Class III Flare Velocities

The exit velocity and maximum permitted velocity is calculated in the following manner:

$$\text{Exit Velocity (ft/sec)} = \frac{\text{Volumetric Flowrate}}{\text{Flare Tip Area}} \text{ (scfm)} \times \frac{1 \text{ min}}{60 \text{ sec}}$$

Maximum Permitted Velocity (m/sec) as per 40CFR60, Section 60.18

$$\log_{10}(V_{MAX}) = \frac{H_T + 28.8}{31.7}$$

Where H_T = Net Heat Value of Landfill Gas, MJ/sm^3
28.8 and 31.7 = Constants

Example Calculation of the Class III flare stack maximum permitted velocity

$$\log_{10}(V_{MAX}) = \frac{11.54 + 28.8}{31.7}$$

Where: Net Heating Value by Lab Analysis= 10,943 Btu/sm^3
or 309.87 Btu/scf (35.31 Btu/sm^3 = 1 Btu/scf)
or 11.54 MJ/sm^3 (200 Btu/scf = 7.45 MJ/sm^3)

V_{MAX} = 18.73 m/sec

$$\frac{18.73 \text{ m/sec}}{0.3048} = 61.44 \text{ ft/sec}$$

Where: 0.3048 meters = 1 ft.

Exit Velocity

Example Calculation of Class III flare stack
Flare Tip Area: 0.1963
Flow Rate: 689.33 scfm

$$\frac{689.33 \text{ scfm}}{0.1963 \text{ ft}^2} \times \frac{1 \text{ min}}{60 \text{ sec}} = 58.51 \text{ ft/sec}$$

58.51 ft/sec x 0.3048 = 17.83 m/sec

APPENDIX 3A

Field Operational Data

GAS FLOW CALCULATION - PITOT TUBE
LANDFILL GAS MANAGEMENT SYSTEM
SOLID WASTE AUTHORITY OF PALM BEACH COUNTY
WEST PALM BEACH, FLORIDA

TEST LOCATION: **CLASS I FLARE**
TEST DATE: **8/24/2004**
TEST TIME: **11:00 AM**

Point No.	ΔP "(Hg)	t_s °F	Point No.	ΔP "(Hg)	t_s °F	Point No.	ΔP "(Hg)	t_s °F
1	0.11	152.7	1	0.10	153.0	1	0.09	153.5
2	0.12	152.7	2	0.09	153.0	2	0.10	153.5
3	0.13	152.7	3	0.10	153.0	3	0.10	153.5
4	0.12	152.7	4	0.10	153.0	4	0.09	153.5
5	0.08	152.7	5	0.08	153.0	5	0.08	153.5
6	0.09	152.7	6	0.08	153.0	6	0.08	153.5
7	0.09	152.7	7	0.09	153.0	7	0.08	153.5
8	0.09	152.7	8	0.08	153.0	8	0.08	153.5
Average	0.104	152.7	Average	0.090	153.0	Average	0.088	153.5

Avg ΔP ("H_2O)	0.09	Avg $\Delta P^{1/2}$ ("H_2O)$^{1/2}$	0.31
Avg t_s (°F)	153.07	T_s = Avg t_s + 460 (°R)	613.07

Given:

Cp	0.99
T_{std} (°R)	528
P_{std} ("Hg)	29.92
K_p	85.49

Recorded:

Traverse Points (No.)	8
P_{bar} ("Hg)	30.06
P_g - Static ("H_2O)	0.30
t' - Wet Bulb °F	138
Duct ID (in)	12.000

Lab Analysis:

CH_4 (%)	44.00
CO_2 (%)	27.00
O_2 (%)	3.40
N_2 (%)	24.00

Units of K_p - (ft/sec [(lb/lb-mole)("Hg)/(°R)("H_2O)]$^{1/2}$

Equations:

$P_s = P_{bar} + (P_g/13.6)$
Duct Area = πr^2
$B_{ws} = [e' - (A * P_s * (t_s - t'))] / P_s$
$A = 3.57\ E\text{-}4 * [1 + .00064 * (t' - 32)]$
e' = saturated vapor pressure of water at t'
$M_d = .16*CH_4 + .44*CO_2 + .32*O_2 + .28*N_2$
$M_s = (M_d * 1\text{-}B_{ws}) + (18 * B_{ws})$
$V_s = K_p * C_p * [T_s / (M_s * P_s)]^{1/2} * \Delta P^{1/2}$
$Q_{acfm} = V_s * \text{Duct Area} * 60$
$Q_{scfm} = V_s * \text{Duct Area} * T_{std}/T_s * P_s/P_{std} * 60$
$Q_{dscfm} = V_s * \text{Duct Area} * T_{std}/T_s * P_s/P_{std} * (1\text{-}B_{ws}) * 60$

Calculations:

P_s ("Hg)	30.08	("Hg)
Duct Area (ft^2)	0.7854	($ft.^2$)
B_{ws}	17.90%	
A	0.00038	
e'	5.559	("Hg)
M_d	26.73	(lb/lb-mole)
M_s	25.17	(lb/lb-mole)
V_s	23.32	(ft/sec)
Q_{acfm}	1098.95	($ft.^3$/min)
Q_{scfm}	951.59	($ft.^3$/min)
Q_{dscfm}	781.20	($ft.^3$/min)

Note: e' is recorded from the Handbook of Chemistry and Physics, 52nd Edition, page D-148

FLARE TIP VELOCITY CALCULATION
LANDFILL GAS MANAGEMENT SYSTEM
SOLID WASTE AUTHORITY OF PALM BEACH COUNTY
WEST PALM BEACH, FLORIDA
CLASS I FLARE

Recorded:		**Lab Analysis:**	
Flare Tip ID (in)	15.624	Net Heating Value H_T (BTU/m^3)	15885
		Net Heating Value H_T (BTU/$ft.^3$)	449.81
		Net Heating Value H_T (MJ/m^3)	16.75

Equations:	**Calculations:**
Maximum Permitted Velocity (V_{MAX}) as per 40 CFR 60.18:	
$\log_{10}(V_{MAX}) = (H_T + 28.8) / 31.7$	27.34 (m/sec)
	89.71 (ft./sec)
Flare Tip Area = πr^2	1.3314 ($ft.^2$)
Flare Tip Exit Velocity (V_{TIP}) = Q_{scfm} / (Tip Area * 60)	11.91 (ft./sec)
	3.63 (m/sec)

GAS FLOW CALCULATION - PITOT TUBE
LANDFILL GAS MANAGEMENT SYSTEM
SOLID WASTE AUTHORITY OF PALM BEACH COUNTY
WEST PALM BEACH, FLORIDA

TEST LOCATION: **CLASS III FLARE**
TEST DATE: **8/25/2004**
TEST TIME: **8:00 AM**

Point No.	ΔP "(Hg)	t_s °F	Point No.	ΔP "(Hg)	t_s °F	Point No.	ΔP "(Hg)	t_s °F
1	0.27	110.3	1	0.27	110.4	1	0.26	110.4
2	0.28	110.3	2	0.27	110.4	2	0.26	110.4
3	0.25	110.3	3	0.27	110.4	3	0.26	110.4
4	0.24	110.3	4	0.24	110.4	4	0.23	110.4
5	0.28	110.3	5	0.27	110.4	5	0.26	110.4
6	0.29	110.3	6	0.28	110.4	6	0.27	110.4
7	0.25	110.3	7	0.27	110.4	7	0.27	110.4
8	0.24	110.3	8	0.23	110.4	8	0.23	110.4
Average	0.263	110.3	Average	0.263	110.4	Average	0.255	110.4

Avg ΔP ("H_2O)	0.26	Avg $\Delta P^{1/2}$ ("$H_2O)^{1/2}$	0.51
Avg t_s (°F)	110.4	T_s = Avg t_s + 460 (°R)	570.4

Given:

Cp	0.99
T_{std} (°R)	528
P_{std} ("Hg)	29.92
K_p	85.49

Recorded:

Traverse Points (No.)	8
P_{bar} ("Hg)	30.06
P_g - Static ("H_2O)	1.90
t' - Wet Bulb °F	100
Duct ID (in)	7.981

Lab Analysis:

CH_4 (%)	30.00
CO_2 (%)	27.00
O_2 (%)	4.40
N_2 (%)	38.00

Units of K_p - (ft/sec [(lb/lb-mole)("Hg)/(°R)("H_2O)]$^{1/2}$

Equations:

$P_s = P_{bar} + (P_g/13.6)$
Duct Area = πr^2
$B_{ws} = [e' - (A * P_s * (t_s - t'))] / P_s$
$A = 3.57\ E\text{-}4 * [1 + .00064 * (t' - 32)]$
e' = saturated vapor pressure of water at t'
$M_d = .16*CH_4 + .44*CO_2 + .32*O_2 + .28*N_2$
$M_s = (M_d * 1\text{-}B_{ws}) + (18 * B_{ws})$
$V_s = K_p * C_p * [T_s / (M_s * P_s)]^{1/2} * \Delta P^{1/2}$
$Q_{acfm} = V_s * \text{Duct Area} * 60$
$Q_{scfm} = V_s * \text{Duct Area} * T_{std}/T_s * P_s/P_{std} * 60$
$Q_{dscfm} = V_s * \text{Duct Area} * T_{std}/T_s * P_s/P_{std} * (1\text{-}B_{ws}) * 60$

Calculations:

P_s ("Hg)	30.20	("Hg)
Duct Area (ft^2)	0.3474	($ft.^2$)
B_{ws}	6.04%	
A	0.00037	
e'	1.940	("Hg)
M_d	28.73	(lb/lb-mole)
M_s	28.08	(lb/lb-mole)
V_s	35.39	(ft/sec)
Q_{acfm}	737.74	($ft.^3$/min)
Q_{scfm}	689.33	($ft.^3$/min)
Q_{dscfm}	647.71	($ft.^3$/min)

Note: e' is recorded from the Handbook of Chemistry and Physics, 52nd Edition, page D-148

FLARE TIP VELOCITY CALCULATION
LANDFILL GAS MANAGEMENT SYSTEM
SOLID WASTE AUTHORITY OF PALM BEACH COUNTY
WEST PALM BEACH, FLORIDA
CLASS III FLARE

Recorded:		**Lab Analysis:**	
Flare Tip ID (in)	6.000	Net Heating Value H_T (BTU/m^3)	10943
		Net Heating Value H_T (BTU/$ft.^3$)	309.87
		Net Heating Value H_T (MJ/m^3)	11.54

Equations:	**Calculations:**
Maximum Permitted Velocity (V_{MAX}) as per 40 CFR 60.18:	
$\log_{10}(V_{MAX}) = (H_T + 28.8) / 31.7$	18.73 (m/sec)
	61.44 (ft./sec)
Flare Tip Area = πr^2	0.1963 ($ft.^2$)
Flare Tip Exit Velocity (V_{TIP}) = Q_{scfm} / (Tip Area * 60)	58.51 (ft./sec)
	17.83 (m/sec)

WASTE ENERGY TECHNOLOGY, LLC - FLARE LOG WORKSHEET

SITE: Solid Waste Authority - WET Project No: 204519

PERSONNEL: Andy Rodgers/Luis Soto

DATE (YYMMDD)	TIME 24 HR	HDR IN ("wc)	BLWR IN / OUT ("wc)	B.P. ("wc)	LFG TEMP. (°F)	PILOT TEMP. (°F)	FLOW TOTALIZER (x1000 hrs)	LFG FLOW (scfm)	BLWR#1 AMPS (amps)	BLWR#1 HRMTR (x 10 hrs)	BLWR#2 AMPS (amps)	BLWR#2 HRMTR (x 10 hrs)	LFG QUALITY O2 (%)	LFG QUALITY CH4 (%)	ACTUATOR VALVE TANK (psi)	ACTUATOR VALVE LINE (psi)	PROP. TANK (%)	COMMENTS
Class I																		
08/24/04	806	-36.2	n/a	0.3	141.0	1083	11,768,540	1079	20.0	933.5	0.0	888.8	2.8	54	1610	107	57	
Class III																		
08/25/04	800	-11.5	-14.3	1.9	110.0	734	-	643	9.0	33796.8	0.0	39875.6	3.1	33	6000	100	82	

APPENDIX 3B

Visible Emissions Test Reports

WASTE ENERGY TECHNOLOGY, LLC

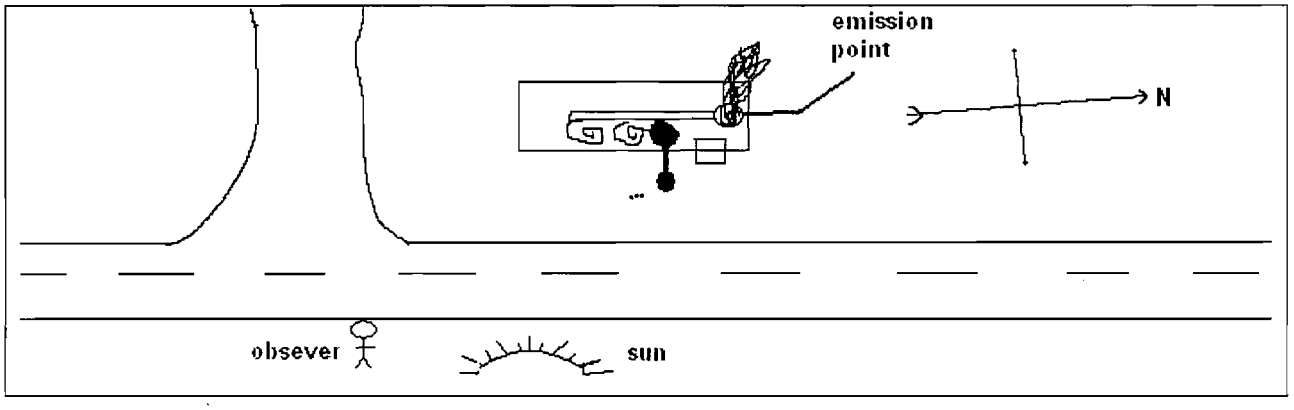
ENVIRONMENTAL MANAGEMENT
ENGINEERS & CONTRACTORS

FORT WALTON BEACH, FLORIDA

FUGITIVE OR SMOKE EMISSION ENSPECTION
OUTDOOR LOCATION

Company	Solid Waste Authority	Observer	Andy Rodgers
Location	Class I	Affiliation	WET Technician
Representative	Bob Worobel	Date	8/24/04
Sky Conditions	Partly Cloudy	Wind Direction	SW (calm)
Precipitation	None	Wind Speed	0-5 mph (calm)
Industry	Solid Waste	Process Unit	Utility Flare

Sketch process unit; indicate observer position relative to source and sun; indicate potential emission points and/or actual emission points.



OBSERVATIONS

	Clock Time	Observation Period Duration	Accumulated Emission Time
Begin Observation	8:30	20 min	0
	8:55	20 min	0
	9:20	20 min	0
	9:45	20 min	0
	10:10	20 min	0
	10:35	20 min	0
End Observation	10:55 am	120 min	0

11 Tupelo Avenue, S.E., Fort Walton Beach Florida 32548 L:\PROJECT\SWA 204519\2004AOR_report\ClassI-VETest.doc
Tel: (850) 243-0033 Fax: (850) 243-0077

WASTE ENERGY TECHNOLOGY, LLC

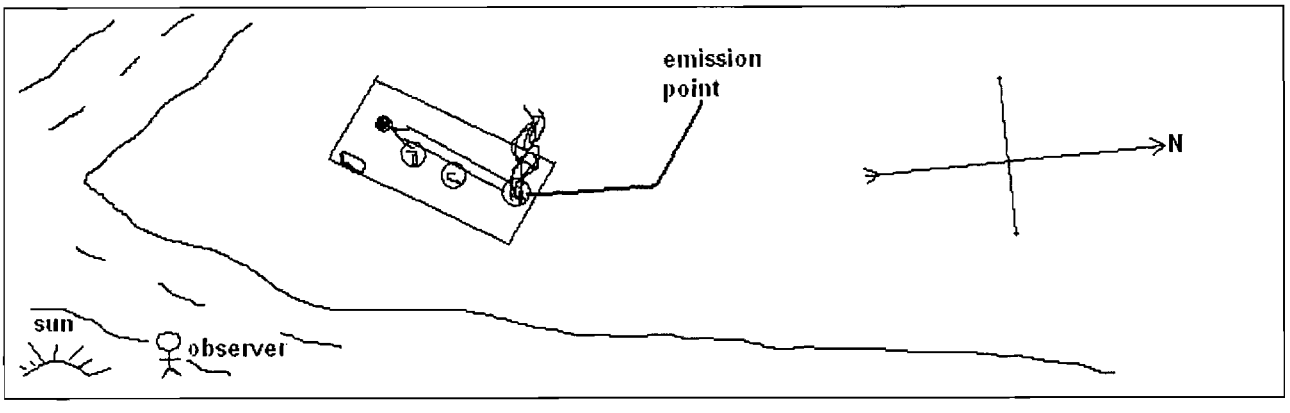
ENVIRONMENTAL MANAGEMENT
ENGINEERS & CONTRACTORS

FORT WALTON BEACH, FLORIDA

FUGITIVE OR SMOKE EMISSION ENSPECTION
OUTDOOR LOCATION

Company	Solid Waste Authority	Observer	Andy Rodgers
Location	Class III	Affiliation	WET Technician
Representative	Bob Worobel	Date	8/24/04
Sky Conditions	Cloudy	Wind Direction	Calm; NW @ 2:00pm
Precipitation	Light Rain	Wind Speed	Calm; 5-10mph@2:00pm
Industry	Solid Waste	Process Unit	Utility Flare

Sketch process unit; indicate observer position relative to source and sun; indicate potential emission points and/or actual emission points.



OBSERVATIONS

	Clock Time	Observation Period Duration	Accumulated Emission Time
Begin Observation	1:10	20 min	0
	1:35	20 min	0
	2:00	20 min	0
	2:25	20 min	0
	2:50	20 min	0
	3:15	20 min	0
End Observation	3:35 pm	120 min	0

11 Tupelo Avenue, S.E., Fort Walton Beach Florida 32548
Tel: (850) 243-0033 Fax: (850) 243-0077

APPENDIX 4

Sulfur Content & Net Heating Value Test Program
South Florida Environmental Services
August 25, 2004

South Florida
Environmental Services

FINAL REPORT
COMPLIANCE TEST PROGRAM

PREPARED FOR:
Waste Energy Technology
11 Tupelo Avenue, S.E.
Walton Beach, Florida 32548-5414

CONCERNING:
Solid Waste Authority
Class I & III Landfill Gas Flares
West Palm Beach. Florida
August 25, 2004

PREPARED BY:
South Florida Environmental Services
6861 Vista Parkway North
West Palm Beach, FL 33411

I hereby certify that the information contained in this report is true and accurate to the best of my knowledge.

Dr. John Jallah
Environmental Chemist

9/30/04
Date

TABLE OF CONTENTS

APPENDICES

1.0 COMPENDIUM

On August 25, 2004, South Florida Environmental Services (SFES) conducted a Compliance Test on behalf of Waste Energy Technology on the Solid Waste Authority of Palm Beach County Landfill, located at 6501 North Jog Road, West Palm Beach, Florida.

The purpose of the program was to sample and characterize Class I and III Landfill Gas (LFG) for VOC, Mixed gases, Assorted Sulfur Compounds and Heating Value.

2.0 SAMPLING AND ANALYTICAL PROCEDURES

Landfill gas samples were collected in glass-lined cylindrical Suma-Canisters for VOC, Mixed Gases, and Heating Value. Tedlar Bag samples were also taken for the determination of assorted Sulfur Compounds.

Air Toxics, Ltd of Folsom, California provided the Canisters and Tedlar Bags, which had been prepared according to Protocol No. 1 standards. Air Toxics also analyzed both the Canister and Tedlar Bag gas samples for the chemical and physical constituents of interest.

Francis K. Morlu (Engineer & Technical Services Manager) and John Jallah (Environmental Chemist) were responsible for the Compliance Program, including LFG sampling and report preparation.

3.0 QUALITY CONTROL PROCEDURES

Throughout all phases of the test program, including sampling, analysis and data reduction, strict quality control procedures were adhered to.

Sampling was conducted by trained personnel with extensive experience in both inorganic and organic compound sampling. Analysis was conducted by Air Toxics, Ltd. of Folsom, California, which is thoroughly familiar with the requirements associated with these analytical procedures.

SFES's entire equipment inventory is on a schedule of routine maintenance and calibration. This includes meter boxes, thermocouples, barometers, pitot tubes and sampling nozzles. Meter boxes are calibrated over a full range of flow rates against a wet test meter every six months.

Analysis was conducted in accordance with the specific methods using proper laboratory procedures. These specific procedures in addition to South Florida Environmental Service's usual high standard of quality control helped validate the results obtained in this test program. SFES is staffed by a team of qualified, experienced environmental professionals. As the majority of our emissions testing work is done for compliance purposes, strict QA/QC procedures are incorporated into our everyday work performance.

4.0 RESULTS AND DISCUSSION

The results of the test are summarized in **Tables 1-1** through **1-3** of this section. **Table 1-1** shows that Nitrogen (N2), Carbon Dioxide (CO2) and Methane (CH4) are the main gaseous constituents. Air Toxics, which analyzed the gaseous samples, estimated the Heating Value (HV) at 450 Btu/ft^3 (15,885 Btu/m^3) for the Class I Flare and 310 Btu/ft^3 (10,943 Btu/m^3) for the Class III Flare. A special formula that takes into account the relative contributions of Methane and Hydrogen gases gave a total HV of 16,966 Btu/m^3 for the Class I Flare and 11,523 Btu/m^3 for the Class III Flare.

Table 1-2 summarizes the Sulfur characteristics of the Flares. The table shows that most sulfur compounds are negligible to non-detectable. The Table shows that Hydrogen Sulfide is the main sulfur constituent for both Class I & III Flares.

Volatile Organic Compounds (VOC's) in the Flares are reported in **Table 1-3**, which shows that most VOC's are non-detectable. Those that are detectable in both Class I and III Flares include: Freon-12, Ethanol, Acetone, 2-Propanol, Hexane, 2-Butanone, Tetrahydrofuran, Benzene, Heptane, 4-Methyl-2-pentanone, Toluene, Tetrachloroethene, Ethyl Benzene, m/p-Xylene, 0-Xylene, Styrene, and Benzene and Benzene-like compounds. The table also shows that Class I Flares are considerably higher than Class III Flares with respect to these VOC's.

Table 1-1
Mixed Gases and Heating Value Results.

PARAMETER	CONCENTRATION†	
	FLARE-I	FLARE-III
	Mixed Gases (%)	
Oxygen	3.40	4.40
Nitrogen	24.00	38.00
Carbon Monoxide	ND	ND
Methane	44.00	30.00
Carbon Dioxide	27.00	27.00
Ethane	ND	ND
Hydrogen	0.53	ND
Ethene	ND	ND
Total	**98.93**	**99.4**
Heating Value [GCV] (Btu/ft^3)		
Estimated by Air Toxics	450	310
Heating Value [GCV] (Btu/m^3)		
Estimated by Air Toxics*	15,885	10943
Calculated From CH4 **	16,900	11523
Calculated From H2	65	ND
Sum of CH4 & H2-Calculation	16,966	11,523

† Numbers have been corrected for blank samples; ND=Not Detected above detection limit; *GCV (Btu/m^3)= GCV (Btu/ft^3) x 35.3 ft^3/m^3; **Calculated GCV ≈ [% CH4 or H2 /100 %] x H x 273 K/298 K x 1000 L/m3 x 1.0543 Btu/kj x 1.0 mole/22.4 L; where, H=890.8 kj/mole for CH4 and 285.83 kj/mole for H2.

Table 1-2
Assorted Sulfur Analysis Results

PARAMETER	CONCENTRATIONS (PPM)†	
	FLARE-I	FLARE-III
Hydrogen Sulfide	200.00	64.00
Carbonyl Sulfide	ND*	ND
Methyl Mercaptan	11.00	0.43
Ethyl Mercaptan	ND	ND
Dimethyl Sulfide	14.00	0.42
Carbon Disulfide	ND	ND
Isopropyl Mercaptan	ND	ND
tert-Butyl Mercaptan	ND	ND
n-Propyl Mercaptan	ND	ND
Ethyl Methyl Sulfide	ND	ND
Thiophene	ND	ND
Isobutyl Mercaptan	ND	ND
Diethyl Sulfide	ND	ND
Butyl Mercaptan	ND	ND
Dimethyl Disulfide	ND	ND
3-Methylthiophene	ND	ND
Tetrahydrothiophene	ND	ND
2-Ethylthiophene	ND	ND
2,5-Dimethylthiophene	ND	ND
Diethyl Disulfide	ND	ND

†Numbers have been corrected for blank samples; *ND=Not Detected above detection limit.

Table 1-3
Landfill Gas Class I & III Flare
VOC Analysis Results

PARAMETER	VOC CONCENTRATIONS (PPB)†		VOC CONCENTRATIONS (Ug/m3)†	
	FLARE-I	FLARE-III	FLARE-I	FLARE-III
Freon 12	1900	180	9400	930
Freon 114	ND*	ND	ND	ND
Chloromethane	ND	ND	ND	ND
Vinyl Chloride	ND	110	ND	290
1,3-Butadiene	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND
Chloroethane	ND	40	ND	110
Freon 11	ND	40	ND	230
Ethanol	210000	22000	400000	43000
Freon 113	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND
Acetone	46000	440	110000	1000
2-Propanol	30000	1400	740000	3500
Carbon Disulfide	ND	ND	ND	ND
3-Chloropropene	ND	ND	ND	ND
Methylene Chloride	ND	ND	ND	ND
Methyl tert-butyl ether	ND	32	ND	120
trans-1,2-Dichloroethene	ND	ND	ND	ND
Hexane	900	660	32000	2400
Vinyl Acetate	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	66000	340	200000	1000
Cis-1,2-Dichloroethene	ND	66	ND	260
Tetrahydrofuran	4400	110	13000	340
Chloroform	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
Cyclohexane	ND	260	ND	900
Carbon Tetrachloride (CCl4)	ND	ND	ND	ND
2,2,4-Trimethylpentane	ND	240	ND	1100
Benzene	2400	260	7800	860
1,2-Dichloroethane	ND	ND	ND	ND
Heptane	1100	400	4600	1700
Trichloroethane	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND

†Numbers have been corrected for blank samples; *ND=Not Detected above detection limit.

Table 1-3 Continued
Landfill Gas Class I & III Flare
VOC Analysis Results

PARAMETER	VOC CONCENTRATIONS (PPB)†		VOC CONCENTRATIONS (Ug/m3)†	
	FLARE-I	FLARE-III	FLARE-I	FLARE-III
cis-1,3-Dichloropropene	ND*	ND	ND	ND
4-Methyl-2-pentanone	1800	ND	7500	ND
Toluene	19000	580	72000	2200
trans-1,3-Dichloropropene	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND
Tetrachloroethene	820	ND	5700	ND
2-Hexanone	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND
1,2-Dibromoethane (EDB)	ND	ND	ND	ND
Chlorobenzene	ND	54	ND	250
Ethyl Benzene	6800	740	30000	3300
m,p-Xylene	13000	460	59000	2000
0-Xylene	4000	220	17000	980
Styrene	960	29	4200	120
Bromoform	ND	ND	ND	ND
Cumene	ND	1100	ND	5300
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND
Propylbenzene	ND	120	ND	610
4-Ethyltoluene	3300	220	16000	1100
1,3,5-Trimethylbenzene	1200	100	6100	520
1,2,4-Trimethylebenzene	3100	280	15000	1400
1,3-Dichlorobenzene	ND	ND	ND	ND
1,4-dichlorobenzene	1900	53	12000	320
alpha-Chlorotoluene	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND

†Numbers have been corrected for blank samples; *ND=Not Detected above detection limit.

APPENDIX A
NOMENCLATURE

NOMENCLATURE

%DRE	= percent destruction/removal efficiency
% ISO	= percent isokinetic sampling rate
$\%CO_2$	= percent carbon dioxide by volume (dry)
$\%H_2O$	= percent moisture
$\%N_2$	= percent nitrogen by volume (dry)
$\%O_2$	= percent oxygen by volume (dry)
µg	= micrograms
$\Delta H_@$	= pressure drop across orifice of meter for 0.75 CFM at standard conditions
ΔP_{avg}	= average velocity pressure
A_n	= sampling nozzle cross-sectional area (ft2)
Ar	= acetone residue - result of blank evaporation
A_s	= stack cross sectional area (ft2)
B_{wo}	= moisture content of stack gas; expressed as a decimal
C	= final emissions data reported by CEMs, adjusted for calibration drift
C'	= raw emissions data reported by the CEMs, uncorrected for calibration drift.
Cm	= average CEM response to initial and final span gas system calibration
Co	= average CEM response to initial and final zero gas system calibration
C_p	= pitot tube coefficient
C_s	= concentration in stack gas in pounds per standard cubic foot
$C_{s'}$	= concentration in stack gas in grains per standard cubic foot
C_{s12}	= concentration corrected to 12 percent CO_2
D_e	= equivalent diameter of rectangular stack
D_n	= nozzle diameter in inches
D_s	= stack inside diameter in feet
Delta H(abs)	= the meter orifice differential, absolute conditions in inches of mercury
Delta H	= the meter orifice differential
dgm	= dry gas meter
Dry Gas In	= temperature of the dgm inlet in degrees Fahrenheit
Dry Gas Out	= temperature of the dgm outlet in degrees Fahrenheit
F factor	= a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted
F_c	= a factor representing a ratio of the volume of carbon dioxide generated to the calorific value of the fuel combusted
Fw	= a F factor on a wet basis

NOMENCLATURE (CONT'D)

dscf	= dry standard cubic foot
dscfh	= dry standard cubic foot per hour
dscfm	= dry standard cubic foot per minute
E	= emission rate in pounds per million BTU
End Meter	= the dgm reading in cubic feet at the end of the sampling period
F_d	= F-factor dry standard cubic feet per million BTU at zero percent oxygen
FID	= flame ionization detection
F_o	= EPA method 3 fuel factor
fps	= feet per second
GC	= gas chromatograph
GC/MS	= gas chromatograph/mass spectrograph
gr	= grain of particulate; 1lb. = 7000 grains
gr/dscf	= grains per dry standard cubic foot
gr@12%	= grains per dry standard cubic foot corrected to 12 percent oxygen
gr@7%	= grains per dry standard cubic foot corrected to 7 percent oxygen
Hg	= mercury
int/i	= initial
IN	= inches
Int Meter	= the dgm reading in cubic feet at the beginning of the test period
K	= degrees Kelvin
PIT Coeff	= pitot tube coefficient
lb/SCF	= pounds per standard cubic foot
lb/hr	= pounds per hour
lb/mmBTU	= pounds per million BTU
Cma	= concentration of the calibration gases
M_d	= dry molecular weight of flue gas
mg	= milligrams
mg/DSCM	= milligrams per dry standard cubic meter
ml	= milliliters
MM5	= modified EPA method 5
MMBTU/hr	= million BTU per hour
M_s	= molecular weight of flue gas, wet basis
Md	= molecular weight of flue gas, dry basis
ng	= nanograms
NMHC	= non-methane hydrocarbons
Θ	= net run time in minutes

NOMENCLATURE (CONT'D)

°C	= degrees Celsius
°F	= degrees Fahrenheit
°R	= degrees Rankine
P bar	= barometric pressure in inches of mercury
P stk	= pressure of the stack in inches of water
Pabs	= absolute pressure
ppm_{vd}	= parts per million by volume, dry
Ps	= flue gas static pressure in absolute pressure
P_{std}	= standard absolute pressure at 29.92 inches of mercury
Qa	= volumetric air flow rate actual cubic feet per minute
Q_s	= volumetric air flow rate dry standard cubic feet per minute
rh	= relative humidity
scf	= standard cubic feet
scfm	= standard cubic feet per minute
T_m	= dry gas meter temperature in degrees Fahrenheit
T_s	= flue gas temperature in degrees Fahrenheit
t_{std}	= standard temperature in degrees Fahrenheit
T_{std}	= standard absolute temperature
THC	= Total hydrocarbons
V	= volume
Vl	= total volume of liquid collected in impingers and silica gel
V_m	= volume of metered gas sampled in cubic feet
$V_{m\ std}$	= volume of metered gas sample at dry standard conditions in dry standard cubic feet
VOC	= volatile organic compounds
VS	= average flue gas velocity in feet per second
$V_{w\ std}$	= volume of water vapor in cubic feet
wscfm	= wet standard cubic feet per minute
Y	= dry gas meter calibration factor

APPENDIX B

ANALYTICAL LABORATORY RESULTS

- Results of Mixed Gases & Heating Value
- Results of Volatile Organic Compounds
- Results of Assorted Sulfur Compounds

- Results of Mixed Gases & Heating Value

AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Air Toxics Ltd. Introduces the Electronic Report

Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 8:00 A.M to 6:00 P.M. Pacific
E-mail to:samplereceiving@airtoxics.com

@ AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0408520B

Work Order Summary

CLIENT:	Dr. John Jallah South Florida Environmental Services 6861 Vista Parkway North West Palm Beach, FL 33411	**BILL TO:**	Dr. John Jallah South Florida Environmental Services 6861 Vista Parkway North West Palm Beach, FL 33411
PHONE:	561-687-5300	**P.O. #**	
FAX:	561-687-3676	**PROJECT #**	WET-04-564 WET
DATE RECEIVED:	8/27/04	**CONTACT:**	DeDe Dodge
DATE COMPLETED:	9/10/04		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.
01A	Class I-F-C	Modified ASTM D-1945	0.5 "Hg
02A	Class III-F-C	Modified ASTM D-1945	1.0 "Hg
02AA	Class III-F-C Duplicate	Modified ASTM D-1945	1.0 "Hg
03A	Lab Blank	Modified ASTM D-1945	NA
03B	Lab Blank	Modified ASTM D-1945	NA
04A	LCS	Modified ASTM D-1945	NA
04B	LCS	Modified ASTM D-1945	NA

CERTIFIED BY: _____ DATE: 09/10/04

Laboratory Director

Certification numbers: AR DEQ - 03-084-0, CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/04, Expiration date: 06/30/05
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 , (800) 985-5955 , FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1945
South Florida Environmental Services
Workorder# 0408520B

Two 1 Liter Silonite Canister samples were received on August 27, 2004. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample. See the data sheets for the reporting limits for each compound.

