SWA
SOLID WASTE AUTHORITY
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SOLID WASTE SOLUTIONS

February 5, 2010

Mike Halpin, P.E.
Program Administrator, Siting Office
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 48
Tallahassee, FL 32399-2400

Re: Petition to Modify the Power Plant Site Certification
Conditions of Certification PA 84-20
Palm Beach County Solid Waste Authority
Resource Recovery Facility

Dear Mr. Halpin,

In 1986 the Solid Waste Authority of Palm Beach County ("the Authority") was authorized to construct and operate a resource recovery facility, landfill, and associated facilities, subject to Conditions of Certification (PA 84-20) that were established pursuant to the Florida Electrical Power Plant Siting Act.

The Authority now needs to expand the Class I and Class III Landfill into the area where the Authority's existing ferrous processing facility is located. The Authority intends to raze this facility and replace it with a new ferrous processing facility ("the New FPF"). The New FPF will be located in a different portion of the Authority's certified site.

The Authority respectfully submits three (3) hard copies and one (1) electronic copy of a Petition for a modification to the Power Plant Site Act Conditions of Certification PA 84-20 (Petition) including the associated application fee of $10,000, and hereby requests authorization to construct and operate the New FPF on the Authority's certified site.

Additional information regarding the site plan and operations of the New FPF are in the enclosed Petition.

Please note that we have also provided copies of the Petition to the following for their information:

- The City of West Palm Beach Planning and Zoning Department;
- The Palm Beach County Health Department;
- The Florida Department of Environmental Protection Southeast District (WB) Office; and
- The South Florida Water Management District.

Additionally, we have provided, via certified mail, copies of the Petition to those listed in the attached Certificate of Service.

The Authority and our consultant, Malcolm Pirnie, Inc., welcome the opportunity to work with the Florida Department of Environmental Protection's Siting Office and other agencies involved in reviewing this Petition for modification to the Conditions of Certification PA 84-20.

We anticipate that the information contained herein will be sufficient to thoroughly evaluate this request. However, should you find that additional clarification is required, please do not hesitate to contact us at your convenience.

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Very truly yours,

Mark Hammond
Solid Waste Authority Executive Director

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CERTIFICATE OF SERVICE

A copy of the foregoing was sent via certified U.S. Mail to the following this first Day of February, 2010.

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Solid Waste Authority of Palm Beach County

7501 North Jog Road • West Palm Beach, FL 33412

Petition for Modification of Conditions of Certification (PA 84-20)

February 2010

Report Prepared By:

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3582061

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1. Executive Summary

In 1986 the Solid Waste Authority of Palm Beach County ("the Authority") received authorization to construct and operate a Renewable Energy Facility, landfill, and associated facilities, subject to Conditions of Certification (PA 84-20) that were established pursuant to the Florida Electrical Power Plant Siting Act ("PPSA"). One of these facilities is the Authority's existing Ferrous Processing Facility ("Existing Facility"), which currently is located adjacent to the Authority's landfill. In accordance with the Authority's Integrated Solid Waste Management Plan (Appendix A, page 51), the Existing Facility needs to be relocated to allow for the expansion of the landfill. The Authority intends to raze the Existing Facility and replace it with a new Ferrous Processing Facility ("New FPF"). The New FPF will be located in a different area within the Authority's certified site.

The Authority's proposed project is described in the following sections of this document. This document constitutes the Authority's petition ("Petition") for a modification of the Conditions of Certification ("Conditions"), in accordance with Section 403.516(1)(c), Florida Statutes ("F.S."), and Rule 62-17.211, Florida Administrative Code ("F.A.C."), to accommodate this project. In this Petition, the Authority is requesting authorization under the PPSA to construct and operate the New FPF on the Authority's certified site.

As demonstrated within this Petition, the construction and operation of the Authority's New FPF will comply with all of the nonprocedural requirements of the agencies involved in the PPSA review process. Nonetheless, a modification to the text of the Conditions may be needed to address the new stormwater management system that will be constructed with the New FPF. The Authority is not aware of any other modifications that may be necessary for the construction of the New FPF. In any event, the Authority respectfully requests the Florida Department of Environmental Protection (FDEP) to approve any modification(s) that the FDEP determines is needed to authorize the construction and operation of the New FPF.

The Authority has analyzed the key issues involved in the PPSA review of the Authority's plans for the New FPF. Table 1-1 (below) summarizes the Authority's analysis. Table 1-1 also indicates whether these key issues will require a modification of the Conditions for the Authority's site.

Table 1-1.
Summary of PPSA Analysis for the New FPF

Key Issues	Summary of Analysis	Modification Required
Stormwater Management System	A new stormwater management system will be constructed. Environmental Resources Permit (ERP) information is required and included within this Petition.	Modification may be required.
Dredge and Fill Activities	None anticipated.	No modification required.
Dewatering Activities	Dewatering activities, if required will be conducted by the selected construction engineer.	No modification required at this time.
Recovered Materials and Solid Waste	A Recovered Materials Certification application is required to be submitted upon substantial completion of the New FPF.	No modification required.
Wastewater Management	Domestic wastewater from the New FPF will be handled in the same manner as the wastewater from the Existing Facility.	No modification required.
Listed or Endangered Species	A gopher tortoise burrow was noted at the Project Site and appropriate permits will be obtained prior to construction if the ultimate site layout is within 25-feet of the burrow.	No modification required.
Sound Level Impact	A sound impact analysis showed the New FPF will not increase sound levels at the nearest human and ecological receptor locations.	No modification required.
Project Site Habitat	Wetlands will not be impacted as part of the construction of the New FPF. Construction will maintain a minimum 25-foot setback from the wetlands.	No modification required.
NPDES Permits	NPDES permit has been obtained by the Authority and includes activites at the New FPF.	No modification required.
Potable Water Supply	Potable water will be provided by the City's potable water pipeline in the same manner as the water supply for the Existing Facility.	No modification required.

Key Issues	Summary of Analysis	Modification Required
Title V Air Operating Permit	The operations at the New FPF will be consistent with and will replace the operations at the Existing Facility. The New FPF shredder and diesil emergency generator are currently considered to be an insignificant source of air emissions. However, the FDEP is currently reviewing the applicability of the categorical expemption statute, 62-210.300(3)(a)35, F.A.C. Depending on the outcome of the FDEP review, a Title V Air Operation Permit may be required for the emergency generator.	No modification required at this time.
100-Year Flood Plain	The Project Site does not lie in the 100-year flood plain, as determined by FEMA.	No modification required.
Traffic	The Existing Facility (buildings, equipment) are located on the Authority's certified site. The New FPF will be constructed at a new location on the certified site and the Existing Facility will be razed. Since the New FPF will replace the Existing Facility, the New FPF will not generate new traffic to or from the certified site.	No modification required.
Comprehensive Land Use Plan	The comprehensive land use plan for the City of West Palm Beach designates the Project Site as Special Impact Zone/Community Service (SIZ/CS). The New FPF, like the Existing Facility, is consistent and in compliance with the City's comprehensive plan.	No modification required.
Zoning	The Authority's plan to use the Project Site for the New FPF is consistent and in compliance with the Community Service designation in the City's comprehensive plan and zoning ordinance.	No modification required.

2. The Authority and Its Existing Facilities

2.1. The Solid Waste Authority of Palm Beach County

The Solid Waste Authority of Palm Beach County is a dependent special taxing district that was established for the purpose of developing and implementing an environmentally-sound, cost effective, integrated solid waste management system for Palm Beach County, Florida (County). The Authority follows the waste management hierarchy of source reduction, recycling, composting, combustion, and landfilling. The Authority provides solid waste services and programs to the residents and businesses of the incorporated and unincorporated areas of the County.

2.2. The Authority's Existing Facilities

The Authority's solid waste management system includes a Renewable Energy Facility (i.e., a waste-to-energy facility), a Class I Landfill, a Class III Landfill, a Ferrous Processing Facility, a Composting Facility, a Vegetation Processing Facility, a Biosolids Pelletizer Facility, a Commercial and Residential Recovered Materials Processing Facility, a Household Hazardous Waste Collection Facility, and five Transfer Stations.

2.3. The Authority's Certified Site

All of the Authority's processing and disposal facilities are located on a large site (approximately 1,390-acres) that was certified pursuant to the PPSA. The certified site previously was known as the Site 7 Campus and now is known as the Renewable Energy Park ("Park"). The approximate location of the Park is depicted on the regional map included as Figure 2-1. The boundaries of the Park are depicted on the aerial photograph included as Figure 2-2.

2.4. The Conditions of Certification

The activities conducted in the Park are governed by the Conditions of Certification PA 84-20 of which the most recent version is contained in Appendix B of this Petition.

3. Project Description

3.1. Project Description

The Authority currently has an existing Ferrous Processing Facility ("Existing Facility") on the Authority's Park. The location of the Existing Facility is shown in Figure 3-1. In accordance with the Authority's Integrated Solid Waste Management Plan (Appendix A, page 51), the Existing Facility must be relocated as it lies in the footprint of the expansion of the Class I Landfill as it was originally permitted and the Existing Facility was to be relocated to provide land for the expansion. Accordingly, the Authority intends to construct and operate a new Ferrous Processing Facility ("New FPF") at a different location within the certified Park. After the New FPF is constructed and operational, the Authority will raze the Existing Facility to allow for the expansion of the landfills.

3.2. The New Ferrous Processing Facility

The proposed location for the New FPF is shown in Figure 3-2. The proposed location ("Project Site") consists of approximately 9-acres of an approximately 15-acre parcel that is located southeast of the intersection of 45th Street and Jog Road in Palm Beach County, Florida. The Project Site, as well as the entire 15-acre parcel, is contained within the Authority's certified Park.

The ferrous materials that the New FPF will receive and process are "Recovered Materials," which are defined in Section 403.703(24), F.S., and Rule 62-701.200, F.A.C., as metal, paper, glass, plastic, textile, and rubber materials that have known recycling potential and have been diverted from the solid waste stream for sale or reuse. Section 403.703(24), F.S., provides that Recovered Materials are not solid waste. Section 403.7045(1)(e), F.S., provides that Recovered Materials shall not be regulated as solid waste, subject to the conditions contained therein.

The Authority receives ferrous materials at the Renewable Energy Facility, Class III Landfill, and the Commercial and Residential Recovered Materials Processing Facility. The ferrous materials are removed (recovered) from the solid waste and then taken from these facilities to the Existing Facility via transfer trailer for processing (e.g., size reduction and bailing). The recovered ferrous materials are transported from the Existing FPF for sale and reuse. These same steps will be taken after the New FPF is constructed and operational, except that the ferrous recovered materials will be transported from the Authority's facilities to the New FPF for processing, rather than the Existing Facility.

The New FPF will include: a new Heavy Duty Hammer Mill Shredder, a one-story administration building; a covered storage area for incoming ferrous materials; a one-story maintenance shop with a covered maintenance area; on-site roadways; and a parking lot for employees and visitors. The site layout will be designed to accommodate a future scale house with one weigh station and a radiation detection device.

Construction of the New FPF will include the following infrastructure:

Site access, easements, and rights of way;

Stormwater management;

Potable water service;

Domestic sewer; and

Electrical utilities.

The footprint of the New FPF will be approximately 140,000 square feet (SF). The proposed site plan for the New FPF is shown in Figure 3-3.

The Existing Facility uses a grinder to reduce the size of the recovered ferrous material. The New FPF will use a shredder, instead of a grinder, for size reduction. The new shredder will operate at a slower speed (i.e., fewer revolutions per minute), and it will be quieter, than the existing grinder. The shredder also will have the capability to process more ferrous material per hour (40 tons) than the grinder (17 tons), thus enabling the Authority to process the ferrous material in less time.

3.3. The Project Site

The Project Site consists of a recently filled-in borrow lake, which was filled by the Authority for the purpose of creating land to accommodate future facilities, as well as the relocation of current facilities that need to be moved due to the expansion of the Class I and Class III Landfill. The Project Site is well suited for its proposed use and is large enough (approximately 9-acres) to readily accommodate the New FPF, including the on-site access roads, parking, stormwater management systems, and other ancillary facilities. Access to the Project Site is provided by 45th Street and Jog Road; both are two-lane roads, which intersect adjacent to the Project Site's northern border, as shown on Figure 3-4. The Project Site is buffered by an existing borrow lake to the west, the existing Biosolids Pelletizer Facility to the east, an FPL Transmission Easement and a conservation area to the south, and the Authority's lands to the north. The Authority owns the lands and facilities that are adjacent to the eastern, western, and northern boundaries of the Project Site.

3.3.1. Existing Land Uses on the Project Site

As noted above, the Project Site lies within the certified site that comprises the Authority's Park. There are no buildings or other structures on the Project Site at this time.

3.3.2. Habitat on the Project Site

Because the Project Site has been recently disturbed due to dredge and fill activities, it is mainly devoid of vegetation, with the exception of paspalum grasses (*Bahia spp.)*. However, there is a remnant wetland and upland area on the northwestern perimeter of the Site, which is dominated by slash pine, cypress, and saw palmetto at the margins. A tree survey was conducted on the Project Site in accordance with the City of West Palm Beach's (City) Land Development Regulations and is provided in Appendix C.

This remnant wetlands consists of a 0.98 acre wetland forested mixed habitat and is depicted in Figure 3-5. The New FPF will not impact any wetlands, as illustrated in Figure 3-5.

3.3.3. 100-Year Flood Plain

The Project Site does not lie within the 100-year flood zone, as determined by the Federal Emergency Management Agency (FEMA). The Federal Insurance Rate Map prepared by FEMA is attached hereto as Figure 3-6. The FEMA map shows that the Project Site lies within FEMA "X500", which typically is comprised of areas that are between the limits of the 100-year flood and the 500-year flood.

3.3.4. Traffic

The Existing Facility is located in the Authority's Park, in an area east of Jog Road. Jog Road can be accessed via State Road 710 (Bee Line Highway) or 45th Street. The New FPF will also be constructed within the Authority's Park, adjacent to Jog Road and 45th Street. After the New FPF is constructed and operational, the Existing Facility will be razed. Since the New FPF will replace the Existing Facility, the New FPF is not expected to generate additional traffic to or from the Authority's Park.

The primary entrance to the Project Site is the existing entrance to the Biosolids Pelletizer Facility, which is approximately 1,000-feet east of the intersection of 45th Street and Jog Road and approximately one (1) mile south of the Existing Facility. After the New FPF is constructed, the Biosolids Pelletizer Facility and the New FPF will also use a secondary/emergency entrance located at the intersection of Jog Road and 45th Street.

Based upon traffic volumes at the Existing FPF between June 1, 2008 and May 31, 2009, the average daily truck volume was approximately 14 vehicles per day and the average daily Personally Owned Vehicle (POV) traffic was approximately 11 vehicles per day. Traffic volumes for truck and POV's were provided by scale information from the Authority and information provided by the Existing FPF Operator, respectively. These

volumes represent the Existing Facility-related traffic volumes within the Park. The New FPF related traffic volumes for truck traffic are not expected to increase after the New FPF is built. However, the POV traffic may increase slightly to 13 POVs per day if the New FPF is operated on a single shift basis. This increase (2 POV per day) is not expected to significantly alter the traffic flow within the Park. If two shifts are utilized by the Operator, there will be no net increase in the number of trips for POV's.

The New FPF has been designed to ensure there will be no disruptions to traffic on 45th Street. The New FPF will have on-site roadways, staging, and parking areas that are designed with sufficient capacity to prevent vehicle queuing on 45th Street and Jog Road. Although there may be some minor changes in the local traffic pattern within the Authority's Park, the traffic volumes are not significant, given the traffic conditions that currently exist on 45th Street between Jog Road and Haverhill Road and Jog Road between 45th Street and the Bee Line Highway.

A Traffic Concurrency Letter from the Palm Beach County Traffic Division is provided as Appendix D. This letter confirms that the "Traffic Division has determined that the proposed relocation project meets the Traffic Performance Standards of Palm Beach County."

3.3.5. The Comprehensive Land Use Plan

On October 1, 1984, the Board of County Commissioners granted the Authority's request for a special exception to the agricultural residential ("AR") zoning for the Park. The special exception allowed the Authority to develop the Park with a Renewable Energy Facility, landfill, and related facilities. After the rezoning, the Park was annexed into the City of West Palm Beach ("City"). On May 30, 1989, the City approved a Class A Special Use Permit to allow a Heavy Utility Use and the construction of a Central Resource Recovery and Landfill Facility within the Park.

The City's Comprehensive Land Use Plan contains a Future Land Use Map ("FLUM"), which is provided in Figure 3-7. The Project Site has a Future Land Use designation of Special Impact Zone/Community Service ("SIZ/CS"). The SIZ designation is given to certain lands that are used for community services. The development of these areas requires a Level II Formal Site Plan Review by the City's Plans and Plats Review Committee. In this case, the review process will be completed by the Authority's construction engineer, after the engineer is selected.

Since the New FPF will simply continue the operations that currently are performed at the Existing Facility, the operation of the New FPF will be consistent with the designation of the Project Site for SIZ/CS.

3.3.6. Zoning

The Project Site is located in the Community Service (CS) Zoning District. A Class A Special Use Permit approval to allow a Heavy Utility Use and the construction of a Central Resource Recovery and Landfill Facility on the Park. The zoning designation for the Project Site is illustrated by the City's Official Zoning Map, provided in Figure 3-8. Under the City's Land Development Code, the "Utility Facility, Heavy – Public and Private" use classification allows "Solid Waste Facilities."

In the City's Land Development Code (Appendix A, Item 168), Solid Waste Facilities are "facilities for the collection and disposal of refuse are allowed as listed in the U.S. Department of Labor Standard Industrial Classification (SIC) Code group 4953". However, according to the U.S. Census Bureau, the North American Industry Classification System (NAICS) has replaced the U.S. SIC system. The 2007 NAICS code for Solid Waste Collection Services (562111) states that this U.S. industry comprises:

> *'establishments primarily engaged in one or more of the following: (1) collecting and/or hauling non-hazardous solid waste (i.e. garbage) within a local area; (2) operating non-hazardous solid waste transfer stations; and (3) collecting and/or hauling mixed recyclable materials within a local area.'*

The NAICS Solid Waste Collection Services code cross-references and includes "Materials Recovery Facilities" (562920), which are defined as establishments primarily engaged in:

> *'Operating facilities for separating and sorting recyclable materials from nonhazardous waste streets (i.e. garbage) and/or for sorting commingled recyclable materials, such as paper, plastics, and metal cans, into distinct categories'*

The Existing FPF processes ferrous materials, such as (a) metal cans that are recovered from the Renewable Energy Facility and (b) large household appliances that are recovered from the Central Landfill. These Recovered Materials are packaged (e.g., bailed) and hauled off-site to be recycled. The New FPF will operate in this same manner.

The New FPF will be a "Materials Recovery Facility," as defined by the NAICS. Thus it will constitute a Solid Waste Facility, which is an approved use under the City's Land Development Code and the provisions for Heavy Utility Use. Therefore, the proposed relocation and continued operation of the FPF is consisted with the City's Zoning Code, zoning designations, and Special Use Permit approval. As a practical matter, the New FPF will simply continue the activities that currently occur at the Existing Facility and were approved by the City.

4. Modification of the PPSA Conditions of Certification for the New FPF

4.1. Modification of the PPSA Conditions of Certification for the New FPF

As previously noted, the activities on the Authority's Park are governed by the Conditions of Certification (PA 84-20) ("Conditions") that were issued pursuant to the PPSA in 1986. The Authority is now filing this Petition for a PPSA modification because the Authority wishes to relocate the Existing Facility, consistent with the Authority's longstanding plan, and thus make room for the expansion of the Authority's Class I and Class III Landfill.

It appears that a modification to the text of the Conditions may be required to address the new stormwater management system that will be constructed and operated for the New FPF. The Authority is not aware of any other modifications to the text of the Conditions that are needed for the construction of the New FPF. However, to ensure that the Authority is in compliance with the PPSA, the Authority is requesting approval of any modification of the Conditions necessary to authorize the construction and operation of the New FPF, as described in this Petition, including any modification required to address the new stormwater management system.

This section of this Petition discusses various aspects and impacts of the New FPF. It also demonstrates that the New FPF will comply with applicable environmental laws and regulations.

4.2. Environmental Resource Permit

4.2.1. Stormwater Management System

The New FPF will involve the construction and operation of a new stormwater management system designed in accordance with FDEP regulations and South Florida Water Management District's ("SFWMD") Basis of Review ("BOR") criteria. The new stormwater management system will consist of a combination of conveyance swales and dry retention areas on the west side of the New FPF and along the proposed on-site roadway. The dry retention areas will be designed to retain and treat runoff produced by the 25-year, 72-hour storm from the entire Project Site. Stormwater volume resulting from a storm event greater than a 25-year, 72-hour storm will be discharged to the Southwest Borrow Lake via an overflow weir.

It appears that the text of the Conditions may need to be modified to address the stormwater system for the New FPF. It is anticipated that the Siting Office will include the new ERP requirements (if any) in the Conditions, and a separate ERP will not be issued. Accordingly, the Authority has included the technical information necessary (Sections A, C and E of the ERP application) for review under the ERP program in Appendix E of this Petition. The ERP information demonstrates that the proposed stormwater system will comply with applicable agency standards.

4.2.2. Dredge and Fill Activities

The construction and operation of the New FPF will not involve any dredging or filling activities in any wetlands, waters of the State, or waters of the United States. Consequently, the construction and operation of the New FPF does not require the submittal of the dredge and fill portion of the ERP application. Since no dredge and fill activities are planned, no modification to the text of the Conditions is necessary to address these activities.

4.3. Gopher Tortoise Relocation

During a site visit conducted in December 2008 and May 2009, one Gopher Tortoise (Gopherus polyphemus) burrow was observed near the wetland habitat along the northwestern perimeter of the Project Site. The Gopher Tortoise is listed as Threatened by the Florida Fish and Wildlife Conservation Commission ("FWC") and is protected by Chapter 68A - 27.005, F.A.C.

Gopher Tortoise burrows require a 25-foot minimum setback distance from construction activities. If the burrow is located within this minimum setback requirement, the Gopher Tortoise(s) will have to be physically removed and relocated on-site. In the event relocation is necessitated, an On-Site Gopher Tortoise Relocation Permit will be needed. Relocations are to be conducted no more than 45-days prior to construction commencement. Once the construction plan is finalized, the Authority will obtain the proper permit, if necessary. It is not anticipated that the text of the Conditions will need to be modified to address the potential Gopher Tortoise relocation.

4.4. Sound Impacts

A sound impact analysis was conducted to characterize the sound levels from the Existing Facility and determine whether the New FPF will result in increased sound levels at human and ecological receptor locations. Receptors were identified as the nearest residential community on Parke Avenue and a bird rookery northwest of the Project Site on the Park property.

4.4.1. Sound Criteria

4.4.1.1. Human Receptors

The City of West Palm Beach ("City") has promulgated a noise regulation that appilies to sound originating within the jurisdictional limits of the City. The Existing Facility and the New FPF are within the jurisdictional limits of the City; however, the City regulation provides an exemption from the requirements of the regulation. Specifically, the exemption appilies to activities on or in publicly owned properties and facilities where such activities have been authorized by the public authority owning the properties or facilities. A copy of the City's noise regulation is contained in Appendix G of this Petition.

Palm Beach County has a noise regulation in the County's Unified Land Development Code that appilies to all land in the unincorporated area of Palm Beach County. However, the County regulation does not apply to the Existing Facility or the New FPF because these facilities are not located within the unincorporated are of the County. A copy of the County's noise regulation is also contained in Appendix F of this Petition.

Although there are no sound regulations that apply to the New FPF, the Authority evaluated the potential sounds associated with the New FPF to determine whether there will be any increases in sound levels in the nearest residential community. The Authority's analysis and findings are described in Section 4.4.2 below.

4.4.1.2. Ecological Receptors

As noted above, the Authority's Renewable Energy Park contains a Renewable Energy Facility, two landfills, the Existing Facility, and other solid waste management facilities. Notwithstanding these facilities and the associated truck traffic and human activities, the Park also contains a bird rookery. The birds in the rookery were identified as potential ecological receptors and they were considered when the Authority evaluated the potential sounds from the New FPF.

According to the United States Fish and Wildlife Service ("USFWS") and the Florida Fish and Wildlife Conservation Commission ("FWC"), there are no noise regulations that apply directly to the birds in the rookery; however, any bird that is listed as a threatened or endangered species under the federal Endangered Species Act (Act) is protected against a "take" and "harassment". The definition of "take" in the Act includes "harass". The Act's implementing regulations define harass as "… an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering" [50 CFR §17.3].

For the purposes of the Authority's sound study, it was assumed that the current operations at the Existing Facility are not disruptive to the birds in the rookery and thus those existing operations do not constitute a take or harassment, as defined by the Act. This assumption appears to be reasonable, based on the results of the Authority's long-term bird monitoring program, which began in 1987 and has continued through to the present day. As a practical matter, it seems reasonable to assume that the birds would have left the rookery if the existing sound levels were unacceptable.

4.4.2. Sound Level Measurement, Analysis, and Findings

Sound levels at the Existing Facility were measured during normal operations in July 2009 using Larson Davis Model 831 Class 1 Integrating Sound Level Meters/Analyzers. The instrumentation operating procedure met the "Type 1-Precision" requirements set forth in American National Standards Institute standard for acoustical measuring devices.

The sound levels at the New FPF are expected to be equal to or less than the sound levels produced at the Existing Facility, primarily because the shredder used at the New FPF is expected to be quieter than the grinder used at the Existing Facility. The new shredder will operate at a lower speed (i.e., fewer revolutions per minute) than the grinder at the Existing Facility. The new shredder will rely on torque to tear the ferrous material and push it through a grate. By comparison, the grinder repeatedly strikes the ferrous material. As a result of these operational differences, the new shredder is expected to produce less sound than the existing grinder. This conclusion is supported comparing the sound levels measured at the Existing Facility to the results of a sound study conducted with a shredder that was similar to the new shredder that will be used at the New FPF. In addition, this conclusion is supported by the qualitative observations that were made when a shredder was tested at the Existing Facility. During the test, observers concluded that the sound levels produced by the shredder were noticeably lower than the sound levels produced by the existing grinder.

Following the sound level measurement at the Existing Facility, a conventionally accepted sound wave divergence equation was used to estimate the sound pressure level at receptor locations, based on the measured sound levels and intervening attenuation factors (e.g., ground surface, trees, and atmospheric conditions). Two types of sound were evaluated at the human and ecological receptor locations for the Existing Facility and New FPF: (1) continuous noise and (2) infrequent short duration impulsive noise.

The analysis demonstrated that the New FPF will not cause any perceptible change in the sound levels experienced by human receptors on Parke Avenue, where the nearest residential community is located. The analysis also demonstrated the New FPF will not cause any meaningful change in the sound levels experienced by the birds in the rookery. The sound levels within the rookery will decrease by a barely perceptible 3 to 5 dBA in a portion of the rookery and experience no perceptible change in the remaining area of the

rookery. Given the results of this analysis, it is not anticipated that the text of the Conditions will need to be modified to address potential noise impacts.

4.5. Recovered Materials and Solid Waste

Pursuant to Rule 62-722.400(1), F.A.C., any person in the State of Florida that handles, purchases, receives, recovers, sells or is the end user of Recovered Materials must submit an Application for Recovered Materials Certification by April 1st of each year. The Existing Facility is currently certified in accordance with this rule. When the New FPF is substantially complete, the Authority will submit an Application for Recovered Materials Certification to the FDEP. The Application for Recovered Materials Certification is not included as part of this Petition. Instead, the application will be submitted to the Waste Reduction Section of the FDEP following substantial completion of the New FPF, as required.

4.6. Wastewater Management

The Authority periodically will use wash water at the New FPF. The wash water will be conveyed through floor drains, trench drains, standpipe and funnel drains. These drains will also collect spills (if any) and indirect wastes, such as leaks from plumbing, HVAC and process equipment. The New FPF will also include a washbay area for washing trucks and pressure washing equipment.

To ensure the protection of the groundwater at the Project Site, wash water from the New FPF, including the washbay area, will be pumped to a double-walled, high density polyethylene, below ground storage tank. The storage tank will be fitted with high level alarms, leak detection, inlet and outlet piping, and other required openings. The wash water will be held temporarily in this storage tank and then taken to a licensed treatment facility via tanker truck for disposal.

Any domestic wastewater generated at the New FPF will be discharged to a pump station and conveyed via pipeline to the City's domestic wastewater treatment plant. The toilet, locker and break rooms will also have floor drains and associated piping that will be drained to the pump station.

The text of the Conditions will not need to be modified to address the wastewater management systems at the New FPF.

4.6.1. Dewatering

Dewatering may be required for some construction activities. The necessary dewatering permits from appropriate agencies will be obtained by the selected construction engineer prior to the commencement of construction.

4.7. General Permit for Stormwater Discharge from Large and Small Construction Activities

The FDEP administers the National Pollutant Discharge Elimination System (NPDES) stormwater permitting program in the State of Florida. Under this program, operators of large (>5 acres) or small (1-5 acres) construction activities with stormwater discharges to surface waters are required to obtain coverage under the *Generic Permit for Stormwater Discharge from Large and Small Construction Activities* pursuant to Chapter 62-621, F.A.C. The Authority's construction engineer will submit a Notice of Intent (NOI) to obtain generic permit coverage before the commencement of construction. A Stormwater Pollution Prevention Plan (SWP3) that meets all generic permit requirements will be submitted with the NOI. After the construction activities are complete and the site meets the eligible requirements of the general permit, the Authority's construction engineer will submit a Notice of Termination. The NPDES activities will be conducted in compliance with a federally-delegated or approved permit program, which is separate from the PPSA process. Therefore, it is not anticipated that the text of the Conditions will need to be modified.