Method modifications taken to run these samples include:

Requirement	*ASTM D-1945*	*ATL Modifications*
Normalization	Sum of original values should not differ from 100.0% by more than 1.0%.	Sum of original values may range between 75-125%. Normalization of data not performed.
Sample analysis	Equilibrate samples to 20-50° F. above source temperature at field sampling	No heating of samples is performed.
Sample calculation	Response factor is calculated using peak height for C5 and lighter compounds.	Peak areas are used for all target analytes to quantitate concentrations.
Reference Standard	Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%.	A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD </= 25%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons).
Sample Injection Volume	0.50 mL to achieve Methane linearity.	1.0 mL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Since Nitrogen is used to pressurize samples, the Nitrogen values are calculated by adding all the sample components and subtracting from 100%.

Definition of Data Qualifying Flags

Six qualifiers may have been used on the data analysis sheets and indicate as follows:
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

AIR TOXICS LTD.

SAMPLE NAME: Class I-F-C

ID#: 0408520B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	**9090716**	**Date of Collection:**	**8/25/04**
Dil. Factor:	**2.05**	**Date of Analysis:**	**9/7/04 01:08 PM**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.20	3.4
Nitrogen	0.20	24
Carbon Monoxide	0.020	Not Detected
Methane	0.00020	44
Carbon Dioxide	0.020	27
Ethane	0.0020	Not Detected
Hydrogen	0.020	0.53
Ethene	0.0020	Not Detected

Total BTU/Cu.F. = 450
Total Sp. Gravity = 0.93
Container Type: 1 Liter Silonite Canister

AIR TOXICS LTD.

SAMPLE NAME: Class III-F-C

ID#: 0408520B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	**9090717**	**Date of Collection:**	**8/25/04**
Dil. Factor:	**2.09**	**Date of Analysis:**	**9/7/04 01:29 PM**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.21	4.4
Nitrogen	0.21	38
Carbon Monoxide	0.021	Not Detected
Methane	0.00021	30
Carbon Dioxide	0.021	27
Ethane	0.0021	Not Detected
Hydrogen	0.021	Not Detected
Ethene	0.0021	Not Detected

Total BTU/Cu.F. = 310
Total Sp. Gravity = 0.99
Container Type: 1 Liter Silonite Canister

AIR TOXICS LTD.

SAMPLE NAME: Class III-F-C Duplicate

ID#: 0408520B-02AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	**9090718**	**Date of Collection:**	**8/25/04**
Dil. Factor:	**2.09**	**Date of Analysis:**	**9/7/04 01:51 PM**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.21	4.4
Nitrogen	0.21	38
Carbon Monoxide	0.021	Not Detected
Methane	0.00021	30
Carbon Dioxide	0.021	27
Ethane	0.0021	Not Detected
Hydrogen	0.021	Not Detected
Ethene	0.0021	Not Detected

Total BTU/Cu.F. = 310
Total Sp. Gravity = 0.99
Container Type: 1 Liter Silonite Canister

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0408520B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	**9090705**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/7/04 08:23 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Nitrogen	0.10	Not Detected
Carbon Monoxide	0.010	Not Detected
Methane	0.00010	Not Detected
Carbon Dioxide	0.010	Not Detected
Ethane	0.0010	Not Detected
Ethene	0.0010	Not Detected

Container Type: NA - Not Applicable

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0408520B-03B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9090706b	Date of Collection: NA	
Dil. Factor:	1.00	Date of Analysis: 9/7/04 08:51 AM	

Compound	Rpt. Limit (%)	Amount (%)
Hydrogen	0.010	Not Detected

Container Type: NA - Not Applicable

AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0408520B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9090731	**Date of Collection:**	NA
Dil. Factor:	1.00	**Date of Analysis:**	9/7/04 09:19 PM

Compound	%Recovery
Oxygen	97
Nitrogen	101
Carbon Monoxide	96
Methane	99
Carbon Dioxide	99
Ethane	96
Ethene	100

Container Type: NA - Not Applicable

AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0408520B-04B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name:	9090729b	Date of Collection: NA	
Dil. Factor:	1.00	Date of Analysis: 9/7/04 07:49 PM	

Compound	%Recovery
Hydrogen	98

Container Type: NA - Not Applicable

- Results of Assorted Sulfur Compounds

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Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

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E-mail to:samplereceiving@airtoxics.com

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AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0408520C

Work Order Summary

CLIENT:	Dr. John Jallah South Florida Environmental Services 6861 Vista Parkway North West Palm Beach, FL 33411	**BILL TO:**	Dr. John Jallah South Florida Environmental Services 6861 Vista Parkway North West Palm Beach, FL 33411
PHONE:	561-687-5300	**P.O. #**	
FAX:	561-687-3676	**PROJECT #**	WET-04-564 WET
DATE RECEIVED:	8/27/04	**CONTACT:**	DeDe Dodge
DATE COMPLETED:	9/1/04		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.
01A	Class I-F-T	ASTM D-5504	Tedlar Bag
02A	Class III-F-T	ASTM D-5504	Tedlar Bag
03A	Lab Blank	ASTM D-5504	NA
04A	LCS	ASTM D-5504	NA

CERTIFIED BY: _____ DATE: 09/01/04

Laboratory Director

Certfication numbers: AR DEQ - 03-084-0, CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/04, Expiration date: 06/30/05
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
ASTM D-5504
South Florida Environmental Services
Workorder# 0408520C

Two 1 Liter Tedlar Bag samples were received on August 27, 2004. The laboratory performed the analysis of sulfur compounds via ASTM D-5504 using GC/SCD. The method involves direct injection of the air sample into the GC via a fixed 1.0 mL sampling loop. See the data sheets for the reporting limits for each compound.

Receiving Notes

Samples were received past the recommended hold time of 24 hours. The discrepancy was noted in the Sample Receipt Confirmation email/fax and the analysis proceeded.

Analytical Notes

Ethyl Methyl Sulfide and n-Butyl Mercaptan coelute with 3-Methyl Thiophene. The corresponding peak is reported as 3-Methyl Thiophene.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.
File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

AIR TOXICS LTD.

SAMPLE NAME: Class I-F-T

ID#: 0408520C-01A

SULFUR GASES BY ASTM D-5504 GC/SCD

File Name:	b082706	Date of Collection:	8/25/04
Dil. Factor:	250	Date of Analysis:	8/27/04 11:58 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)
Hydrogen Sulfide	1000	200000
Carbonyl Sulfide	1000	Not Detected
Methyl Mercaptan	1000	11000
Ethyl Mercaptan	1000	Not Detected
Dimethyl Sulfide	1000	14000
Carbon Disulfide	1000	Not Detected
Isopropyl Mercaptan	1000	Not Detected
tert-Butyl Mercaptan	1000	Not Detected
n-Propyl Mercaptan	1000	Not Detected
Ethyl Methyl Sulfide	1000	Not Detected
Thiophene	1000	Not Detected
Isobutyl Mercaptan	1000	Not Detected
Diethyl Sulfide	1000	Not Detected
Butyl Mercaptan	1000	Not Detected
Dimethyl Disulfide	1000	Not Detected
3-Methylthiophene	1000	Not Detected
Tetrahydrothiophene	1000	Not Detected
2-Ethylthiophene	1000	Not Detected
2,5-Dimethylthiophene	1000	Not Detected
Diethyl Disulfide	1000	Not Detected

Container Type: 1 Liter Tedlar Bag

AIR TOXICS LTD.

SAMPLE NAME: Class III-F-T

ID#: 0408520C-02A

SULFUR GASES BY ASTM D-5504 GC/SCD

File Name:	**b082705**	**Date of Collection: 8/25/04**	
Dil. Factor:	**100**	**Date of Analysis: 8/27/04 11:27 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)
Hydrogen Sulfide	400	64000
Carbonyl Sulfide	400	Not Detected
Methyl Mercaptan	400	430
Ethyl Mercaptan	400	Not Detected
Dimethyl Sulfide	400	420
Carbon Disulfide	400	Not Detected
Isopropyl Mercaptan	400	Not Detected
tert-Butyl Mercaptan	400	Not Detected
n-Propyl Mercaptan	400	Not Detected
Ethyl Methyl Sulfide	400	Not Detected
Thiophene	400	Not Detected
Isobutyl Mercaptan	400	Not Detected
Diethyl Sulfide	400	Not Detected
Butyl Mercaptan	400	Not Detected
Dimethyl Disulfide	400	Not Detected
3-Methylthiophene	400	Not Detected
Tetrahydrothiophene	400	Not Detected
2-Ethylthiophene	400	Not Detected
2,5-Dimethylthiophene	400	Not Detected
Diethyl Disulfide	400	Not Detected

Container Type: 1 Liter Tedlar Bag

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0408520C-03A

SULFUR GASES BY ASTM D-5504 GC/SCD

File Name:	b082703	Date of Collection: NA	
Dil. Factor:	1.00	Date of Analysis: 8/27/04 08:59 AM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)
Hydrogen Sulfide	4.0	Not Detected
Carbonyl Sulfide	4.0	Not Detected
Methyl Mercaptan	4.0	Not Detected
Ethyl Mercaptan	4.0	Not Detected
Dimethyl Sulfide	4.0	Not Detected
Carbon Disulfide	4.0	Not Detected
Isopropyl Mercaptan	4.0	Not Detected
tert-Butyl Mercaptan	4.0	Not Detected
n-Propyl Mercaptan	4.0	Not Detected
Ethyl Methyl Sulfide	4.0	Not Detected
Thiophene	4.0	Not Detected
Isobutyl Mercaptan	4.0	Not Detected
Diethyl Sulfide	4.0	Not Detected
Butyl Mercaptan	4.0	Not Detected
Dimethyl Disulfide	4.0	Not Detected
3-Methylthiophene	4.0	Not Detected
Tetrahydrothiophene	4.0	Not Detected
2-Ethylthiophene	4.0	Not Detected
2,5-Dimethylthiophene	4.0	Not Detected
Diethyl Disulfide	4.0	Not Detected

Container Type: NA - Not Applicable

AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0408520C-04A

SULFUR GASES BY ASTM D-5504 GC/SCD

File Name:	**b082702**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/27/04 08:11 AM**	

Compound	%Recovery
Hydrogen Sulfide	101
Carbonyl Sulfide	93
Methyl Mercaptan	90
Ethyl Mercaptan	98
Dimethyl Sulfide	85
Carbon Disulfide	75
Isopropyl Mercaptan	108
tert-Butyl Mercaptan	109
n-Propyl Mercaptan	107
Ethyl Methyl Sulfide	89
Thiophene	85
Isobutyl Mercaptan	92
Diethyl Sulfide	91
Butyl Mercaptan	89
Dimethyl Disulfide	103
3-Methylthiophene	89
Tetrahydrothiophene	94
2-Ethylthiophene	93
2,5-Dimethylthiophene	92
Diethyl Disulfide	103

Container Type: NA - Not Applicable

- Results of Volatile Organic Compounds

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This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

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E-mail to:samplereceiving@airtoxics.com

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WORK ORDER #: 0408520A

Work Order Summary

CLIENT:	Dr. John Jallah South Florida Environmental Services 6861 Vista Parkway North West Palm Beach, FL 33411	**BILL TO:**	Dr. John Jallah South Florida Environmental Services 6861 Vista Parkway North West Palm Beach, FL 33411
PHONE:	561-687-5300	**P.O. #**	
FAX:	561-687-3676	**PROJECT #**	WET-04-564 WET
DATE RECEIVED:	08/27/2004	**CONTACT:**	DeDe Dodge
DATE COMPLETED:	09/10/2004		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.
01A	Class I-F-C	Modified TO-14A	0.5 "Hg
02A	Class III-F-C	Modified TO-14A	1.0 "Hg
02AA	Class III-F-C Duplicate	Modified TO-14A	1.0 "Hg
03A	Lab Blank	Modified TO-14A	NA
04A	CCV	Modified TO-14A	NA
05A	LCS	Modified TO-14A	NA

CERTIFIED BY: _____ DATE: 09/12/04

Laboratory Director

Certfication numbers: AR DEQ - 03-084-0, CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/04, Expiration date: 06/30/05
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
Modified TO-14A
South Florida Environmental Services
Workorder# 0408520A

Two 1 Liter Silonite Canister samples were received on August 27, 2004. The laboratory performed analysis via modified EPA Method TO-14A using GC/MS in the full scan mode. The method involves concentrating up to 0.2 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. See the data sheets for the reporting limits for each compound.

Method modifications taken to run these samples include:

Requirement	*TO-14A/TO-15*	*ATL Modifications*
Continuing Calibration criteria	</= 30% Difference	</= 30% Difference with two allowed out to </= 40% Difference; flag and narrate outliers
Initial Calibration criteria	RSD<30% (TO-14A)	RSD</=30%, two compounds allowed up to 40%.
Moisture control	Nafion Dryer (TO-14A)	Multisorbent trap
Blank acceptance criteria	<0.20 ppbv (TO-14A)	<Reporting Limit
Primary ions for Quantification	Freon 114: 85, Carbon Tetrachloride: 117, Trichloroethene: 130, Ethyl Benzene, m,p- and o-Xylene: 91, Vinyl Acetate: 43, 2-Butanone: 43, 4-Methyl-2-Pentanone: 43.	Freon 114: 135, Carbon Tetrachloride: 119, Trichloroethene: 95, Ethyl Benzene, m,p- and o-Xylene: 106, Vinyl Acetate: 86, 2-Butanone: 72, 4-Methyl-2-Pentanone: 58.
Dilutions for Initial Calibration	Dynamic dilutions or static using canisters	Syringe dilutions
BFB absolute abundance criteria	Within 10% of that from previous day. (TO-14A)	CCV internal standard area counts are compared to ICAL, corrective action for > 40% D.
Sample Load Volume	400 mL (TO-14A)	Varied to 200 mL
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
Concentration of IS Spike.	10 ppbv (TO-15)	25 ppbv.
BFB Abundance	CLP Protocol (TO-15)	SW-846 Protocol
IS Recoveries.	Within 40% of mean over ICAL for blanks, and within 40% of daily CCV for samples. (TO-15)	Within 40% of CCV recoveries for blanks and samples.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifving Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction no performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

AIR TOXICS LTD.

SAMPLE NAME: Class I-F-C

ID#: 0408520A-01A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**d090923**	**Date of Collection: 8/25/04**	
Dil. Factor:	**1370**	**Date of Analysis: 9/10/04 01:26 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	680	1900	3400	9400
Freon 114	680	Not Detected	4900	Not Detected
Chloromethane	2700	Not Detected	5800	Not Detected
Vinyl Chloride	680	Not Detected	1800	Not Detected
1,3-Butadiene	680	Not Detected	1500	Not Detected
Bromomethane	680	Not Detected	2700	Not Detected
Chloroethane	680	Not Detected	1800	Not Detected
Freon 11	680	Not Detected	3900	Not Detected
Ethanol	2700	210000 E	5200	400000 E
Freon 113	680	Not Detected	5300	Not Detected
1,1-Dichloroethene	680	Not Detected	2800	Not Detected
Acetone	2700	46000	6600	110000
2-Propanol	2700	30000	6800	74000
Carbon Disulfide	680	Not Detected	2200	Not Detected
3-Chloropropene	2700	Not Detected	8700	Not Detected
Methylene Chloride	680	Not Detected	2400	Not Detected
Methyl tert-butyl ether	680	Not Detected	2500	Not Detected
trans-1,2-Dichloroethene	680	Not Detected	2800	Not Detected
Hexane	680	900	2400	3200
Vinyl Acetate	2700	Not Detected	9800	Not Detected
1,1-Dichloroethane	680	Not Detected	2800	Not Detected
2-Butanone (Methyl Ethyl Ketone)	680	66000	2000	200000
cis-1,2-Dichloroethene	680	Not Detected	2800	Not Detected
Tetrahydrofuran	680	4400	2000	13000
Chloroform	680	Not Detected	3400	Not Detected
1,1,1-Trichloroethane	680	Not Detected	3800	Not Detected
Cyclohexane	680	Not Detected	2400	Not Detected
Carbon Tetrachloride	680	Not Detected	4400	Not Detected
2,2,4-Trimethylpentane	680	Not Detected	3200	Not Detected
Benzene	680	2400	2200	7800
1,2-Dichloroethane	680	Not Detected	2800	Not Detected
Heptane	680	1100	2800	4600
Trichloroethene	680	Not Detected	3700	Not Detected
1,2-Dichloropropane	680	Not Detected	3200	Not Detected
1,4-Dioxane	2700	Not Detected	10000	Not Detected
Bromodichloromethane	680	Not Detected	4700	Not Detected
cis-1,3-Dichloropropene	680	Not Detected	3200	Not Detected
4-Methyl-2-pentanone	680	1800	2800	7500
Toluene	680	19000	2600	72000
trans-1,3-Dichloropropene	680	Not Detected	3200	Not Detected
1,1,2-Trichloroethane	680	Not Detected	3800	Not Detected
Tetrachloroethene	680	820	4700	5700

AIR TOXICS LTD.

SAMPLE NAME: Class I-F-C

ID#: 0408520A-01A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**d090923**	**Date of Collection: 8/25/04**	
Dil. Factor:	**1370**	**Date of Analysis: 9/10/04 01:26 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
2-Hexanone	2700	Not Detected	11000	Not Detected
Dibromochloromethane	680	Not Detected	5900	Not Detected
1,2-Dibromoethane (EDB)	680	Not Detected	5400	Not Detected
Chlorobenzene	680	Not Detected	3200	Not Detected
Ethyl Benzene	680	6800	3000	30000
m,p-Xylene	680	13000	3000	59000
o-Xylene	680	4000	3000	17000
Styrene	680	960	3000	4200
Bromoform	680	Not Detected	7200	Not Detected
Cumene	680	Not Detected	3400	Not Detected
1,1,2,2-Tetrachloroethane	680	Not Detected	4800	Not Detected
Propylbenzene	680	Not Detected	3400	Not Detected
4-Ethyltoluene	680	3300	3400	16000
1,3,5-Trimethylbenzene	680	1200	3400	6100
1,2,4-Trimethylbenzene	680	3100	3400	15000
1,3-Dichlorobenzene	680	Not Detected	4200	Not Detected
1,4-Dichlorobenzene	680	1900	4200	12000
alpha-Chlorotoluene	680	Not Detected	3600	Not Detected
1,2-Dichlorobenzene	680	Not Detected	4200	Not Detected
1,2,4-Trichlorobenzene	2700	Not Detected	21000	Not Detected
Hexachlorobutadiene	2700	Not Detected	30000	Not Detected

E = Exceeds instrument calibration range.

Container Type: 1 Liter Silonite Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	96	70-130

AIR TOXICS LTD.

SAMPLE NAME: Class III-F-C

ID#: 0408520A-02A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	d090924	Date of Collection: 8/25/04
Dil. Factor:	41.8	Date of Analysis: 9/10/04 02:07 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	21	180	100	930
Freon 114	21	Not Detected	150	Not Detected
Chloromethane	84	Not Detected	180	Not Detected
Vinyl Chloride	21	110	54	290
1,3-Butadiene	21	Not Detected	47	Not Detected
Bromomethane	21	Not Detected	82	Not Detected
Chloroethane	21	40	56	110
Freon 11	21	40	120	230
Ethanol	84	22000 E	160	43000 E
Freon 113	21	Not Detected	160	Not Detected
1,1-Dichloroethene	21	Not Detected	84	Not Detected
Acetone	84	440	200	1000
2-Propanol	84	1400	210	3500
Carbon Disulfide	21	Not Detected	66	Not Detected
3-Chloropropene	84	Not Detected	260	Not Detected
Methylene Chloride	21	Not Detected	74	Not Detected
Methyl tert-butyl ether	21	32	76	120
trans-1,2-Dichloroethene	21	Not Detected	84	Not Detected
Hexane	21	660	75	2400
Vinyl Acetate	84	Not Detected	300	Not Detected
1,1-Dichloroethane	21	Not Detected	86	Not Detected
2-Butanone (Methyl Ethyl Ketone)	21	340	63	1000
cis-1,2-Dichloroethene	21	66	84	260
Tetrahydrofuran	21	110	63	340
Chloroform	21	Not Detected	100	Not Detected
1,1,1-Trichloroethane	21	Not Detected	120	Not Detected
Cyclohexane	21	260	73	900
Carbon Tetrachloride	21	Not Detected	130	Not Detected
2,2,4-Trimethylpentane	21	240	99	1100
Benzene	21	260	68	860
1,2-Dichloroethane	21	Not Detected	86	Not Detected
Heptane	21	400	87	1700
Trichloroethene	21	Not Detected	110	Not Detected
1,2-Dichloropropane	21	Not Detected	98	Not Detected
1,4-Dioxane	84	Not Detected	310	Not Detected
Bromodichloromethane	21	Not Detected	140	Not Detected
cis-1,3-Dichloropropene	21	Not Detected	96	Not Detected
4-Methyl-2-pentanone	21	Not Detected	87	Not Detected
Toluene	21	580	80	2200
trans-1,3-Dichloropropene	21	Not Detected	96	Not Detected
1,1,2-Trichloroethane	21	Not Detected	120	Not Detected
Tetrachloroethene	21	Not Detected	140	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: Class III-F-C

ID#: 0408520A-02A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**d090924**	**Date of Collection:**	**8/25/04**
Dil. Factor:	**41.8**	**Date of Analysis:**	**9/10/04 02:07 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
2-Hexanone	84	Not Detected	350	Not Detected
Dibromochloromethane	21	Not Detected	180	Not Detected
1,2-Dibromoethane (EDB)	21	Not Detected	160	Not Detected
Chlorobenzene	21	54	98	250
Ethyl Benzene	21	740	92	3300
m,p-Xylene	21	460	92	2000
o-Xylene	21	220	92	980
Styrene	21	29	90	120
Bromoform	21	Not Detected	220	Not Detected
Cumene	21	1100	100	5300
1,1,2,2-Tetrachloroethane	21	Not Detected	140	Not Detected
Propylbenzene	21	120	100	610
4-Ethyltoluene	21	220	100	1100
1,3,5-Trimethylbenzene	21	100	100	520
1,2,4-Trimethylbenzene	21	280	100	1400
1,3-Dichlorobenzene	21	Not Detected	130	Not Detected
1,4-Dichlorobenzene	21	53	130	320
alpha-Chlorotoluene	21	Not Detected	110	Not Detected
1,2-Dichlorobenzene	21	Not Detected	130	Not Detected
1,2,4-Trichlorobenzene	84	Not Detected	630	Not Detected
Hexachlorobutadiene	84	Not Detected	910	Not Detected

E = Exceeds instrument calibration range.

Container Type: 1 Liter Silonite Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	100	70-130

AIR TOXICS LTD.

SAMPLE NAME: Class III-F-C Duplicate

ID#: 0408520A-02AA

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	d090925	Date of Collection:	8/25/04
Dil. Factor:	41.8	Date of Analysis:	9/10/04 02:52 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	21	180	100	900
Freon 114	21	Not Detected	150	Not Detected
Chloromethane	84	Not Detected	180	Not Detected
Vinyl Chloride	21	100	54	270
1,3-Butadiene	21	Not Detected	47	Not Detected
Bromomethane	21	Not Detected	82	Not Detected
Chloroethane	21	45	56	120
Freon 11	21	40	120	220
Ethanol	84	24000 E	160	45000 E
Freon 113	21	Not Detected	160	Not Detected
1,1-Dichloroethene	21	Not Detected	84	Not Detected
Acetone	84	460	200	1100
2-Propanol	84	1500	210	3700
Carbon Disulfide	21	Not Detected	66	Not Detected
3-Chloropropene	84	Not Detected	260	Not Detected
Methylene Chloride	21	Not Detected	74	Not Detected
Methyl tert-butyl ether	21	35	76	130
trans-1,2-Dichloroethene	21	Not Detected	84	Not Detected
Hexane	21	690	75	2500
Vinyl Acetate	84	Not Detected	300	Not Detected
1,1-Dichloroethane	21	Not Detected	86	Not Detected
2-Butanone (Methyl Ethyl Ketone)	21	290	63	860
cis-1,2-Dichloroethene	21	63	84	250
Tetrahydrofuran	21	99	63	300
Chloroform	21	Not Detected	100	Not Detected
1,1,1-Trichloroethane	21	Not Detected	120	Not Detected
Cyclohexane	21	260	73	920
Carbon Tetrachloride	21	Not Detected	130	Not Detected
2,2,4-Trimethylpentane	21	240	99	1100
Benzene	21	250	68	810
1,2-Dichloroethane	21	Not Detected	86	Not Detected
Heptane	21	390	87	1600
Trichloroethene	21	53	110	290
1,2-Dichloropropane	21	Not Detected	98	Not Detected
1,4-Dioxane	84	Not Detected	310	Not Detected
Bromodichloromethane	21	Not Detected	140	Not Detected
cis-1,3-Dichloropropene	21	Not Detected	96	Not Detected
4-Methyl-2-pentanone	21	Not Detected	87	Not Detected
Toluene	21	600	80	2300
trans-1,3-Dichloropropene	21	Not Detected	96	Not Detected
1,1,2-Trichloroethane	21	Not Detected	120	Not Detected
Tetrachloroethene	21	Not Detected	140	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: Class III-F-C Duplicate

ID#: 0408520A-02AA

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**d090925**	**Date of Collection:**	**8/25/04**
Dil. Factor:	**41.8**	**Date of Analysis:**	**9/10/04 02:52 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
2-Hexanone	84	Not Detected	350	Not Detected
Dibromochloromethane	21	Not Detected	180	Not Detected
1,2-Dibromoethane (EDB)	21	Not Detected	160	Not Detected
Chlorobenzene	21	54	98	250
Ethyl Benzene	21	740	92	3300
m,p-Xylene	21	440	92	1900
o-Xylene	21	220	92	980
Styrene	21	32	90	140
Bromoform	21	Not Detected	220	Not Detected
Cumene	21	1100	100	5400
1,1,2,2-Tetrachloroethane	21	Not Detected	140	Not Detected
Propylbenzene	21	120	100	620
4-Ethyltoluene	21	220	100	1100
1,3,5-Trimethylbenzene	21	98	100	490
1,2,4-Trimethylbenzene	21	280	100	1400
1,3-Dichlorobenzene	21	Not Detected	130	Not Detected
1,4-Dichlorobenzene	21	60	130	360
alpha-Chlorotoluene	21	Not Detected	110	Not Detected
1,2-Dichlorobenzene	21	Not Detected	130	Not Detected
1,2,4-Trichlorobenzene	84	Not Detected	630	Not Detected
Hexachlorobutadiene	84	Not Detected	910	Not Detected

E = Exceeds instrument calibration range.

Container Type: 1 Liter Silonite Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	98	70-130

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0408520A-03A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	d090905	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/9/04 10:23 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.6	Not Detected
Chloromethane	2.0	Not Detected	4.2	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	0.50	Not Detected	2.0	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.9	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	2.0	Not Detected	4.8	Not Detected
2-Propanol	2.0	Not Detected	5.0	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	2.0	Not Detected	6.4	Not Detected
Methylene Chloride	0.50	Not Detected	1.8	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
Vinyl Acetate	2.0	Not Detected	7.2	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.5	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.8	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.2	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.4	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.1	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.3	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.1	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.8	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0408520A-03A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	d090905	**Date of Collection:**	NA
Dil. Factor:	1.00	**Date of Analysis:**	9/9/04 10:23 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
2-Hexanone	2.0	Not Detected	8.3	Not Detected
Dibromochloromethane	0.50	Not Detected	4.3	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.9	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.2	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.5	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.5	Not Detected
Propylbenzene	0.50	Not Detected	2.5	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.5	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.5	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.5	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	22	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	94	70-130

AIR TOXICS LTD.

SAMPLE NAME: CCV

ID#: 0408520A-04A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**d090902**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/9/04 06:54 AM**	

Compound	%Recovery
Freon 12	119
Freon 114	116
Chloromethane	103
Vinyl Chloride	107
1,3-Butadiene	99
Bromomethane	98
Chloroethane	93
Freon 11	109
Ethanol	87
Freon 113	104
1,1-Dichloroethene	102
Acetone	92
2-Propanol	96
Carbon Disulfide	100
3-Chloropropene	89
Methylene Chloride	107
Methyl tert-butyl ether	97
trans-1,2-Dichloroethene	96
Hexane	97
Vinyl Acetate	89
1,1-Dichloroethane	103
2-Butanone (Methyl Ethyl Ketone)	103
cis-1,2-Dichloroethene	98
Tetrahydrofuran	102
Chloroform	106
1,1,1-Trichloroethane	105
Cyclohexane	100
Carbon Tetrachloride	106
2,2,4-Trimethylpentane	102
Benzene	93
1,2-Dichloroethane	113
Heptane	95
Trichloroethene	103
1,2-Dichloropropane	104
1,4-Dioxane	93
Bromodichloromethane	109
cis-1,3-Dichloropropene	107
4-Methyl-2-pentanone	102
Toluene	98
trans-1,3-Dichloropropene	115
1,1,2-Trichloroethane	105
Tetrachloroethene	104

AIR TOXICS LTD.