4.8. NPDES Multi-Sector General Permit for Stormwater Discharge Associated with Industrial Activities (MSGP)

The Authority has obtained a site wide NPDES permit pursuant to 40 CFR Section 122 in order to discharge stormwater from an industrial site into the surface waters of the United States. The site wide NPDES permit includes the operations at the New FPF and are covered under the NPDES permit program pursuant to Sector N of the *Multi-Sector General Permit for Stormwater Discharge Associated with Industrial Activities* ("MSGP'). Therefore a NOI to obtain coverage under Section N of the MSGP for the stormwater discharges from the New FPF is not necessary and it is not anticipated that the text of the Conditions of Certification will need to be modified.

4.9. Title V Air Operating Permit

The Authority's current Title V Air Operation Permit (number 0990234-010-AV) lists insignificant sources of air emissions within the Park pursuant to Rule 62-213.430(6), F.A.C. The Existing Facility is listed as an insignificant source of air emissions in Appendix I of the current permit, which is provided as Appendix G. The operations at the New FPF will be fundamentally similar to the existing operations and will replace the existing operations. The Authority is not adding a new point source of air emissions to the Park. The New FPF, like the Existing Facility, will be an insignificant source of PM-10 pollutant emissions.

In addition, in accordance with Rule 62-210.300(3)(b)1, F.A.C., the Authority is exempt from air quality permitting requirements for the construction and operation of the New FPF because the New FPF meets the following criteria:

- The New FPF is not subject to a unit-specific applicable requirement.
- The New FPF will neither emit nor have the potential to emit:
  - 500 pounds per year or more of lead and lead compounds expressed as lead;
  - 1,000 pounds per year or more of any hazardous air pollutant;
  - 2,500 pounds per year or more of total hazardous air pollutants; or
  - 5.0 tons per year or more of any other regulated pollutant.

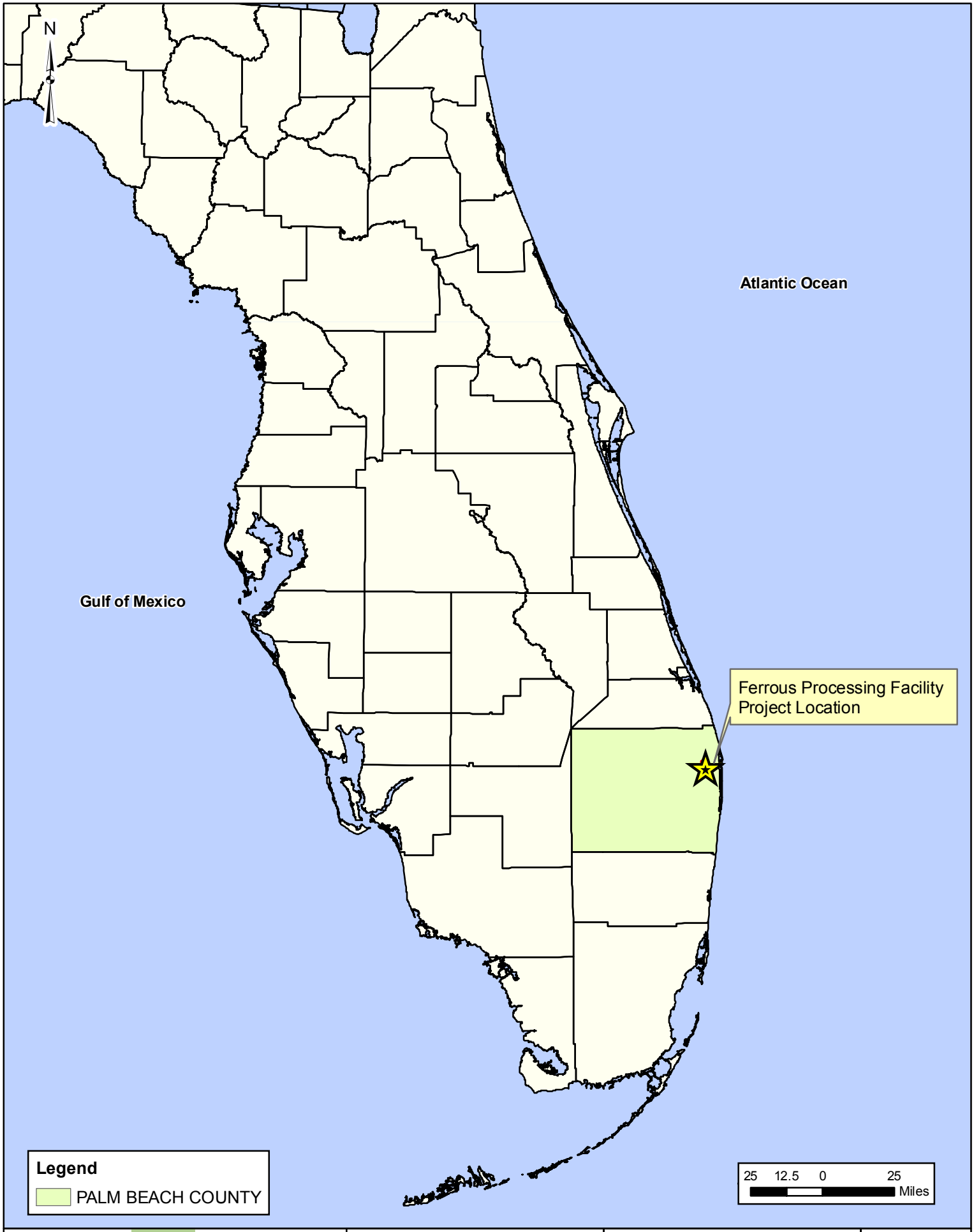
As indicated above, the operations at the New FPF will be similar to the current operations at the Existing Facility and will not involve the use of machinery that produces emissions subject to air quality permitting requirements. The only point source of air emissions at the New FPF, as is in the current facility, will be an emergency (standby) power generator. The expected rated capacity of the generator for the New FPF is in the range of 100 to 150 kW. The generator will be sized to power the office administration section of the New FPF, including the HVAC and emergency equipment, in the event of a power outage. The generator will be diesel-fired and will comply with the U.S. Environmental Protection Agency (EPA) Tier 3 emissions standards for non-road engines.

At this time, FDEP is currently reviewing the applicability of the categorical exemption statute Rule 62-210.300(3)(a)35, F.A.C. for emergency generators that are located at the Renewable Energy Park. If it is determined that the new emergency generator at the New FPF does not meet the categorical exemption rule, an Air Construction Permit to account for emissions from the New FPF's emergency generator may be required. Therefore, it is currently unknown if the text of the Conditions will need to be modified to address the air emissions from the New FPF.

5. Conclusion

Based on the information contained in this Petition, the Solid Waste Authority of Palm Beach County respectfully requests the FDEP to modify the Conditions of Certification for the Authority's Park, if and to the extent that such modifications are necessary, to authorize the construction and operation of the Authority's New FPF on the Project Site, as described in this Petition. The Authority anticipates that a modification to the Conditions of Certification may be necessary to address the new stormwater management system that will be constructed on the Project Site with the New FPF. The Authority requests approval of this modification and any other modifications that are deemed necessary by the FDEP to authorize the development and use of the New FPF.

6. Figures



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MALCOLM PIRNIE

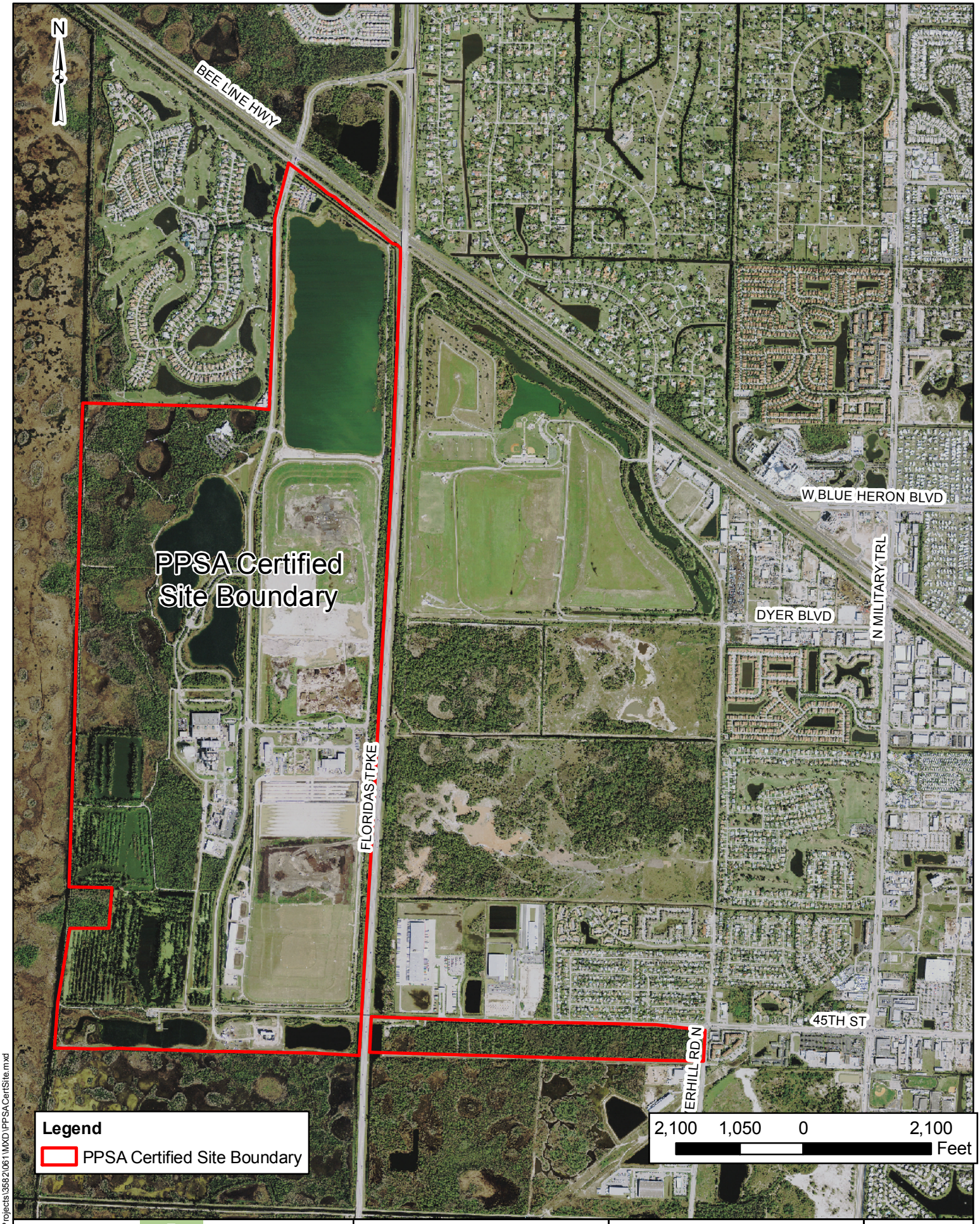
SWA Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Relocation Petition for Modification
of Conditions of Certification (PA 84-20)

Project Site
General Location Map

February 2010

FIGURE 2-1



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Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Relocation Petition for Modification
of Conditions of Certification (PA 84-20)

Park Boundary Certified By Power Plant Siting Act

February 2010

FIGURE 2-2

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Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Relocation Petition for Modification
of Conditions of Certification (PA 84-20)

Existing FPF Location

February 2010

FIGURE 3-1

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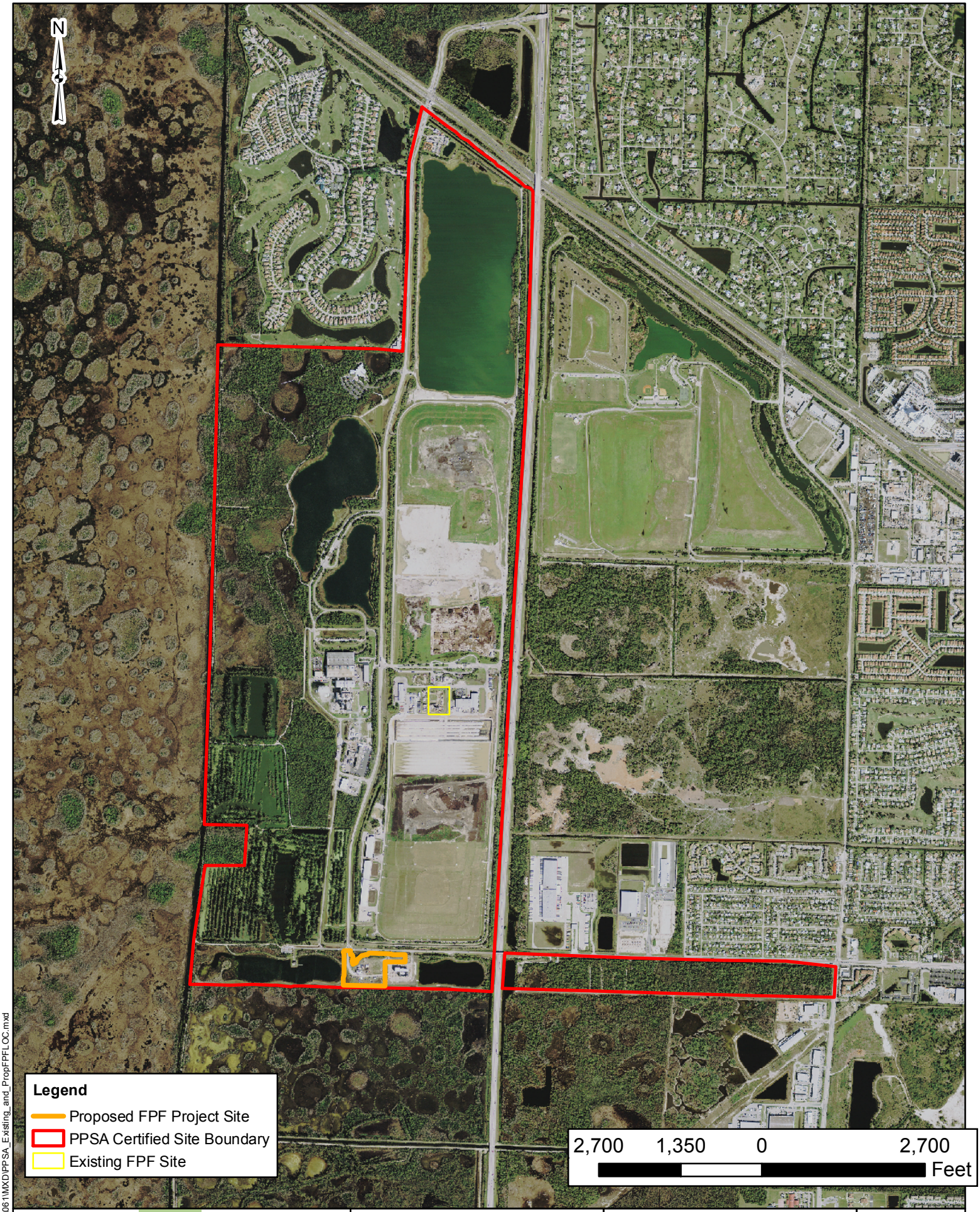

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SWA SOLID WASTE AUTHORITY

Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Relocation Petition for Modification
of Conditions of Certification (PA 84-20)

Existing FPF and Proposed FPF Project Site

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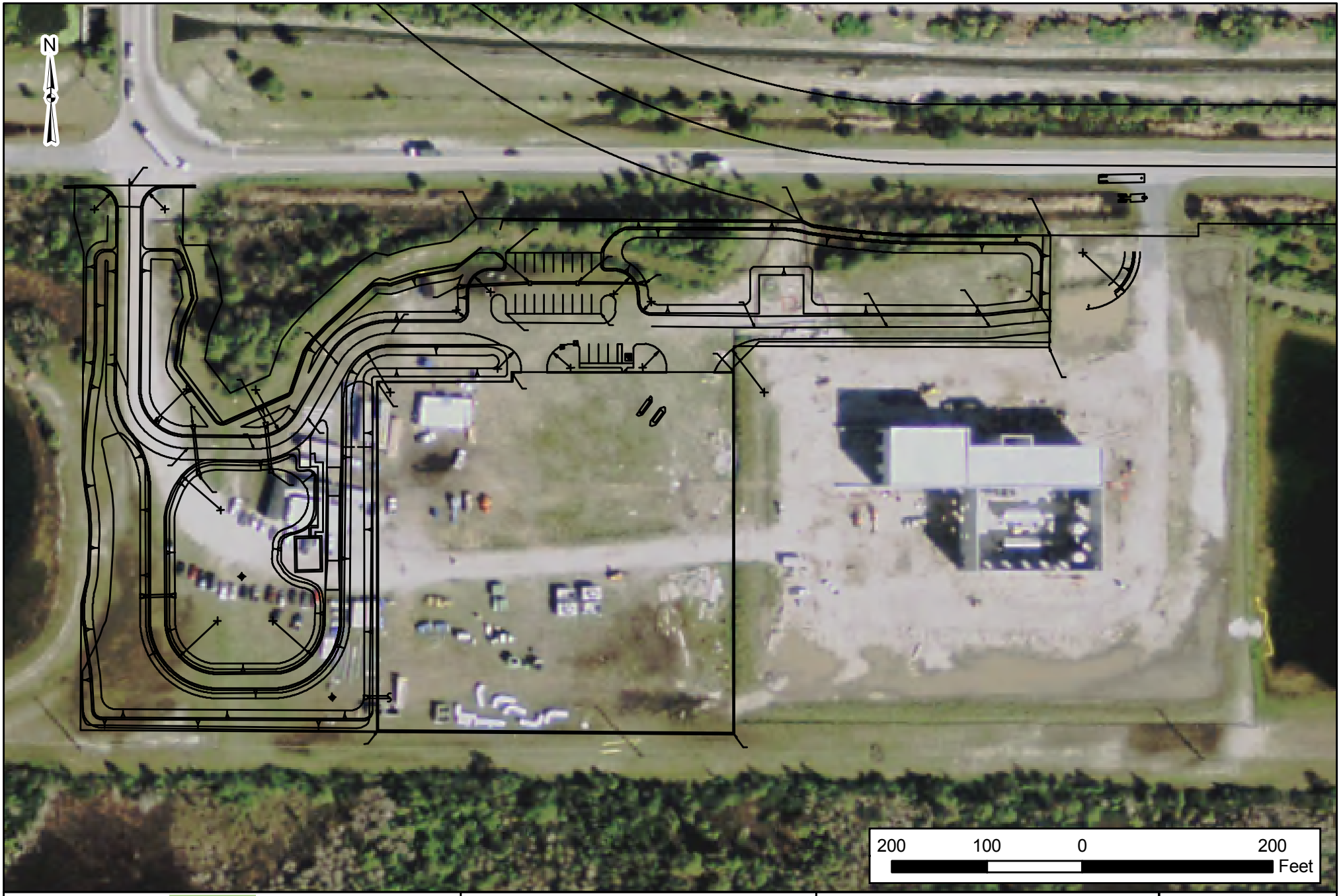
FIGURE 3-2



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SWA SOLID WASTE AUTHORITY

Solid Waste Authority of Palm Beach County

Ferrous Processing Facility Relocation
Petition for Modification
of Conditions of Certification (PA 84-20)

New Facility Site Plan

February 2010

FIGURE 3-3

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SWA Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Relocation Petition for Modification
of Conditions of Certification (PA 84-20)

Proposed FPF Project Site Location and Adjacent Buffers

February 2010

FIGURE 3-4

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SWA SOLID WASTE AUTHORITY

Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Relocation Petition for Modification
of Conditions of Certification (PA 84-20)

Delineated Wetland Locations

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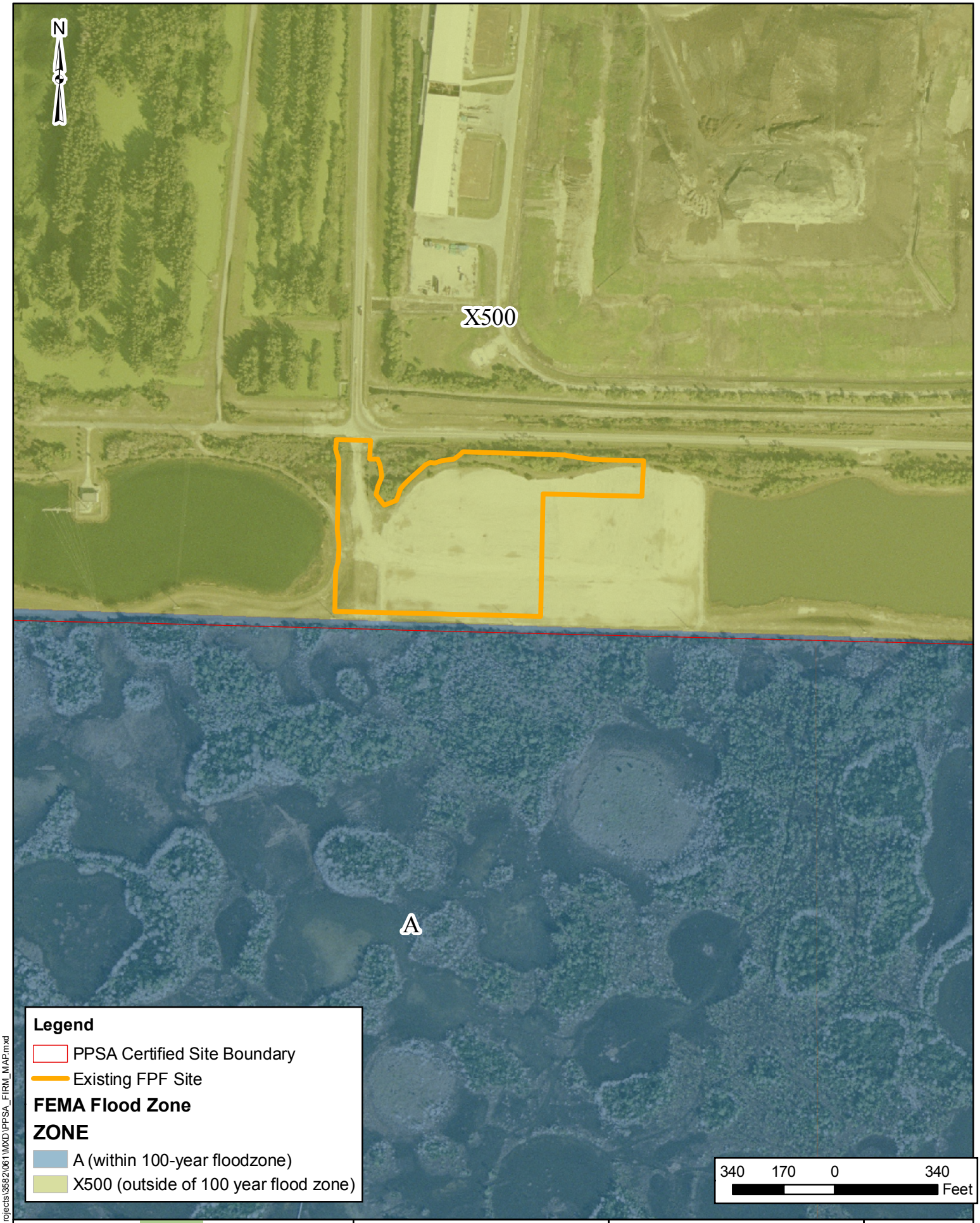
FIGURE 3-5



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SWA SOLID WASTE AUTHORITY

Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Relocation Petition for Modification
of Conditions of Certification (PA 84-20)

Federal Emergency Management Agency Flood Insurance Rate Map

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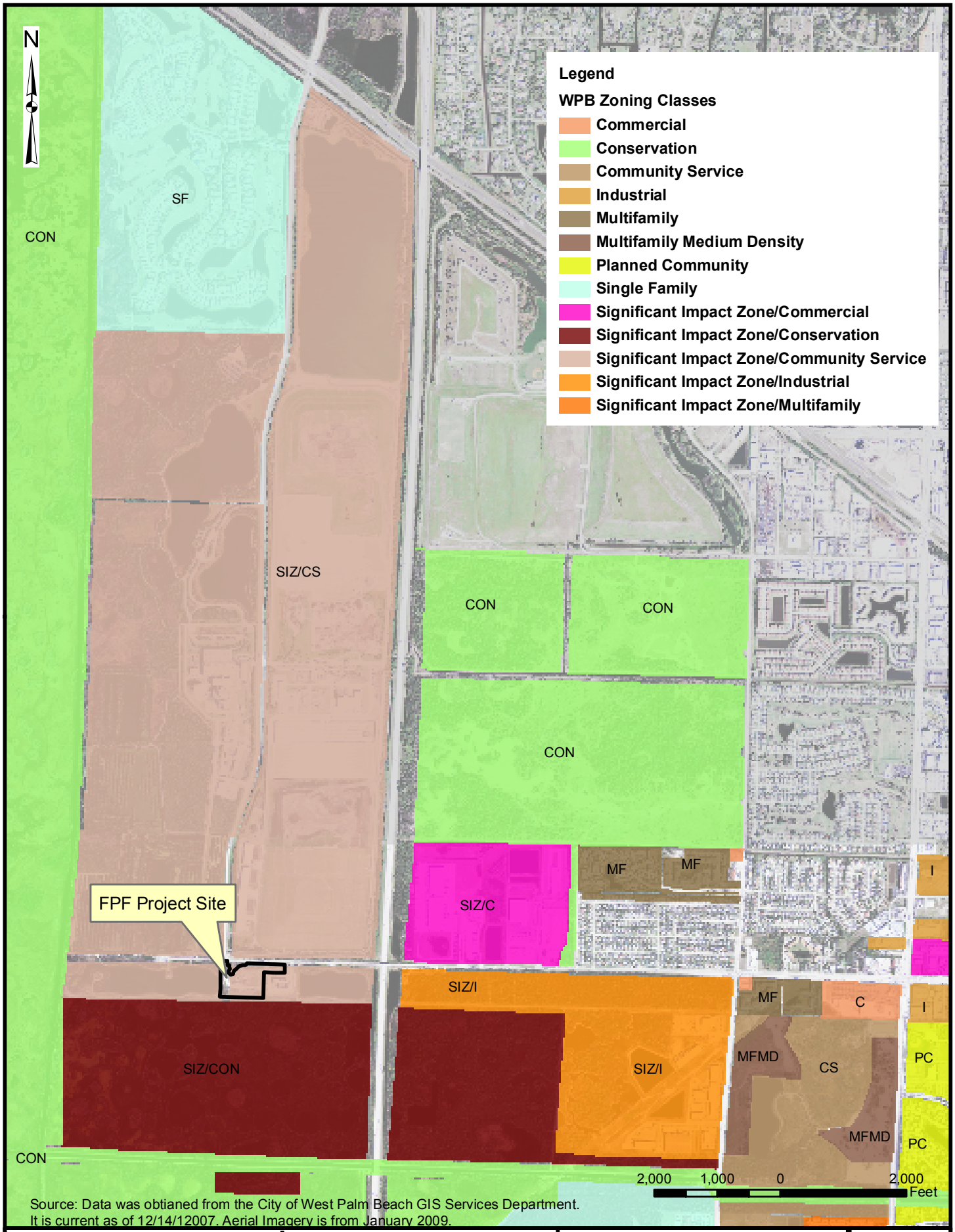
FIGURE 3-6



Source: Data was obtianed from the City of West Palm Beach GIS Services Department.
It is current as of 12/14/12007. Aerial Imagery is from January 2009.

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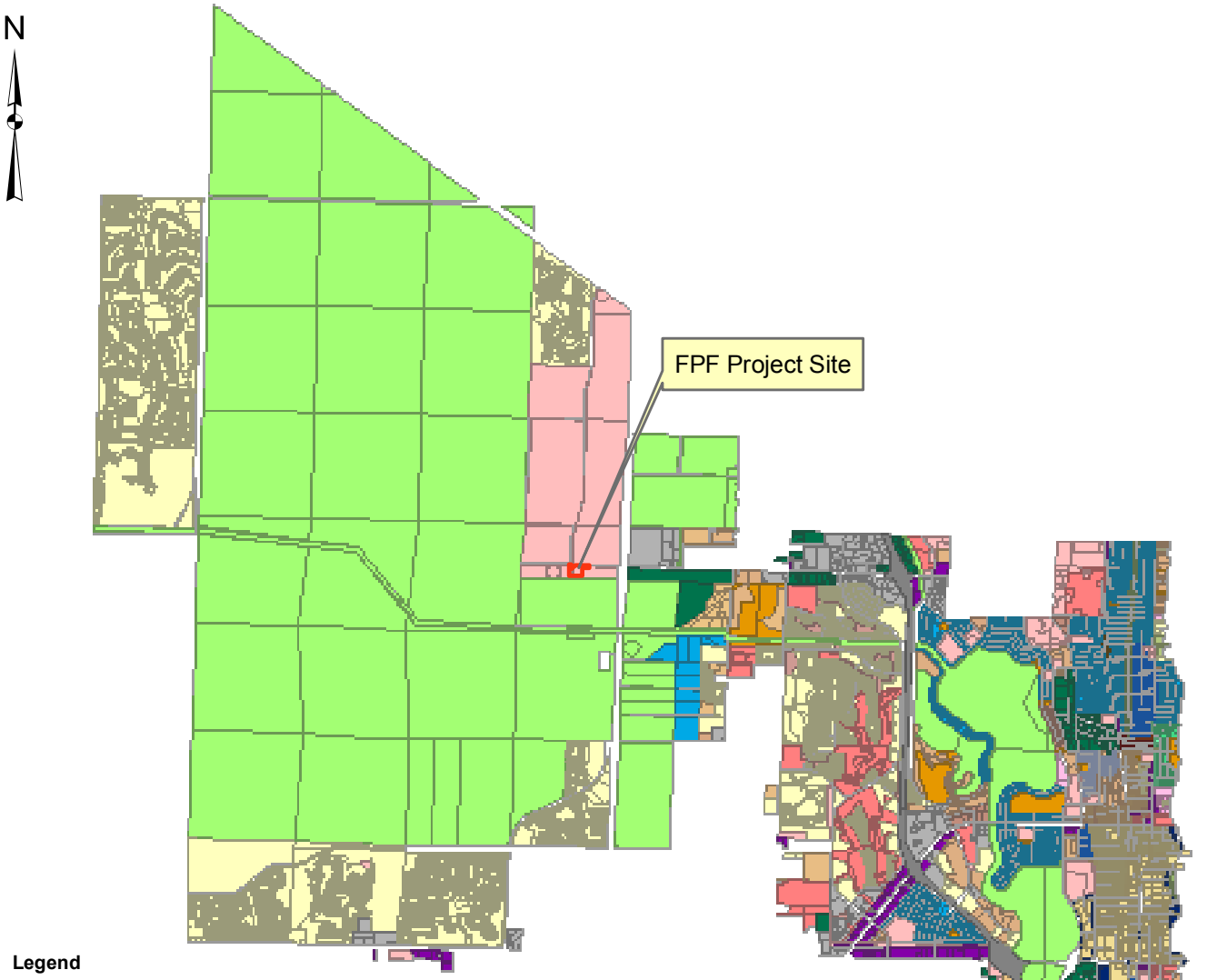
SWA Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Relocation Petition for Modification
of Conditions of Certification (PA 84-20)