SAMPLE NAME: CCV

ID#: 0408520A-04A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	d090902	Date of Collection: NA	
Dil. Factor:	1.00	Date of Analysis: 9/9/04 06:54 AM	

Compound	%Recovery
2-Hexanone	108
Dibromochloromethane	114
1,2-Dibromoethane (EDB)	112
Chlorobenzene	104
Ethyl Benzene	100
m,p-Xylene	101
o-Xylene	98
Styrene	106
Bromoform	118
Cumene	98
1,1,2,2-Tetrachloroethane	101
Propylbenzene	99
4-Ethyltoluene	100
1,3,5-Trimethylbenzene	99
1,2,4-Trimethylbenzene	96
1,3-Dichlorobenzene	98
1,4-Dichlorobenzene	95
alpha-Chlorotoluene	95
1,2-Dichlorobenzene	95
1,2,4-Trichlorobenzene	90
Hexachlorobutadiene	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	98	70-130

AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0408520A-05A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**d090903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/9/04 07:44 AM**	

Compound	%Recovery
Freon 12	128
Freon 114	120
Chloromethane	127
Vinyl Chloride	123
1,3-Butadiene	104
Bromomethane	114
Chloroethane	114
Freon 11	114
Ethanol	56 Q
Freon 113	109
1,1-Dichloroethene	109
Acetone	105
2-Propanol	112
Carbon Disulfide	112
3-Chloropropene	92
Methylene Chloride	109
Methyl tert-butyl ether	108
trans-1,2-Dichloroethene	108
Hexane	111
Vinyl Acetate	82
1,1-Dichloroethane	114
2-Butanone (Methyl Ethyl Ketone)	117
cis-1,2-Dichloroethene	110
Tetrahydrofuran	119
Chloroform	118
1,1,1-Trichloroethane	118
Cyclohexane	113
Carbon Tetrachloride	121
2,2,4-Trimethylpentane	121
Benzene	107
1,2-Dichloroethane	129
Heptane	108
Trichloroethene	118
1,2-Dichloropropane	128
1,4-Dioxane	104
Bromodichloromethane	122
cis-1,3-Dichloropropene	116
4-Methyl-2-pentanone	121
Toluene	114
trans-1,3-Dichloropropene	125
1,1,2-Trichloroethane	121
Tetrachloroethene	122

AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0408520A-05A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**d090903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/9/04 07:44 AM**	

Compound	%Recovery
2-Hexanone	131
Dibromochloromethane	128
1,2-Dibromoethane (EDB)	132 Q
Chlorobenzene	117
Ethyl Benzene	114
m,p-Xylene	116
o-Xylene	107
Styrene	113
Bromoform	132
Cumene	87
1,1,2,2-Tetrachloroethane	111
Propylbenzene	94
4-Ethyltoluene	115
1,3,5-Trimethylbenzene	100
1,2,4-Trimethylbenzene	96
1,3-Dichlorobenzene	102
1,4-Dichlorobenzene	98
alpha-Chlorotoluene	106
1,2-Dichlorobenzene	96
1,2,4-Trichlorobenzene	101
Hexachlorobutadiene	117

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	96	70-130

CDM
1601 Belvedere Road, Suite 211 South
West Palm Beach, Florida 33406
tel: 561 689-3336
fax: 561 689-9713

October 14, 2003

Mr. Steven L. Palmer, P.E.
Siting Coordination Office
Florida Department of Environmental Protection
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Subject: Solid Waste Authority (SWA) of Palm Beach County
Proposed Lime Recalcination and Biosolids Pelletization Facilities
Modification of Conditions of Certification, PA84-20
Transmittal of Response to Request for Additional Information, dated April 8, 2003

Dear Mr. Palmer:

The enclosed Power Plant Site Certification application is being submitted to you in response to your Request for Additional Information, dated April 8, 2003. Your April 8th letter contained a comment from Mr. Cleve Holladay requesting additional information for this application, and we apologize for the delay in providing a response. The proposed Lime Recalcination and Biosolids Pelletization Facilities project has undergone some substantial changes since the receipt of the April letter. In addition to providing the dispersion modeling that Mr. Holladay requested, we are submitting a revised application to modify the Power Plant Site Certification that reflects the project changes. This transmittal letter describes the project changes, as well as our approach in this submittal to addressing both Mr. Holladay's comment and comments that we have also received from Ms. Teresa Heron of the Air Resources Management Division.

Project Changes

The following changes have been made to the Lime Recalcination Facility (LRF) and Biosolids Pelletization Facility (BPF) projects and to Class I Landfill gas flare(s) since the January 2003, submittal of the application to modify the Power Plant Site Certification:

- The BPF has been increased in size from 200 wet tons per day (wtpd) to 400 wtpd. This is being accomplished by adding a second 200-wtpd process train, identical to the one described in the original application. There will now be two stacks (one for each train), and

two of each of the pieces of equipment described in the original application. This doubles the air pollutant emission rates from this facility.

- The 2,300-scfm back-up flare that was described in the January 2003 submittal has been eliminated. The landfill gas pressurization system has been moved from the LRF and BPF site south of 45th Street to a pad just north of the Composting Facility, adjacent to the Class I Landfill. A 4,000-scfm pressurized landfill gas line will run from this new location south, under 45th Street, to the LRF and BPF projects. Although the supply line will be sized for 4,000-scfm, the maximum design landfill gas demand of the LRF and BPF projects will be 2,700-scfm, including the increased demand from the newly enlarged BPF.

- The PM_{10} emission rates from the LRF's kiln exhaust and lime cooler stack have been reduced to be consistent the proposed Maximum Achievable Control Technology (MACT) Standards for Lime Manufacturing Plants (40 CFR 63 Subpart AAAAA), signed as a final rule on August 25, 2003, but not yet published in the Federal Register. The LRF's air pollution control equipment, a three-field electrostatic precipitator (ESP), will be enlarged to a four-field ESP to reduce the emission rate to the proposed MACT level of 0.1 lb PM / ton of "stone" feed from the LRF's current 0.21 lb PM / ton of "stone" feed.

- The existing 1,800-scfm flare at the Class I Landfill will be decommissioned and replaced by the 3,500-scfm Class I flare, not by the 2,300-scfm back-up flare.

- The new 3,500-scfm Class I flare is needed in the short term (within the next few months) to serve landfill gas collection system expansion in the Class I Landfill. Because of this urgent need, SWA would like to request that FDEP issue a separate minor preconstruction permit for this flare. We understand that this could be possible if we demonstrate that the flare can be exempt from PSD permitting (see further discussion in Approach, below).

- The 3,500-scfm Class I flare will not be sufficient to handle all the gas produced by the Class I Landfill at build-out. Two more flares, a 2,000-scfm flare and a 1,000-scfm flare would be needed at the Class I Landfill by 2020, the approximate build-out year. The 6,500-scfm capacity of the three flares together could handle the expected maximum gas generation rate of about 6,000 scfm. In addition, they could be used in combinations of one or two to handle smaller gas flows when the LRF and BPF are drawing off the 2,700 scfm of gas that these facilities need. All three flares have been included in the dispersion modeling portion of this application, with emission rates based on Class I Landfill build-out conditions, as discussed in Approach, below.

FDEP Comments

You observed, in the April 8th comment letter, that the pollution control exemption for landfill gas flares required by the New Source Performance Standards only applies, "provided the owner or operator demonstrates to the Department that such increase would not cause or contribute to a violation of any ambient air quality standard, maximum allowable increase, or visibility limitation." (Rule 62-212.400(a)2.c., FAC). You requested that this demonstration be made by including the proposed new Class I flare in a cumulative dispersion modeling analysis with the LRF and BPF for all pollutants that would have a "significant" increase in emissions after addition of the flare. It is likely that this would include the modeling done for carbon monoxide (CO), nitrogen oxides (NO_X) and particulate matter less than 10 microns (PM_{10}).

In addition to this written comment, Ms. Teresa Heron of FDEP's Department of Air Resources Management submitted a verbal request on April 21, 2003, to Ms. Cynthia Hibbard of CDM to provide more information in the PSD application about the 3,500-scfm Class I flare. Specifically, she wanted to know whether or not the 3,500-scfm Class I flare plus the LRF, BPF and back-up flare would have sufficient capacity to handle all of the gas generated by the Class I Landfill at full build-out, or whether SWA would seek to increase the capacity of the Class I flare at some point in the future. She requested information on when landfill capacity would be reached and how much gas would be generated at that point. She also requested information on how large the Class I Landfill is now, how many cells contain waste, how large it would be when supplying all of the needed gas to the LRF and BPF projects, and how large it would be at build-out.

Approach for Revised Application Submittal

Because of the project changes described above, edits have been made throughout all three volumes of this application submittal to update project information. We are, therefore, submitting complete revised copies of the application, rather than just correction pages or sections.

As requested by Mr. Holladay, the dispersion modeling presented in Volume III, Sections 6 and 7, includes the proposed new 3,500-scfm Class I flare in a cumulative dispersion modeling analysis with the LRF and BPF for all pollutants that would have a "significant" increase in emissions after addition of the flare. If the modeling shows that these projects together would not cause or contribute to a violation of an ambient air quality standard, maximum allowable increase (PSD Increment), or visibility limitation, then the flare would be exempt from the other requirements of PSD permitting. That is, a Best Available Control

Technology (BACT) analysis would not be required for the flare, and the flare could receive a separate minor modification preconstruction air permit on a more expedited schedule than the major modification for the LRF and BPF projects.

The emissions from the additional 1,000-scfm and 2,000-scfm Class I flares have also been included in the dispersion modeling. The 1,000-scfm and 2,000-scfm flares have been included:

- to determine if they can also meet the conditions of the exemption from PSD permitting;
- to address concerns raised by FDEP about how much landfill gas would be generated at landfill build-out, and about granting incremental approvals for each landfill gas collection and control system expansion; and
- to give SWA maximum flexibility on when they could install the 1,000-scfm and 2,000-scfm flares, and on how to operate the Class I Landfill gas collection and control system. The current proposed plan is to install the 1,000-scfm and 2,000-scfm flares at about the same time as the LRF and BPF. Each flare has a turndown ratio of 10:1 (that is, they can operate at flows down to 1/10th of their maximum design flow rate). Having a range of flare sizes also available at the Class I Landfill Flare Station would allow SWA to combust possibly large swings in leftover gas flow to the flares as the LRF and BPF come on- (and off-) line. The three flares could be used in any combination of one, two or three to handle fluctuating flows, and all three together could handle the Class I Landfill expected build-out flow by themselves, even if the LRF and BPF projects were not built.

All three flares, therefore -- the immediately needed 3,500-scfm Class I flare, as well as the planned 1,000-scfm and 2,000-scfm flares -- have been included in the dispersion modeling to evaluate their combined air pollutant concentration impacts with those of the LRF and BPF, and to determine if all three flares could qualify for the PSD permitting exemption.

Dispersion modeling was performed for SO_2, NO_X, CO, PM_{10} and lead (even though significant emissions increases would occur only for NO_X, CO and PM_{10}). The dispersion modeling results presented Table 6-5 in the enclosed Volume III, Section 6, show that the combined project impacts would not exceed any Significant Impact Levels or Class II PSD Increments. Table 6-6 confirms that when background concentrations are added in, modeled concentrations would not exceed any ambient air quality standards. Table 6-7 shows that the combined projects would not cause any exceedances of Class I Significant Impact Levels or Class I Increments at either the Everglades National Park or at the Big Cypress National

Preserve. Section 7 in Volume III presents the results of the visibility modeling, and shows that the combined projects would not impair visibility at either the Everglades National Park or at the Big Cypress National Preserve. Since these demonstrations appear to fulfill the condition for granting the PSD permitting exemption to the three proposed landfill gas flares, the flares were excluded from the BACT analysis in this Application. In addition, a separate set of ELSA forms for a minor modification preconstruction permit application for the three flares has been prepared, and is transmitted herewith. Copies of both the PPSA (3-Volume) and Minor Modification permit applications are also being copied to the Southeast District Office.

We greatly appreciate FDEP's review of this application, and look forward to continuing to work with you throughout the review process. If you or any FDEP staff have any additional questions, or would like any clarifications on this revised application submittal, please feel free to contact myself or Jill Grimaldi at (772) 231-4301.

Very truly yours,

Alex H. Makled, P.E., DEE
Vice President
Camp Dresser & McKee Inc.

Enclosures

File: 2678-39378-064

cc: John D. Booth, SWA
Raymond H. Schauer, SWA
Marc C. Bruner, SWA
Tom Tittle, FDEP Southeast District Office
James Golden, South Florida Water Management District
Jeaneanne Gettle, U.S. EPA
John O'Malley, PBC Health Department

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

September 18, 2002

Mr. Gregg Worley, Chief
Air, Radiation Technology Branch
Preconstruction/HAP Section
U.S. EPA, Region 4
61 Forsyth Street
Atlanta, Georgia 30303

RE: Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
DEP File No. 0990234-006-AC, PSD-FL-108

Dear Mr. Worley:

Enclosed for your review and comment is an application submitted by the Solid Waste Authority of Palm Beach County for a PSD modification for the above referenced facility in Palm Beach County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/922-6979. If you have any questions, please contact Teresa Heron, review engineer, at 850/921-9529.

Sincerely,

Patty Adams

for Al Linero, P.E.
Administrator
New Source Review Section

AAL/pa

Enclosure

Cc: Teresa Heron

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

September 18, 2002

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS – Air Quality Division
Post Office Box 25287
Denver, Colorado 80225

RE: Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
DEP File No. 0990234-006-AC, PSD-FL-108

Dear Mr. Bunyak:

Enclosed for your review and comment is an application submitted by the Solid Waste Authority of Palm Beach County for a PSD modification for the above referenced facility in Palm Beach County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/922-6979. If you have any questions, please contact Teresa Heron, review engineer, at 850/921-9529.

Sincerely,

Patty Adams

for Al Linero, P.E.
Administrator
New Source Review Section

AAL/pa

Enclosure

Cc: Teresa Heron

SOLID WASTE AUTHORITY OF PALM BEACH COUNTY
NORTH COUNTY RESOURCE RECOVERY FACILITY SITE

REQUEST FOR AN AMENDMENT LEADING TO A MODIFICATION OF POWER PLANT SITE CERTIFICATION PA84-20

Second Revision to Include Project Updates and Information Requested in FDEP Letter Dated April 8, 2003

LIME RECALCINATION AND BIOSOLIDS PELLETIZATION FACILITIES

Volume II of III

Submitted to:
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
SITING COORDINATION OFFICE
TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

Prepared for:
Solid Waste Authority of Palm Beach County
7501 North Jog Road
West Palm Beach, Florida 33412

Prepared by:
Camp Dresser & McKee Inc.
1601 Belvedere Road, Suite 211 South
West Palm Beach, Florida 33406

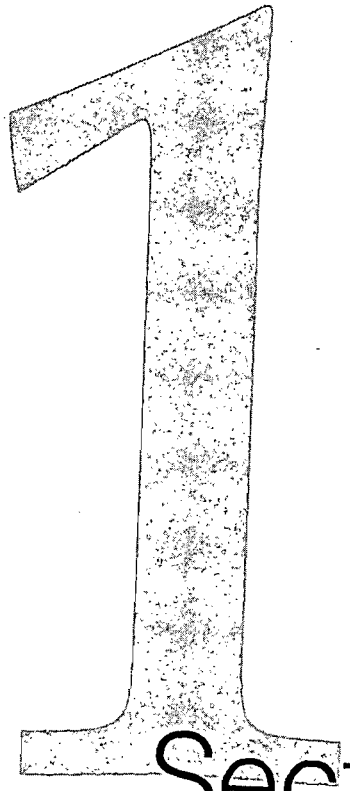
October 2003

10/14/03

Alex H. Makled, P.E., DEE
Florida Registered Engineer
Engineer Number 45935

Contents

Contents



Section One

Section 1
Application Information

Department of
Environmental Protection

DIVISION OF AIR RESOURCES MANAGEMENT

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Identification of Facility Addressed in This Application

1. Facility Owner/Company Name :
   Solid Waste Authority of Palm Beach Co.

2. Site Name :
   North County Resource Recovery Facility

3. Facility Identification Number : 0990234 [ ] Unknown

4. Facility Location :
   Solid Waste Authority of Palm Beach County
   North County Resource Recovery Facility

   Street Address or Other Locator : 7501 North Jog Rod
   City : West Palm Beach County : Palm Beach Zip Code : 33412-2414

5. Relocatable Facility?
   [ ] Yes [X] No

6. Existing Permitted Facility?
   [X] Yes [ ] No

DEP Form No. 62-210.900(1) - Form
Effective : 3-21-96

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official :

Name : John D. Booth, P.E, DEE
Title : Executive Director

2. Owner or Authorized Representative or Responsible Official Mailing Address :

Organization/Firm : Solid Waste Authority of Palm Beach Co
Street Address : 7501 North Jog Road
City : West Palm Beach
State : FL Zip Code : 33412-2414

3. Owner/Authorized Representative or Responsible Official Telephone Numbers :

Telephone : (561)640-4000 Fax : (561)683-4067

4. Owner/Authorized Representative or Responsible Official Statement :

I, the undersigned, am the owner or authorized representative of the non-Title V source addressed in this Application for Air Permit or the responsible official, as defined in Rule 62-210.200, F.A.C., of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions units.*

John D Booth 10/9/03

Signature Date

* Attach letter of authorization if not currently on file.

Scope of Application

Emissions Unit ID	Description of Emissions Unit	Permit Type
	Lime Recalcination Facility Kiln Process	
	Biosolids Pelletizing Facility Dryer Train #1	
	Biosolids Pelletizing Facility Dryer Train #2	

Purpose of Application and Category

Category I : All Air Operation Permit Applications Subject to Processing Under Chapter 62-213, F.A.C.

This Application for Air Permit is submitted to obtain :

[ ] Initial air operation permit under Chapter 62-213, F.A.C., for an existing facility which is classified as a Title V source.

[ ] Initial air operation permit under Chapter 62-213, F.A.C., for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.

Current construction permit number :

[ ] Air operation permit renewal under Chapter 62-213, F.A.C., for a Title V source.

Operation permit to be renewed :

[**X**] Air operation permit revision for a Title V source to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number :
PSD-FL-108(E)

Operation permit to be revised :
0990234-003-AV

[ ] Air operation permit revision or administrative correction for a Title V source to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application.

Operation permit to be revised/corrected :

[ ] Air operation permit revision for a Title V source for reasons other than construction or modification of an emissions unit.

Operation permit to be revised :

Reason for revision :

Category II : All Air Operation Permit Applications Subject to Processing Under Rule 62-210.300(2)(b), F.A.C.

This Application for Air Permit is submitted to obtain :

[ ] Initial air operation permit under Rule 62-210.300(2)(b), F.A.C., for an existing facility seeking classification as a synthetic non-Title V source.

Current operation/construction permit number(s) :

[ ] Renewal air operation permit under Fule 62-210.300(2)(b), F.A.C., for a synthetic non-Title V source.

Operation permit to be renewed :

[ ] Air operation permit revision for a synthetic non-Title V source.

Operation permit to be revised :

Reason for revision :

Category III : All Air Construction Permit Applications for All Facilities and Emissions Units

This Application for Air Permit is submitted to obtain :

[X] Air construction permit to construct or modify one or more emissions units within a facility (including any facility classified as a Title V source).

Current operation permit number(s), if any :
PSD-FL-108(E)

[ ] Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.

Current operation permit number(s) :

[ ] Air construction permit for one or more existing, but unpermitted, emissions units.

Application Processing Fee

Check one :

[ ] Attached - Amount : $0.00 [X] Not Applicable.

Construction/Modification Information

1. Description of Proposed Project or Alterations :

   An application for modification of the SWA's Title V Air Operating Permit, No. 0990234-AV was submit on January 14, 2003. This previous submittal included all information related to the proposed Lime Recalcination Facility (LRF) and Biosolids Pelletization Facility (BPF).

   The BPF has been resized to treat 400 wtpd of sludge, instead of the original 200 wtpd. This change will result in increased air pollutant emission rates.
   These forms include all of the information submitted in January, except that the landfill gas flare has been removed and is in a separate application. Also, a second train has been added to the BPF.

2. Projected or Actual Date of Commencement of Construction :

3. Projected Date of Completion of Construction :

Professional Engineer Certification

1. Professional Engineer Name : Alex H. Makled
   Registration Number : 45935

2. Professional Engineer Mailing Address :

   Organization/Firm : Camp Dresser & McKee
   Street Address : 1601 Belvedere Road,Suite 211S
   City : West Palm Beach State : FL Zip Code : 33406

3. Professional Engineer Telephone Numbers :
   Telephone : (561)689-3336 Fax : (561)689-9713

4. Professional Engineer Statement :

I, the undersigned, hereby certify, except as particularly noted herein, that :*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollutant control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [ ] if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [✓] if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [✓] if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature — Date: 10/14/03

(seal)

* Attach any exception to certification statement.

Application Contact

1. Name and Title of Application Contact :

Name : Alex H. Makled
Title : Vice President

2. Application Contact Mailing Address :

Organization/Firm : Camp Dresser & McKee
Street Address : 1601 Belvedere Road,Suite 211S
City : West Palm Beach
State : FL Zip Code : 33406

3. Application Contact Telephone Numbers :

Telephone : (561)689-3336 Fax : (561)689-9713

Application Comment

This application contains a modification to the previous permit application submitted in January 2003. An additional emission unit (E.U.003) has been included.
The Class I Landfill flare and the backup flare have both been removed from this application, for reasons explained in Volume III, Sections 1.2.3 and 1.3,
EPSAP forms will be submitted electronically for this permit application.

2 Section Two

Section 2
Facility Information

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility, Location, and Type 13

1. Facility UTM Coordinates :
   Zone : 17 East (km) : 585.80 North (km) : 2960.20

2. Facility Latitude/Longitude :
   Latitude (DD/MM/SS) : 26 46 Longitude (DD/MM/SS) : 80 8 45

3. Governmental Facility Code :	4. Facility Status Code :	5. Facility Major Group SIC Code :	6. Facility SIC(s) :
3	A	49	

7. Facility Comment :

The SWA proposes to add a lime recalcination facility and biosolids pelletizing facility that would utilize gas from the Class I landfill.

Facility Contact

1. Name and Title of Facility Contact :
   John D. Booth
   Executive Director

2. Facility Contact Mailing Address :
   Organization/Firm : Solid Waste Auth. of Palm Beach Co.
   Street Address : 7501 North Jog Road
   City : West Palm Beach State : FL Zip Code : 33412-2414

3. Facility Contact Telephone Numbers :
   Telephone : (561)640-4000 Fax : (561)683-4067

Facility Regulatory Classifications

1. Small Business Stationary Source?	N
2. Title V Source?	Y
3. Synthetic Non-Title V Source?	N
4. Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)?	Y
5. Synthetic Minor Source of Pollutants Other than HAPs?	N
6. Major Source of Hazardous Air Pollutants (HAPs)?	N
7. Synthetic Minor Source of HAPs?	N
8. One or More Emissions Units Subject to NSPS?	Y
9. One or More Emission Units Subject to NESHAP?	Y
10. Title V Source by EPA Designation?	N
11. Facility Regulatory Classifications Comment :	

B. FACILITY REGULATIONS

Rule Applicability Analysis

Applicable rules are discussed in Volume III, Section 2.0, Air Quality Regulations

B. FACILITY REGULATIONS

List of Applicable Regulations

The Title V Core List (dated 03/01/02), attached.

40 CFR 60 Subpart HH - Standards of Performance for Lime Manufacturing Plants

40 CFR 60 Subpart WWW - Standards of Performance for Municipal Solid Waste Landfills

40 CFR 61 Subpart E - National Emissions Standard for Hazardous Air Pollutants (NESHAP) - Mercury

40 CFR 64 - Compliance Assurance Monitoring Rule

40 CFR 63 Subpart AAAA - National Emission Standards for Municipal Solid Waste Landfills

40 CFR 63 Subpart AAAAA - National Emissions Standards for Lime Manufacturing Plants.

Title V Core List
Effective: 03/01/02

[Note: The Title V Core List is meant to simplify the completion of the "List of Applicable Regulations" for DEP Form No. 62-210.900(1), Application for Air Permit - Long Form. The Title V Core List is a list of rules to which all Title V Sources are presumptively subject. The Title V Core List may be referenced in its entirety, or with specific exceptions. The Department may periodically update the Title V Core List.]

Federal: *(description)*

40 CFR 61, Subpart M: NESHAP for Asbestos.

40 CFR 82: Protection of Stratospheric Ozone.
40 CFR 82, Subpart B: Servicing of Motor Vehicle Air Conditioners (MVAC).
40 CFR 82, Subpart F: Recycling and Emissions Reduction.

State: *(description)*

CHAPTER 62-4, F.A.C.: PERMITS, effective 06-01-01

62-4.030, F.A.C.: General Prohibition.
62-4.040, F.A.C.: Exemptions.
62-4.050, F.A.C.: Procedure to Obtain Permits; Application.
62-4.060, F.A.C.: Consultation.
62-4.070, F.A.C.: Standards for Issuing or Denying Permits; Issuance; Denial.
62-4.080, F.A.C.: Modification of Permit Conditions.
62-4.090, F.A.C.: Renewals.
62-4.100, F.A.C.: Suspension and Revocation.
62-4.110, F.A.C.: Financial Responsibility.
62-4.120, F.A.C.: Transfer of Permits.
62-4.130, F.A.C.: Plant Operation - Problems.
62-4.150, F.A.C.: Review.
62-4.160, F.A.C.: Permit Conditions.
62-4.210, F.A.C.: Construction Permits.
62-4.220, F.A.C.: Operation Permit for New Sources.

CHAPTER 62-210, F.A.C.: STATIONARY SOURCES - GENERAL REQUIREMENTS, effective 06-21-01

62-210.300, F.A.C.: Permits Required.
62-210.300(1), F.A.C.: Air Construction Permits.
62-210.300(2), F.A.C.: Air Operation Permits.
62-210.300(3), F.A.C.: Exemptions.
62-210.300(5), F.A.C.: Notification of Startup.
62-210.300(6), F.A.C.: Emissions Unit Reclassification.
62-210.300(7), F.A.C.: Transfer of Air Permits.
62-210.350, F.A.C.: Public Notice and Comment.

62-210.350(1), F.A.C.: Public Notice of Proposed Agency Action.
62-210.350(2), F.A.C.: Additional Public Notice Requirements for Emissions Units Subject to Prevention of Significant Deterioration or Nonattainment-Area Preconstruction Review.
62-210.350(3), F.A.C.: Additional Public Notice Requirements for Sources Subject to Operation Permits for Title V Sources.

62-210.360, F.A.C.: Administrative Permit Corrections.
62-210.370(3), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility.
62-210.400, F.A.C.: Emission Estimates.
62-210.650, F.A.C.: Circumvention.
62-210.700, F.A.C.: Excess Emissions.

62-210.900, F.A.C.: Forms and Instructions.
62-210.900(1), F.A.C.: Application for Air Permit - Title V Source, Form and Instructions.
62-210.900(5), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility, Form and Instructions.
62-210.900(7), F.A.C.: Application for Transfer of Air Permit - Title V and Non-Title V Source.

CHAPTER 62-212, F.A.C.: STATIONARY SOURCES - PRECONSTRUCTION REVIEW, effective 08-17-00

CHAPTER 62-213, F.A.C.: OPERATION PERMITS FOR MAJOR SOURCES OF AIR POLLUTION, effective 04-16-01

62-213.205, F.A.C.: Annual Emissions Fee.
62-213.400, F.A.C.: Permits and Permit Revisions Required.
62-213.410, F.A.C.: Changes Without Permit Revision.
62-213.412, F.A.C.: Immediate Implementation Pending Revision Process.
62-213.415, F.A.C.: Trading of Emissions Within a Source.
62-213.420, F.A.C.: Permit Applications.
62-213.430, F.A.C.: Permit Issuance, Renewal, and Revision.
62-213.440, F.A.C.: Permit Content.
62-213.450, F.A.C.: Permit Review by EPA and Affected States
62-213.460, F.A.C.: Permit Shield.

62-213.900, F.A.C.: Forms and Instructions.
62-213.900(1), F.A.C.: Major Air Pollution Source Annual Emissions Fee Form.
62-213.900(7), F.A.C.: Statement of Compliance Form.

CHAPTER 62-296, F.A.C.: STATIONARY SOURCES - EMISSION STANDARDS, effective 03-02-99

62-296.320(4)(c), F.A.C.: Unconfined Emissions of Particulate Matter.

62-296.320(2), F.A.C.: Objectionable Odor Prohibited.

CHAPTER 62-297, F.A.C.: STATIONARY SOURCES - EMISSIONS MONITORING, effective 03-02-99

62-297.310, F.A.C.: General Test Requirements.
62-297.330, F.A.C.: Applicable Test Procedures.
62-297.340, F.A.C.: Frequency of Compliance Tests.
62-297.345, F.A.C.: Stack Sampling Facilities Provided by the Owner of an Emissions Unit.
62-297.350, F.A.C.: Determination of Process Variables.
62-297.570, F.A.C.: Test Report.
62-297.620, F.A.C.: Exceptions and Approval of Alternate Procedures and Requirements.

Miscellaneous:

CHAPTER 28-106, F.A.C.: Decisions Determining Substantial Interests
CHAPTER 62-110, F.A.C.: Exception to the Uniform Rules of Procedure, effective 07-01-98
CHAPTER 62-256, F.A.C.: Open Burning and Frost Protection Fires, effective 11-30-94
CHAPTER 62-257, F.A.C.: Asbestos Notification and Fee, effective 02-09-99
CHAPTER 62-281, F.A.C.: Motor Vehicle Air Conditioning Refrigerant Recovery and Recycling, effective 09-10-96

C. FACILITY POLLUTANTS

Facility Pollutant Information

1. Pollutant Emitted	2. Pollutant Classification
VOC	B
PM10	B
NOX	B

D. FACILITY POLLUTANT DETAIL INFORMATION

Facility Pollutant Information Pollutant 1

1. Pollutant Emitted : VOC
2. Requested Emissions Cap : (lbs/hour) (tons/year)
3. Basis for Emissions Cap Code :
4. Facility Pollutant Comment : Regulated pollutant is NMOC

D. FACILITY POLLUTANT DETAIL INFORMATION

Facility Pollutant Information Pollutant 2

1. Pollutant Emitted :	PM10
2. Requested Emissions Cap :	(lbs/hour) (tons/year)
3. Basis for Emissions Cap Code :	
4. Facility Pollutant Comment :	

D. FACILITY POLLUTANT DETAIL INFORMATION

Facility Pollutant Information Pollutant 3

1. Pollutant Emitted :	NOX
2. Requested Emissions Cap :	(lbs/hour) (tons/year)
3. Basis for Emissions Cap Code :	
4. Facility Pollutant Comment :	

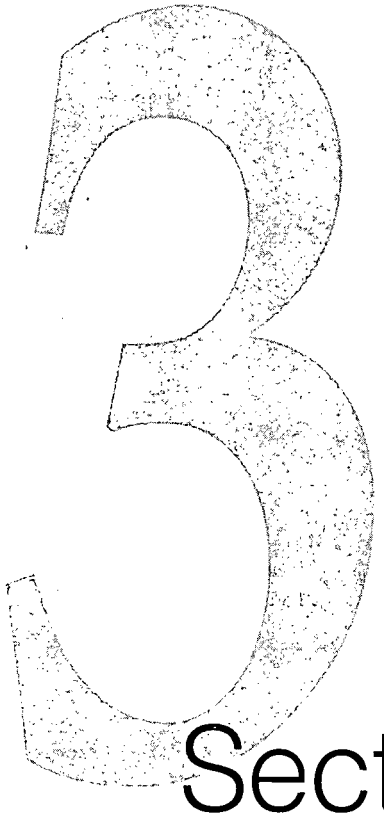
D. FACILITY SUPPLEMENTAL INFORMATION

Supplemental Requirements for All Applications

1. Area Map Showing Facility Location :	Appendix A
2. Facility Plot Plan :	Appendix B
3. Process Flow Diagram(s) :	Appendix C
4. Precautions to Prevent Emissions of Unconfined Particulate Matter :	Appendix D
5. Fugitive Emissions Identification :	NA
6. Supplemental Information for Construction Permit Applica	Appendix E

Additional Supplemental Requirements for Category I Applications Only

7. List of Proposed Exempt	Appendix F
8. List of Equipment/Activities Regulated under Title	NA
9. Alternative Methods of Operation :	NA
10. Alternative Modes of Operation (Emissions	NA
11. Identification of Additional Applicable	NA
12. Compliance Assurance Monitoring	Appendix G
13. Risk Management Plan Verification :	NA
14. Compliance Report and Plan :	Appendix H
15. Compliance Certification (Hard-copy Requir	Appendix I



Section Three

Section 3
Emissions Unit Information

III. EMISSIONS UNIT INFORMATION

A. TYPE OF EMISSIONS UNIT
(Regulated and Unregulated Emissions Units)

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

Type of Emissions Unit Addressed in This Section

1. Regulated or Unregulated Emissions Unit? Check one :

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

2. Single Process, Group of Processes, or Fugitive Only? Check one :

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

III. EMISSIONS UNIT INFORMATION

A. TYPE OF EMISSIONS UNIT
(Regulated and Unregulated Emissions Units)

Emissions Unit Information Section 2

Biosolids Pelletizing Facility Dryer Train #1

Type of Emissions Unit Addressed in This Section

1. Regulated or Unregulated Emissions Unit? Check one :

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

2. Single Process, Group of Processes, or Fugitive Only? Check one :

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

III. EMISSIONS UNIT INFORMATION

A. TYPE OF EMISSIONS UNIT
(Regulated and Unregulated Emissions Units)

Emissions Unit Information Section 3

Biosolids Pelletizing Facility Dryer Train #2

Type of Emissions Unit Addressed in This Section

1. Regulated or Unregulated Emissions Unit? Check one :

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

2. Single Process, Group of Processes, or Fugitive Only? Check one :

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

Emissions Unit Information Section 1

B. GENERAL EMISSIONS UNIT INFORMATION
(Regulated and Unregulated Emissions Units)

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section : Lime Recalcination Facility Kiln Process		
2. Emissions Unit Identification Number : [ ] No Corresponding ID [ ] Unknown		
3. Emissions Unit Status Code : C	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code : 49
6. Emissions Unit Comment : The LRF will recalcinate 100 dry ton / day lime by exposing it to high temperatures in a kiln. The rotary kiln will combust landfill gas (counter-current) with gases exiting through an ESP and 100-foot stack		

Emissions Unit Information Section 2

B. GENERAL EMISSIONS UNIT INFORMATION
(Regulated and Unregulated Emissions Units)

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section : Biosolids Pelletizing Facility Dryer Train #1		
2. Emissions Unit Identification Number : [ ] No Corresponding ID [ ] Unknown		
3. Emissions Unit Status Code : C	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code : 49
6. Emissions Unit Comment : The BPF will dry sewage sludge to fertilizer pellets. Exhaust gases will go through a venturi scrubber and regenerative thermal oxidizer		

Emissions Unit Information Section 3

B. GENERAL EMISSIONS UNIT INFORMATION
(Regulated and Unregulated Emissions Units)

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section : Biosolids Pelletizing Facility Dryer Train #2		
2. Emissions Unit Identification Number : [ ] No Corresponding ID [ ] Unknown		
3. Emissions Unit Status Code : C	4. Acid Rain Unit? [ ] Yes [X] No	5. Emissions Unit Major Group SIC Code : 49
6. Emissions Unit Comment : The BPF will dry sewage sludge to fertilizer pellets. Exhaust gases will go through a venturi scrubber and regenerative thermal oxidizer.		