City of West Palm Beach
Future Landuse Map

February 2010

FIGURE 3-7



Legend

FPF_Boundary

WPB Zoning Classes

- **Airport Commercial**
- **Broadway Mixed Use District TYPE I**
- **Broadway Mixed Use District TYPE II**
- **City Center Lake Front**
- **Commercial Marine**
- **Commercial Marine Planned Development**
- **Currie Mixed Use District PUBLIC GREEN**
- **Currie Mixed Use District TYPE I**
- **Currie Mixed Use DistrictTYPE II**
- **Currie Mixed Use District TYPE III**
- **Commercial Planned Development**
- **Community Service**
- **Community Service Planned Development**
- **Downtown Master Plan I**
- **Downtown Master Plan II**
- **Downtown Master Plan III**
- **Downtown Master Plan IV**
- **General Commercial**
- **Industrial**
- **Industrial Planned Development**
- **Interstate**
- **Multifamily Low Density Residential**
- **Multifamily Medium Density Residential**
- **Multifamily High Density Residential**
- **Neighborhood Commercial**
- **Northwood Mixed Use District TYPE I**
- **Northwood Mixed Use District TYPE II**
- **Northwood Mixed Use District TYPE III**
- **Office Commercial**
- **Office Commercial Planned Development**
- **Planned Community**
- **Professional Office Residential**
- **Professional Office Residential Planned Development**
- **Recreation and Open Space**
- **Recreation and Open Space Planned Development**
- **Residential Planned Development**
- **Single Family/Small Lot High Density Residential**
- **Single Family High Density Residential**
- **Single Family Low Density Residential**
- **SLT**
- **Conservation**

1 0.5 0 1 Miles

Source: Data was obtianed from the City of West Palm Beach GIS Services Department. It is current as of 12/14/12007.

MALCOLM PIRNIE | SWA Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Relocation Petition for Modification
of Conditions of Certification (PA 84-20)

City of West Palm Beach
Zoning Map

February 2010

FIGURE 3-8

Solid Waste Authority of Palm Beach County
Petition for Modification of Conditions of Certification (PA 84-20)

Appendix A
Solid Waste Authority of Palm Beach County Integrated Solid Waste Management Plan

3582061 / FTL

MALCOLM PIRNIE

The Solid Waste Authority of Palm Beach County

Integrated Solid Waste Management Plan

August 2006

Preface to the 2006 Plan

This document represents a substantial departure in format and organization from the earlier versions of the Solid Waste Authority Plan. Theses changes begin with the title. This document was previously titled Comprehensive Solid Waste Management Plan, Resource Recovery and Recycling Program. The title has been shortened to Integrated Solid Waste Management Plan. This change appropriately reflects the Authority's fundamental strategy for solid waste management which is discussed in further detail in the Introduction.

The changes in this plan also reflect the modifications that have occurred in the solid waste system in the intervening years. Earlier versions of this plan reflected a solid waste system that was being developed, with new facilities under construction or being planned, and new programs being developed and implemented to comply with environmental laws and regulations. At the same time, many of these laws and regulations were themselves undergoing substantial revisions and modifications. This 2006 revised plan reflects a system whose major capital components are now in place, which now has programs functioning to address the major legislative and regulatory initiatives of the late 1980's and early 1990's, and is intended to have the flexibility to accommodate additional changes in law if they occur.

The Solid Waste Authority plan was developed to comply with the planning and resource recovery elements of Chapter 403 Florida Statues and Chapter 17-7 (now 62-701) Florida Administrative Code. As such, this plan is not directly comparable with the format and structural requirements for local government comprehensive planning as identified in Chapter 9J-5 Florida Administrative Code. However, this plan can serve as the basis for a solid waste sub-element of a local government plan. The Solid Waste Sub-Element of the Palm Beach County Comprehensive Plan was developed based on the Solid Waste Authority Plan, and is attached as an appendix to serve as a model for incorporating the elements of the Integrated Solid Waste Management Plan in the local government comprehensive planning process for other units of government within Palm Beach County.

Although this Plan differs in many ways from previous versions, it is nevertheless based on the information developed in those earlier editions. In particular, the sections providing background on the Authority are primarily revisions and extensions of those same sections of the earlier versions of the Plan. The authors of those prior versions merit acknowledgment for the original development of this information.

While all plans are intended to be living and dynamic documents, it is hoped that the plan itself will not require substantive amendment on a regular basis to keep pace with the implementation of various system elements. As one goal of Integrated Solid Waste Management is flexibility, so this plan is intended to address alternatives without requiring extensive modifications.

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Appendix D - Solid Waste Authority Rule III

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Appendix F - Landfill Depletion Model

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INTRODUCTION

Integrated Solid Waste Management

The methods, technologies and policies for the management of Municipal Solid Waste (MSW) underwent a period of intensive evaluation and review from the mid 1960's to the mid 1980's. Federal, State and Local governments, along with private sector service providers and the environmental activist community all participated in these efforts to resolve the interrelated issues of dwindling landfill capacity and the environmental consequences of solid waste disposal. The result of that evaluation is the management philosophy commonly identified as Integrated Solid Waste Management (ISWM).

Perhaps the most fundamental goal of ISWM is to reduce the amount of waste that must ultimately be placed in landfills for disposal. Conservation of landfill space results from effective ISWM operations.

ISWM is, at its most basic level, a system to manage solid waste through a combination of techniques and programs. ISWM presents no single solution; it is based on the premise that multiple solutions are needed to address the various elements of waste management and the waste stream. ISWM systems are designed to address the fact that the municipal solid waste stream is made up of distinct components that can be managed separately.

Another fundamental component of ISWM systems is that they are based on local conditions and circumstances. There is no standard set of technologies or programs for an ISWM system. The nature of the local area, its population, the nature of its waste stream, and the local resources, economics and environment are the keys to designing an ISWM system to address local needs.

ISWM systems rely on the concept of strategic planning. This means that waste management policies must be established for the long term, and that the planning process should also involve anticipating changes that are likely to occur in the future. The elements of the ISWM system, their capacity, and the composition of the waste stream itself need to be regularly assessed as a part of the planning process. The entire strategic planning process of ISWM needs to be an ongoing effort to assure the success of the system.

Flexibility needs to be built into all the elements of an ISWM system. This means flexibility in the basic elements of the ISWM plan, and also in the design of the components of the system, to enable them to accommodate change. This flexibility allows an ISWM system to respond to changes in regulatory programs, local needs and changes in the solid waste stream, and also enables policy makers to evaluate new management alternatives, as they become available.

The Waste Management Hierarchy

ISWM is based on using the various options available for different segments of the waste streams in a hierarchy of waste management alternatives. The hierarchy of management options should be used to evaluate the system components against community needs. Each of the elements in the hierarchy is interrelated with the others. An essential component of ISWM system planning is assuring that the waste management options chosen complement each other.

The hierarchy of ISWM as defined in this plan is Source Reduction, Recycling, Composting, Combustion and Landfill. The hierarchy can be visualized as a pyramid, with Source Reduction at the top, and Landfill as the base.

Source Reduction

Source Reduction as an element of ISWM, represents an activity which actually precedes waste management, at the point of waste generation, by examining how products are manufactured, purchased and used. Because it takes place prior to waste generation, it represents the system component which has the least amount of direct control by the ISWM system operators.

Source Reduction addresses product manufacture, purchasing habits and product use. Options available in implementing source reduction efforts include product reuse, increasing the recycled content of products or packaging, reduction in material volume of either product or packaging, increasing the usable life of a product, and decreasing the total quantity or toxicity of products used. Source reduction begins in the design, manufacture and packaging of products by business and industry, and continues through selective buying and reuse of products by individuals or businesses.

Source reduction efforts all take place prior to disposal. They represent a break from the traditional management strategies for managing wastes for disposal. As such they represent a challenge for ISWM systems in that they are not technologies, per se, and therefore are not amenable to traditional methods for implementation and determining performance for a program. The benefits of source reduction are conceptually clear, but implementing and quantifying source reduction activities for large scale ISWM systems is still in its infancy. Public information and education programs are key components for successful source reductions efforts.

Recycling

Recycling has always been an option in waste management systems, but was not commonly implemented on a large scale as a waste management tool from the 1950's to the 1980's. Recycling consists of separating materials from the waste stream, either at the source, or by recovering materials from mixed waste prior to disposal, turning those

materials into commodities, often through some form of processing or re-packaging, and returning those materials to the stream of commerce as a feedstock for new products or processes.

Recycling programs typically consist of educational elements to encourage participation (in voluntary programs), compliance and enforcement mechanisms (in mandatory programs), collection programs for source separated materials, processing facilities for source separated materials and recovery of materials from unsegregated wastes, and marketing programs to deliver the recovered commodities to the stream of commerce. Although individual programs may differ, most address the recycling of a set of basic materials such as containers made of aluminum, glass, ferrous metal and plastic, and paper products such as corrugated cardboard and newspaper.

Participation by waste generators in collection programs plays a significant role in recycling programs, by assuring a steady stream of materials for the market. This means that educational and informational efforts have to be an ongoing component of recycling programs.

Two factors typically exert the most influence in determining which materials will be addressed in recycling programs. The first is legislative mandates. Many state legislatures have identified a list of materials that are to be included in local recycling programs, as well as a target percentage for the recovery and recycling of those materials. The other principal factor is the market demand for the recovered materials. If a stable market for recovered materials is available, preferably at the local or regional level, they can be considered as potential candidates for recycling. Without a stable and reliable market for recovered materials, recycling programs may accumulate quantities of material which may eventually have to be disposed of rather than recycled.

Composting

Composting is a sub-area of recycling that addresses the organic portion of the solid waste stream. At its most basic level, composting uses the action of microorganisms to process waste materials and produce a product that can be used as a soil amendment. Some industries and segments of the agricultural community have long been using composting as a means to reduce their waste generation and enhance the productivity of their farmland. While some communities have also had long standing composting programs, particularly for yard wastes and leaves, as part of their waste management systems, the impetus for wider application of this waste management tool arose in the late 1980's in response to legislative mandates for recycling and waste reduction.

The most common material handled in composting programs is yard waste and leaves. These materials can be composted in "backyard" systems by individual property owners. They can also be collected and processed in centralized programs, alone or in combination with other wastes.

Waste water treatment sludge is the material which is most frequently combined with yard waste in centralized composting programs. This combination can be very effective, as it can produce a quality, marketable product, and resolve two waste management issues. While waste water treatment sludge, meeting the appropriate standards, can be directly applied to some agricultural lands, the long term reliability of land application as a disposal method, combined with limitations of land application on a day-to-day basis due to weather, make composting of waste water sludge an attractive alternative for sludge management.

Some efforts have been made to compost municipal solid waste, but this technology is still developing. Substantial amounts of pre-processing are necessary to separate the compostable fraction from the rest of the waste steam. The quality of the product is very dependent on the quality of this initial separation. Until these technologies have matured, municipal solid waste composting will not be available as a viable waste management tool for large scale integrated systems.

Composting, like recycling, is very dependent on the availability of markets for its products to assure program success. The marketability of compost products is itself dependent upon the quality of the compost. Both regulations and market demand determine how a given compost product may be used.

Combustion

The combustion of municipal solid waste in a modern waste to energy facility serves two functions: a reduction in the volume of solid waste subject to final disposal in a landfill, and the recovery of energy. Modern waste to energy facilities, particularly those constructed since the early 1980's, are more similar to today's power plants than they are to older solid waste incinerators. But because they are one of the highest cost components in ISWM systems, in terms of capital expenditures for construction, and because of concerns about the environmental impacts of air emissions and ash management, waste combustion facilities are the most controversial component of ISWM systems.

Local governments evaluating waste combustion face several basic choices and options. The first pertains to facility ownership and operation. Typically some communities have chosen to own their facilities, and contract the operation to a private concern, while others choose not to own or operate the facilities, but enter into contracts with private owner-operators for the delivery of waste.

A second choice is combustion technology. Mass burn units combust waste without any preprocessing at the facility other than to remove items too large to be fed into the combustion unit. Refuse Derived Fuel (RDF) facilities preprocess the waste, usually removing metals, non-combustibles and reducing the size of the burnable fraction.

Air pollution control technologies present another set of options. Acid gas control can be achieved through wet or dry scrubbers, or dry sorbent injectors. Particulate control can be achieved through fabric filter baghouses or electrostatic precipitators. Other control technologies for control of NOx (Nitrogen Oxides), Mercury and organics such as dioxin are available and will probably become regulatory requirements in the near future.

The ultimate choice to be faced is whether to utilize combustion as component of the ISWM system. The size of the community to be served, its rate of growth, the overall economic conditions, and community priorities and social factors all play a role in this decision.

Landfill

Landfills are the single most widely used waste management method in the United States. Landfill disposal capacity is a necessary component of any ISWM system. This is the case because even though source reduction and recycling, including composting can divert significant quantities of solid waste, not all materials are recyclable. Even though combustion can significantly reduce the volume of waste destined for disposal, some ash residue and non-processible materials will remain.

Landfills represent the base of the hierarchy, and the one depletable resource of the ISWM system. Once waste is placed in a landfill for disposal, that capacity is irrevocably lost, and must eventually be replaced. In addition to losing this capacity, the ISWM system must close, care for and continue to monitor landfills that have reached their capacity. These are the reasons landfill capacity conservation is one of the fundamental objectives of ISWM systems.

The design of landfills, and the technology used in constructing landfills has undergone dramatic changes in the last ten to fifteen years. These changes have been driven by changes in regulations and by the decisions by landfill operators to provide extra levels of protection to the environment. The two most significant design and construction changes involve the liners which are constructed to intercept leachate (water which percolates through waste in the landfill) and the management of landfill gas which is generated within the landfill as waste decomposes.

Landfill liners today incorporate low permeability clays, existing on site or brought to the facility, and one or more geo-composite or synthetic liners, with intervening layers of soil, piping and geotextile materials to enhance the drainage of any leachate collected. Figure 1 is a cross-section of the liner system used by the Authority for its Class I landfill, which accepts ash and residue from the Waste to Energy plant, and unprocessed garbage. The liners are integrated with systems to collect and treat the leachate collected, then safely dispose of it.

Landfill gas management systems collect the gas, which is predominantly methane, carbon dioxide and water vapor, to prevent it from seeping from the landfill into the

environment. This gas can be burned in a flare to safely dispose of it, or it can be utilized as a fuel when economic conditions are favorable. Landfill gas can be combusted in several types of generating units to produce electricity.

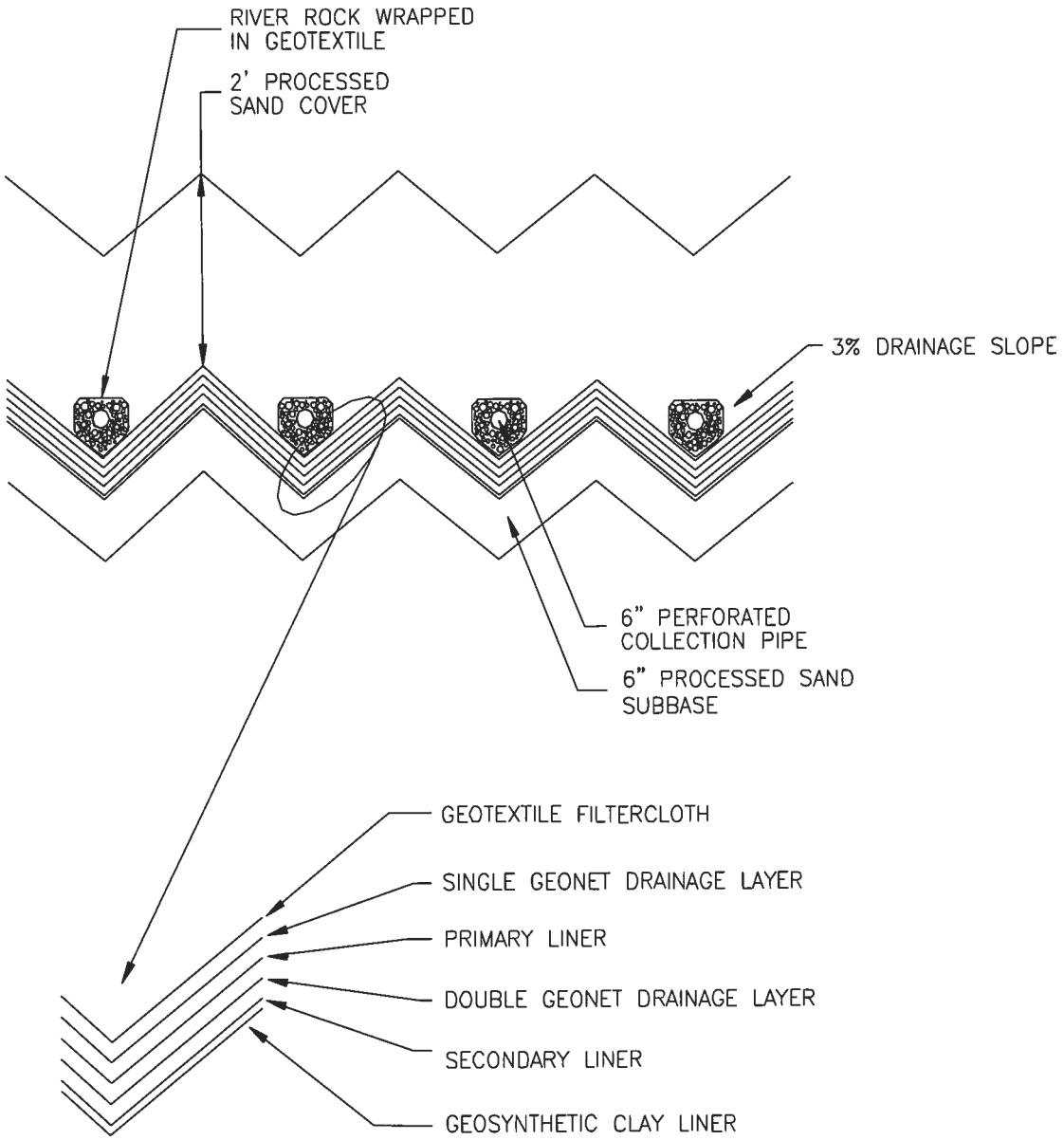


Figure 1. Schematic Diagram of a Typical Double Lined Landfill Design.

THE SOLID WASTE AUTHORITY

Legislative Background

Palm Beach County has established a mechanism for dealing with the solid waste problem on a county-wide basis, and developing an effective, long-term solution. The County's far-sighted approach was the outcome of the combined and cooperative efforts of a number of concerned citizens, state and local agency officials and legislators. The culmination of these efforts were contained in legislation which created the Solid Waste Authority to coordinate the management of solid waste throughout the County in order to meet local governments expanding requirements for safe and sanitary processing and disposal of solid waste.

The Solid Waste Authority of Palm Beach County was established as an independent special taxing district created by the Florida Legislature under the Palm Beach County Solid Waste Act, Chapter 75-473, Laws of Florida, Special Acts of 1975, as amended and supplemented (the "Act"). The Act was amended in 1991, converting the Authority to a dependent special taxing district, with the County Commissioners of Palm Beach County serving as the Board of the Solid Waste Authority.

Under the Act, the Solid Waste Authority of Palm Beach County was established for the purpose of developing and implementing plans for an integrated County-wide solid waste management system comprised of recycling, resource recovery, transfer station and landfill facilities to serve the future needs of the county at reasonable cost. There have been various amendments to the original enabling legislation since 1975. Appendix A is a copy of the Act and an historical summary of the various amendments to the enabling legislation since 1975.

Among other specific purposes and powers, the Act gives the Authority the power to construct and operate solid waste disposal facilities including resource recovery facilities. It authorizes the Authority to issue revenue bonds to fund all or part of the acquisition and construction costs for solid waste management facilities. The Authority is empowered to charge reasonable rates and fees to cover the costs developing and operating the solid waste system. In addition, the Act specifies that no person shall operate, maintain, construct, expand, or modify any waste management facility without first having received a valid operating permit from the Authority.

On May 10, 1978 the Solid Waste Authority was designated by then Governor Askew as the lead implementation planning agency responsible for solid waste management and resource recovery in Palm Beach County; pursuant to Section 4006 of Public Law 94-580, RCRA and Chapter 403.706 of the State of Florida RRMA.

In 1986 and 1988, the Act was amended to transfer the responsibility for collection of solid waste and billing for solid waste collection fees in the unincorporated areas of the county from the Board of County Commissioners to the Solid Waste Authority. In addition the 1986 amendments authorized the Authority to levy a county wide, non ad

valorem annual disposal special assessment as a means to finance the construction and operation of the solid waste system.

The Authority completed "The Comprehensive Solid Waste Management and Resource Recovery Plan" in 1979, as required by state statute, addressing the problems associated with solid waste management on a county-wide basis. The plan was again amended in 1988, to address new legislative mandates in the Florida Solid Waste Management Act of 1988. This document constitutes the third amendment to the plan, now called "The Integrated Solid Waste Management Plan". Unlike the previous two versions, there is no statutory requirement for the development and adoption of the current plan.

Agency Organization

The Authority is governed by a seven member policy making board. The Board consists of the seven members of the Board of County Commissioners of Palm Beach County.

The Executive Director of the Authority is appointed by and directly accountable to the Board. All other employees of the Authority are appointed and removed by the Executive Director. The employee organizational chart for the Authority is included in the annual budget document.

The Authority board appoints members to it's Citizen's Advisory Committee (CAC). The CAC serves as a formal mechanism to secure public input into the activities of the Authority, and advise the Board on matters of policy. The CAC consists of eleven members, representing the seven County Commission Districts plus four members appointed at large.

History of Operations and System Development

During the initial years of its existence, the Authority's activities were focused on planning functions and analysis of waste management alternatives, which culminated in the completion of the 1979 Comprehensive Plan.

This Comprehensive Plan called for a system of solid waste management facilities, including six transfer stations, two regional processing and disposal facilities, and ancillary facilities. The six transfer stations were planned to be located such that substantially all of the solid waste collected in the urbanized coastal portion of the County will be within 10 to 12 miles of a transfer station or one of the regional facilities. This plan served as the basis for the Authority securing Bond financing to acquire and develop the system.

In 1978, the Authority entered into an agreement with the City of Delray Beach to operate a solid waste transfer station and to provide $525,000 in capital improvements. In 1980, the Authority entered into agreements with the cities of Belle Glade and South

Bay and with the Board of County Commissioners to assume responsibility for receiving solid waste collected in the Glades region of the County and for transporting this solid waste to the Pahokee Landfill. In 1981, the Authority also assumed responsibility for operating the County's Pahokee Landfill.

In April 1983, the Authority and the County entered into an agreement in which all of the County's landfill facilities were transferred to the Authority effective October 1, 1983. These landfill facilities consisted of the Cross State landfill (which had ceased operations in 1976), the Pahokee landfill (closed in 1984), the Lantana landfill (closed in 1987) and the Dyer Boulevard landfill (closed in 1990). At the time of their transfer to the Authority, these landfills accounted for the disposal of an estimated 88% of the total volume of solid waste collected throughout the County.

Once the Authority assumed ownership and operational responsibility for the County facilities, further steps in implementing the Comprehensive plan were directly related to the securing of Bond financing for system development. In 1983, the Authority took its first major step in implementing the Comprehensive Plan when it completed the initial system financing with the sale of $43,500,000 of Revenue Bonds. The purpose of the 1983 Bonds was to provide the funds needed to pay the cost of (1) closing out the Pahokee landfill, the Lantana landfill and a portion of the Dyer Boulevard landfill; (2) the acquisition of approximately 1,300 acres of land adjacent to the Dyer Boulevard landfill to serve as the site for the North County Regional Resource Recovery and Solid Waste Disposal Facility and to provide additional landfill capacity to meet the County's estimated long-term landfill needs; (3) the construction or reconstruction of three transfer stations in South County (Delray Beach), South Central County (Lantana) and the Glades Region (Belle Glade); and (4) the initial planning for the Northern Resource Recovery Facility.

In 1984, the Solid Waste Authority of Palm Beach County issued $320,000,000 of Revenue Bonds. The bonds were issued (1) to finance a series of projects for the North County Regional Resource Recovery and Solid Waste Disposal Facility and related facilities (2) to pay capitalized interest on the bonds, (3) to make a deposit in the Debt Service Reserve Account, and (4) to pay expenses relative to the issuance of the Bonds.

The proceeds of the 1984 Bonds were to provide funds for the following projects: (1) the Northern Resource Recovery Facility which can process in excess of 2,000 tons per day of garbage and trash generated in the County into salable electricity and recover certain materials, including ferrous metals and aluminum cans; and (2) site work, utilities, including water and waste water facilities, with a deep-well injection system for effluent disposal, a fire protection system, scale houses, an administration building, a maintenance building for Authority vehicles and equipment and other ancillary facilities including off-site traffic and aesthetic improvements.

In 1985, the Authority sold an additional $100,000,000 of Bonds. The purpose of the 1985 Bonds was to provide the funds needed to pay the cost of (1) refunding the 1983 Bonds; (2) acquiring approximately 1,650 acres of land in the southern portion of the

County to serve as a Class III (trash) landfill and the site for a second resource recovery facility to be developed by the Authority known as the Southern Resource Recovery Facility (SRRF); (3) the initial development of the South County Class III (trash) landfill and the final phases of development of the Dyer Boulevard landfill; and (4) the construction of three additional transfer stations in North County (Jupiter), West Central County (Royal Palm Beach) and Southwest County.

On September 20, 1988, the Board of County Commissioners entered into an interlocal agreement with the Solid Waste Authority for the purpose of transferring programs relating to solid waste management. Some of the programs and responsibilities of the Solid Waste Authority include:

1. The powers and duties to establish a mandatory collection system for solid waste and to impose reasonable rates, fees and charges to all users of said system;

2. The powers and duties to grant franchises, contracts, issue permits or otherwise provide for the collection of solid waste in Palm Beach County and establish reasonable rates, fees and charges;

3. The powers and duties to carry out the responsibilities and programs for the determination of the full costs of solid waste management and solid waste management fees, and to coordinate the same with municipalities in Palm Beach County as more specifically set out in Section 403.7049, FS, (1988);

4. To cooperate, coordinate and communicate on behalf of Palm Beach County with the Florida Department of Environmental Protection and other applicable departments in the development and/or implementation of the state solid waste management program as more specifically set out in Section 403.705, FS, (1988);

5. To carry out the local government solid waste responsibilities on behalf of Palm Beach County regarding disposal facilities and recycling programs as more specifically set out in Section 403.706, FS, (1988);

6. To apply for and receive solid waste management grants from the State of Florida to assist in the development and operation of recycling programs and education programs to carry out the requirements of recycling as appropriate to take advantage of and fulfill the provisions of Sections 403.709 and 403.7095, FS, (1988);

7. To seek and obtain financing, if necessary, regarding solid waste management facilities as more specifically set out in Section 403.712, FS, (1988);

8. To avail itself of the provisions of Section 403.713, FS, regarding the collection, separation, transportation and/or disposal of solid waste within Palm Beach County;

9. To develop programs and apply for and receive grants from the State of Florida on behalf of Palm Beach County to encourage the collection, re-use and proper disposal of used oil as such grants are provided for in Section 403.763, FS, (1988);

10. To develop programs and apply for and receive grants on behalf of Palm Beach County for the collection, processing and disposal of waste tires as such grants are provided for in Section 403.719, FS (1988).

In 1989 the Authority issued $83,045,000 of Refunding Revenue Bonds, Series 1989 to refund a portion of the 1985 Bonds.

In 1991 the Authority issued $10,000,000 of Revenue Bond Anticipation Notes to fund the acquisition of additional property for the South County facility. Also in 1991, the Authority renegotiated the franchise contracts assumed pursuant to the 1988 interlocal agreement for an additional two year period.

In 1992 the Authority sold $58,510,000 of Refunding and Improvement Bonds. The 1992 Bonds refunded earlier issues, satisfied the 1991 Bond Anticipation Notes, and funded projects to replace the Glades Transfer Station, expand the footprint and capacity of the North County landfill, and expand the capacity of the North County Materials Recovery Facility (MRF) located at the North County site. Also in 1992, as part of the program which included expansion of the North County site, the Board of the Authority directed staff to pursue alternatives that would eliminate the need to utilize the South County site for landfill disposal.