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

Emissions Unit Control Equipment 1

1. Description : Electric precipitator to control fine particulate matter. A low NOx burner will aso be used.
2. Control Device or Method Code : 10

Emissions Unit Information Section 2

Biosolids Pelletizing Facility Dryer Train #1

Emissions Unit Control Equipment 1

1. Description : A Regenerative Thermal Oxidizer at the end of the process will be used for VOC, NH3, CO, and H2S control. A low NOx burner will be used.
2. Control Device or Method Code : 99

Emissions Unit Information Section 2

Biosolids Pelletizing Facility Dryer Train #1

Emissions Unit Control Equipment 2

1. Description : A venturi scrubber located upstream of the RTO for fine particulate matter control.
2. Control Device or Method Code : 53

Emissions Unit Information Section 3

Biosolids Pelletizing Facility Dryer Train #2

Emissions Unit Control Equipment 1

1. Description : A Regenerative Thermal Oxidizer at the end of the process will be used for VOC, NH3, CO, and H2S control. A low NOx burner will be used.
2. Control Device or Method Code : 99

Emissions Unit Information Section 3

Biosolids Pelletizing Facility Dryer Train #2

Emissions Unit Control Equipment 2

1. Description : A venturi scrubber located upstream of the RTO for fine particulate matter control.
2. Control Device or Method Code : 53

C. EMISSIONS UNIT DETAIL INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Information Section 1
Lime Recalcination Facility Kiln Process

Emissions Unit Details

1. Initial Startup Date :	01-Dec-2004
2. Long-term Reserve Shutdown Date :	
3. Package Unit : Manufacturer : FFE Minerals, Metso Minerals (or equiv.)	Model Number :
4. Generator Nameplate Rating :	MW
5. Incinerator Information :	
Dwell Temperature :	Degrees Fahrenheit
Dwell Time :	Seconds
Incinerator Afterburner Temperature :	Degrees Fahrenheit

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate :	33	mmBtu/hr	
2. Maximum Incinerator Rate :		lb/hr	tons/day
3. Maximum Process or Throughput Rate :		172	dry tons/day
4. Maximum Production Rate :	100	dry tons/day	
5. Operating Capacity Comment : Primary fuel is landfill gas. Backup fuel is natural gas. 313 wet tons per day (at 55% solids), or 172 dry tons/day of lime sludge is processed to produce 100 dry tons/day of recalcined lime.			

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule :	
24 hours/day	7 days/week
52 weeks/year	8,760 hours/year

C. EMISSIONS UNIT DETAIL INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Information Section 2
Biosolids Pelletizing Facility Dryer Train #1

Emissions Unit Details

1. Initial Startup Date :	01-Dec-2004
2. Long-term Reserve Shutdown Date :	
3. Package Unit :	
Manufacturer : Andritz Dryer Drum (or equiv.)	Model Number : DDS-70 (or equiv.)
4. Generator Nameplate Rating :	MW
5. Incinerator Information :	
Dwell Temperature :	Degrees Fahrenheit
Dwell Time :	Seconds
Incinerator Afterburner Temperature :	Degrees Fahrenheit

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate :	24	mmBtu/hr	
2. Maximum Incinerator Rate :		lb/hr	tons/day
3. Maximum Process or Throughput Rate :		34	dry tons/day
4. Maximum Production Rate :			
5. Operating Capacity Comment : Landfill gas will be the primary fuel. Natural gas will be available as a backup fuel.			

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule :	
24 hours/day	7 days/week
52 weeks/year	8,760 hours/year

C. EMISSIONS UNIT DETAIL INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Information Section 3
Biosolids Pelletizing Facility Dryer Train #2

Emissions Unit Details

1. Initial Startup Date :	12-Jan-2004
2. Long-term Reserve Shutdown Date :	
3. Package Unit : Manufacturer : Andritz Dryer Drum (or equivalent)	Model Number : DDS-70 (or equiv)
4. Generator Nameplate Rating :	MW
5. Incinerator Information :	
Dwell Temperature :	Degrees Fahrenheit
Dwell Time :	Seconds
Incinerator Afterburner Temperature :	Degrees Fahrenheit

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate :	24	mmBtu/hr	
2. Maximum Incinerator Rate :		lb/hr	tons/day
3. Maximum Process or Throughput Rate :	34		
4. Maximum Production Rate :			
5. Operating Capacity Comment : Landfill gas will be the primary fuel. Natural gas will be available as a backup fuel.			

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule :	
24 hours/day	7 days/week
52 weeks/year	8,760 hours/year

D. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

Emissions Unit Information Section 1
Lime Recalcination Facility Kiln Process

Rule Applicability Analysis

Refer to Volume III of the permit application.

D. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

Emissions Unit Information Section 2
Biosolids Pelletizing Facility Dryer Train #1

Rule Applicability Analysis

Refer to Volume III of the permit application.

D. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

Emissions Unit Information Section 3
Biosolids Pelletizing Facility Dryer Train #2

Rule Applicability Analysis

Refer to Volume III of the permit application.

List of Applicable Regulations

40 CFR 60 Subpart HH Standards of Performance for Lime Manufacturing Plants.

40 CFR 60 WWW New Source Performance Standards for MSW Landfills.

40 CFR 63 AAAA - National Emissions Standards for Municipal Solid Waste Landfills

40 CFR AAAAA - National Emissions Standards for Lime Manufacturing Plants

Emissions Unit Information Section 2
Biosolids Pelletizing Facility Dryer Train #1

List of Applicable Regulations

40 CFR 60 Subpart WWW - Standards of Performance for Municipal Solid Waste Landfills

40 CFR 61 Subpart E - National Emissions Standard for Hazardous Air Pollutants (NESHAP) - Mercury

40 CFR 63 Subpart AAAA - National Emission Standards for Municipal Solid Waste Landfills

List of Applicable Regulations

40 CFR 60 Subpart WWW - Standards of Performance for Municipal Solid Waste Landfills

40 CFR 61 Subpart E - National Emissions Standard for Hazardous Air Pollutants (NESHAP) - Mercury

40 CFR 63 Subpart AAAA - National Emissions Standard for Municipal Solid Waste Landfills.

E. EMISSION POINT (STACK/VENT) INFORMATION

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

Emission Point Description and Type :

1. Identification of Point on Plot Plan or Flow Diagram :	LRF Stack	
2. Emission Point Type Code :	1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking : (limit to 100 characters per point)		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common : none		
5. Discharge Type Code :	V	
6. Stack Height :	100	feet
7. Exit Diameter :	2.7	feet
8. Exit Temperature :	402	°F
9. Actual Volumetric Flow Rate :	22255	acfm
10. Percent Water Vapor :	33.72	%
11. Maximum Dry Standard Flow Rate :	13564	dscfm
12. Nonstack Emission Point Height :	0	feet
13. Emission Point UTM Coordinates : Zone : 17 East (km) : 237.847 North (km) : 269.059		

14. Emission Point Comment :

Emission point coordinates are State Planar (km)

E. EMISSION POINT (STACK/VENT) INFORMATION

Emissions Unit Information Section 2

Biosolids Pelletizing Facility Dryer Train #1

Emission Point Description and Type :

1. Identification of Point on Plot Plan or Flow Diagram :	BPF Stack	
2. Emission Point Type Code :	1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking : (limit to 100 characters per point)		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common : none		
5. Discharge Type Code :	V	
6. Stack Height :	137	feet
7. Exit Diameter :	1.9	feet
8. Exit Temperature :	207	°F
9. Actual Volumetric Flow Rate :	11120	acfm
10. Percent Water Vapor :	6.50	%
11. Maximum Dry Standard Flow Rate :	8261	dscfm
12. Nonstack Emission Point Height :	0	feet
13. Emission Point UTM Coordinates : Zone : 17	East (km) : 238.051	North (km) : 268.985

14. Emission Point Comment :

Emission point coordinates are State Planar (km)

E. EMISSION POINT (STACK/VENT) INFORMATION

Emissions Unit Information Section 3

Biosolids Pelletizing Facility Dryer Train #2

Emission Point Description and Type :

1. Identification of Point on Plot Plan or Flow Diagram :	BPF Stack	
2. Emission Point Type Code :	1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking : (limit to 100 characters per point)		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common : 0		
5. Discharge Type Code :	V	
6. Stack Height :	137	feet
7. Exit Diameter :	1.9	feet
8. Exit Temperature :	207	°F
9. Actual Volumetric Flow Rate :	11120	acfm
10. Percent Water Vapor :	6.50	%
11. Maximum Dry Standard Flow Rate :	8261	dscfm
12. Nonstack Emission Point Height :	0	feet
13. Emission Point UTM Coordinates : Zone : 17 East (km) : 238.051 North (km) : 268.985		

14. Emission Point Comment :

Emission Point Coordinates are State Planar (km).

F. SEGMENT (PROCESS/FUEL) INFORMATION

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

Segment Description and Rate : Segment 1

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) : Combustion of landfill gas in a Rotary Kiln used to recalcinate lime. (Natural gas is available as backup fuel)	
2. Source Classification Code (SCC) :	
3. SCC Units : Million Cubic Feet Burned (all gaseous fuels)	
4. Maximum Hourly Rate : 0.02	5. Maximum Annual Rate : 202.90
6. Estimated Annual Activity Factor :	
7. Maximum Percent Sulfur : 0.01	8. Maximum Percent Ash :
9. Million Btu per SCC Unit : 500	
10. Segment Comment :	

F. SEGMENT (PROCESS/FUEL) INFORMATION

Emissions Unit Information Section 2

Biosolids Pelletizing Facility Dryer Train #1

Segment Description and Rate : Segment 1

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) : Combustion of landfill gas from Class I landfill to fire the sludge dryer used for the biosolids pelletizing facilities. (Natural gas is available as a backup fuel)	
2. Source Classification Code (SCC) :	
3. SCC Units : Million Cubic Feet Processed	
4. Maximum Hourly Rate : 0.50	5. Maximum Annual Rate : 420.48
6. Estimated Annual Activity Factor :	
7. Maximum Percent Sulfur : 0.01	8. Maximum Percent Ash :
9. Million Btu per SCC Unit : 500	
10. Segment Comment :	

F. SEGMENT (PROCESS/FUEL) INFORMATION

Emissions Unit Information Section 3

Biosolids Pelletizing Facility Dryer Train #2

Segment Description and Rate : Segment 1

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) : Combustion of landfill gas from Class I landfill to fire the sludge dryer used for the biosolids pelletizing facilities. (Natural gas is available as a backup fuel)	
2. Source Classification Code (SCC) :	
3. SCC Units : Million Cubic Feet Burned (all gaseous fuels)	
4. Maximum Hourly Rate : 0.50	5. Maximum Annual Rate : 420.48
6. Estimated Annual Activity Factor :	
7. Maximum Percent Sulfur : 0.01	8. Maximum Percent Ash :
9. Million Btu per SCC Unit : 500	
10. Segment Comment :	

G. EMISSIONS UNIT POLLUTANTS
(Regulated and Unregulated Emissions Units)

Emissions Unit Information Section 1
Lime Recalcination Facility Kiln Process

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
1 - PM10	010		EL
2 - SO2			NS
3 - NOX	024		EL
4 - CO			NS
5 - VOC	023		EL

G. EMISSIONS UNIT POLLUTANTS
(Regulated and Unregulated Emissions Units)

Emissions Unit Information Section 2
Biosolids Pelletizing Facility Dryer Train #1

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
1 - NOX	024		EL
2 - VOC	023		EL

G. EMISSIONS UNIT POLLUTANTS
(Regulated and Unregulated Emissions Units)

Emissions Unit Information Section 3
Biosolids Pelletizing Facility Dryer Train #2

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
1 - NOX	024		EL
2 - VOC	023		EL

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

Pollutant Potential/Estimated Emissions : Pollutant 1

1. Pollutant Emitted : **PM10**
2. Total Percent Efficiency of Control : 99.00 %
3. Potential Emissions : 0.5800000 lb/hour 2.5500000 tons/year
4. Synthetically Limited? [ ] Yes [X] No
5. Range of Estimated Fugitive/Other Emissions: to tons/year
6. Emissions Factor 0 Units gr/dscf@10%O2 Reference : FEE, Vendor
7. Emissions Method Code : 2
8. Calculations of Emissions : EF= 0.005 gr/dscf @10%O2 Exit flow: 13564 dscfm @ 10% O2 0.005 gr/dscf * 13564 dscfm * (1g/ 15.43 grain) * (1 min/60 s) = 0.07 g/s 0.07 g/s * 1/453.6 lb/g * 3600 s/hr = 0.58 lb/hr 0.58 lb/hr* 1/2000 ton/lb* 8760 hr/yr = 2.55 ton/yr

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

9. Pollutant Potential/Estimated Emissions Comment :

Emission calculation based on vendor information (FEE Minerals USA)

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

Pollutant Potential/Estimated Emissions : Pollutant 2

1. Pollutant Emitted : **SO2**
2. Total Percent Efficiency of Control : %
3. Potential Emissions : 1.4000000 lb/hour 6.1000000 tons/year
4. Synthetically Limited? [ ] Yes [X] No
5. Range of Estimated Fugitive/Other Emissions: to tons/year
6. Emissions Factor 0 Units Reference : EPA
7. Emissions Method Code : 4
8. Calculations of Emissions : Emission factor assumes 100 ppmv sulfur in landfill gas EF: 0.000998 lbs/hr/scfm Flow: 1400 scfm (max design flow rate) 0.000998*1400 scfm = 1.4 lbs/hr
9. Pollutant Potential/Estimated Emissions Comment : See Appendix E

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

Pollutant Potential/Estimated Emissions : Pollutant 3

1. Pollutant Emitted : **NOX**
2. Total Percent Efficiency of Control : %
3. Potential Emissions : 14.5200000 lb/hour 63.6300000 tons/year
4. Synthetically Limited? [ ] Yes [X] No
5. Range of Estimated Fugitive/Other Emissions: to tons/year
6. Emissions Factor 0 Units lbs/MMBtu Reference : Vendor Information
7. Emissions Method Code : 5
8. Calculations of Emissions : EF: 0.44 lbs/MMBtu Heating rate: 33 MMBTU/hr 0.44 * 33 MMBtu/hr = 14.52 lbs/hr 14.52 lbs/hr * 1/2000 ton/hr * 8760 hr/yr = 63.63 ton/yr
9. Pollutant Potential/Estimated Emissions Comment :

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

Emission Calculation based on vendor information (FEE Minerals USA)
See Appendix E

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

Pollutant Potential/Estimated Emissions : Pollutant 4

1. Pollutant Emitted : **CO**
2. Total Percent Efficiency of Control : %
3. Potential Emissions : 8.8700000 lb/hour 38.9000000 tons/year
4. Synthetically Limited? [ ] Yes [X] No
5. Range of Estimated Fugitive/Other Emissions: to tons/year
6. Emissions Factor 150 Units ppmv Reference : Vendor Information
7. Emissions Method Code : 5
8. Calculations of Emissions :
9. Pollutant Potential/Estimated Emissions Comment : Emission Calculation based on vendor information (FEE Minerals USA) See Appendix E

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

Pollutant Potential/Estimated Emissions : Pollutant 5

1. Pollutant Emitted : **VOC**
2. Total Percent Efficiency of Control : 98.00 %
3. Potential Emissions : 2.2200000 lb/hour 9.7600000 tons/year
4. Synthetically Limited? [ ] Yes [X] No
5. Range of Estimated Fugitive/Other Emissions: to tons/year
6. Emissions Factor 20 Units ppmv@3%O2 Reference : Vendor Information
7. Emissions Method Code : 5
8. Calculations of Emissions : 20 ppmv @3%O2 = 12.18 ppm@ 10%O2 flow rate: 13564 dscfm or 6.40 dscm/sec (12.18 mol CO/1e+6 moles) * 41.57 moles/dscm * 86.18 g/mole = 0.044 g/dscm 0.044 * 6.40 = 0.28 g/sec 0.28 * 1.1 e-6 ton/g * 3600 sec/hour * 8760 hrs/year = 9.76 ton/year.
9. Pollutant Potential/Estimated Emissions Comment :

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

Emission calculation based on vendor information (FEE Minerals USA)
See Appendix E.

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 2
Biosolids Pelletizing Facility Dryer Train #1

Pollutant Potential/Estimated Emissions : Pollutant 1

1. Pollutant Emitted : **NOX**
2. Total Percent Efficiency of Control : %
3. Potential Emissions : 2.2400000 lb/hour 9.8100000 tons/year
4. Synthetically Limited? [ ] Yes [X] No
5. Range of Estimated Fugitive/Other Emissions: to tons/year
6. Emissions Factor 2 Units lb/hr Reference : Vendor Information
7. Emissions Method Code : 5
8. Calculations of Emissions : 2.24 lb/hr * 1/2000 tons/lb * 8760 hrs/yr = 9.81 ton/yr
9. Pollutant Potential/Estimated Emissions Comment : Emission Factor provided by North American Burner. See Appendix E.

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 2
Biosolids Pelletizing Facility Dryer Train #1

Pollutant Potential/Estimated Emissions : Pollutant 2

1. Pollutant Emitted : **VOC**
2. Total Percent Efficiency of Control : %
3. Potential Emissions : 0.3000000 lb/hour 1.3000000 tons/year
4. Synthetically Limited? [ ] Yes [X] No
5. Range of Estimated Fugitive/Other Emissions: to tons/year
6. Emissions Factor 0 Units lbs/hr Reference : Vendor Information
7. Emissions Method Code : 5
8. Calculations of Emissions : 0.3 lbs/hr * 8760 hrs/yr * 5e-4 tons/lb = 1.31 tpy
9. Pollutant Potential/Estimated Emissions Comment : Emission factor provided by North American Burner See Appendix E.

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 2

Biosolids Pelletizing Facility Dryer Train #1

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 3

Biosolids Pelletizing Facility Dryer Train #2

Pollutant Potential/Estimated Emissions : Pollutant 1

1. Pollutant Emitted : **NOX**
2. Total Percent Efficiency of Control : %
3. Potential Emissions : 2.2400000 lb/hour 9.8100000 tons/year
4. Synthetically Limited? [ ] Yes [X] No
5. Range of Estimated Fugitive/Other Emissions: to tons/year
6. Emissions Factor 2 Units lb/hr Reference : Vendor Information
7. Emissions Method Code : 5
8. Calculations of Emissions : 2.24 lb/hr * 1/2000 tons/lb * 8760 hrs/yr = 9.81 ton/yr
9. Pollutant Potential/Estimated Emissions Comment : Emission Factor provided by North American Burner. See Appendix E.

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 3

Biosolids Pelletizing Facility Dryer Train #2

Pollutant Potential/Estimated Emissions : Pollutant 2

1. Pollutant Emitted : **VOC**
2. Total Percent Efficiency of Control : %
3. Potential Emissions : 0.3000000 lb/hour 1.3000000 tons/year
4. Synthetically Limited? [ ] Yes [X] No
5. Range of Estimated Fugitive/Other Emissions: to tons/year
6. Emissions Factor 0 Units lbs/hr Reference : Vendor Information
7. Emissions Method Code : 5
8. Calculations of Emissions : EF: 0.3 lbs/hr 0.3 lbs/hr * 8760 hrs/yr * 5e-04 ton/lbs = 1.3 tpy
9. Pollutant Potential/Estimated Emissions Comment : Emission Factor provided by Andritz See Appendix E.

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 3

Biosolids Pelletizing Facility Dryer Train #2

Emissions Unit Information Section 1
Lime Recalcination Facility Kiln Process

Pollutant Information Section 1

Allowable Emissions 1

1. Basis for Allowable Emissions Code :
2. Future Effective Date of Allowable Emissions :
3. Requested Allowable Emissions and Units :
4. Equivalent Allowable Emissions : lb/hour tons/year
5. Method of Compliance :
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) : Not Applicable.

Emissions Unit Information Section 2
Biosolids Pelletizing Facility Dryer Train #1

Pollutant Information Section 1

Allowable Emissions 1

1. Basis for Allowable Emissions Code :
2. Future Effective Date of Allowable Emissions :
3. Requested Allowable Emissions and Units :
4. Equivalent Allowable Emissions : lb/hour tons/year
5. Method of Compliance :
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) : Not Applicable.

Emissions Unit Information Section 2
Biosolids Pelletizing Facility Dryer Train #1

Pollutant Information Section 2

Allowable Emissions 1

1. Basis for Allowable Emissions Code :
2. Future Effective Date of Allowable Emissions :
3. Requested Allowable Emissions and Units :
4. Equivalent Allowable Emissions : lb/hour tons/year
5. Method of Compliance :
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) : Not Applicable. PM 10, VOC, NH3, SO2, CO and H2S are all emitted in less than threshold amounts and are not emissions limited, so they are not reported in Section H.

Emissions Unit Information Section 3
Biosolids Pelletizing Facility Dryer Train #2

Pollutant Information Section 1

Allowable Emissions 1

1. Basis for Allowable Emissions Code :
2. Future Effective Date of Allowable Emissions :
3. Requested Allowable Emissions and Units :
4. Equivalent Allowable Emissions : lb/hour tons/year
5. Method of Compliance :
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) : Not Applicable.

Emissions Unit Information Section 3
Biosolids Pelletizing Facility Dryer Train #2

Pollutant Information Section 2

Allowable Emissions 1

1. Basis for Allowable Emissions Code :
2. Future Effective Date of Allowable Emissions :
3. Requested Allowable Emissions and Units :
4. Equivalent Allowable Emissions : lb/hour tons/year
5. Method of Compliance :
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) : Not Applicable.

I. VISIBLE EMISSIONS INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Information Section 1
Lime Recalcination Facility Kiln Process

Visible Emissions Limitation : Visible Emissions Limitation 1

1. Visible Emissions Subtype :	07
2. Basis for Allowable Opacity :	RULE
3. Requested Allowable Opacity :	
Normal Conditions :	7 %
Exceptional Conditions :	15 %
Maximum Period of Excess Opacity Allowed :	0 min/hour
4. Method of Compliance :	
Method 22 (40 CFR Appendix A)	
5. Visible Emissions Comment :	
40 CFR 60. CFR 63 Subpart AAAAA: 7% opacity, 6-minute-block average, as determined by Method 22.	

I. VISIBLE EMISSIONS INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Information Section 2
Biosolids Pelletizing Facility Dryer Train #1

Visible Emissions Limitation : Visible Emissions Limitation 1

1. Visible Emissions Subtype :	05
2. Basis for Allowable Opacity :	RULE
3. Requested Allowable Opacity :	
Normal Conditions :	5 %
Exceptional Conditions :	20 %
Maximum Period of Excess Opacity Allowed :	5 min/hour
4. Method of Compliance :	
Method 22 (40 CRF Appendix A)	
5. Visible Emissions Comment :	
40 CFR 60.18 (c)(1): no visible emissions (<5% opacity), as determined by Method 22, except for periods not exceeding 5 minutes during two consecutive hours.	

I. VISIBLE EMISSIONS INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Information Section 3
Biosolids Pelletizing Facility Dryer Train #2

Visible Emissions Limitation : Visible Emissions Limitation 1

1. Visible Emissions Subtype : 05
2. Basis for Allowable Opacity : RULE
3. Requested Allowable Opacity : Normal Conditions : 20 % Exceptional Conditions : 5 % Maximum Period of Excess Opacity Allowed : min/hour
4. Method of Compliance : Method 22 (40 CRF Appendix A)
5. Visible Emissions Comment : 40 CFR 60.18 (c)(1): no visible emissions (<5% opacity), as determined by Method 22, except for periods not exceeding 5 minutes during two consecutive hours.

J. CONTINUOUS MONITOR INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Information Section 2
Biosolids Pelletizing Facility Dryer Train #1

Continuous Monitoring System Continuous Monitor 1

1. Parameter Code : EM	2. Pollutant(s):
3. CMS Requirement	
4. Monitor Information Manufacturer : Model Number : Serial Number :	
5. Installation Date :	
6. Performance Specification Test Date :	
7. Continuous Monitor Comment : To be provided at time of installation.	

J. CONTINUOUS MONITOR INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Information Section 3
Biosolids Pelletizing Facility Dryer Train #2

Continuous Monitoring System Continuous Monitor 1

1. Parameter Code :	2. Pollutant(s):
3. CMS Requirement	
4. Monitor Information Manufacturer : Model Number : Serial Number :	
5. Installation Date :	
6. Performance Specification Test Date :	
7. Continuous Monitor Comment : Not Applicable.	

K. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

[ ] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

[X] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[**X**] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code :		
PM : C	SO2 : C	NO2 : C
4. Baseline Emissions :		
PM :	lb/hour	tons/year
SO2 :	lb/hour	tons/year
NO2 :		tons/year
5. PSD Comment :		

K. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

Emissions Unit Information Section 2

Biosolids Pelletizing Facility Dryer Train #1

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

[ ] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

[X] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[X] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code :		
PM : C	SO2 : C	NO2 : C
4. Baseline Emissions :		
PM :	lb/hour	tons/year
SO2 :	lb/hour	tons/year
NO2 :		tons/year
5. PSD Comment :		

K. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION

Emissions Unit Information Section 3

Biosolids Pelletizing Facility Dryer Train #2

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

[ ] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

[X] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

[ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[X] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

[ ] None of the above apply. If so, baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code :		
PM : C	SO2 : C	NO2 : C
4. Baseline Emissions :		
PM :	lb/hour	tons/year
SO2 :	lb/hour	tons/year
NO2 :		tons/year
5. PSD Comment :		

L. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

Emissions Unit Information Section 1

Lime Recalcination Facility Kiln Process

Supplemental Requirements for All Applications

1. Process Flow Diagram :	Appendix C
2. Fuel Analysis or Specification :	NA
3. Detailed Description of Control Equipment :	Appendix J
4. Description of Stack Sampling Facilities :	Appendix K
5. Compliance Test Report :	NA
6. Procedures for Startup and Shutdown :	Appendix L
7. Operation and Maintenance Plan :	Appendix M
8. Supplemental Information for Construction Permit Application :	Appendix E
9. Other Information Required by Rule or Statue :	See Vol. III

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operations :	NA
11. Alterntive Modes of Operation (Emissions Trading) :	NA

12. Identification of Additional Applicable Requirements :	NA
13. Compliance Assurance Monitoring Plan :	Appendix G

14. Acid Rain Application (Hard-copy Required) :

NA	Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
NA	Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
NA	New Unit Exemption (Form No. 62-210.900(1)(a)2.)
NA	Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)

L. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

Emissions Unit Information Section 2

Biosolids Pelletizing Facility Dryer Train #1

Supplemental Requirements for All Applications

1. Process Flow Diagram :	Appendix C
2. Fuel Analysis or Specification :	NA
3. Detailed Description of Control Equipment :	Appendix J
4. Description of Stack Sampling Facilities :	Appendix K
5. Compliance Test Report :	NA
6. Procedures for Startup and Shutdown :	Appendix L
7. Operation and Maintenance Plan :	Appendix M
8. Supplemental Information for Construction Permit Application :	Appendix E
9. Other Information Required by Rule or Statue :	NA

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operations :	NA
11. Alterntive Modes of Operation (Emissions Trading) :	NA

12. Identification of Additional Applicable Requirements :	NA
13. Compliance Assurance Monitoring Plan :	NA

14. Acid Rain Application (Hard-copy Required) :

NA	Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
NA	Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
NA	New Unit Exemption (Form No. 62-210.900(1)(a)2.)
NA	Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)

L. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

Emissions Unit Information Section 3

Biosolids Pelletizing Facility Dryer Train #2

Supplemental Requirements for All Applications

1. Process Flow Diagram :	Appendix C
2. Fuel Analysis or Specification :	NA
3. Detailed Description of Control Equipment :	Appendix J
4. Description of Stack Sampling Facilities :	Appendix K
5. Compliance Test Report :	NA
6. Procedures for Startup and Shutdown :	Appendix L
7. Operation and Maintenance Plan :	Appendix M
8. Supplemental Information for Construction Permit Application :	Appendix E
9. Other Information Required by Rule or Statue :	NA

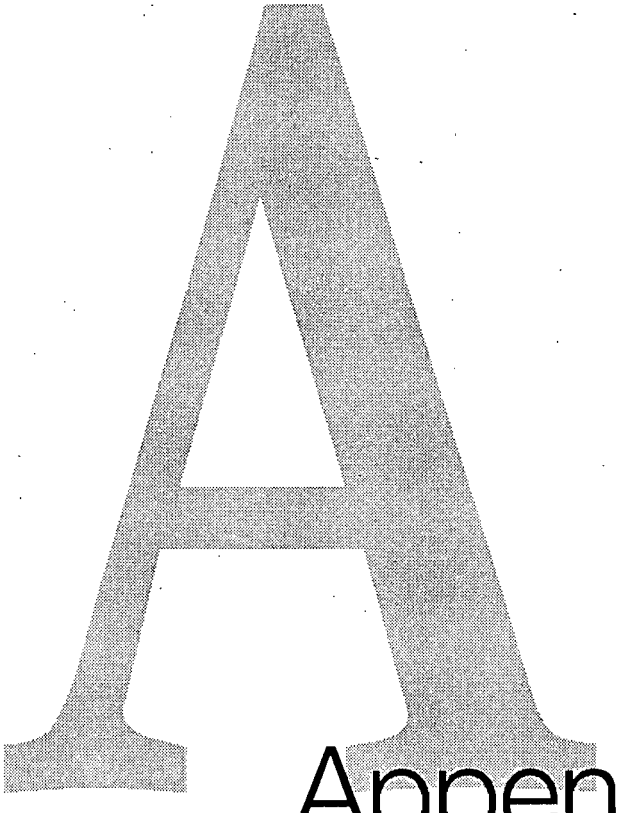
Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operations :	NA
11. Alterntive Modes of Operation (Emissions Trading) :	NA

12. Identification of Additional Applicable Requirements :	NA
13. Compliance Assurance Monitoring Plan :	NA

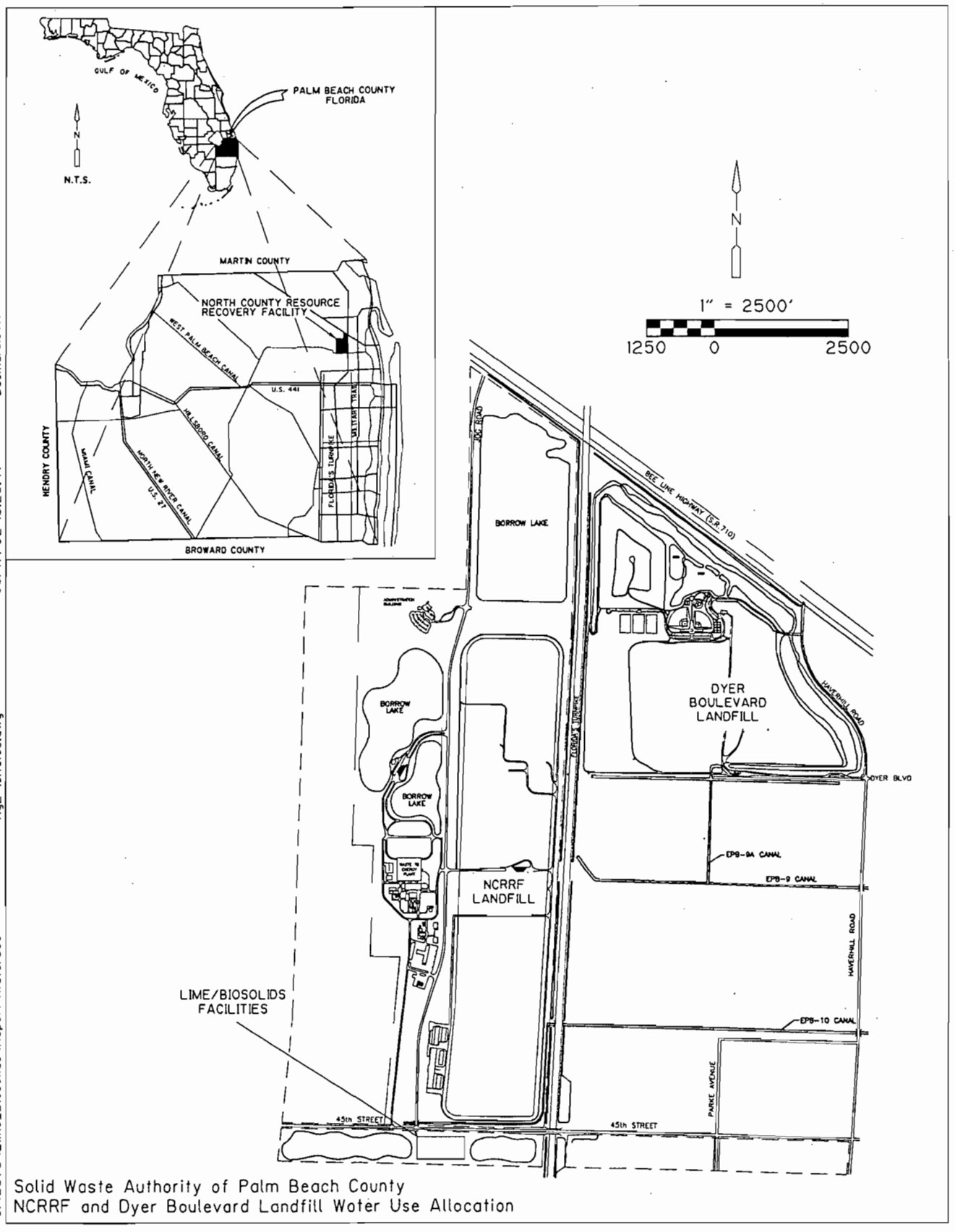
14. Acid Rain Application (Hard-copy Required) :

NA	Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
NA	Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
NA	New Unit Exemption (Form No. 62-210.900(1)(a)2.)
NA	Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)



Appendix A

Appendix A
Area Map



Solid Waste Authority of Palm Beach County
NCRRF and Dyer Boulevard Landfill Water Use Allocation

J:\2678\Lime_Biosolids\Report\WaterUse fig E-1 siteloc.dwg 06/17/02 16:23:47 DesmaraisTR

Appendix A
Area Map

CDM

Appendix B

Appendix D

Appendix D
Precautions to Prevent Emissions of Unconfined Particulate Matter

Appendix D
Precautions to Prevent Emissions of Unconfined Particulate Matter

In accordance with the guidance contained in 62-296.320(4)(b)4.a., FAC, Control of Unconfined Particulate Matter, the following dust control measures are practiced at SWA's NCRRF Site:

- All parking lots and permanent drives are paved.
- A water truck sprays water as a dust suppressant to unpaved roads and active unpaved areas.
- Landfill areas that are closed are promptly re-vegetated.
- Ash is quenched with water prior to landfilling.

Appendix E

Appendix E
Supplemental Information for Construction Permit Application

APPENDIX E
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Emission Calculation Tables

The tables in this Appendix include the emission inventory for the SWA Lime Recalcination and Biosolids Pelletizing Facility PSD permit modification, along with calculation and information support documentation for the inventory.

Table Number	Table Name	Description
E-1	Estimated Maximum Potential Emission Rates	Summary of emission factors and emission rates for PSD pollutants emitted from the LRF, BPF, and flares
E-2	Estimated Emission Rates for the Lime Kiln	Calculation of the lime kiln emissions based on Vendor (FFE Minerals, Dave Gunkle) Information
E-3	Estimated PM Emission Rates for Baghouses, Lime Silos, Sludge Pelletizing Silos	Calculation of PM/PM10 emissions from the proposed baghouses, based on vendor information (Lime: FFE Minerals, Dave Gunkle; BPF: Andritz, Peter Commerford)
E-4	Cooling Tower Air Emissions - PM	Calculation of PM emissions from the cooling tower based on known design parameters and AP-42 estimates.
E-5	Methane Emission Rates	Calculation of Methane and NMOC emission rates for the lime kiln.
E-6	HAP Emission Rates	Calculation of HAP emission rates for the lime kiln, based on default HAP concentrations in landfill gas as listed in AP-42
E-7	Methane Emission Rates	Calculation of Methane and NMOC emission rates for the biosolids pelletizing dryer.
E-8	HAP Emission Rates	Calculation of HAP emission rates for the biosolids pelletizing dryer, based on default HAP concentrations in landfill gas as listed in AP-42
	Existing Flare Emission Calculations	
E-9	Methane Emission Rates	Calculation of Methane and NMOC emission rates for the existing flare.
E-10	HAP Emission Rates	Calculation of HAP emission rates for the existing flare, based on default HAP concentrations in landfill gas as listed in AP-42

E-11	Estimated Emissions for the Existing Flare	Calculation of CO, NO_X, PM, SO2 and HCl based on AP-42 emission factors.
	Proposed 1000 SCFM Flare Emission Calculations	
E-12	Exit Gas Flow Rate Calculations	Calculation of exit flow and velocity from the flare
E-13	Methane Emission Rates	Calculation of Methane and NMOC emission rates for the proposed flare.
E-14	HAP Emission Rates	Calculation of HAP emission rates for the proposed flare, based on default HAP concentrations in landfill gas as listed in AP-42
E-15	Secondary Pollutant Emission Rates from Flare	Calculation of CO and NO_X emissions based on vendor information. Calculation of SO_2 and HCl based on AP-42 calculations and flare data.
	Proposed 2000 SCFM Flare Emission Calculations	
E-16	Exit Gas Flow Rate Calculations	Calculation of exit flow and velocity from the flare
E-17	Methane Emission Rates	Calculation of Methane and NMOC emission rates for the proposed flare.
E-18	HAP Emission Rates	Calculation of HAP emission rates for the proposed flare, based on default HAP concentrations in landfill gas as listed in AP-42
E-19	Secondary Pollutant Emission Rates from Flare	Calculation of CO and NO_X emissions based on vendor information. Calculation of SO_2 and HCl based on AP-42 calculations and flare data.
	Proposed 3500 SCFM Flare Emission Calculations (operating at capacity)	
E-20	Exit Gas Flow Rate Calculations	Calculation of exit flow and velocity from the flare
E-21	Methane Emission Rates	Calculation of Methane and NMOC emission rates for the proposed flare.
E-22	HAP Emission Rates	Calculation of HAP emission rates for the proposed flare, based on default HAP concentrations in landfill gas as listed in AP-42
E-23	Secondary Pollutant Emission Rates from Flare	Calculation of CO and NO_X emissions based on vendor information. Calculation of SO_2 and HCl based on AP-42 calculations and flare data.
	Proposed 3500 SCFM Flare Emission Calculations (operating 800 SCFM to account for LRF and BPF demand of 2700 SCFM)	
E-24	Exit Gas Flow Rate Calculations	Calculation of exit flow and velocity from the flare
E-25	Methane Emission Rates	Calculation of Methane and NMOC emission rates for the proposed flare.

E-26	HAP Emission Rates	Calculation of HAP emission rates for the proposed flare, based on default HAP concentrations in landfill gas as listed in AP-42
E-27	Secondary Pollutant Emission Rates from Flare	Calculation of CO and NO_X emissions based on vendor information. Calculation of SO_2 and HCl based on AP-42 calculations and flare data.

Table E-1
SWA Lime Recalcination Facility and Biosolids Pelletization Facility
Estimated Maximum Potential Emission Rates

Source	Emissions, by Air Pollutant																							
	Particulate Matter				Sulfur Dioxide				Nitrogen Oxides				Carbon Monoxide				Lead				Volatile Organic Compounds				Total HAP	
	Emission Factor	Units	lb/hr	ton/year	Emission Factor	Units	lb/hr	ton/year	Emission Factor	Units	lb/hr	ton/year	Emission Factor	Units	lb/hr	ton/year	Emission Factor	Units	lb/hr	ton/year	Emission Factor	Units	lb/hr	ton/year	lb/hr	ton/year
Lime Recalcination Facility																								
Rotary Kiln (Landfill Gas)[1]	0.005	gr/dscf @ 10% O2	0.58	2.5	9.98E-04	lb/hr/scfm[1]	1.40	6.1	0.440	lbs/MMBtu	14.52	63.6	150.00	ppmv @ 10% O2	6.87	30.9	--	--	--	--	20	ppmv @ 3% O2	2.22	9.7	--	0.13
Cross-bar lime cooler	0.005	gr/dscf @ 10% O2	0.08	0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Storage Silo (2 Silos)	1.50E-02	gr/dscf actual	4.78E-04	2.1E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Facility Subtotal	--	--	--	2.9	--	--	--	6.1	--	--	--	63.6	--	--	--	30.9	--	--	--	--	--	--	--	9.7	0.03	0.13
Biosolids Pelletizing Facility																								
200-wtpd Train (Andritz)	0.78	lb/hour[3,4]	0.78	3.4	0.93	lb/hour[2]	0.93	4.1	2.24	lb/hour[2]	2.24	9.8	0.39	lb/hour[2]	0.39	1.7	8.3E-05	lb/hour[2]	8.3E-05	3.6E-04	0.3	lb/hour[2]	0.3	1.3	--	0.09
Odor Control Unit																										
Storage Silos (2 Silos)	0.015	gr/dscf actual	1.51E-04	6.61E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cooling Towers (2)	0.019	lbs/10^3 gal drift	3.42E-04	1.50E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Recycle Bin w/ Baghouse	0.015	gr/dscf actual	3.36E-01	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
200-wtpd Train (Andritz)	0.78	lb/hour[3,4]	0.78	3.4	0.93	lb/hour[2]	0.93	4.1	2.24	lb/hour[2]	2.24	9.8	0.39	lb/hour[2]	0.39	1.7	8.3E-05	lb/hour[2]	8.3E-05	3.6E-04	0.3	lb/hour[2]	0.3	1.3	--	0.00
Odor Control Unit																										
Storage Silos (2 Silos)	0.015	gr/dscf actual	1.51E-04	6.61E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cooling Towers (2)	0.019	lbs/10^3 gal drift	3.42E-04	1.50E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Recycle Bin w/ Baghouse	0.015	gr/dscf actual	3.36E-01	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Facility Subtotal	--	--	--	9.8	--	--	--	8.1	--	--	--	19.6	--	--	--	3.4	--	--	--	0.0	--	--	--	2.6	0.02	0.1
1800 SCFM Flare																								
Existing Flare[5]	17	lbs/10^6 dscf CH$_4$	0.53	2.3	9.98E-04	lb/hr/scfm[1]	1.03	4.5	40	lbs/10^6 dscf CH$_4$	1.24	5.4	750	lbs/10^6 dscf CH$_4$	23.19	101.6	--	--	--	--	--	--	0.15	0.7	0.03	0.14
1000 SCFM Flare																								
Proposed Flare[7]	17	lbs/10^6 dscf CH$_4$	0.56	2.5	9.98E-04	lb/hr/scfm[1]	1.00	4.4	0.068	lb/MMBtu	2.34	10.3	0.37	lb/MMBtu	12.74	55.8	--	--	--	--	--	--	0.15	0.6	0.03	0.13
2000 SCFM Flare Netted with Existing 1800 SCFM Flare																								
Proposed Flare[7]	17	lbs/10^6 dscf CH$_4$	0.60	2.61	9.98E-04	lb/hr/scfm[1]	0.96	4.22	0.068	lb/MMBtu	3.44	15.09	0.37	lb/MMBtu	2.28	9.99	--	--	--	--	--	--	0.14	0.6	0.03	0.13
3500 SCFM Flare - Operating at Capacity																								
Proposed Flare[7]	17	lbs/10^6 dscf CH$_4$	1.89	8.3	9.98E-04	lb/hr/scfm[1]	3.49	15.3	0.068	lb/MMBtu	8.19	35.9	0.37	lb/MMBtu	44.58	195.3	--	--	--	--	--	--	0.51	2.3	0.11	0.48
3500 SCFM Flare - Operating at 900 SCFM[8]																								
Proposed Flare[7]	17	lbs/10^6 dscf CH$_4$	0.45	2.0	9.98E-04	lb/hr/scfm[1]	0.80	3.5	0.068	lb/MMBtu	1.87	8.2	0.37	lb/MMBtu	10.19	44.6	--	--	--	--	--	--	0.12	0.5	0.02	0.11
Totals																								
Total (No Flares)	--	--	--	12.7	--	--	--	14.3	--	--	--	83.2	--	--	--	42.5	--	--	--	0.0	--	--	--	12.5	--	0.2
Total (Flares Included)	--	--	--	19.7	--	--	--	20.4	--	--	--	118.8	--	--	--	261.0	--	--	--	0.0	--	--	--	14.1	--	0.6
Emission Thresholds																								
PSD Significant Increase (Major Modification)				25 (15 PM$_{10}$)				40				40				100				0.6				40		25

Bold Text denotes an exceedence of the PSD threshold

Notes:
[1] Assumes a 100 ppmv sulfur dioxide concentration in the landfill gas which is a conservative estimate for the Class I landfill (based on a 68.9 ppm concentration previously sampled at the Class I flare inlet)
Lime kiln combusts about 1,000 scfm of landfill gas. 200-wtpd sludge dryer combusts about 600 scfm of landfill gas.
[2] Emissions based on vendor information (Andritz), dated May 2, 2002, attached. BACT emission rate for low-NOx burner from North American Burner.
[3] Emissions are from the dryer stack only. Particulate matter emissions from screens, recycle bin, and storage silos not included.
[4] Emissions based on Vendor information (FFE Minerals USA Inc.) estimates of flue gas concentrations at ESP exit: 150 ppmv CO @ 10% O2; 0.005 gr/dscf PM. NO_x Emissions based on BACT for low-NOx burner (Coen): 0.44 lbs/MMBtu
[5] Emissions factors calculated based on estimated baghouse emission rate of 0.015 gr/dscf.
[6] Emission factors for the Existing Flare are from U.S. EPA AP-42 Section 2.4, consistent with AOR reporting.
[7] NOx and CO emission factors are based on vendor guarantees and U.S. EPA AP-42 Section 13.5 (See Table A-16)
[8] 2700 SCFM is subtracted from flare capacity to account for demands of the Lime Recalcination Facility and the Biosolids Pelletization Facility.

Table E-2
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Estimated Emission Rates for the Lime Kiln

PM Concentration	0.005	gr/dscf of PM	10%	O_2 conc.	Flow	11850.3 acfm @	32 °F
Flue gas flow at stack exit	13563.9	dscfm, with	10%	O_2 conc.			3.36% O_2 conc.
NO_X Concentration	0.44	lbs NO_X/MMBtu	33	MMBtu/hr			33.72% H_2O, by vol.
CO Concentration	150	ppmv, corrected	10%	O_2 conc.	Temperature Correction:	12717.4	
VOC Concentration	20	ppmv, corrected	3%	O_2 conc.	Moisture Correction:	8429.09	
					Oxygen Correction:	13563.9 dscfm	

PM Emissions

Calculate PM emission rate per unit:

$$\frac{0.005\ \text{grains}}{1\ \text{dscf}} \cdot \frac{13563.87428\ \text{dscf}}{1\ \text{min}} \cdot \frac{1\ \text{g}}{15.43\ \text{grain}} \cdot \frac{1\ \text{min}}{60\ \text{second}} = \frac{0.07\ \text{g}}{\text{second}}$$

Calculate PM emission rate for facility

$$\frac{0.07\ \text{g}}{\text{sec/unit}} \quad 1\ \text{units} = \frac{0.07\ \text{g}}{\text{sec}}$$

$$\frac{0.07\ \text{g}}{\text{second}} \cdot \frac{1\ \text{ton}}{907200\ \text{g}} \cdot \frac{60\ \text{sec}}{1\ \text{min}} \cdot \frac{60\ \text{min}}{1\ \text{hour}} \cdot \frac{24\ \text{hour}}{1\ \text{day}} \cdot \frac{365\ \text{days}}{1\ \text{year}} = \frac{2.55\ \text{ton}}{\text{year}}$$

Nitrogen Dioxide Emissions

Adjusted NO_X emissions

$$\frac{0.44\ \text{lbs}\ NO_X}{\text{MMBtu}} \cdot \frac{33\ \text{MMBtu}}{1\ \text{hr}} \cdot \frac{24\ \text{hour}}{1\ \text{day}} \cdot \frac{365\ \text{days}}{1\ \text{year}} \cdot \frac{1\ \text{ton}}{2000\ \text{lbs}} = \frac{63.60\ \text{ton}}{\text{year}}$$

* 0.25 lbs/MMBtu, emission rate from FFE.

Carbon Monoxide Emissions

Adjusted CO emissions

$$\frac{150\ \text{ppmv}\ @\ 10\%\ O_2\ \text{conc.}}{(20.9\% - 10\%)\ O_2\ \text{conc.}} \cdot \frac{(20.9\% - 10\%)\ O_2\ \text{conc.}}{} = \frac{150.0\ \text{ppmv}\ @\ 10\%\ O_2}{}$$

Dry volumetric flow rate for unit

$$13564\ \text{dscfm}\ @\ 10\%\ O_2 \cdot \frac{1\ \text{dscm}}{35.31\ \text{dscf}} \cdot \frac{1\ \text{min}}{60\ \text{second}} = \frac{6.40\ \text{dscm}}{1\ \text{sec}}$$

CO emission rate for unit

$$\frac{150.00\ \text{mol CO}}{1.E{+}06\ \text{moles}} \cdot \frac{41.57\ \text{moles}}{1\ \text{dscm}} \cdot \frac{28.01\ \text{g}}{1\ \text{mole}} = \frac{0.175\ \text{g}}{\text{dscm}}$$

$$\frac{0.175\ \text{g}}{\text{dscm}} \cdot \frac{6.40\ \text{dscm}}{1\ \text{sec}} = \frac{1.12\ \text{g}}{\text{sec}}$$

Calculate CO emissions for the facility

$$\frac{1.12\ \text{g}}{\text{sec/unit}} \cdot 1\ \text{units} = \frac{1.12\ \text{g}}{\text{sec}}$$

$$\frac{1.12\ \text{g}}{\text{sec}} \cdot \frac{1\ \text{ton}}{907200\ \text{g}} \cdot \frac{60\ \text{sec}}{1\ \text{min}} \cdot \frac{60\ \text{min}}{1\ \text{hour}} \cdot \frac{24\ \text{hour}}{1\ \text{day}} \cdot \frac{365\ \text{days}}{1\ \text{year}} = \frac{38.87\ \text{ton}}{\text{year}}$$

Volatile Organic Compound Emissions (MSW Landfill NSPS Limit)

Adjusted VOC emissions

$$\frac{20\ \text{ppmv}\ @\ 3\%\ O_2\ \text{conc.}}{(20.9\% - 10\%)\ O_2\ \text{conc.}} \cdot \frac{(20.9\% - 10\%)\ O_2\ \text{conc.}}{(20.9\% - 3\%)\ O_2\ \text{conc.}} = \frac{12.18\ \text{ppmv}\ @\ 10\%\ O_2}{}$$

Dry volumetric flow rate for unit

$$13564\ \text{dscfm}\ @\ 10\%\ O_2 \cdot \frac{1\ \text{dscm}}{35.31\ \text{dscf}} \cdot \frac{1\ \text{min}}{60\ \text{second}} = \frac{6.40\ \text{dscm}}{1\ \text{sec}}$$

VOC emission rate for unit

$$\frac{12.18\ \text{mol CO}}{1.E{+}06\ \text{moles}} \cdot \frac{41.57\ \text{moles}}{1\ \text{dscm}} \cdot \frac{86.18\ \text{g}}{1\ \text{mole}} = \frac{0.044\ \text{g}}{\text{dscm}}$$

$$\frac{0.044\ \text{g}}{\text{dscm}} \cdot \frac{6.40\ \text{dscm}}{1\ \text{sec}} = \frac{0.28\ \text{g}}{\text{sec}}$$

Calculate VOC emissions for the facility

$$\frac{0.28\ \text{g}}{\text{sec/unit}} \cdot 1\ \text{units} = \frac{0.28\ \text{g}}{\text{sec}}$$

$$\frac{0.28\ \text{g}}{\text{sec}} \cdot \frac{1\ \text{ton}}{907200\ \text{g}} \cdot \frac{60\ \text{sec}}{1\ \text{min}} \cdot \frac{60\ \text{min}}{1\ \text{hour}} \cdot \frac{24\ \text{hour}}{1\ \text{day}} \cdot \frac{365\ \text{days}}{1\ \text{year}} = \frac{9.71\ \text{ton}}{\text{year}}$$

Table E-3
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Estimated PM Emission Rates for Baghouses, Lime Silos, Sludge Pelletizing Silos

Cross-Bar Lime Product Cooler with Baghouse

baghouse airflow 1785.1 dscfm
PM Concentration 0.005 gr/dscf 10% O_2 conc.

Calculate PM emission rate per unit:

$$\frac{0.005\ \text{grains}}{1\ \text{dscf}} \cdot \frac{1785.1\ \text{dscf}}{1\ \text{min}} \cdot \frac{1\ \text{g}}{15.43\ \text{grain}} \cdot \frac{1\ \text{min}}{60\ \text{second}} = \frac{0.01\ \text{g}}{\text{second}}$$

Calculate PM emission rate for facility

$$\frac{0.01\ \text{g}}{\text{sec/unit}} \quad 1\ \text{units} = \frac{0.01\ \text{g}}{\text{sec}}$$

$$\frac{0.01\ \text{g}}{\text{second}} \cdot \frac{1\ \text{ton}}{907200\ \text{g}} \cdot \frac{60\ \text{sec}}{1\ \text{min}} \cdot \frac{60\ \text{min}}{1\ \text{hour}} \cdot \frac{24\ \text{hour}}{1\ \text{day}} \cdot \frac{365\ \text{days}}{1\ \text{year}} = \frac{0.34\ \text{ton}}{\text{year}}$$

Biosolid Pellet, Recycle Bin Baghouse

baghouse airflow 2625 dscfm
PM Concentration 0.015 gr/dscf of PM

Calculate PM emission rate per unit:

$$\frac{0.015\ \text{grains}}{1\ \text{dscf}} \cdot \frac{2625\ \text{dscf}}{1\ \text{min}} \cdot \frac{1\ \text{g}}{15.43\ \text{grain}} \cdot \frac{1\ \text{min}}{60\ \text{second}} = \frac{0.04\ \text{g}}{\text{second}}$$

Calculate PM emission rate for facility

$$\frac{0.04\ \text{g}}{\text{sec/unit}} \quad 1\ \text{units} = \frac{0.04\ \text{g}}{\text{sec}}$$

$$\frac{0.04\ \text{g}}{\text{second}} \cdot \frac{1\ \text{ton}}{907200\ \text{g}} \cdot \frac{60\ \text{sec}}{1\ \text{min}} \cdot \frac{60\ \text{min}}{1\ \text{hour}} \cdot \frac{24\ \text{hour}}{1\ \text{day}} \cdot \frac{365\ \text{days}}{1\ \text{year}} = \frac{1.48\ \text{ton}}{\text{year}}$$

Lime Storage Silos

PM Concentration 0.015 gr/dscf of PM
Volume of each Silo 25977.04 dscf
Max mass of lime in silo 500 tons of lime
ρ of Lime produced 75 lbs/cf
Throughput 100 tons/day
Amount of air displaced 2666.667 dscf/day 1.85185 dscfm

Calculate PM emission rate per unit:

$$\frac{0.015\ \text{grains}}{1\ \text{dscf}} \cdot \frac{2666.7\ \text{dscf}}{1\ \text{day}} \cdot \frac{1\ \text{g}}{15.43\ \text{grain}} \cdot \frac{1\ \text{day}}{24\ \text{hour}} \cdot \frac{1\ \text{hour}}{60\ \text{min}} \cdot \frac{1\ \text{min}}{60\ \text{second}} = \frac{3.0\text{E-}05\ \text{g}}{\text{second}}$$

Calculate PM emission rate for facility

$$\frac{3.00\text{E-}05\ \text{g}}{\text{sec/unit}} \quad 2\ \text{units} = \frac{6.00\text{E-}05\ \text{g}}{\text{sec}}$$

$$\frac{6.00\text{E-}05\ \text{g}}{\text{second}} \cdot \frac{1\ \text{ton}}{907200\ \text{g}} \cdot \frac{60\ \text{sec}}{1\ \text{min}} \cdot \frac{60\ \text{min}}{1\ \text{hour}} \cdot \frac{24\ \text{hour}}{1\ \text{day}} \cdot \frac{365\ \text{days}}{1\ \text{year}} = \frac{2.09\text{E-}03\ \text{ton}}{\text{year}}$$

Biosolids Pelletizing Silo (accounts for 1 train in 2 silos)

PM Concentration 0.015 gr/dscf of PM
Annual Biosolid Production 12509.28 dry tons/year
ρ of Biosolid produced 40.58 lbs/cf
Amount of air displaced 1689.11 dscf/day 1.17299 dscfm

Calculate PM emission rate per unit:

$$\frac{0.015\ \text{grains}}{1\ \text{dscf}} \cdot \frac{1689.1\ \text{dscf}}{1\ \text{day}} \cdot \frac{1\ \text{g}}{15.43\ \text{grain}} \cdot \frac{1\ \text{day}}{24\ \text{hour}} \cdot \frac{1\ \text{hour}}{60\ \text{min}} \cdot \frac{1\ \text{min}}{60\ \text{second}} = \frac{1.9\text{E-}05\ \text{g}}{\text{second}}$$

Calculate PM emission rate for facility

$$\frac{1.90\text{E-}05\ \text{g}}{\text{sec/unit}} \quad 1\ \text{units} = \frac{1.90\text{E-}05\ \text{g}}{\text{sec}}$$

$$\frac{1.90\text{E-}05\ \text{g}}{\text{second}} \cdot \frac{1\ \text{ton}}{907200\ \text{g}} \cdot \frac{60\ \text{sec}}{1\ \text{min}} \cdot \frac{60\ \text{min}}{1\ \text{hour}} \cdot \frac{24\ \text{hour}}{1\ \text{day}} \cdot \frac{365\ \text{days}}{1\ \text{year}} = \frac{6.61\text{E-}04\ \text{ton}}{\text{year}}$$

Table E-4

Solid Waste Authority of Palm Beach County
Biosolids Pelletizing Facility
Cooling Tower Air Emissions - Particulate Matter

A. Flow Rate Across ALL Cooling Towers (2 operating)	1500	gal/min	
B. Amount of Dissolved Particulate Matter (PM)	45	mg/L	
C. Amount of Dissloved PM (AP-42)	1.900E-05	lbs/gal	AP-42, Table 13.4-1
D. Drift as a Percentage of Recirculating Rate	0.020%	AP-42, Table 13.4-1, 1/95	
E. Total Drift of all towers (A*D*60)	18	Gal/hour	
F. Total PM10 Emissions within Drift (C*E)	3.42E-04	lbs/hour	
G. Hours of Operations	8760	hours/year	
H. Annual PM10 Emissions for tower (F*G/2000)	1.50E-03	TPY	
I. Annual PM_{10} Emissions for one tower (H/3)	7.49E-04	TPY	
Emission Rate (g/s) - per tower	2.15E-05		
	1.71E-04	lbs/hr	

Table E-5
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Methane Emission Rates - Landfill Gas to Lime Kiln

Kiln Burner Gas Flow Design Capacity:	1000.0	scfm	14883336.36 m^3/year
Methane Content of Landfill Gas:	58.5%	(percent by volume)	
Total Methane Flow to Kiln Burner:	585.5	scfm	8713869.89 m^3/year
MW of Methane	16		

Methane Emission Rate

Pollutant	Methane Flow Rate (m^3/year)	Methane Flow Rate (m^3/minute)	Methane (Mg/yr)*
Class I Landfill			
Methane	8713870	16.6	5,796

*41.57 Conversion from std. m^3/yr to g/yr.