In 1993 the Authority competitively bid the collection franchises for solid waste and recycling collection in the unincorporated area. The franchises cover both residential and commercial waste and recycling collection. Ten franchise districts were bid, and five year exclusive contracts were awarded. In addition, non-exclusive collection contracts for construction and demolition debris were awarded to 21 haulers for the unincorporated area of the county. These contracts were subsequently bid in 1998 and 2003, and are scheduled to be bid again in 2008.

In 1994 the Authority secured approval from the Florida Department of Environmental Protection (FDEP) to expand the capacity of the landfill at the North County site. This change included expanding the landfill footprint, increasing the permitted height, and allowing steeper slopes on the sides of the landfill. Also in 1994, the Authority completed the development and implementation of the Landfill depletion model as the means to evaluate the disposal capacity of the solid waste system.

In 1996 the Authority entered into a transaction to exchange property for the South County Site for another parcel of land of equal size in the Everglades Agricultural Area (EAA). In this three party transaction, the South County site was acquired by the South Florida Water Management District (SFWMD) for use as a water management area, and

the Authority utilized the proceeds from that sale to acquire the Western Site in the EAA from a farming concern.

In 1997 the Authority issued $266,590,000 in Refunding Revenue Bonds, Series 1997A to refund the 1984 Bonds and issued $33,885,000 in Fixed Rate Improvement Revenue Bonds (Series 1997 B) to fund the following improvements: expansion of the Residential Materials Recycling Facility to 600 tons per day, acquisition and construction of the new Central County Transfer Station, and improvements to the Resource Recovery Facility, the Compost Facility, the Yard Waste Processing Facility, and the South County Transfer Station.

In 1998 the Authority issued $36,405,432 Refunding Revenue Bonds, Series 1998A and $19,170,000 Refunding Revenue Bonds, Taxable Series 1998B, to refund certain of the Authority's outstanding Series 1989, Series 1992, and Series 1997A bonds.

In 2002 the Authority issued $30,560,000 Refunding Revenue Bonds, Series 2002A to refund portions of the Series 1992 Bonds and issued $39,869,386.20 in Fixed Rate Improvement Revenue Bonds (Series 2002 B) to fund the acquisition and construction of the following: acquisition and development of the Southwest County Transfer Station, modification and expansion of the West Central Transfer Station and the North County Transfer Station, and other projects.

In 2004 the Authority issued $34,385,000 in Refunding Revenue Bonds to refund the outstanding Series 1997B Bonds.

POLICIES AND GOALS

Introduction

The Policies and Goals of the Solid Waste Authority establish the foundation on which the ISWM Plan is to be implemented. The intent of this section is to identify, for each major element of the Authority's operations and responsibilities, the underlying basis for actions taken by the Authority to develop and implement the ISWM system.

The Authority has developed Policy Statements and Goals in the following areas:

Integrated Solid Waste Management
Source Reduction
Recycling
Organic Reclamation
Combustion
Collection Services
Transfer Stations
Special Wastes
Hazardous Waste Management
Solid Waste System Operations
Environmental Management
Public Participation
Intergovernmental Coordination
Administration and Management
Emergency Management

The policy statements are summaries of the intent of the Authority, establishing the direction to be pursued in each of the areas addressed. The goals which accompany each policy statement identify the activities to be undertaken, or the end points to be achieved to fulfill the policies. While the goals are listed in order, this does not constitute a priority ranking.

Integrated Solid Waste Management

Policy Statement

It shall be the Policy of the Solid Waste Authority of Palm Beach County to utilize the principles of Integrated Solid Waste Management to conserve landfill capacity, while recovering energy and material resources from the solid waste stream through a well planned and operated system using source reduction, recycling, composting, combustion and landfill.

It shall be the Policy of the Solid Waste Authority to develop an Integrated Solid Waste Management System to provide flexible, dependable and cost effective programs for managing the solid waste generated in Palm Beach County. In this regard, it is the intent of the Solid Waste Authority to provide for periodic review and revision of the Integrated Solid Waste Management Plan.

Goal A:

Develop a system of programs and facilities for effectively and economically managing solid waste, using source reduction, recycling, composting, combustion and landfill.

Goal B:

Utilize the elements of source reduction, recycling and composting to reduce the amount of waste delivered for combustion or landfill.

Goal C:

Provide for a coordinated County-wide system to assure the realization of Federal, State, regional and local government goals for solid waste management.

Goal D:

Provide a plan and schedule for the construction of the necessary solid waste management facilities for Palm Beach County.

Goal E:

Develop Emergency Management Plans to assure that Authority facilities are properly prepared to respond to localized or countywide disasters.

Source Reduction

Policy Statement

It shall be the policy of the Solid Waste Authority of Palm Beach County to develop and manage a countywide source reduction program. This will be a comprehensive program to address all areas of source reduction including decreased consumption, reduced material volume, reduced toxicity or products and/or operating procedures, and reuse. The program is intended to make waste prevention a priority for Palm Beach County.

Goal A:

Develop programs to encourage residents to consider opportunities such as rental or repair in lieu of purchase; reducing unwanted direct mail; and changing buying habits to reduce the purchase of single-use and disposable products wherever appropriate.

Goal B:

Expand existing educational and incentive programs to encourage residents to implement source separation or composting as an alternative to the disposal of yard waste.

Goal C:

Develop educational programs to inform residents of options for less or non-toxic alternatives to common household chemical products.

Goal D:

Develop programs to assist businesses with source reduction efforts.

Goal E:

Participate in the development of quantitative methods to evaluate the effectiveness of source reduction activities.

Recycling

Policy Statement

It shall be the policy of the Solid Waste Authority to implement programs to recover recyclable materials from the solid waste stream within Palm Beach County. Recycling programs will include both materials mandated for recycling by law or regulation, and any other materials which may be effectively recovered and marketed as commodities.

Goal A:

Provide for a reduction in the waste stream requiring ultimate disposal by recovering recyclable materials to the maximum extent practical.

Goal B:

Provide for a recycling program convenient for all residents and businesses in Palm Beach County to encourage source separation of materials from the waste stream.

Goal C:

Provide for sufficient processing capacity for source-separated recyclable materials generated.

Goal D:

Encourage the procurement by local businesses, government and residents of all manner of goods made all or in part from recycled materials.

Goal E:

Assist in the development and expansion of secondary materials markets at the local, regional, state and national levels.

Goal F:

Maximize materials recovery, revenues and market stability, through pursuing revenue sharing programs with municipal and commercial customers, selling recovered materials at the highest dollar value associated with each commodity and pursuing long term marketing arrangements with consumers or brokers.

Organics Reclamation

Policy Statement

It shall be the Policy of the Solid Waste Authority of Palm Beach County to utilize organics reclamation to manage selected portions of the solid waste stream such as vegetation and wastewater treatment plant sludge, and create products that have value as commodities for agricultural or horticultural uses. Some of the technologies include composting, mulching, and drying.

It shall further be the policy of the Solid Waste Authority to develop organics processing facilities in cooperation with the generators of wastewater treatment plant sludge so adequate processing capacity and materials are available to assure long term viability of organics reclamation programs.

Goal A:

Enable generators of wastewater treatment plant sludge to contract with the Authority for additional processing capacity as an alternative to landfill disposal or land application.

Goal B:

Utilize technologies that provide assured processing capacity for organics received.

Goal C:

Implement operational practices to assure regulatory compliance and the production of the highest quality end-products achievable with the feedstock received.

Goal D:

Establish programs to market end-products.

Combustion

Policy Statement

It shall be the policy of the Solid Waste Authority of Palm Beach County to utilize combustion, with the recovery of energy, to manage those portions of the solid waste stream which cannot be efficiently managed through waste reduction, recycling or organics reclamation.

Goal A:

Utilize the existing waste-to-energy facility to assure that the waste reduction and energy production goals are achieved.

Goal B:

Utilize landfill gas as an energy source where circumstances permit economically viable facilities.

Goal C:

Evaluate combustion and disposal capacity on a regular basis to enable policy decisions regarding the expansion of combustion capacity to be addressed on a timely basis.

Goal D:

Assure, through annual inspections and compliance activities that the waste-to-energy facility operates in compliance with contract requirements and appropriate regulations.

Landfill

Policy Statement

It shall be the policy of the Solid Waste Authority to utilize landfill disposal for the wastes and residues remaining after applying waste reduction, recycling, organics reclamation and combustion technologies to the waste stream.

It shall further be the policy of the Solid Waste Authority to provide sufficient landfill disposal capacity to assure the continued safe and environmentally sound management of wastes in the event that waste reduction, recycling, organics reclamation or combustion technologies do not achieve their full potential for reduction of the waste stream.

Goal A:

Utilize landfill designs and construction practices which assure compliance with regulatory requirements and provide long term protection of the environment.

Goal B:

Review and refine operating practices on an ongoing basis to assure the maximal use of available landfill capacity.

Goal C:

Evaluate landfill consumption and capacity on an annual basis to determine the remaining life of disposal facilities and to ensure that policy decisions regarding the expansion or replacement of landfill capacity are addressed in a timely manner.

Goal D:

Implement cost effective programs to recover usable and marketable materials from the waste received at the landfill, prior to disposal.

Goal E:

Utilize management and operating practices to assure that landfills are designed, constructed, operated and closed cost effectively and assuring regulatory compliance, environmental protection, and reduction of potential for nuisances.

Collection Services

Policy Statement

It shall be the Policy of the Solid Waste Authority of Palm Beach County to provide for an adequate level of solid waste and recycling collection for the residents, and businesses of unincorporated Palm Beach County.

It shall be the Policy of the Solid Waste Authority of Palm Beach County to assure that collection services are dependable and cost effective and shall support the Authority's compliance with all state, local and federal laws.

Goal A:

Provide a level of service which meets the collection needs of the vast majority of the County while encouraging recycling and the separation of vegetative waste.

Goal B:

Utilize a competitive process to select competent collectors to provide collection services and assure exclusivity of franchise collection contracts as required.

Goal C:

Assure compliance with regulatory requirements for sanitary collection and transport of wastes.

Goal D:

Provide contract administration and customer service programs necessary to ensure dependable, comprehensive collection services.

Goal E:

Utilize a special assessment as the means to bill residential customers for collection costs in the unincorporated area of the county.

Transfer Stations

Policy Statement

It shall be the policy of the Solid Waste Authority to provide a system of transfer stations to enhance the efficiency of collection of solid waste and recyclables in Palm Beach County.

It shall further be the policy of the Solid Waste Authority to strategically locate, construct and operate transfer stations throughout Palm Beach County as required to improve the overall efficiency of the solid waste system.

Goal A:

Operate transfer stations to assure compliance with regulatory requirements and environmental protection.

Goal B:

Review and refine operating practices on a regular basis to assure maximum efficiency.

Goal C:

Implement operational procedures to maximize waste separation efforts at Authority transfer facilities.

Goal D:

Implement programs to assure employees are adequately trained in driver safety, waste identification and emergency response.

Goal E:

Review transfer station system capacity on a regular basis to determine need for modification or expansion of the transfer station system.

Special Wastes

Policy Statement

It shall be the policy of the Solid Waste Authority to implement special waste management programs for those wastes designated as special wastes in law or regulation, and also for any wastes accepted by the Authority which require testing, documentation or special handling to assure operational compliance and worker safety.

Goal A:

Encourage the generators of special wastes to apply methods and technology for the reduction or recycling of special wastes as an alternative to disposal.

Goal B:

Assure compliance with regulations by implementing appropriate tracking and management systems for special wastes received by the Authority.

Goal C:

Implement recycling and utilization programs for special wastes received by the Authority to minimize landfill disposal of special wastes.

Goal D:

Develop programs which address those wastes requiring landfill disposal, such as treated biomedical wastes.

Goal E:

Implement training and education programs to assure the occupational health and safety of all waste management personnel is protected when handling special wastes.

Hazardous Waste Management

Policy Statement

It shall be the policy of the Solid Waste Authority of Palm Beach County to encourage the proper and responsible management of hazardous wastes within Palm Beach County. Also, to the maximum extent practicable, the potential for the improper introduction of hazardous wastes into the environment shall be minimized.

It shall further be the policy of the Solid Waste Authority of Palm Beach County to develop and operate such hazardous waste collection facilities as may be deemed prudent and necessary to manage the County's Household Hazardous Waste and Conditionally Exempt Small Quantity Generators (CESQG).

Goal A:

Minimize the potential for the delivery of hazardous wastes to the NCRRF and the landfills.

Goal B:

Enable citizens to conveniently dispose of their household hazardous wastes in a manner which protects public health and the environment.

Goal C:

Provide a means of hazardous waste disposal which is reasonably accessible to the Conditionally Exempt Small Quantity Generator.

Goal D:

Integrate collection programs with source reduction efforts to assist citizens in reducing the amount of household hazardous waste they generate.

Goal E:

Develop operational and educational programs to assist residents in the proper handling and management of household hazardous waste. Such programs shall not include efforts to permanently store, treat or dispose of hazardous wastes at Authority facilities.

Solid Waste System Operations

Policy Statement

It shall be the Policy of the Solid Waste Authority to operate its solid waste management facilities to minimize their impact on adjacent and neighboring properties.

It shall further be the Policy of the Solid Waste Authority to utilize screening and landscape buffers, maximizing the use of native Florida vegetation, to minimize visual impacts and noise. The Solid Waste Authority shall use operational best management practices to prevent or reduce pollution, provide for adequate water quality protection, and minimize odors which may emanate from solid waste facilities.

Goal A:

Assure that the solid waste facilities are, to the extent possible, aesthetically compatible with surrounding land uses.

Goal B:

Manage solid waste facilities to minimize potential odor, noise and traffic impacts.

Goal C:

Develop operating plans for individual facilities as appropriate to address issues of pollution prevention, operational practices, safety procedures and facility maintenance.

Goal D:

Develop plans to use closed facilities, to the extent practical, for park and open space purposes, integrating surrounding community recreational needs into the end-use plans for facilities.

Environmental Management

Policy Statement

It shall be the Policy of the Solid Waste Authority to implement environmental monitoring programs and control systems and to minimize the potential for any negative environmental impact and assure the compliance of facility operations with Federal state and local regulations.

Goal A:

Utilize facility designs, operating methods and monitoring programs to assure the protection of surface and ground water quality while developing and operating solid waste processing and disposal facilities.

Goal B:

Utilize technology and operating practices to protect ambient air quality from pollution by using state-of-the-art solid waste processing techniques and control technologies.

Goal C:

Utilize efficient and cost effective technologies to mitigate for environmental impacts which cannot otherwise be avoided or reduced.

Goal D:

Provide for long term care, using reclamation and restoration techniques where appropriate, for older, closed landfills under Authority control.

Goal E:

Provide for a comprehensive litter abatement and illegal dumping deterrence programs. Coordinate efforts with private and governmental state, local and federal entities which foster similar programs to create and fulfill a comprehensive local program.

Public Participation

Policy Statement

It shall be the Policy of the Solid Waste Authority of Palm Beach County to provide public information and education programs for all components of the integrated solid waste management system and to inform the public, municipalities, local governments and industry organizations of the systems objectives.