0.276315002

NMOC Emission Rate

Pollutant	Concentration of NMOC (ppmv)	MW of NMOC (g/mol)	Concentration of NMOC ($\mu g/m^3$)	NMOC, Uncontrolled (Mg/yr)	NMOC, Uncontrolled (tpy)	NMOC, Controlled* (tpy)	NMOC, Controlled* (lbs/hr)
Class I Landfill							
NMOC	595	86.2	2,131,589	32	32	1	0.147

* 98% Control of NMOC assumed for calculation

Table E-6

SWA, Lime Kiln HAP Emissions

Input Information:

NMOC concentration in landfill gas:	595	ppmdv expressed as hexane with MW of:		86.17
Equivalent mass/volume conc. is:	2131341.7	ug/m3	[ug/m3 = (ppm)41.57(MW)]	
NMOC em. rate:	32	Mg/yr	1.005998122 g/s	

HAP	Molecular Weight	Default Conc. (ppmv)	Mass Conc. (ug/m3)	Emissions (Mg/yr)	Emissions (tons/yr)
1,1,1-Trichlorethane (methyl chloroform)	133.42	0.480	2617.38	3.90E-02	3.95E-02
1,1,2,2-Tetrachloroethane	167.85	1.11	7614.63	1.13E-01	1.15E-01
1,1,2-Trichloroethane	133.42	0.100	545.29	8.12E-03	8.22E-03
1,1-Dichloroethane (ethylidene dichloride)	98.95	2.35	9503.60	1.41E-01	1.43E-01
1,1-Dichloroethene (vinylidene chloride)	96.94	0.201	796.35	1.19E-02	1.20E-02
1,2-Dichloroethane (ethylene dichloride)	98.96	0.407	1646.11	2.45E-02	2.48E-02
1,2-Dichloropropane (propylene dichloride)	112.98	0.18	831.15	1.24E-02	1.25E-02
Acrylonitrile	53.06	6.33	13727.00	2.04E-01	2.07E-01
Benzene	78.11	1.91	6097.40	9.08E-02	9.20E-02
Carbon disulfide	76.13	0.583	1813.97	2.70E-02	2.74E-02
Carbon tetrachloride	153.84	0.004	25.15	3.74E-04	3.79E-04
Carbonyl sulfide	60.07	0.490	1202.98	1.79E-02	1.81E-02
Chlorobenzene	112.56	0.254	1168.48	1.74E-02	1.76E-02
Chloroethane	64.52	1.25	3296.17	4.91E-02	4.97E-02
Chlorform	119.39	0.03	146.38	2.18E-03	2.21E-03
Chloromethane (methyl chloride)	50.49	1.21	2496.87	3.72E-02	3.77E-02
Dichlorobenzene	147.00	0.213	1279.68	1.90E-02	1.93E-02
Dichloromethane (methylene chloride)	84.94	14.3	49642.42	7.39E-01	7.49E-01
Ethylbenzene	106.16	4.61	20001.68	2.98E-01	3.02E-01
Hexane	86.17	6.57	23138.02	3.44E-01	3.49E-01
Mercury	200.61	0.000292	2.39	3.56E-05	3.61E-05
Methyl ethyl ketone (2-butanone)	72.10	7.09	20892.29	3.11E-01	3.15E-01
Methyl isobutyl ketone (hexone)	100.16	1.87	7654.92	1.14E-01	1.15E-01
Perchloroethylene (tetrachloroethylene)	165.83	3.73	25279.97	3.76E-01	3.81E-01
Toluene	92.13	39.3	147978.38	2.20E+00	2.23E+00
Trichloroethylene	131.40	2.82	15144.30	2.25E-01	2.28E-01
Vinyl chloride	62.50	7.34	18749.11	2.79E-01	2.83E-01
Xylenes	106.16	12.1	52498.99	7.81E-01	7.92E-01
Total Uncontrolled VOC HAPs (before burner)					6.57E+00
Total Mercury					3.61E-05
Total Controlled VOC HAPs					1.31E-01
Total HAPs					**0.13**

Table E-7

SWA Lime Recalcination Facility and Sludge Pelletization Facility

Methane Emission Rates - Landfill Gas to Biosolids Pelletizing Facility

Flare Gas Flow Design Capacity:	670.0	scfm	9971835.36 m^3/year
Methane Content of Landfill Gas:	58.5%	(percent by volume)	
Total Methane Flow to Flare:	392.3	scfm	5838292.82 m^3/year
MW of Methane	16		

Methane Emission Rate

Pollutant	Methane Flow Rate to Flare (m^3/year)	Methane Flow Rate to Flare (m^3/minute)	Methane (Mg/yr)*
Class I Landfill			
Methane	5838293	11.1	3,883

*41.57 Conversion from std. m^3/yr to g/yr.

0.185131051

NMOC Emission Rate

Pollutant	Concentration of NMOC (ppmv)	MW of NMOC (g/mol)	Concentration of NMOC (µg/m^3)	NMOC, Uncontrolled (Mg/yr)	NMOC, Uncontrolled (tpy)	NMOC, Controlled* (tpy)	NMOC, Controlled* (lbs/hr)
Class I Landfill							
NMOC	595	86.2	2,131,589	21	22	0	0.098

* 98% Control of NMOC assumed for calculation

Table E-8

SWA, Biosolids Pelletizing Dryer HAP Emissions

Input Information:

NMOC concentration in landfill gas:	595	ppmdv expressed as hexane with MW of:		86.17
Equivalent mass/volume conc. is:	2131341.71	ug/m3	[ug/m3 = (ppm)41.57(MW)]	
LANDFILL 1995 NMOC em. rate:	21	Mg/yr	0.67401874	g/s

HAP	Molecular Weight	Default Conc. (ppmv)	Mass Conc. (ug/m3)	Emissions (Mg/yr)	Emissions (tons/yr)
1,1,1-Trichlorethane (methyl chloroform)	133.42	0.480	2617.38	2.61E-02	2.64E-02
1,1,2,2-Tetrachloroethane	167.85	1.11	7614.63	7.59E-02	7.69E-02
1,1,2-Trichloroethane	133.42	0.100	545.29	5.44E-03	5.51E-03
1,1-Dichloroethane (ethylidene dichloride)	98.95	2.35	9503.60	9.48E-02	9.60E-02
1,1-Dichloroethene (vinylidene chloride)	96.94	0.201	796.35	7.94E-03	8.05E-03
1,2-Dichloroethane (ethylene dichloride)	98.96	0.407	1646.11	1.64E-02	1.66E-02
1,2-Dichloropropane (propylene dichloride)	112.98	0.18	831.15	8.29E-03	8.40E-03
Acrylonitrile	53.06	6.33	13727.00	1.37E-01	1.39E-01
Benzene	78.11	1.91	6097.40	6.08E-02	6.16E-02
Carbon disulfide	76.13	0.583	1813.97	1.81E-02	1.83E-02
Carbon tetrachloride	153.84	0.004	25.15	2.51E-04	2.54E-04
Carbonyl sulfide	60.07	0.490	1202.98	1.20E-02	1.22E-02
Chlorbenzene	112.56	0.254	1168.48	1.17E-02	1.18E-02
Chloroethane	64.52	1.25	3296.17	3.29E-02	3.33E-02
Chlorform	119.39	0.03	146.38	1.46E-03	1.48E-03
Chloromethane (methyl chloride)	50.49	1.21	2496.87	2.49E-02	2.52E-02
Dichlorbenzene	147.00	0.213	1279.68	1.28E-02	1.29E-02
Dichlormethane (methylene chloride)	84.94	14.3	49642.42	4.95E-01	5.02E-01
Ethylbenzene	106.16	4.61	20001.68	1.99E-01	2.02E-01
Hexane	86.17	6.57	23138.02	2.31E-01	2.34E-01
Mercury	200.61	0.000292	2.39	2.39E-05	2.42E-05
Methyl ethyl ketone (2-butanone)	72.10	7.09	20892.29	2.08E-01	2.11E-01
Methyl isobutyl ketone (hexone)	100.16	1.87	7654.92	7.63E-02	7.74E-02
Perchloroethylene (tetrachloroethylene)	165.83	3.73	25279.97	2.52E-01	2.55E-01
Toluene	92.13	39.3	147978.38	1.48E+00	1.50E+00
Trichloroethylene	131.40	2.82	15144.30	1.51E-01	1.53E-01
Vinyl chloride	62.50	7.34	18749.11	1.87E-01	1.89E-01
Xylenes	106.16	12.1	52498.99	5.24E-01	5.30E-01
Total Uncontrolled VOC HAPs (before burner)					4.40E+00
Total Mercury					2.42E-05
Total Controlled VOC HAPs					8.81E-02
Arsenic (from biosolids drying)					1.44E-05
Cadmium (from biosolids drying)					3.65E-05
Chromium (from biosolids drying)					1.37E-04
Mercury (from biosolids drying)					9.48E-06
Nickel (from biosolids drying)					1.25E-04
Total HAPs					**0.09**

Table E-9
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Methane Emission Rates - Existing Flare

Flare Actual Flow Rate:	1033.7	scfm	15384840.09 m^3/year
Methane Content of Landfill Gas:	58.5%	(percent by volume)	
Total Methane Flow to Flare:	605.2	scfm	9007489.42 m^3/year
MW of Methane	16		

Methane Emission Rate

Pollutant	Methane Flow Rate to Flare (m^3/year)	Methane Flow Rate to Flare (m^3/minute)	Methane (Mg/yr)*
Class I Landfill			
Methane	9007489	17.1	5,991

*41.57 Conversion from std. m^3/yr to g/yr.

0.285625616

NMOC Emission Rate

Pollutant	Concentration of NMOC (ppmv)	MW of NMOC (g/mol)	Concentration of NMOC (µg/m³)	NMOC, Uncontrolled (Mg/yr)	NMOC, Uncontrolled (tpy)	NMOC, Controlled* (tpy)	NMOC, Controlled* (lbs/hr)
Class I Landfill							
NMOC	595	86.2	2,131,589	33	33	0.7	0.152

* 98% Control of NMOC assumed for calculation

Table E-10

SWA, Existing Flare HAP Emissions

Input Information:

NMOC concentration in landfill gas:	595	ppmdv expressed as hexane with MW of:		86.17
Equivalent mass/volume conc. is:	2131341.71	ug/m3	[ug/m3 = (ppm)41.57(MW)]	
Uncontrolled NMOC Emission Rate	33	Mg/yr	1.03989588 g/s	

HAP	Molecular Weight	Default Conc. (ppmv)	Mass Conc. (ug/m3)	Emissions (Mg/yr)	Emissions (tons/yr)
1,1,1-Trichlorethane (methyl chloroform)	133.42	0.480	2617.38	4.03E-02	4.08E-02
1,1,2,2-Tetrachloroethane	167.85	1.11	7614.63	1.17E-01	1.19E-01
1,1,2-Trichloroethane	133.42	0.100	545.29	8.39E-03	8.50E-03
1,1-Dichloroethane (ethylidene dichloride)	98.95	2.35	9503.60	1.46E-01	1.48E-01
1,1-Dichloroethene (vinylidene chloride)	96.94	0.201	796.35	1.23E-02	1.24E-02
1,2-Dichloroethane (ethylene dichloride)	98.96	0.407	1646.11	2.53E-02	2.57E-02
1,2-Dichloropropane (propylene dichloride)	112.98	0.18	831.15	1.28E-02	1.30E-02
Acrylonitrile	53.06	6.33	13727.00	2.11E-01	2.14E-01
Benzene	78.11	1.91	6097.40	9.38E-02	9.51E-02
Carbon disulfide	76.13	0.583	1813.97	2.79E-02	2.83E-02
Carbon tetrachloride	153.84	0.004	25.15	3.87E-04	3.92E-04
Carbonyl sulfide	60.07	0.490	1202.98	1.85E-02	1.88E-02
Chlorbenzene	112.56	0.254	1168.48	1.80E-02	1.82E-02
Chloroethane	64.52	1.25	3296.17	5.07E-02	5.14E-02
Chlorform	119.39	0.03	146.38	2.25E-03	2.28E-03
Chloromethane (methyl chloride)	50.49	1.21	2496.87	3.84E-02	3.89E-02
Dichlorbenzene	147.00	0.213	1279.68	1.97E-02	1.99E-02
Dichlormethane (methylene chloride)	84.94	14.3	49642.42	7.64E-01	7.74E-01
Ethylbenzene	106.16	4.61	20001.68	3.08E-01	3.12E-01
Hexane	86.17	6.57	23138.02	3.56E-01	3.61E-01
Mercury	200.61	0.000292	2.39	3.68E-05	3.73E-05
Methyl ethyl ketone (2-butanone)	72.10	7.09	20892.29	3.21E-01	3.26E-01
Methyl isobutyl ketone (hexone)	100.16	1.87	7654.92	1.18E-01	1.19E-01
Perchloroethylene (tetrachloroethylene)	165.83	3.73	25279.97	3.89E-01	3.94E-01
Toluene	92.13	39.3	147978.38	2.28E+00	2.31E+00
Trichloroethylene	131.40	2.82	15144.30	2.33E-01	2.36E-01
Vinyl chloride	62.50	7.34	18749.11	2.88E-01	2.92E-01
Xylenes	106.16	12.1	52498.99	8.08E-01	8.18E-01
Total Uncontrolled VOC HAPs (before flare)					6.79E+00
Total Mercury					3.73E-05
Total Controlled VOC HAPs					1.36E-01
Total HAPs					**0.14**

Table E-11
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Estimated Emission Rates for the Existing Flare

AP-42 Emission Factors

NO_X	40 lbs/10^6 dscf Methane
CO	750 lbs/10^6 dscf Methane
PM	17 lbs/10^6 dscf Methane

Class 1

Flare Flow Rate (current)	880 dscfm
% Methane	58.5%

* Flow Rate is the two-year average taken from the SWA Flare Log Sheets for 2000 and 2001. Unclear whether cfm is acfm, acfm, or dscfm. Methane is also the two year average from SWA Flare Log Sheets for 2000 and 2001. Sulfur data taken from November 2000 Flare Inlet gas testing

PM Emissions

Calculate Total Methane emissions from the flares (current)

Class 1 Flare: 880 dscf/min * 58.5% methane = 515.4 dscf/min methane

Calculate Total PM_{10} emissions from the flares

Class 1: 515.43 dscf/min * 17 lbs/10^6 dscf * 1 10^6 dscf/1E+06 dscf * 60 min/1 hour * 8760 hour/1 year * 1 ton/2000 lbs = 2.30 ton/year

CO Emissions

Calculate Total Methane emissions from the flares (current)

Class 1 Flare: 880 dscf/min * 58.5% methane = 515.4 dscf/min methane

Calculate Total CO emissions from the flares

Class 1: 515.43 dscf/min * 750 lbs/10^6 dscf * 1 10^6 dscf/1E+06 dscf * 60 min/1 hour * 8760 hour/1 year * 1 ton/2000 lbs = 101.59 ton/year

NOX Emissions

Calculate Total Methane emissions from the flares (current)

Class 1 Flare: 880 dscf/min * 58.5% methane = 515.4 dscf/min methane

Calculate Total NOX emissions from the flares

Class 1: 515.43 dscf/min * 40 lbs/10^6 dscf * 1 10^6 dscf/1E+06 dscf * 60 min/1 hour * 8760 hour/1 year * 1 ton/2000 lbs = 5.42 ton/year

Table E-11 (Cont.)
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Estimated Emission Rates for the Existing Flare

	Current			
Class 1 flow rate	15384840.09	m^3/year		
Energy content of methane:	980	Btu/cf	34603.8	Btu/m3

SO2 and HCl Emission Rates Based on Mass Balance

Pollutant	Total Landfill Gas Flow Rate to Flare (Std. m^3/yr)	Concentration of S or Cl in Landfill Gas (ppmV)	Emission rate of S or Cl (m^3/yr)	Molecular Weight of S or Cl (g/gmol)	Temperature at Standard Conditions (°C)	Uncontrolled Mass Emissions of S or Cl (kg/yr)	Control Efficiency (%)	Ratio of Molecular Weights SO_2/S or HCl/Cl	Controlled Mass Emissions of Pollutant (kg/yr)	Controlled Mass Emissions of Pollutant (lb/hr)	Controlled Mass Emissions of Pollutant (ton/yr)
				Current							
Class I Landfill											
Sulfur - Sulfur Dioxide	15384840	100	1538.48	32.06	20	2050.65	0	2.00	4097.58	1.031	4.52E+00
Class I Landfill											
Chlorine - Hydrogen Chloride	15384840	42	646.16	35.45	20	952.22	91	1.03	88.3	0.02	9.73E-02

The calculation of SO2 and HCl is from: U.S. EPA, *Compilation of Air Pollutant Emission Factors*, Report No. AP-42, Fifth Edition, Supplement C, Section 2.4, updated November, 1997.

Table E-12
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Exit Gas Flow Rate Calculations - Proposed 1000 SCFM Flare

Maximum Potential Gas Flow Rate

Flare Gas Flow Design Capacity:	1000	scfm
cf of air needed to combust 1 cf of LFG:	15.7	(ratio)
Exit Gas Flow Rate:	15700	scfm

Gas going to LRF (33 MMBtu/hr):	958.6	scfm
Gas going to BPF (23 MMBtu/hr):	668.1	scfm

	Actual	Standard
Moisture Content of Gas (%):	6.0%	0%
Temperature of Gas (°F):	1400	68

Conversion from scfm to dscfm:

$$\frac{15700\ \frac{ft^3}{minute}}{} * (1 - 0.06) = \frac{14{,}758\ \frac{dscf}{minute}}{}$$

Converstion from scfm to acfm:

$$\frac{15700\ \frac{ft^3}{minute}}{} * \frac{(459.67°R + 1400°F)}{(459.67°R + 68°F)} = \frac{55{,}332\ \frac{acf}{minute}}{}$$

Table E-13

SWA Lime Recalcination Facility and Sludge Pelletization Facility

Methane Emission Rates - Proposed 1000 SCFM Flare

Flare Gas Flow Design Capacity:	1000	scfm	14883336.36 m^3/year
Methane Content of Landfill Gas:	58.5%	(percent by volume)	
Total Methane Flow to Flare:	585.5	scfm	8713869.89 m^3/year
MW of Methane	16		

Methane Emission Rate

Pollutant	Methane Flow Rate to Flare (m^3/year)	Methane Flow Rate to Flare (m^3/minute)	Methane (Mg/yr)*
Class I Landfill			
Methane	8713870	16.6	5,796

*41.57 Conversion from std. m^3/yr to g/yr.

Table E-14

SWA, Proposed 1000 SCFM Flare HAP Emissions

Input Information:

NMOC concentration in landfill gas:	595	ppmdv expressed as hexane with MW of:		86.17
Equivalent mass/volume conc. is:	2131341.71	ug/m3	[ug/m3 = (ppm)41.57(MW)]	
NMOC Emission Rate	32	Mg/yr	1.00599812 g/s	

HAP	Molecular Weight	Default Conc. (ppmv)	Mass Conc. (ug/m3)	Emissions (Mg/yr)	Emissions (tons/yr)
1,1,1-Trichlorethane (methyl chloroform)	133.42	0.480	2617.38	3.90E-02	3.95E-02
1,1,2,2-Tetrachloroethane	167.85	1.11	7614.63	1.13E-01	1.15E-01
1,1,2-Trichloroethane	133.42	0.100	545.29	8.12E-03	8.22E-03
1,1-Dichloroethane (ethylidene dichloride)	98.95	2.35	9503.60	1.41E-01	1.43E-01
1,1-Dichloroethene (vinylidene chloride)	96.94	0.201	796.35	1.19E-02	1.20E-02
1,2-Dichloroethane (ethylene dichloride)	98.96	0.407	1646.11	2.45E-02	2.48E-02
1,2-Dichloropropane (propylene dichloride)	112.98	0.18	831.15	1.24E-02	1.25E-02
Acrylonitrile	53.06	6.33	13727.00	2.04E-01	2.07E-01
Benzene	78.11	1.91	6097.40	9.08E-02	9.20E-02
Carbon disulfide	76.13	0.583	1813.97	2.70E-02	2.74E-02
Carbon tetrachloride	153.84	0.004	25.15	3.74E-04	3.79E-04
Carbonyl sulfide	60.07	0.490	1202.98	1.79E-02	1.81E-02
Chlorbenzene	112.56	0.254	1168.48	1.74E-02	1.76E-02
Chloroethane	64.52	1.25	3296.17	4.91E-02	4.97E-02
Chlorform	119.39	0.03	146.38	2.18E-03	2.21E-03
Chloromethane (methyl chloride)	50.49	1.21	2496.87	3.72E-02	3.77E-02
Dichlorbenzene	147.00	0.213	1279.68	1.90E-02	1.93E-02
Dichlormethane (methylene chloride)	84.94	14.3	49642.42	7.39E-01	7.49E-01
Ethylbenzene	106.16	4.61	20001.68	2.98E-01	3.02E-01
Hexane	86.17	6.57	23138.02	3.44E-01	3.49E-01
Mercury	200.61	0.000292	2.39	3.56E-05	3.61E-05
Methyl ethyl ketone (2-butanone)	72.10	7.09	20892.29	3.11E-01	3.15E-01
Methyl isobutyl ketone (hexone)	100.16	1.87	7654.92	1.14E-01	1.15E-01
Perchloroethylene (tetrachloroethylene)	165.83	3.73	25279.97	3.76E-01	3.81E-01
Toluene	92.13	39.3	147978.38	2.20E+00	2.23E+00
Trichloroethylene	131.40	2.82	15144.30	2.25E-01	2.28E-01
Vinyl chloride	62.50	7.34	18749.11	2.79E-01	2.83E-01
Xylenes	106.16	12.1	52498.99	7.81E-01	7.92E-01
Total Uncontrolled VOC HAPs (before flare)					6.57E+00
Total Mercury					3.61E-05
Total Controlled VOC HAPs					1.31E-01
Total HAPs					**0.13**

Table E-15
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Secondary Pollutant Emission Rates - Proposed 1000 SCFM Flare

Flare Gas Flow Design Capacity:	1000	scfm	14883336.36	m^3/year	0.4719475
Methane Content of Landfill Gas:	58.5%	(percent by volume)			
Total Methane Flow to Flare:	585.5				
Energy content of methane:	980	Btu/ft^3	34603.8	Btu/m^3	

CO and NOx Emission Rates Based on Vendor Emission Factors

Pollutant	Methane Flow Rate to Flare (scfm)	Energy input to flare (MMBtu/yr)	Emission Factor (lb/MMBtu)	Emissions from Flare (lb/yr)	Emissions from Flare (ton/yr)
Class I Landfill					
Carbon Monoxide	585	301572.8	0.37	111581.9	55.79
Nitrogen Oxides	585	301572.8	0.068	20507.0	10.25

SO2 and HCl Emission Rates Based on Mass Balance

Pollutant	Total Landfill Gas Flow Rate to Flare (Std. m^3/yr)	Concentration of S or Cl in Landfill Gas (ppmV)	Emission rate of S or Cl (m^3/yr)	Molecular Weight of S or Cl (g/gmol)	Temperature at Standard Conditions (°C)	Uncontrolled Mass Emissions of S or Cl (kg/yr)	Control Efficiency (%)	Ratio of Molecular Weights SO_2/S or HCl/Cl	Controlled Mass Emissions of Pollutant (kg/yr)	Controlled Mass Emissions of Pollutant (lb/hr)	Controlled Mass Emissions of Pollutant (ton/yr)
Class I Landfill											
Sulfur - Sulfur Dioxide	14883336	100	1488.33	32.06	20	1983.80	0	2.00	3964.01	1.0E+00	4.4
Chlorine - Hydrogen Chloride	14883336	42.0	625.10	35.45	20	921.18	91	1.03	85.29	2.1E-02	0.09

The emission rates for CO and NO_X are from U.S. EPA, *Compilation of Air Pollutant Emision Factors*, Report No. AP-42, Section 13.5, Industrial Flares, September 1991. The calculation of SO_2 and HCl is from: U.S. EPA, *Compilation of Air Pollutant Emission Factors*, Report No. AP-42, Section 2.4, updated November, 1997.

Table E-16
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Exit Gas Flow Rate Calculations - Proposed 2000 SCFM Flare

Maximum Potential Gas Flow Rate

Flare Gas Flow Design Capacity:	2000	scfm
cf of air needed to combust 1 cf of LFG:	15.7	(ratio)
Exit Gas Flow Rate:	31400	scfm

Gas going to LRF (33 MMBtu/hr):	958.6	scfm
Gas going to BPF (23 MMBtu/hr):	668.1	scfm

	Actual	Standard
Moisture Content of Gas (%):	6.0%	0%
Temperature of Gas (°F):	1400	68

Conversion from scfm to dscfm:

$$\frac{31400\ \frac{ft^3}{minute}}{} * (1 - 0.06) = \frac{29{,}516\ \frac{dscf}{minute}}{}$$

Converstion from scfm to acfm:

$$\frac{31400\ \frac{ft^3}{minute}}{} * \frac{(459.67°R + 1400°F)}{(459.67°R + 68°F)} = \frac{110{,}663\ \frac{acf}{minute}}{}$$

Table E-17

SWA Lime Recalcination Facility and Sludge Pelletization Facility

Methane Emission Rates - Proposed 2000 SCFM Flare

Flare Gas Flow Design Capacity:	2000	scfm	29766672.72 m^3/year
Methane Content of Landfill Gas:	58.5%	(percent by volume)	
Total Methane Flow to Flare:	1171.0	scfm	17427739.78 m^3/year
MW of Methane	16		

Methane Emission Rate

Pollutant	Methane Flow Rate to Flare (m^3/year)	Methane Flow Rate to Flare (m^3/minute)	Methane (Mg/yr)*
Class I Landfill			
Methane	17427740	33.2	11,592

*41.57 Conversion from std. m^3/yr to g/yr.

Table E-18

SWA, Proposed 2000 SCFM Flare HAPs Emissions

Input Information:

NMOC concentration in landfill gas:	595	ppmdv expressed as hexane with MW of:		86.17
Equivalent mass/volume conc. is:	2131341.71	ug/m3	[ug/m3 = (ppm)41.57(MW)]	
NMOC Emission Rate	63	Mg/yr	2.01199624	g/s

HAP	Molecular Weight	Default Conc. (ppmv)	Mass Conc. (ug/m3)	Emissions (Mg/yr)	Emissions (tons/yr)
1,1,1-Trichlorethane (methyl chloroform)	133.42	0.480	2617.38	7.79E-02	7.89E-02
1,1,2,2-Tetrachloroethane	167.85	1.11	7614.63	2.27E-01	2.30E-01
1,1,2-Trichloroethane	133.42	0.100	545.29	1.62E-02	1.64E-02
1,1-Dichloroethane (ethylidene dichloride)	98.95	2.35	9503.60	2.83E-01	2.87E-01
1,1-Dichloroethene (vinylidene chloride)	96.94	0.201	796.35	2.37E-02	2.40E-02
1,2-Dichloroethane (ethylene dichloride)	98.96	0.407	1646.11	4.90E-02	4.97E-02
1,2-Dichloropropane (propylene dichloride)	112.98	0.18	831.15	2.47E-02	2.51E-02
Acrylonitrile	53.06	6.33	13727.00	4.09E-01	4.14E-01
Benzene	78.11	1.91	6097.40	1.82E-01	1.84E-01
Carbon disulfide	76.13	0.583	1813.97	5.40E-02	5.47E-02
Carbon tetrachloride	153.84	0.004	25.15	7.49E-04	7.59E-04
Carbonyl sulfide	60.07	0.490	1202.98	3.58E-02	3.63E-02
Chlorbenzene	112.56	0.254	1168.48	3.48E-02	3.52E-02
Chloroethane	64.52	1.25	3296.17	9.81E-02	9.94E-02
Chlorform	119.39	0.03	146.38	4.36E-03	4.42E-03
Chloromethane (methyl chloride)	50.49	1.21	2496.87	7.43E-02	7.53E-02
Dichlorbenzene	147.00	0.213	1279.68	3.81E-02	3.86E-02
Dichlormethane (methylene chloride)	84.94	14.3	49642.42	1.48E+00	1.50E+00
Ethylbenzene	106.16	4.61	20001.68	5.95E-01	6.03E-01
Hexane	86.17	6.57	23138.02	6.89E-01	6.98E-01
Mercury	200.61	0.000292	2.39	7.13E-05	7.22E-05
Methyl ethyl ketone (2-butanone)	72.10	7.09	20892.29	6.22E-01	6.30E-01
Methyl isobutyl ketone (hexone)	100.16	1.87	7654.92	2.28E-01	2.31E-01
Perchloroethylene (tetrachloroethylene)	165.83	3.73	25279.97	7.53E-01	7.63E-01
Toluene	92.13	39.3	147978.38	4.41E+00	4.46E+00
Trichloroethylene	131.40	2.82	15144.30	4.51E-01	4.57E-01
Vinyl chloride	62.50	7.34	18749.11	5.58E-01	5.66E-01
Xylenes	106.16	12.1	52498.99	1.56E+00	1.58E+00
Total Uncontrolled VOC HAPs (before flare)					1.31E+01
Total Mercury					7.22E-05
Total Controlled VOC HAPs					2.63E-01
Total HAPs					**0.26**

Table E-19
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Secondary Pollutant Emission Rates - Proposed 2000 SCFM Flare

Flare Gas Flow Design Capacity:	2000	scfm	29766672.72	m^3/year	0.943895
Methane Content of Landfill Gas:	58.5%	(percent by volume)			
Total Methane Flow to Flare:	1171.0				
Energy content of methane:	980	Btu/ft^3	34603.8	Btu/m^3	

CO and NOx Emission Rates Based on Vendor Emission Factors

Pollutant	Methane Flow Rate to Flare (scfm)	Energy input to flare (MMBtu/yr)	Emission Factor (lb/MMBtu)	Emissions from Flare (lb/yr)	Emissions from Flare (ton/yr)
Class I Landfill					
Carbon Monoxide	1171	603145.7	0.37	223163.9	111.58
Nitrogen Oxides	1171	603145.7	0.068	41013.9	20.51

SO2 and HCl Emission Rates Based on Mass Balance

Pollutant	Total Landfill Gas Flow Rate to Flare (Std. m^3/yr)	Concentration of S or Cl in Landfill Gas (ppmV)	Emission rate of S or Cl (m^3/yr)	Molecular Weight of S or Cl (g/gmol)	Temperature at Standard Conditions (°C)	Uncontrolled Mass Emissions of S or Cl (kg/yr)	Control Efficiency (%)	Ratio of Molecular Weights SO_2/S or HCl/Cl	Controlled Mass Emissions of Pollutant (kg/yr)	Controlled Mass Emissions of Pollutant (lb/hr)	Controlled Mass Emissions of Pollutant (ton/yr)
Class I Landfill											
Sulfur - Sulfur Dioxide	29766673	100	2976.67	32.06	20	3967.60	0	2.00	7928.03	2.0E+00	8.7
Chlorine - Hydrogen Chloride	29766673	42.0	1250.20	35.45	20	1842.37	91	1.03	170.58	4.3E-02	0.19

The emission rates for CO and NOX are from U.S. EPA, *Compilation of Air Pollutant Emision Factors*, Report No. AP-42, Section 13.5, Industrial Flares, September 1991. The calculation of SO2 and HCl is from: U.S. EPA, *Compilation of Air Pollutant Emission Factors*, Report No. AP-42, Section 2.4, updated November, 1997.

Table E-20
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Exit Gas Flow Rate Calculations - Proposed 3500 SCFM Flare

Maximum Potential Gas Flow Rate

Flare Gas Flow Design Capacity:	3500	scfm
cf of air needed to combust 1 cf of LFG:	15.7	(ratio)
Exit Gas Flow Rate:	54950	scfm

Gas going to LRF (33 MMBtu/hr):	958.6	scfm
Gas going to BPF (23 MMBtu/hr):	668.1	scfm

	Actual	Standard
Moisture Content of Gas (%):	6.0%	0%
Temperature of Gas (°F):	1400	68

Conversion from scfm to dscfm:

$$\frac{54950\ \frac{ft^3}{minute}}{} * (1 - 0.06) = \frac{51{,}653\ \frac{dscf}{minute}}{}$$

Converstion from scfm to acfm:

$$\frac{54950\ \frac{ft^3}{minute}}{} * \frac{(459.67°R + 1400°F)}{(459.67°R + 68°F)} = \frac{193{,}661\ \frac{acf}{minute}}{}$$

Table E-21

SWA Lime Recalcination Facility and Sludge Pelletization Facility

Methane Emission Rates - Proposed 3500 SCFM Flare

Flare Gas Flow Design Capacity:	3500	scfm	52091677.26 m^3/year
Methane Content of Landfill Gas:	58.5%	(percent by volume)	
Total Methane Flow to Flare:	2049.2	scfm	30498544.61 m^3/year
MW of Methane	16		

Methane Emission Rate

Pollutant	Methane Flow Rate to Flare (m^3/year)	Methane Flow Rate to Flare (m^3/minute)	Methane (Mg/yr)*
Class I Landfill			
Methane	30498545	58.0	20,285

*41.57 Conversion from std. m^3/yr to g/yr.

Table E-22

SWA, Proposed 3500 SCFM Flare HAP Emissions

Input Information:

NMOC concentration in landfill gas:	595	ppmdv expressed as hexane with MW of:		86.17
Equivalent mass/volume conc. is:	2131341.71	ug/m3	[ug/m3 = (ppm)41.57(MW)]	
NMOC Emission Rate	111	Mg/yr	3.52099343	g/s

HAP	Molecular Weight	Default Conc. (ppmv)	Mass Conc. (ug/m3)	Emissions (Mg/yr)	Emissions (tons/yr)
1,1,1-Trichlorethane (methyl chloroform)	133.42	0.480	2617.38	1.36E-01	1.38E-01
1,1,2,2-Tetrachloroethane	167.85	1.11	7614.63	3.97E-01	4.02E-01
1,1,2-Trichloroethane	133.42	0.100	545.29	2.84E-02	2.88E-02
1,1-Dichloroethane (ethylidene dichloride)	98.95	2.35	9503.60	4.95E-01	5.02E-01
1,1-Dichloroethene (vinylidene chloride)	96.94	0.201	796.35	4.15E-02	4.20E-02
1,2-Dichloroethane (ethylene dichloride)	98.96	0.407	1646.11	8.58E-02	8.69E-02
1,2-Dichloropropane (propylene dichloride)	112.98	0.18	831.15	4.33E-02	4.39E-02
Acrylonitrile	53.06	6.33	13727.00	7.15E-01	7.25E-01
Benzene	78.11	1.91	6097.40	3.18E-01	3.22E-01
Carbon disulfide	76.13	0.583	1813.97	9.45E-02	9.58E-02
Carbon tetrachloride	153.84	0.004	25.15	1.31E-03	1.33E-03
Carbonyl sulfide	60.07	0.490	1202.98	6.27E-02	6.35E-02
Chlorbenzene	112.56	0.254	1168.48	6.09E-02	6.17E-02
Chloroethane	64.52	1.25	3296.17	1.72E-01	1.74E-01
Chlorform	119.39	0.03	146.38	7.63E-03	7.73E-03
Chloromethane (methyl chloride)	50.49	1.21	2496.87	1.30E-01	1.32E-01
Dichlorbenzene	147.00	0.213	1279.68	6.67E-02	6.75E-02
Dichlormethane (methylene chloride)	84.94	14.3	49642.42	2.59E+00	2.62E+00
Ethylbenzene	106.16	4.61	20001.68	1.04E+00	1.06E+00
Hexane	86.17	6.57	23138.02	1.21E+00	1.22E+00
Mercury	200.61	0.000292	2.39	1.25E-04	1.26E-04
Methyl ethyl ketone (2-butanone)	72.10	7.09	20892.29	1.09E+00	1.10E+00
Methyl isobutyl ketone (hexone)	100.16	1.87	7654.92	3.99E-01	4.04E-01
Perchloroethylene (tetrachloroethylene)	165.83	3.73	25279.97	1.32E+00	1.33E+00
Toluene	92.13	39.3	147978.38	7.71E+00	7.81E+00
Trichloroethylene	131.40	2.82	15144.30	7.89E-01	7.99E-01
Vinyl chloride	62.50	7.34	18749.11	9.77E-01	9.90E-01
Xylenes	106.16	12.1	52498.99	2.74E+00	2.77E+00
Total Uncontrolled VOC HAPs (before flare)					2.30E+01
Total Mercury					1.26E-04
Total Controlled VOC HAPs					4.60E-01
Total HAPs					**0.46**

Table E-23
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Secondary Pollutant Emission Rates - Proposed 3500 SCFM Flare

Flare Gas Flow Design Capacity:	3500	scfm	52091677.26	m^3/year	1.65181625
Methane Content of Landfill Gas:	58.5%	(percent by volume)			
Total Methane Flow to Flare:	2049.2				
Energy content of methane:	980	Btu/ft^3	34603.8	Btu/m^3	

CO and NOx Emission Rates Based on Vendor Emission Factors

Pollutant	Methane Flow Rate to Flare (scfm)	Energy input to flare (MMBtu/yr)	Emission Factor (lb/MMBtu)	Emissions from Flare (lb/yr)	Emissions from Flare (ton/yr)
Class I Landfill					
Carbon Monoxide	2049	1055504.9	0.37	390536.8	195.27
Nitrogen Oxides	2049	1055504.9	0.068	71774.3	35.89

SO2 and HCl Emission Rates Based on Mass Balance

Pollutant	Total Landfill Gas Flow Rate to Flare (Std. m^3/yr)	Concentration of S or Cl in Landfill Gas (ppmV)	Emission rate of S or Cl (m^3/yr)	Molecular Weight of S or Cl (g/gmol)	Temperature at Standard Conditions (°C)	Uncontrolled Mass Emissions of S or Cl (kg/yr)	Control Efficiency (%)	Ratio of Molecular Weights SO_2/S or HCl/Cl	Controlled Mass Emissions of Pollutant (kg/yr)	Controlled Mass Emissions of Pollutant (lb/hr)	Controlled Mass Emissions of Pollutant (ton/yr)
Class I Landfill											
Sulfur - Sulfur Dioxide	52091677	100	5209.17	32.06	20	6943.30	0	2.00	13874.04	3.5E+00	15.3
Chlorine - Hydrogen Chloride	52091677	42.0	2187.85	35.45	20	3224.14	91	1.03	298.52	7.5E-02	0.33

The emission rates for CO and NO_X are from U.S. EPA, *Compilation of Air Pollutant Emision Factors*, Report No. AP-42, Section 13.5, Industrial Flares, September 1991. The calculation of SO2 and HCl is from: U.S. EPA, *Compilation of Air Pollutant Emission Factors*, Report No. AP-42, Section 2.4, updated November, 1997.

Table E-24
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Exit Gas Flow Rate Calculations - Proposed 3500 SCFM Flare
(Operating at 800 SCFM to account for LRF/BPF demand of 2700 SCFM)

Maximum Potential Gas Flow Rate

Flare Gas Flow Design Capacity:	800	scfm
cf of air needed to combust 1 cf of LFG:	15.7	(ratio)
Exit Gas Flow Rate:	12560	scfm

Gas going to LRF (33 MMBtu/hr):	958.6	scfm
Gas going to BPF (23 MMBtu/hr):	668.1	scfm

	Actual	Standard
Moisture Content of Gas (%):	6.0%	0%
Temperature of Gas (°F):	1400	68

Conversion from scfm to dscfm:

$$\frac{12560\ \frac{ft^3}{minute}}{} * (1 - 0.06) = \frac{11{,}806\ \frac{dscf}{minute}}{}$$

Converstion from scfm to acfm:

$$\frac{12560\ \frac{ft^3}{minute}}{} * \frac{(459.67°R + 1400°F)}{(459.67°R + 68°F)} = \frac{44{,}265\ \frac{acf}{minute}}{}$$

Table E-25

SWA Lime Recalcination Facility and Sludge Pelletization Facility
Methane Emission Rates - Proposed 3500 SCFM Flare
(Operating at 800 SCFM to account for LRF/BPF demand of 2700 SCFM)

Flare Gas Flow Design Capacity:	800	scfm	11906669.09 m^3/year
Methane Content of Landfill Gas:	58.5%	(percent by volume)	
Total Methane Flow to Flare:	468.4	scfm	6971095.91 m^3/year
MW of Methane	16		

Methane Emission Rate

Pollutant	Methane Flow Rate to Flare (m^3/year)	Methane Flow Rate to Flare (m^3/minute)	Methane (Mg/yr)*
Class I Landfill			
Methane	6971096	13.3	4,637

*41.57 Conversion from std. m^3/yr to g/yr.

Table E-26

SWA, Proposed 3500 SCFM Flare HAP Emissions

(Operating at 800 SCFM to account for LRF/BPF demand of 2700 SCFM)

Input Information:

NMOC concentration in landfill gas:	595	ppmdv expressed as hexane with MW of:		86.17
Equivalent mass/volume conc. is:	2131341.71	ug/m3	[ug/m3 = (ppm)41.57(MW)]	
NMOC Emission Rate	25	Mg/yr	0.8047985	g/s

HAP	Molecular Weight	Default Conc. (ppmv)	Mass Conc. (ug/m3)	Emissions (Mg/yr)	Emissions (tons/yr)
1,1,1-Trichlorethane (methyl chloroform)	133.42	0.480	2617.38	3.12E-02	3.16E-02
1,1,2,2-Tetrachloroethane	167.85	1.11	7614.63	9.07E-02	9.19E-02
1,1,2-Trichloroethane	133.42	0.100	545.29	6.49E-03	6.58E-03
1,1-Dichloroethane (ethylidene dichloride)	98.95	2.35	9503.60	1.13E-01	1.15E-01
1,1-Dichloroethene (vinylidene chloride)	96.94	0.201	796.35	9.48E-03	9.61E-03
1,2-Dichloroethane (ethylene dichloride)	98.96	0.407	1646.11	1.96E-02	1.99E-02
1,2-Dichloropropane (propylene dichloride)	112.98	0.18	831.15	9.90E-03	1.00E-02
Acrylonitrile	53.06	6.33	13727.00	1.63E-01	1.66E-01
Benzene	78.11	1.91	6097.40	7.26E-02	7.36E-02
Carbon disulfide	76.13	0.583	1813.97	2.16E-02	2.19E-02
Carbon tetrachloride	153.84	0.004	25.15	2.99E-04	3.03E-04
Carbonyl sulfide	60.07	0.490	1202.98	1.43E-02	1.45E-02
Chlorbenzene	112.56	0.254	1168.48	1.39E-02	1.41E-02
Chloroethane	64.52	1.25	3296.17	3.93E-02	3.98E-02
Chlorform	119.39	0.03	146.38	1.74E-03	1.77E-03
Chloromethane (methyl chloride)	50.49	1.21	2496.87	2.97E-02	3.01E-02
Dichlorbenzene	147.00	0.213	1279.68	1.52E-02	1.54E-02
Dichlormethane (methylene chloride)	84.94	14.3	49642.42	5.91E-01	5.99E-01
Ethylbenzene	106.16	4.61	20001.68	2.38E-01	2.41E-01
Hexane	86.17	6.57	23138.02	2.76E-01	2.79E-01
Mercury	200.61	0.000292	2.39	2.85E-05	2.89E-05
Methyl ethyl ketone (2-butanone)	72.10	7.09	20892.29	2.49E-01	2.52E-01
Methyl isobutyl ketone (hexone)	100.16	1.87	7654.92	9.12E-02	9.24E-02
Perchloroethylene (tetrachloroethylene)	165.83	3.73	25279.97	3.01E-01	3.05E-01
Toluene	92.13	39.3	147978.38	1.76E+00	1.79E+00
Trichloroethylene	131.40	2.82	15144.30	1.80E-01	1.83E-01
Vinyl chloride	62.50	7.34	18749.11	2.23E-01	2.26E-01
Xylenes	106.16	12.1	52498.99	6.25E-01	6.33E-01
Total Uncontrolled VOC HAPs (before flare)					5.26E+00
Total Mercury					2.89E-05
Total Controlled VOC HAPs					1.05E-01
Total HAPs					**0.11**

Table E-27
SWA Lime Recalcination Facility and Sludge Pelletization Facility
Secondary Pollutant Emission Rates - Proposed 3500 SCFM Flare
(Operating at 800 SCFM to account for LRF/BPF demand of 2700 SCFM)

Flare Gas Flow Design Capacity:	800	scfm	11906669.09 m^3/year	0.377558
Methane Content of Landfill Gas:	58.5%	(percent by volume)		
Total Methane Flow to Flare:	468.4			
Energy content of methane:	980	Btu/ft^3	34603.8 Btu/m^3	

CO and NOx Emission Rates Based on Vendor Emission Factors

Pollutant	Methane Flow Rate to Flare (scfm)	Energy input to flare (MMBtu/yr)	Emission Factor (lb/MMBtu)	Emissions from Flare (lb/yr)	Emissions from Flare (ton/yr)
Class I Landfill					
Carbon Monoxide	468	241258.3	0.37	89265.6	44.63
Nitrogen Oxides	468	241258.3	0.068	16405.6	8.20

SO2 and HCl Emission Rates Based on Mass Balance

Pollutant	Total Landfill Gas Flow Rate to Flare (Std. m^3/yr)	Concentration of S or Cl in Landfill Gas (ppmV)	Emission rate of S or Cl (m^3/yr)	Molecular Weight of S or Cl (g/gmol)	Temperature at Standard Conditions (°C)	Uncontrolled Mass Emissions of S or Cl (kg/yr)	Control Efficiency (%)	Ratio of Molecular Weights SO_2/S or HCl/Cl	Controlled Mass Emissions of Pollutant (kg/yr)	Controlled Mass Emissions of Pollutant (lb/hr)	Controlled Mass Emissions of Pollutant (ton/yr)
Class I Landfill											
Sulfur - Sulfur Dioxide	11906669	100	1190.67	32.06	20	1587.04	0	2.00	3171.21	8.0E-01	3.5
Chlorine - Hydrogen Chloride	11906669	42.0	500.08	35.45	20	736.95	91	1.03	68.23	1.7E-02	0.08

The emission rates for CO and NO_X are from U.S. EPA, *Compilation of Air Pollutant Emision Factors*, Report No. AP-42, Section 13.5, Industrial Flares, September 1991. The calculation of SO2 and HCl is from: U.S. EPA, *Compilation of Air Pollutant Emission Factors*, Report No. AP-42, Section 2.4, updated November, 1997.

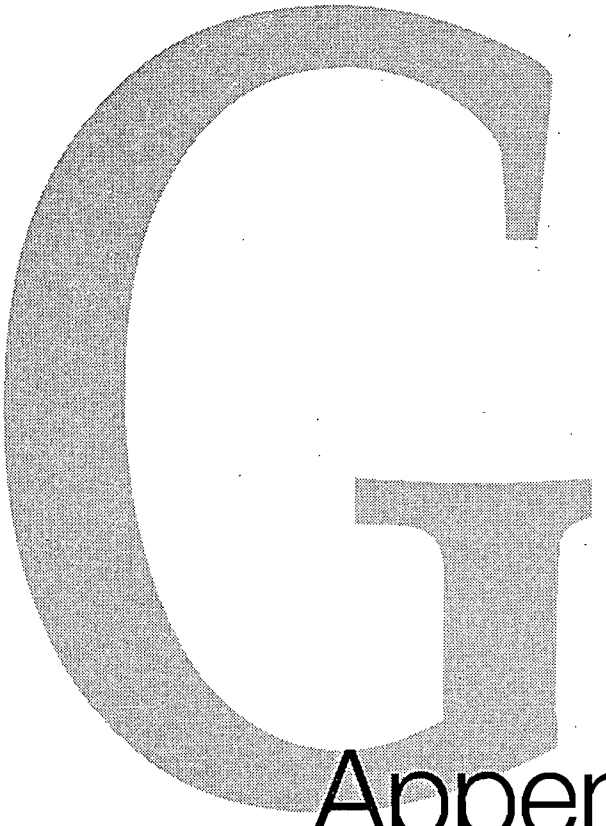
Appendix F

Appendix F
List of Proposed Exempt Activities

APPENDIX F

LIST OF PROPOSED EXEMPT/INSIGNIFICANT ACTIVITIES

Source	Quantity	Description	Reason for Exemption
Cross-Bar Lime Cooler	1	lime product cooler	Criteria emissions < 5 ton/yr (See Appendix E)
Lime Storage Silo	2	baghouse exhaust	Criteria emissions < 5 ton/yr (See Appendix E)
Biosolids Pellet Storage Silo	4	baghouse exhaust	Criteria emissions < 5 ton/yr (See Appendix E)
Cooling Tower (2 cells)	2	1500 gpm for each tower	Criteria emissions < 5 ton/yr (See Appendix E)
Emergency Motor	1	gasoline-powered motor to rotate hot LRF Kiln during power outage	Rule 62-210.300 3.(a)20., F.A.C.



Appendix G

Appendix G
Compliance Assurance Monitoring (CAM) Plan

Appendix G
Compliance Assurance Monitoring (CAM) Plan

The Compliance Assurance Monitoring (CAM) Rule, 40 Code of Federal Regulation (CFR) 64 was written to provide a "reasonable assurance" of continuous compliance with emissions limitations or standards in cases where the underlying requirement for an emissions unit does not require continuous emissions monitoring, and for units that are part of major sources that have Title V operating permits. As described in Volume III, Section 2, the Lime Recalcination Facility's (LRF's) lime kiln has a particulate matter (PM) emissions limit of 0.60 pounds PM per ton of limestone feed from the New Source Performance Standards (NSPS) for Lime Manufacturing Plants (40 CFR 60 Subpart HHH). Compliance with this limit is based on an initial stack test, rather than continuous monitoring.

The CAM Rule applies to a pollutant-specific emissions limit for a unit at a major source required to have a Title V permit, if the unit satisfies all of the following criteria:

1. The unit is subject to an emissions limitation, other than an exempt (defined below) emissions limitation;

2. The unit uses a control device to achieve compliance with the emissions limitation; and

3. The unit has potential pre-control device emissions of the regulated air pollutant that will equal or exceed the amount, in tons per year required for a source to be classified as a major source (100 tons/year for criteria air pollutants, and 10 tons/year for an individual Hazardous Air Pollutant (HAP)).

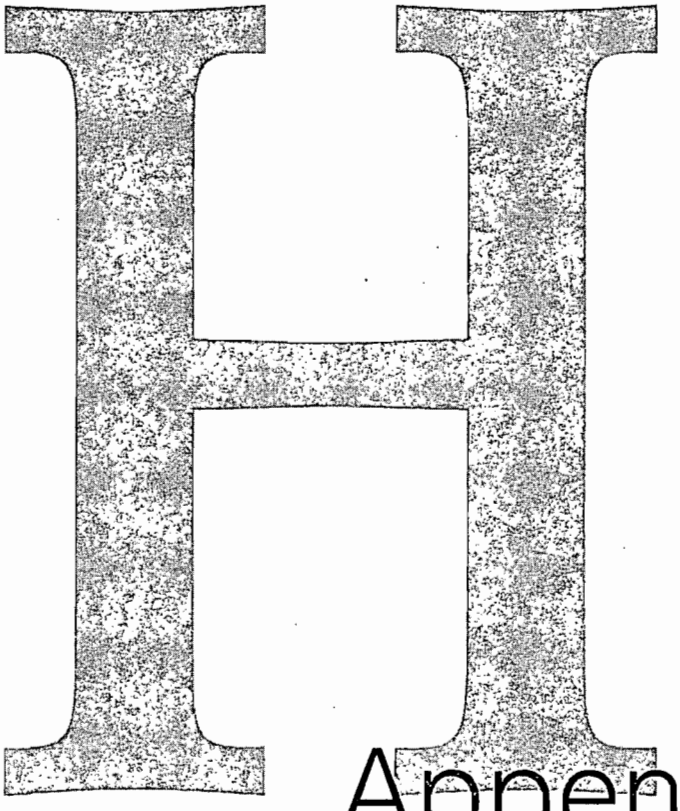
The exempt emissions limitations include any National Emissions Standard for HAP (NESHAP) or NSPS proposed after November 15, 1990. The other exemptions are not relevant to this project.

The Lime Manufacturing NSPS were promulgated in 1984, so the PM and opacity limits for the LRF kiln are not exempt, and Criterion 1), above, is met. The LRF will have an electrostatic precipitator (ESP) to control PM emissions, so Criterion 2), above is also met. Uncontrolled PM emissions from the LRF kiln could be up to 1,770 tons per year, so Criterion 3), above, is also satisfied (Uncontrolled PM emissions are based on an emission factor of 97 lbs PM per ton of lime produced, from EPA, Compilation of Air Pollutant Emission Factors, Report No. AP-42, Vol. I, Fifth Edition, Section 11.17, February, 1998, Table 11.7-2, "gas-fired calcimatic kiln"). Therefore, a CAM plan is required for PM emissions from the LRF kiln's ESP. As described in Section 2.9 of Volume III, the LRF kiln is the only emissions unit in the proposed project to which the CAM Rule would apply.

The schedule for submitting the CAM plan for the LRF's PM emissions is governed by 40 CFR 64.5. This section differentiates between "large" pollutant-specific emissions units and "other" pollutant specific emissions units. "Large" units are those units, which taking control devices into account, would emit the applicable air pollutant in an amount that would make the unit a "major" source by itself. "Other" units are all pollutant-specific emissions required to have CAM plans that are not "large." In this case, the LRF kiln would be a "large" pollutant-specific emissions unit if it had the potential to emit PM, after the ESP, of 100 tons/year. The LRF kiln's maximum potential controlled PM emission rate would be 6.7 tons/year, so it is an "other" pollutant-specific emissions unit. 40 CFR 64.5(b) states that for "other" pollutant-specific emissions units, the owner or operator is required to submit the CAM plan as part of the renewal of the Title V permit. It is not required to be submitted with Title V permit revisions. The Solid Waste Authority of Palm Beach County's (SWA) Title V permit for the North County Resource Recovery Facility (NCRRF) site was effective on October 30, 2000. The permit has a five-year term, and will be required to be renewed before October 30, 2005. Therefore, the CAM plan is not included with this Title V permit revision application, but will be provided with SWA's application for renewal of the Title V permit in 2005, if required at that time.

It is likely that Maximum Achievable Control Technology (MACT) standards for Lime Manufacturing Plants (40 CFR 63 AAAAA) will be promulgated in the next year, before the NCRRF Title V permit expires. These MACT standards will likely contain a PM limit that is more stringent than that in the NSPS (Joseph Wood, EPA OAQPS, Project Lead for Lime Manufacturing MACT Rule Development, telephone conversation, October 1, 2002). The new MACT rule will also likely have PM compliance monitoring requirements that meet the requirements of the CAM Rule. The new MACT standard, therefore, would supplant the NSPS PM limit, as well as fulfill the CAM requirement without a separate CAM plan. 40 CFR 70.7(f)(1)(i) requires that Title V permits be reopened to incorporate new rules if there are three years or more remaining in the Title V permit's term. If a Title V facility is affected by a new rule with less than three years remaining in the permit term, the requirements of the new rule are incorporated at permit renewal. There will be fewer than three years remaining in the NCRRF's Title V permit after October 30, 2002. Therefore, it is likely that the new Lime Manufacturing Plant MACT standard will be incorporated into the Title V permit at its renewal, replacing the requirement to provide a CAM plan at that time.

A CAM plan for the LRF kiln, therefore, is not being provided with this Title V permit revision application. SWA will work with the Florida Department of Environmental Protection (FDEP) to follow the development of the new MACT standard for lime production facilities, and incorporate a CAM plan and/or the new MACT requirements into the Title V permit renewal application in 2005. This approach to CAM Rule compliance was recommended by FDEP (Jonathan Holtom, PE II, Bureau of Air Regulation, FDEP, telephone conversation, October 4, 2002).



Appendix H

Appendices H & I
Compliance Report, Plan and Certification

Appendices H and I
Compliance Report, Plan and Certification

Introduction

Supplemental requirements for Title V Air Operation Permit Applications include an appendix containing a Compliance Report and Plan, and an appendix containing a Compliance Certification. According to the instructions for the Florida Department of Environmental Protection (FDEP) Form No. 62-210.900(1), the Compliance Report is required to address the compliance status of each emissions unit addressed in this Title V application, and is in **Attachment A** to this appendix. The Compliance Plan is a description of actions that will be taken to achieve compliance for those units shown in the Compliance Report to be out of compliance. The Compliance Certification is the statement of the responsible official certifying the truth, accuracy and completeness of the Compliance Report and Plan.

Because this Title V permit revision application is for units that have not yet been constructed, their compliance status cannot be addressed. Instead, this Appendix includes SWA's most recent Compliance Statement and Certification for the NCRRF's existing emissions units. The Compliance Plan is in **Attachment B** to this appendix.

YOUR PARTNER FOR
SOLID WASTE SOLUTIONS

February 11, 2002

Florida Department of Environmental Protection
Southeast District
Post Office Box 15425
West Palm Beach, FL 33416

Attn: Mr. Laxmana Tallam

RE: **Annual Statement of Compliance – YEAR 2001**
North County Resource Recovery Facility
Title V Permit #0990234-001-AV

Dear Mr. Tallam:

Please find enclosed a completed Annual Statement of Compliance for North County Resource Recovery Facility (ID # 0990234) as required in Title V Permit # 0990234-001-AV. Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

If there are any questions or comments regarding the Annual Statement of Compliance please contact Mary Beth Mihalik at (561) 640-4000 ext. 4613.

Sincerely,

Donald L. Lockhart
Executive Director

Enclosures

cc: EPA, Region IV
Mark Hammond, SWA
John Booth, SWA
Marc Bruner, SWA

Department of Environmental Protection

Division of Air Resources Management

STATEMENT OF COMPLIANCE - TITLE V SOURCE

Facility Owner/Company Name: Solid Waste Authority

Site Name: North County Resource Recovery Facility County: Palm Beach

Title V Air Operation Permit No.: 0990234-001-AV

REPORTING PERIOD	REPORT DEADLINE*
January 1st through December 31st of 2001 (year)	March 1, 2002

*See Rule 62-213.440(3)(a)2, F.A.C.

COMPLIANCE STATEMENT (Check only one of the following three options)

___ A. This facility was in compliance with all terms and conditions of the Title V Air Operation Permit and, if applicable, the Acid Rain Part, and there were no reportable incidents of deviations from applicable requirements associated with any malfunction or breakdown of process, fuel burning or emission control equipment, or monitoring systems during the reporting period identified above.

X[1] B. This facility was in compliance with all terms and conditions of the Title V Air Operation Permit and, if applicable, the Acid Rain Part; however, there were one or more reportable incidents of deviations from applicable requirements associated with malfunctions or breakdowns of process, fuel burning or emission control equipment, or monitoring systems during the reporting period identified above, which were reported to the Department. For each incident of deviation, the following information is included:

1. Date of report previously submitted identifying the incident of deviation.
2. Description of the incident.

X[2] C. This facility was in compliance with all terms and conditions of the Title V Air Operation Permit and, if applicable, the Acid Rain Part, EXCEPT those identified in the pages attached to this report. For each item of noncompliance, the following information is included:

1. Emissions unit identification number.
2. Specific permit condition number.
3. Description of the requirement of the permit condition.
4. Basis for the determination of noncompliance (for monitored parameters, indicate whether monitoring was continuous, i.e., recorded at least every 15 minutes, or intermittent).
5. Beginning and ending dates of periods of noncompliance.
6. Identification of the probable cause of noncompliance and description of corrective action or preventative measures implemented.
7. Dates of any reports previously submitted identifying this incident of noncompliance.

[1]**See Attachment A for details** [2]**See Attachment B for details**

STATEMENT OF COMPLIANCE - TITLE V SOURCE

RESPONSIBLE OFFICIAL CERTIFICATION

I, the undersigned, am the responsible official as defined in Chapter 62-210.200, F.A.C., of the Title V source for which this document is being submitted. With respect to all matters other than Acid Rain program requirements, I hereby certify, based on the information and belief formed after reasonable inquiry, that the statements made and data contained in this document are true, accurate, and complete.

Donald L Lockhart — 2/6/02

(Signature of Title V Source Responsible Official) *(Date)*

Name: Donald L. Lockhart Title: Executive Director

DESIGNATED REPRESENTATIVE CERTIFICATION (only applicable to Acid Rain source)

I, the undersigned, am authorized to make this submission on behalf of the owners and operators of the Acid Rain source or Acid Rain units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

_____ _____

(Signature of Acid Rain Source Designated Representative) *(Date)*

Name:_____ Title:_____

{Note: Attachments, if required, are created by the responsible official or the designated representative, as appropriate, and should consist of the information specified and any supporting records. Additional information may also be attached by the responsible official or designated representative when elaboration is required for clarity. This report is to be submitted to both the compliance authority (DEP district or local air program) and the U.S. EPA (U.S. EPA Region 4, Air and EPCRA Enforcement Branch, 61 Forsyth Street, Atlanta GA 30303).}

Attachment A - Annual Statement of Compliance 2001

North County Resource Recovery Facility

Title V Air Operations Permit: 0990234-001-AV Facility ID Number: 0990234

Compliance Statement B. Incidents of Deviation Associated with Malfunction which were reported to Department*

Date of Incident	Time Period	Parameter	Value	Unit No.	Comment	Action Taken
01/01/2001	1600 hrs	CO (1-hr)	637.2 ppmvd	Unit 1	Grate drive failed UG damper stuck	unjammed UG damper
01/08/2001	0500 hrs	CO (1-hr)	444.1 ppmvd	Unit 2	grates piled	cleared grates
01/09/2001	1648(6min)	CEMDAS	Opacity	Unit 1 & 2	software malfunction	reset software
01/13/2001	0800 hrs	CO (1-hr)	507.9 ppmvd	Unit 1	UG damper got wet	put damper in manual
01/14/2001	1800 hrs	CO (1-hr)	456.2 ppmvd	Unit 1	UG damper jammed	unjammed UG damper
01/15/2001	0000 hrs	CO (1-hr)	457.4 ppmvd	Unit 1	feeder chute plugged	unplugged chute
01/15/2001	1424-1436 (6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
01/16/2001	2012 (6-min);2024(6min); 2030(6-min);2036(6min)	Opacity	12%;25%;14.7%;15.6%	Unit 1	134 field tripped	reset field
01/17/2001	0454(6-min)	Opacity	17.3%	Unit 1	134 field tripped	reset field
01/17/2001	2000 hrs	CO (1-hr)	438.5 ppmvd	Unit 2	feeder plugged	unplugged feeder chute
01/19/2001	0500 hrs	CO (1-hr)	407 ppmvd	Unit 1	feeder chute plugged	unplugged chute
01/25/2001	2000 hrs	CO (1-hr)	608.5 ppmvd	Unit 1	feeder plugged	unplugged feeder
01/26/2001	0900 hrs	CO (1-hr)	447.8 ppmvd	Unit 1	feeders not feeding/tripped	cleared feeders
01/26/2001	2100 hrs	CO (1-hr)	412.6 ppmvd	Unit 1	grate jammed	unjammed grates
01/29/2001	1600 hrs	CO (1-hr)	490.2 ppmvd	Unit 1	feeder tachometer failed	repaired tachometer
02/10/2001	0000 hrs	CO (1-hr)	653.6 ppmvd	Unit 2	feeder tripped	reset feeder
02/10/2001	0100 hrs	CO (1-hr)	400.3 ppmvd	Unit 1	grate piled/feeder tripped	cleared grates/reset feeders
02/10/2001	0100 hrs	CO (1-hr)	484.5 ppmvd	Unit 2	rotary air damper shut	resuecured damper
02/14/2001	0006 (6-min); 0706-0718(6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
02/17/2001	0918(6-min);0924(6-min)	Opacity	11.4%	Unit 2	plattco valve malfunction	repaired plattco valve
02/18/2001	0012(6-min)	Opacity	11.9%	Unit 1	134 field tripped	reset field
02/20/2001	1400 hrs	CO (1-hr)	558.6 ppmvd	Unit 2	feeder plugged	unplugged feeder chute

*Information and date of report previously submitted from Quarterly Emission Reports - Year 2001 (4/27/2001;7/31/2001;10/29/2001;1/28/2002)

Attachment A - Annual Statement of Compliance 2001

North County Resource Recovery Facility

Title V Air Operations Permit: 0990234-001-AV Facility ID Number: 0990234

Compliance Statement B. Incidents of Deviation Associated with Malfunction which were reported to Department*

Date of Incident	Time Period	Parameter	Value	Unit No.	Comment	Action Taken
02/23/2001	0800 hrs	CO (1-hr)	431.9 ppmvd	Unit 1	1E, 1F feeder tripped	reset feeders
02/25/2001	0600 hrs	CO (1-hr)	429 ppmvd	Unit 1	grates piled	cleared grates
02/28/2001	0800 hrs	CO (1-hr)	888.2 ppmvd	Unit 2	2F feeder repairs, 2E feeder tripped	reset feeder
02/28/2001	1906 (6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
03/02/2001	1800 hrs	CO (1-hr)	431.8 ppmvd	Unit 2	2F tripped, shaft shifted	repaired shaft
03/12/2001	1642 (6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
03/13/2001	1354-1406(6-min)	Opacity	13.8%;15%;13.7%	Unit 1	131,132 field malfunction	Bailey maintenance
03/21/2001	0600 hrs	CO (1-hr)	499.1 ppmvd	Unit 2	2F feeder not feeding/rotary damper loose	repaired damper
03/21/2001	1424 (6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
03/22/2001	1500 hrs	CO (1-hr)	450.3 ppmvd	Unit 2	200A conveyor plugged	unplugged conveyor
03/28/2001	0700 hrs	CO (1-hr)	462.6 ppmvd	Unit 1	1D feeder plugged	cleared feeder
04/02/2001	0730(6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
04/03/2001	0800 hrs	CO (1-hr)	455.4 ppmvd	Unit 1	lost fuel feed to boiler	restored fuel to boiler
04/03/2001	1206(6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
04/05/2001	0000 hrs	CEMDAS	NOx & SO2	Unit 2	purge valve malfunction	repair/closed valve
04/08/2001	0200(6-min)	CEMDAS	Opacity	Unit 2	software malfunction	reset software
04/08/2001	1300-2300	CEMDAS	NOx & SO2	Unit 1	probe malfunction	repair system
04/08/2001	1500(6-min)	CEMDAS	Opacity	Unit 1	software malfunction	reset software
04/09/2001	0600 hrs	CO (1-hr)	425.9 ppmvd	Unit 1	2 feeders down-jammed/plugged	cleared feeders
04/10/2001	0100 hrs	CO (1-hr)	424.6 ppmvd	Unit 1	1F feeder chute plugged	unplugged chute
04/15/2001	0600 hrs	CO (1-hr)	500.9 ppmvd	Unit 2	2F feeder jammed	injammed feeder
04/21/2001	0648(6-min)	Opacity	14.8%	Unit 1	134 field tripped	reset field
05/04/2001	1500(6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software

*Information and date of report previously submitted from Quarterly Emission Reports - Year 2001 (4/27/2001;7/31/2001;10/29/2001;1/28/2002)

Attachment A - Annual Statement of Compliance 2001

North County Resource Recovery Facility

Title V Air Operations Permit: 0990234-001-AV Facility ID Number: 0990234

Compliance Statement B. Incidents of Deviation Associated with Malfunction which were reported to Department*

Date of Incident	Time Period	Parameter	Value	Unit No.	Comment	Action Taken
05/05/2001	0406(6-min);0418(6-min);0424(6-min)	Opacity	12.1%; 28.3%;15.2%	Unit 1	134 field tripped	reset field
05/05/2001	1800 hrs	CO (1-hr)	526.4 ppmvd	Unit 1	feeders tripped, jammed	cleared/reset feeders
05/06/2001	0000 hrs	CO (1-hr)	431.2 ppmvd	Unit 1	feeders plugged	cleared feeders
05/06/2001	0712 (6-min);0718(6-min)	Opacity	14.3%;12.3%	Unit 1	134 field tripped	reset field
05/11/2001	1030 (6-min)	Opacity	74%;72%	Unit 1 & 2	4 fields tripped/bioler off line	reset field
05/13/2001	0042 (6-min)	Opacity	15.2%	Unit 1	134 field tripped	reset fields
05/20/2001	1600 hrs	CO (1-hr)	403.5 ppmvd	Unit 2	rotary air damper/feeder	secured air damper
05/23/2001	1600 hrs	CO (1-hr)	811.2 ppmvd	Unit 1	feeders plugged	cleared feeders
05/25/2001	1400(6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
05/29/2001	0200 hrs	CO (1-hr)	417.9 ppmvd	Unit 2	1F feeder not feeding/grates piled	cleared grates
05/30/2001	1300 hrs	CO (1-hr)	487.9 ppmvd	Unit 1	fuel feed to boiler lost	restored fuel to boiler
06/01/2001	1900 hrs	CO (1-hr)	638.9 ppmvd	Unit 1	feeders plugged	cleared feeders
06/08/2001	1136 - 1206 (6-min)	Opacity	11.4%;14.9%;16%;29.3%;11.2%;10.9%	Unit 1	low voltage on 4 fields	reduced load
06/08/2001	1100-1136 (6-min)	Opacity	14%; 19.5%; 17.5%; 22.8%; 18.9%; 35.1%; 23.4%	Unit2	low voltage on 4 fields	reduced load
06/09/2001	1036(6-min);1818-1830(6-min); 2312 (6-min)	Opacity	10.5%; 16.6%; 23%; 12.6%; 13.3%	Unit 1	low voltage on 4 fields	reduced load

*Information and date of report previously submitted from Quarterly Emission Reports - Year 2001 (4/27/2001;7/31/2001;10/29/2001;1/28/2002)

Attachment A - Annual Statement of Compliance 2001

North County Resource Recovery Facility

Title V Air Operations Permit: 0990234-001-AV Facility ID Number: 0990234

Compliance Statement B. Incidents of Deviation Associated with Malfunction which were reported to Department*

Date of Incident	Time Period	Parameter	Value	Unit No.	Comment	Action Taken
06/09/2001	0518 (6-min); 0930-0948 (6-min); 1348 (6-min); 1800 (6-min)	Opacity	10.9%; 11.7%; 14%; 14.7%; 13.7%; 10.9%;10.6%	Unit 2	low voltage on 4 fields	reduced load
06/10/2001	0200 (6-min)	Opacity	12.2%	Unit 1	low voltage on 4 fields	reduced load
06/10/2001	1400 hrs	CO (1-hr)	425.6 ppmvd	Unit 2	low undergrate air	increase undergrate air
06/10/2001	1442(6-min)	Opacity	11.3%	Unit 2	low voltage on 4 fields	reduced load
06/11/2001	0148(6-min)	Opacity	15.3%	Unit 2	low voltage on 4 fields	reduced load
06/13/2001	0600 hrs	CO (1-hr)	508.7 ppmvd	Unit 1	feeders plugged	cleared feeders
06/14/2001	1018(6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
06/28/2001	0606 (6-min)	Opacity	14.1%	Unit 1	slag breaking loose in furnace	reduced load
07/02/2001	1900 (6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
07/03/2001	1200 hrs	CO (1-hr)	410 ppmvd	Unit 2	obstruction in feeder	removed obstruction
07/09/2001	0900-1200 hrs	CO (1-hr)	1435.5 ppmvd; 678.9 ppmvd;1793.8 ppmvd;	Unit 1	conveyor plugged	unplugged conveyor
07/09/2001	0900 hrs	CO (1-hr)	577.1 ppmvd	Unit 2	conveyor plugged	unplugged converyor
07/09/2001	1400 hrs	CO (1-hr)	740 ppmvd	Unit 1	conveyor plugged	unplugged conveyor
07/09/2001	1700-1800 hrs	CO (1-hr)	1054.8 ppmvd; 941.2 ppmvd	Unit 2	conveyor plugged	unplugged conveyor
07/15/2001	1800 hrs	CO (1-hr)	406 ppmvd	Unit 1	conveyor plugged	unplugged conveyor
07/15/2001	1848-1900 (6-min)	Opacity	12.2%; 15.3%; 13.3%	Unit 1	feeders/furnace malfunction	unplugged feeders/stabilized combustion

*Information and date of report previously submitted from Quarterly Emission Reports - Year 2001 (4/27/2001;7/31/2001;10/29/2001;1/28/2002)

Attachment A - Annual Statement of Compliance 2001

North County Resource Recovery Facility

Title V Air Operations Permit: 0990234-001-AV Facility ID Number: 0990234

Compliance Statement B. Incidents of Deviation Associated with Malfunction which were reported to Department*

Date of Incident	Time Period	Parameter	Value	Unit No.	Comment	Action Taken
07/18/2001	1900 (6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
07/19/2001	1624 (6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
07/23/2001	1354(6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
07/23/2001	1624-1654(6-min)	CEMDAS	Opacity	Unit 1	software malfunction	reset software
07/24/2001	2000 hrs	CO (1-hr)	443.1 ppmvd	Unit 2	grates piled	cleared grates
07/26/2001	0800 (4hr block)	Temperature	302.5 Deg F	Unit 2	Bailey control malfunction	repaired Bailey control
07/26/2001	2300 hrs	CO (1-hr)	498 ppmvd	Unit 2	conveyor plugged	unplugged conveyor
08/02/2001	2300 hrs	CEMDAS	Outlet Temperature	Unit 2	thremocouple malfunction	repair connection
08/09/2001	1500 hrs	CO (1-hr)	432.7 ppmvd	Unit 1	grates piled	cleared grates
08/13/2001	0800 (4hr block)	Temperature	301.6 Deg F	Unit 2	cooling water line malfunction	repaired line
08/13/2001	1600 hrs	CO (1-hr)	425.5 ppmvd	Unit 1	obstruction in feeder	cleared feeders
08/17/2001	0800-0900 hrs	CO (1-hr)	444.8 ppmvd; 404.7 ppmvd	Unit 1	conveyor plugged	unplugged conveyor
08/22/2001	2100 (6-min)	CEMDAS	Opacity	Unit 1	software malfunction	reset software
08/25/2001	1800 hrs	CO (1-hr)	422.8 ppmvd	Unit 2	feeder problems	cleared feeders
08/29/2001	1636 (6-min)	Opacity	12.70%	Unit 2	fields 133 & 134 tripped	reset fields
09/10/2001	0600 hrs	CO (1-hr)	451.6 ppmvd	Unit 1	grates jammed	unjammed conveyors
09/13/2001	1900(6-min)	CEMDAS	Opacity	Unit2	software malfunction	reset software
09/15/2001	1254-1306(6-min)	CEMDAS	Opacity	Unit 1	software malfunction	reset software
09/17/2001	1200 hrs	CO (1-hr)	454.4 ppmvd	Unit 1	grate chain broke	repaired grate chain
09/17/2001	1600 hrs	CO (1-hr)	510.9 ppmvd	Unit 2	obstruction in feeder	removed obstruction
09/25/2001	0112-0118 (6-min)	Opacity	19.6%; 14.3%	Unit 1	field voltage drop	reduced load
09/25/2001	0400(6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
10/10/2001	1506(6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software

*Information and date of report previously submitted from Quarterly Emission Reports - Year 2001 (4/27/2001;7/31/2001;10/29/2001;1/28/2002)

Attachment A - Annual Statement of Compliance 2001

North County Resource Recovery Facility

Title V Air Operations Permit: 0990234-001-AV Facility ID Number: 0990234

Compliance Statement B. Incidents of Deviation Associated with Malfunction which were reported to Department*

Date of Incident	Time Period	Parameter	Value	Unit No.	Comment	Action Taken
10/16/2001	0124(6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
11/03/2001	1700 hrs	CO (1-hr)	566.6 ppmvd	Unit 2	Bailey control malfunction	Bioler shutdown; repaired Bailey system
11/03/2001	1800-1806 (6-min); 0812(6-min)	Opacity	17.9%; 41.2%;42.6%	Unit 2	Precipitator tripped	reset precipitator
11/09/2001	2254 (6-min)	Opacity	13.2%	Unit 2	low voltage on precipitator fields	rapped fields
11/10/2001	1400(6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
11/15/2001	1900 hrs	CO (1-hr)	483.6 ppmvd	Unit 2	sky vent opened	adjusted skyvent set point
11/21/2001	0954(6-min)	Opacity	18.1%	Unit 1	Lost 132 precipitator field	bioler shutdown;reset field
12/11/2001	1500 (6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software
12/12/2001	2106(6-min)	Opacity	10.9%	Unit 2	low voltage on precipitator fields	rapped fields
12/27/2001	0600 hrs	CO (1-hr)	401.7 ppmvd	Unit 2	west undergrate damper malfunction	repaired damper control
12/29/2001	2000(6-min)	CEMDAS	Opacity	Unit 1&2	software malfunction	reset software

*Information and date of report previously submitted from Quarterly Emission Reports - Year 2001 (4/27/2001;7/31/2001;10/29/2001;1/28/2002)

Attachment B
2001
Annual Statement of Compliance
for
North County Resource Recovery Facility
Title V Air Operating Permit: 0990234-001-AV
Facility ID No: 0990234

FDEP Form No. 62-213.900 (7)

C. This facility was in compliance with all terms and conditions of the Title V Air Operation Permit and, if applicable, the Acid Rain Part, EXCEPT those identified in the pages attached to this report. For each item of noncompliance, the following information is included:

I. 1 hour CO exceedence

1. Emission Unit Identification number: **002 (Municipal Solid Waste Boiler No. 2)**

2. Specific permit condition number: **A.19 & E.5**

3. Description of the requirement of the permit condition:

A.19 -The emission limit for carbon monoxide contained in the gases discharged to the atmosphere is 400 ppmv (1-hour block average), measured to the combustor outlet in conjunction with a measurement or calculation of oxygen concentration, corrected to 7 percent oxygen, dry basis. Calculated as an arithmetic average.

E.5 – Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction shall be prohibited.

4. Basis for the determination of noncompliance (for monitored parameters, indicate whether monitoring was continuous, ie., recorded at least every 15 minutes, or intermittent): **CEMDAS (continuous emission monitoring data acquisition system) reads CO values every minute and records a 1-hour block average.**

5. Beginning and ending dates of periods of noncompliance: **a 1-hour block average period (14:00 –15:00 hour) on June 10, 2001.**

6. Identification of the probable cause of noncompliance and description of corrective action or preventative measure implemented: **On June 10th, 2001, Boiler 2 was running at a reduced load to maintain opacity emissions. A few days prior to the CO incident, precipitator fields on Unit 1 and 2 decreased sharply causing opacity emissions to go above the 10% limit which began on Friday June 8th and lasted**

intermittently until Monday June 12th. In response to the high opacity emissions, Unit 2 was shutdown at which time the precipitator was inspected. A carbon-fiber material coated with ash was discovered adhering to the emitter wires and collector plates. Upon further investigation, it was determined that these fibers were also electrically conductive and did not readily burn. The Plant Operator elected to water wash the entire precipitator.

Boiler 2 was started on the morning of June 10th, and the precipitator field voltages showed a slow but steady increase throughout the day. During this time, the Plant Operator did not know if anymore of this carbon fiber material was present in the RDF. So, to prevent further opacity exceedances, the system was placed in manual mode, and the load was reduced by half, making the unit sensitive to downward load swings. At 1439 hrs, the Control Room Operator attempted to increase the undergrate air flow on Unit 2, but inadvertently keyed in a value that caused a decrease in the undergrate air flow. Within four (4) minutes, the Control Room Operator realized the problem and immediately corrected the situation. Because the boiler was operating at such a reduced load, the loss of undergrate air flow caused a spike in CO which exceed the one-hour limit of 400 ppmvd (recorded hourly average was 425.6 ppmvd). If this error had occurred when the boiler was operating under normal conditions (ie., full load), the CO exceedance may not have occurred. The incident was reviewed with the Control Room Operator and measures have also been taken to investigate the source of the carbon fiber material.

7. Dates of any reports previously submitted identifying this incident of noncompliance:

June 11, 2001 Notification FAX
June 13, 2001 Written notification letter
July 25, 2001 2nd Quarterly Emission Report

II. Opacity exceedence[1]

1. Emission Unit Identification number: **001 (Municipal Solid Waste Boiler No. 1)**
002 (Municipal Solid Waste Boiler No. 2)

2. Specific permit condition number: **A.8 & E.4**

3. Description of the requirement of the permit condition:

A.8 – The emission limit for opacity exhibited by the gases discharged to the atmosphere is 10% (6 minute average). CEM readings when the process is not operating shall be excluded from the averaging.

E. 4 – Excess emissions resulting from malfunction shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed three hours per occurrence unless specifically authorized by the Department for longer duration. Malfunction shall mean any sudden and unavoidable failure of pollution control equipment or process equipment to operate in a normal and usual manner.

4. Basis for the determination of noncompliance (for monitored parameters, indicate whether monitoring was continuous, ie., recorded at least every 15 minutes, or intermittent): **CEMDAS (continuous emission monitoring data acquisition system) records opacity values for a 6 minute average.**

5. Beginning and ending dates of periods of noncompliance:

Unit 001: October 6, 2000 - 16 periods of opacity recordings exceeded 6 minute average limit of 10% intermittently from 16:00 – 21:00 hours.

Unit 002: October 6, 2001 – 9 periods of opacity recordings exceeded the 6 minute average limit of 10% from 19:00 – 20:00 hrs.
October 7, 2001 – 15 periods of opacity recordings exceeded the 6 minute average limit of 10% intermittently from 0:00 – 10:00 hrs.

6. Identification of the probable cause of noncompliance and description of corrective action or preventative measure implemented: **Unexplained voltage drops in electrostatic precipitator fields for Unit 1 & 2. Corrective action attempts, which included reducing the load, rapping the fields, and changing from automatic to manual mode did not improve the situation. Unit 2 was taken offline and inspection of the precipitator revealed that a field shorted. Over time, the precipitator field power gradually increased for Unit 1.**

7. Dates of any reports previously submitted identifying this incident of noncompliance:

October 10, 2000 Written notification letter Unit 1 (follow-up to telephone notification).
October 10, 2000 Written notification letter Unit 2 (follow-up to telephone notification).
January 3, 2000 Written clarification letter
January 24, 2001 4th Quarterly Emissions Report

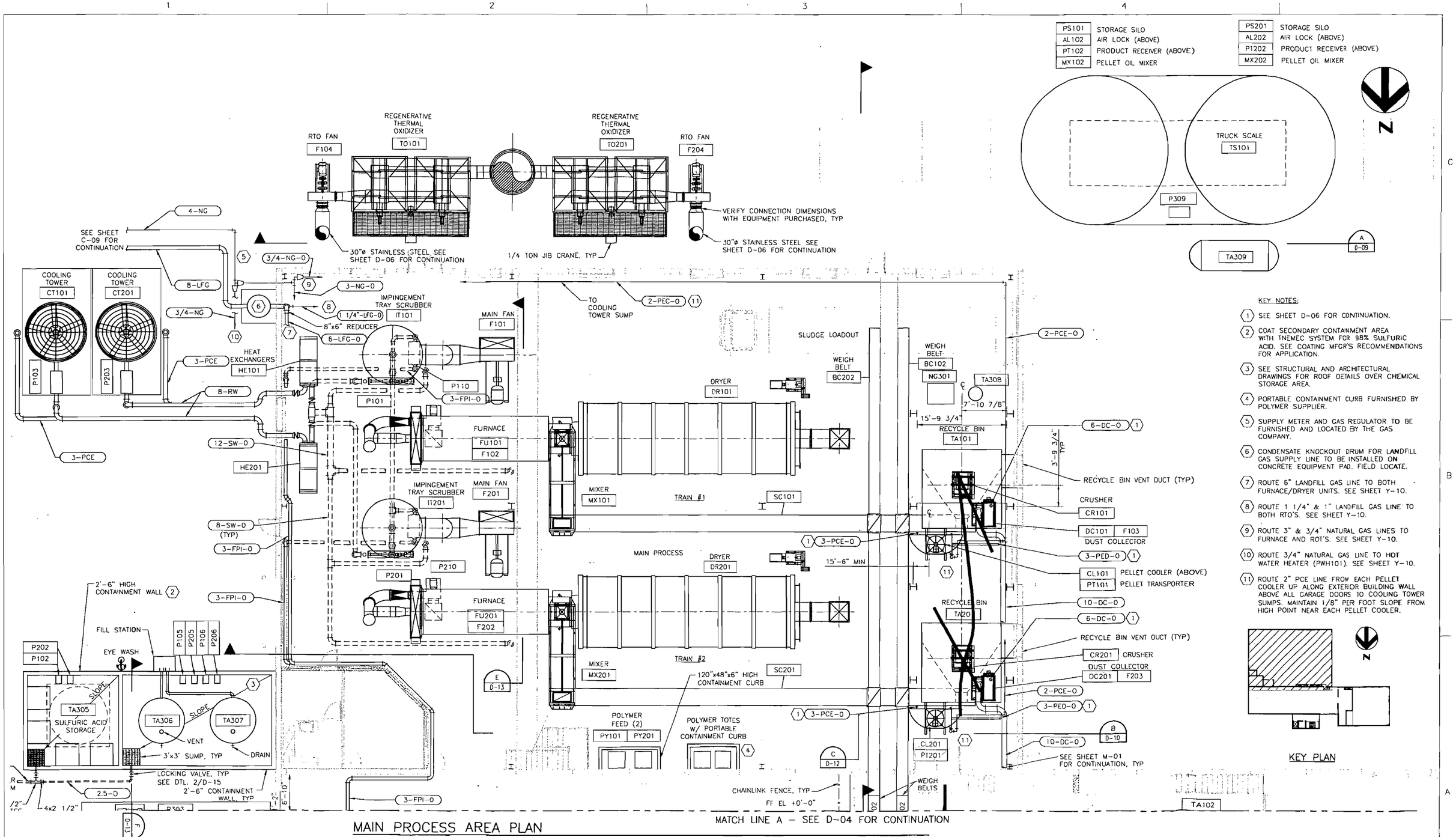
[1]This incident occurred in the year 2000 but was not reported in last year's annual statement of compliance because the matter was not finalized until March 15, 2001 through the short form consent agreement. The 2000 Annual Statement of Compliance for this facility had been submitted February 12, 2000.

Appendix I

Appendices H and I
Compliance Report, Plan and Certification

Appendices H and I have been combined. Please See Appendix H.

Appendix J



MAIN PROCESS AREA PLAN
1/8" = 1'-0"

KEY NOTES:

1. SEE SHEET D-06 FOR CONTINUATION.
2. COAT SECONDARY CONTAINMENT AREA WITH TNEMEC SYSTEM FOR 98% SULFURIC ACID. SEE COATING MFGR'S RECOMMENDATIONS FOR APPLICATION.
3. SEE STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR ROOF DETAILS OVER CHEMICAL STORAGE AREA.
4. PORTABLE CONTAINMENT CURB FURNISHED BY POLYMER SUPPLIER.
5. SUPPLY METER AND GAS REGULATOR TO BE FURNISHED AND LOCATED BY THE GAS COMPANY.
6. CONDENSATE KNOCKOUT DRUM FOR LANDFILL GAS SUPPLY LINE TO BE INSTALLED ON CONCRETE EQUIPMENT PAD. FIELD LOCATE.
7. ROUTE 6" LANDFILL GAS LINE TO BOTH FURNACE/DRYER UNITS. SEE SHEET Y-10.
8. ROUTE 1 1/4" & 1" LANDFILL GAS LINE TO BOTH RTO'S. SEE SHEET Y-10.
9. ROUTE 3" & 3/4" NATURAL GAS LINES TO FURNACE AND ROT'S. SEE SHEET Y-10.
10. ROUTE 3/4" NATURAL GAS LINE TO HOT WATER HEATER (PWH101). SEE SHEET Y-10.
11. ROUTE 2" PCE LINE FROM EACH PELLET COOLER UP ALONG EXTERIOR BUILDING WALL ABOVE ALL GARAGE DOORS TO COOLING TOWER SUMPS. MAINTAIN 1/8" PER FOOT SLOPE FROM HIGH POINT NEAR EACH PELLET COOLER.

KEY PLAN

HDR
HDR ENGINEERING INC.
6190 GOLDEN HILLS DRIVE
MINNEAPOLIS, MN 55416
TEL 763-591-5400

ISSUE	DATE	DESCRIPTION
	11/22/05	90% REVIEW
	9/28/05	60% REVIEW
	8/26/05	30% REVIEW

PROJECT MANAGER	E. DeLaFOREST	CHK BY:
ARCHITECTURAL	S. BIRCH	
STRUCTURAL	W. KIAHON	
CIVIL	R. TRAVIS	
PROCESS	E. DeLaFOREST	DH
MECHANICAL	B. SPOTT	
ELECTRICAL	L. SMITH	
PROJECT NUMBER	000000000024020	

PE NAME: Edward J. DeLaForest
PE # 62369
CA # 4213

BIOSOLIDS PROCESSING FACILITY

Solid Waste Authority of Palm Beach County

MAIN LEVEL PROCESS PLAN

0 1" 2"

FILENAME	00D-03
SCALE	1/8" = 1'-0"

SHEET **D-03**

C:\PWCMwork\tlemke\drns2228B\00D-03.dwg, 11/22/2005 8:11:08 AM, tlemke, 1:2

THE PALM BEACH POST

Published Daily and Sunday
West Palm Beach, Palm Beach County, Florida

PROOF OF PUBLICATION

STATE OF FLORIDA
COUNTY OF PALM BEACH

Before the undersigned authority personally appeared **Wendy Elliott,** who on oath says that she is **Classified Advertising Supervisor** of The Palm Beach Post, a daily and Sunday newspaper published at West Palm Beach in Palm Beach County, Florida; that the attached copy of advertising, being **Notice** in the matter of **DEP0990234-006-AC & PSD-FL-108F** in the --- Court, was published in said newspaper in the issues of **November 29, 2005.**

Affiant further says that the said The Post is a newspaper published at West Palm Beach, in said Palm Beach County, Florida, and that the said newspaper has heretofore been continuously published in said Palm Beach County, Florida, daily and Sunday and has been entered as second class mail matter at the post office in West Palm Beach, in said Palm Beach County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she/he has neither paid nor promised any person, firm or corporation any discount rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Wendy Elliott

Sworn to and subscribed before this 30th day of November, A.D. 2005

Karen M. McLinton

Personally known **XX** or Produced Identification _____

Type of Identification Produced _____

NOTARY PUBLIC STATE OF FLORIDA
Karen M. McLinton
Commission # DD359566
Expires: NOV. 15, 2008
Bonded Thru
Atlantic Bonding Co., Inc.

NO. 4675480
PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT
STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. 0990234-006-AC and PSD-FL-108F
Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
Biosolids Pelletization Facility
Palm Beach County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification to Solid Waste Authority of Palm Beach County, to modify its existing PSD construction permit for the North County Resource Recovery Facility located at 7501 North Jog Road, West Palm Beach, Palm Beach County. A Best Available Control Technology (BACT) determination was required for nitrogen oxides (NOx) and particulate matter (PM) emissions pursuant to Rule 62-212.400, F.A.C., and 40 CFR 52.21. The applicant's mailing address is: 7501 North Jog Road, West Palm Beach, Florida 33412-2414.

This permitting action is for the construction of a Biosolids Pelletization Facility (BPF) at the North County Resource Recovery Facility Site in Palm Beach County. The BPF will primarily combust landfill gas generated from the nearby landfill and use natural gas as a back up fuel in two 337.5 wet ton per day drum dryers to dry sewage sludge, and then screen the dried sludge into marketable fertilizer pellets.

The applicant proposes the use of dry low NOx burners and acid addition in the tray/condenser scrubber to control NOx emissions from each dryer's exhaust. The applicant proposes to use a tray/condenser scrubber and a venturi scrubber to control PM emissions from each dryer's exhaust. The BPF will also use a regenerative thermal oxidizer (RTO) on the dryer exhaust to control VOC emissions and odors. Fabric filters will be used on each material recycle bin exhaust and each pellet storage silo exhaust to control PM emissions.

According to the applicant, the combined maximum emissions from this project in tons per year are summarized below:

Pollutant
NOX
Maximum Potential Emissions
52.5
PSD Significant Emission Rate
40
Pollutant
PM/PM10
Maximum Potential Emissions
22.6/22.3
PSD Significant Emission Rate
25/15
Pollutant
SO2
Maximum Potential Emissions
39
PSD Significant Emission Rate
40
Pollutant
CO
Maximum Potential Emissions
33.7
PSD Significant Emission Rate
100
Pollutant
VOC
Maximum Potential Emissions
9.3
PSD Significant Emission Rate
40
Pollutant
Hg
Maximum Potential Emissions
8.08 E-03
PSD Significant Emission Rate
0.17

An air quality impact analysis was required for nitrogen oxides (NOx) and PM/PM10. According to the applicant, maximum predicted air quality impacts due to emissions from the proposed project for nitrogen oxides (NOx) and PM/PM10 are less than the significant impact levels applicable to PSD Class II Areas (i.e., areas outside of the Everglades National Park). Therefore, an increment consumption analysis was not required. The project has no significant impact on the PSD Class I Everglades National Park area. Based on the required analyses, the Department has reasonable assurance that the proposed project will not cause or contribute to a violation of any state or federal ambient air quality standard.

The Department will issue the FINAL Permit, in accordance with the conditions of the DRAFT Permit, unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed permit issuance action for a period of 30 (thirty) days from the date of publication of this Public Notice of Intent to Issue PSD Permit. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit modification and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

This PSD permitting action is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501-519, F.S.). If a petition for an administrative hearing on the Department's Intent to Issue is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3).

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same inform- ation as set forth above, as required by Rule 28-106. 301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

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

Dept. of Environmental Protection
Bureau of Air Regulation
Suite 4,
111 S. Magnolia Drive
Tallahassee, Florida 32301
Telephone: 850/488-0114
Fax: 850/922-6979

Division of Environmental Science and Engineering
Palm Beach County Health Department
901 Evernia Street
West Palm Beach, Florida 33401
Telephone: 561/355-3070
Fax: 561/355-2442

Dept. of Environmental Protection
Southeast District
400 North Congress Avenue
West Palm Beach, Florida 33401
Telephone: 561/681-6600
Fax: 561/681-6755

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact Scott M. Sheplak, P.E. at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/921-9532, for additional information. The draft permit, technical evaluation and preliminary determination can be accessed at the following web site www.dep.state.fl.us/air/permitting/construct/htm.

PUB: The Palm Beach Post
November 29, 2005

SWA
SOLID WASTE AUTHORITY
YOUR PARTNER FOR
SOLID WASTE SOLUTIONS

RECEIVED
MAY 03 2004
BUREAU OF AIR REGULATION

April 26, 2004

Ms. Teresa Heron
Engineer, Permitting South Section
Bureau of Air Regulation
Division of Air Resource Management
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 5500
Tallahassee, Florida 32399-2400

RE: Solid Waste Authority of Palm Beach County (SWA)
North County Resource Recovery Facility, FID No. 0990234
Lime and Biosolids Facilities Air Construction (PSD) and Title V Permit Modification Applications
PSD No. / PPSA No.: PSD-FL-108(F) / PA 84-20
Title V Permit No. 0990234-003-AV

Dear Ms. Heron:

This letter is to provide written confirmation of telephone conversations and email correspondence that you had in March with Cynthia Hibbard of CDM. SWA requests that FDEP waive the required processing time for PSD permit modification application and to proceed again with the Prevention of Significant Deterioration (PSD) permit when we have resolved the issues listed below. SWA would also like to request that FDEP suspend processing of the Title V application. SWA will submit a revised and updated Title V application either as part of the Title V permit renewal or after start-up of the Lime and/or Biosolids Facilities. We understand that this will be treated in FDEP's system as a withdrawal of the Title V permit application.

For the PSD permit modification application SWA plans to revise at least one proposed metals emissions rate for the Biosolids Pelletization Facility based on better sludge metals concentration data than was available in the permit application; and SWA is considering revising the proposed particulate matter (PM) emissions rate for the Lime Recalcination Facility.

This second issue came up because of a change between the draft and final NESHAP for Lime Manufacturing Plants, 40 CFR 63 Subpart AAAAA. The final Rule, published January 5, 2004 (after the October submittal of the PSD permit modification application), contains new language in Section 63.7081(a) that exempts lime manufacturing facilities that only process sludge containing calcium carbonate from water softening processes. Since the SWA's Lime Recalcination Facility would only receive calcium carbonate lime sludge from water treatment plants, this change in language excludes SWA's Lime Recalcination Facility from the applicability of the NESHAP.

The Lime Recalcination Facility PM emission rate in the PSD application was proposed to meet the draft NESHAP limit of 0.1 lb PM / ton of stone feed and is much more stringent than the still applicable limit of 0.6 lb PM / ton of stone feed in the NSPS (40 CFR 60 Subpart HH). SWA is evaluating, but has not yet decided, whether or not they would like to request that the Lime Recalcination Facility PM emission rate be changed to be closer to the NSPS limit.

We very much appreciate your working with us through the air permit process and expect to send our permit application revisions to you shortly.

Sincerely,

John D. Booth, P.E., DEE
Executive Director
Solid Waste Authority of Palm Beach County

JDB/kal
Cc: Raymond H. Schauer, SWA
Marc Bruner, SWA
Patrick Carroll, SWA
Alex Makled, CDM
Cynthia Hibbard, CDM
Jill Grimaldi, CDM