It shall further be the Policy of the Solid Waste Authority to assure the public has access to information about the various components of the integrated solid waste management program, and provide the timely response to inquiries from the public.

Goal A:

Develop comprehensive educational programs for all the elements of the integrated solid waste management system.

Goal B:

Develop new and enhance existing youth education programs.

Goal C:

Provide forums for the public and local governments to present concerns and recommendations and involve community and business interests in early planning efforts when programs being developed affect them financially.

Goal D:

Prepare audio/visual, print productions and personal presentations that enhance the achievement of the educational objectives.

Intergovernmental Coordination

Policy Statement

It shall be the Policy of the Solid Waste Authority to establish and maintain an intergovernmental coordination program to augment its Integrated Solid Waste Management Plan. The program shall be used to assure that appropriate regulatory agencies and other units of government are adequately informed of Authority policy decisions and activities regarding operational strategy, management, compliance and enforcement.

Goal A:

Provide direct liaison with the County, local municipalities, regional planning agencies, special districts, the Department of Environmental Protection and other State agencies in order to develop an effective solid waste management program.

Goal B:

Assure consistency of the Authority's Plan with the appropriate elements of local government comprehensive plans. Identify areas of conflict which may exist and assist in providing for their resolution.

Goal C:

Establish planning practices which minimize duplication and are capable of responding to changing Federal, State, regional and local goals.

Goal D:

Participate in intergovernmental efforts to abate litter, control illegal dumping and coordinate compliance and enforcement activities for permitted facilities.

Administration and Management

Policy Statement

It shall be the Policy of the Solid Waste Authority to implement administrative and management systems to maximize efficiency in the delivery of services, minimize costs for delivery of services, avoid duplication of efforts and provide a management structure to assure the Solid Waste Authority is achieving its goals and objectives.

Goal A:

Provide an organizational framework of staff, contract operators and technical consultants to implement the policy statements and goals of the Governing Board, as adopted by this plan.

Goal B:

Adopt annual budgets to efficiently provide for the systems needs and comply with the provisions of applicable law and financial commitments, and utilize annual disposal assessments and tipping fees to fund the operational costs of the disposal system not supported by other revenues.

Goal C:

Encourage a high level of technical expertise and professional competence of Solid Waste Authority staff through education, seminars, professional associations and technical certifications.

Goal D:

Implement procurement programs to comply with applicable laws and regulations, assure the highest value is received for the dollars expended and provide participation opportunities for all types of businesses, including Minority/Women Business Enterprises.

Goal E:

Monitor technology improvements, financial circumstances, and other factors to facilitate efficient and economical implementation of solid waste system elements.

Goal F:

Conduct studies and evaluations to assure accuracy of disposal assessments, waste reduction, recycling or other activities required for regulatory compliance or effective management.

Emergency Management

Policy Statement

It shall be the Policy of the Solid Waste Authority to develop and maintain systems and procedures that ensure continuity of operations following hurricanes or other natural disasters or emergency events. It shall further be the policy of the Authority to efficiently and effectively conduct debris management activities for unincorporated Palm Beach County in accordance with its responsibility as a support agency to Palm Beach County under ESF3 and in a manner consistent with the Solid Waste Authority Emergency Management Manual.

Goal A:

Develop and maintain an emergency management plan that ensures effective disaster preparedness, post-disaster damage assessment, disaster recovery, debris management, and intergovernmental and public communication.

Goal B:

Resume solid waste collection operations in unincorporated Palm Beach County as soon as is safe to do so in order to protect the health, safety and welfare of all of the residents of Palm Beach County.

Goal C:

Procure and maintain contracts with debris management contractors, in a manner consistent with the Authority's procurement policies, to ensure rapid deployment of debris collection and management resources following a disaster.

Goal D:

Manage the debris collection activity for unincorporated Palm Beach County in an efficient and effective manner consistent with the Debris Management Plan while striving to maximize the reimbursement of incurred costs from the Federal Emergency Management Agency and other agencies.

Goal E:

Effectively communicate information on facility status and debris collection progress to our customers so they can plan their recovery activities accordingly.

EXISTING CONDITIONS

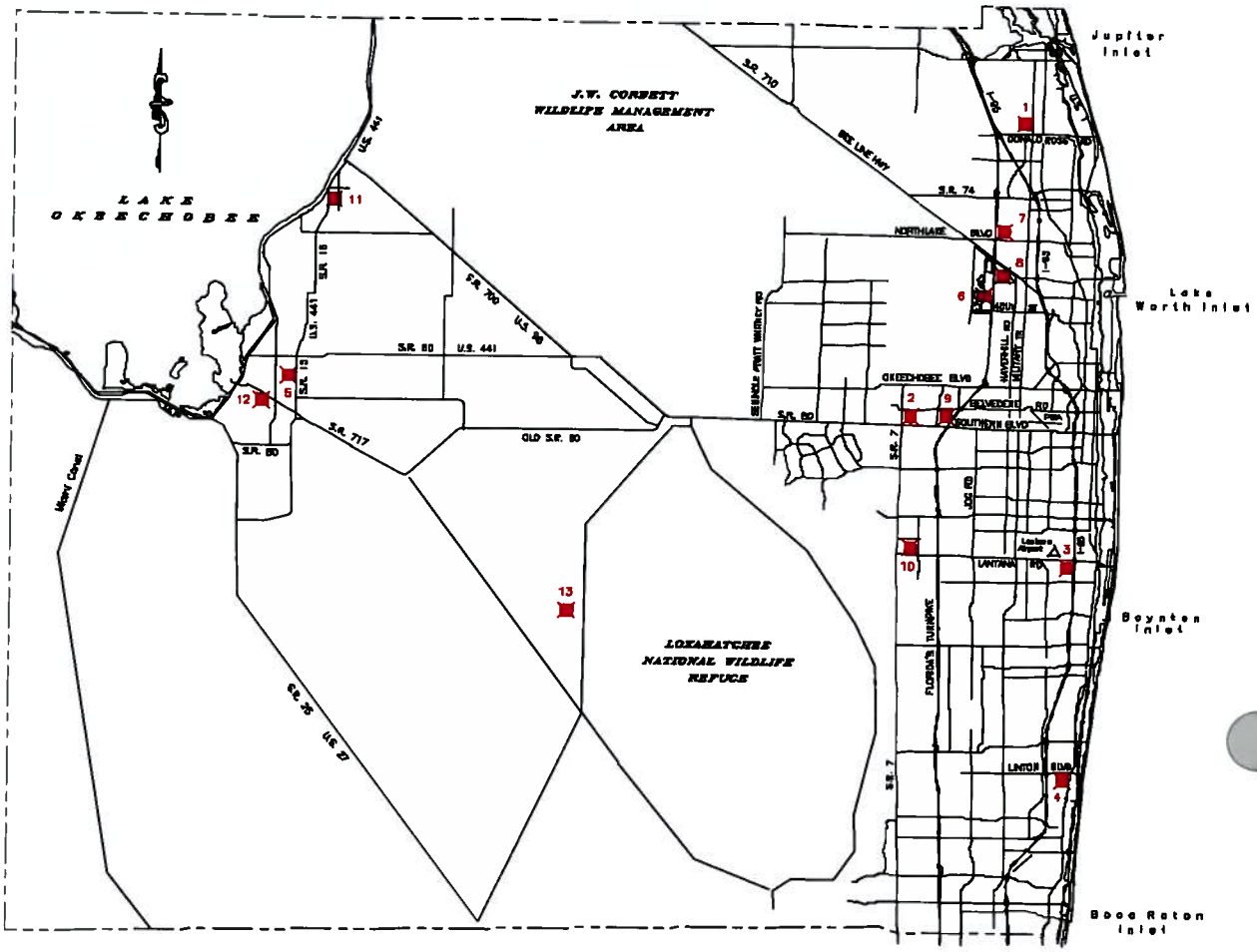
Solid Waste System Capacities and Services

The solid waste system developed and operated by the Authority consists of transfer, processing and disposal facilities, plus closed disposal facilities which the Authority owns or monitors. Figure 2 is a map of Palm Beach County showing the locations of the solid waste facilities managed by the Authority. In addition to the facilities of the Authority, certain transfer and disposal facilities owned and operated by units of government are included as elements of the county wide system. The facilities operated by local governments are not commercial facilities, and manage wastes for only the local governmental units that operate them.

All of the operating facilities have an identified capacity to transfer, process or dispose of waste. The purpose of this section is to identify the remaining available capacity of those facilities, and identify the level of service that has been established for waste collection, and per capita generation of solid waste. These capacities and levels of service serve as the basis for predicting future conditions and projecting the need for new or expanded capacity.

This data summarizes Solid Waste Authority designated transfer stations, processing facilities and disposal facilities serving Palm Beach County as of 2006. Sludge disposal sites are managed pursuant to waste water regulations and are not included in the designation of solid waste disposal sites. Locations of transfer stations reflect the ultimate siting location, or the result of annexation of Authority facilities into municipalities. Capacities of transfer stations reflect design capacities, which provide some flexibility to accommodate peak waste flow days. All waste processing facilities operated by the Solid Waste Authority are located at the North County Resource Recovery Facility (NCRRF) site in West Palm Beach. Figure 3 shows the locations of the waste processing facilities on the NCRRF site.

The Waste to Energy facility is an RDF (Refuse Derived Fuel) municipal waste combustor. The Ferrous Processing facility cleans and densifies ferrous metals recovered in the RDF production process, and white goods and scrap ferrous recovered from the Class III landfill. The Materials Recycling Facility and the Commercial Materials Recycling Facilities process the source-separated recyclable materials received by the Authority through physical separation, densification or baling. The Compost facility processes mulched yard waste and waste water treatment sludge. The capacities for waste processing facilities are in tons per year and are based on either contract quantities or a combination of design data and operating experience. These capacities are shown on Tables 1 through 3.



LEGEND

1 North County Transfer Station
2 West Central Transfer Station
3 Central County Transfer Station
4 South County Transfer Station
5 Glades Regional Transfer Station
6 North County Facility
7 West Lake Park Road Landfill
8 Dyer Boulevard Park (closed landfill)
9 Cross State Landfill
10 Lantana Landfill
11 Pahokee Landfill
12 Belle Glade Landfill
13 Western Site

Figure 2. Location of Solid Waste Authority Facilities.

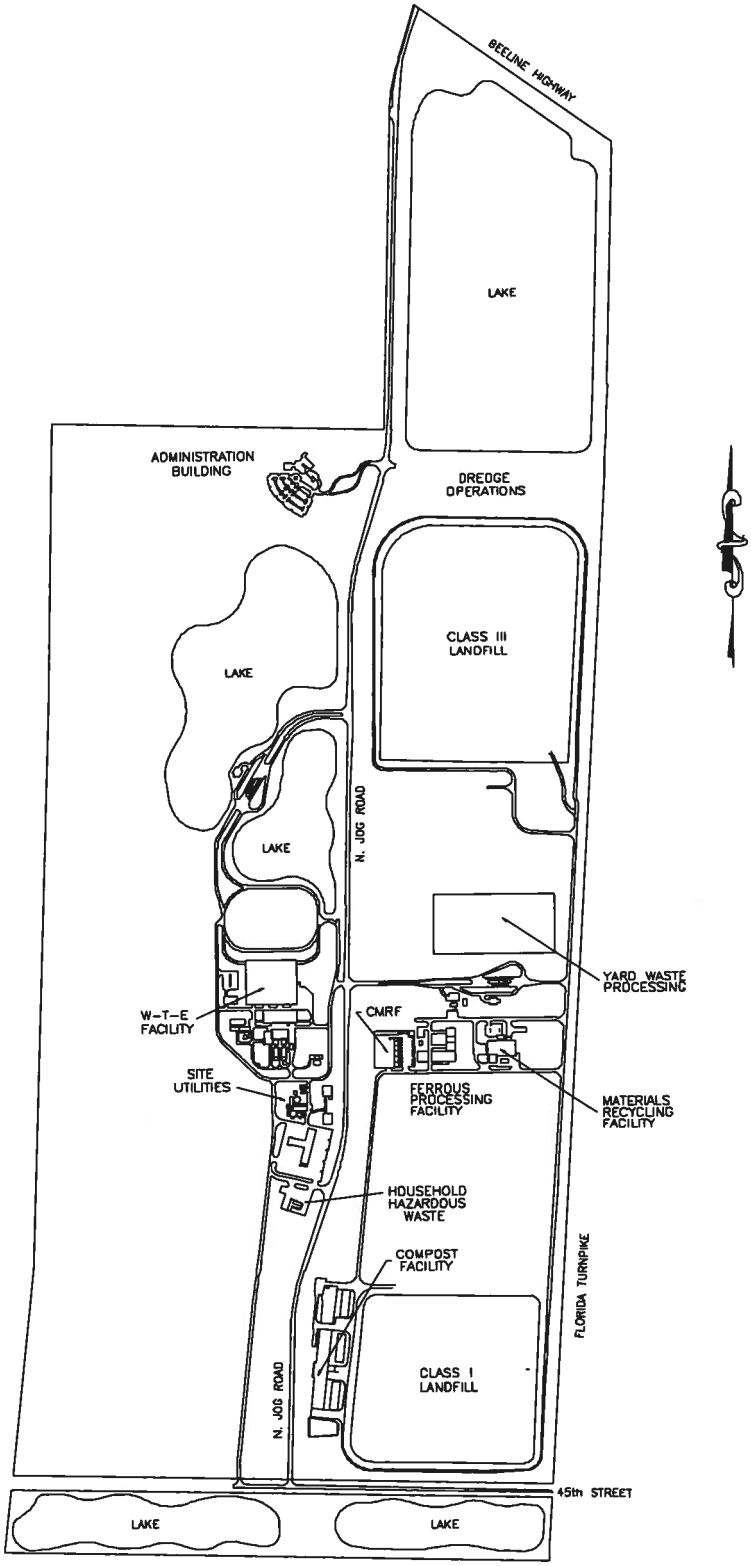


Figure 3. Map of NCRRF Site Showing Facility Locations.

Table 1
Solid Waste System Transfer Stations

Transfer Stations			
Owner Operator	Location	Design Capacity	Status
Authority	Belle Glade	500 tons/day	Active
Authority	Lantana	2400 tons/day	Active
Authority	Delray Beach	1000 tons/day	Active
Authority	Royal Palm Beach	1900 tons/day	Active
Authority	Jupiter	1900 tons/day	Active
Authority	South West County	2400 tons/day	Planned
Town of Palm Beach	Palm Beach	40 tons/day*	Active

* Facility serves Town of Palm Beach collection vehicles only.

Table 2
Solid Waste Authority Waste and Recovered Materials Processing Facilities

Processing Facilities	
Facility	Capacity in Tons per Year
Waste to Energy	624,000*
Ferrous Processing	45,000*
Materials Recycling	175,000
Commercial Materials Recycling	22,000
Compost	120,000

* Capacity based on design capacity or contract with facility operator.

Table 3
Solid Waste System Disposal Facilities

Disposal Facilities					
Owner/Operator	**Location**	**Waste Type**	**Acres**	**Life**	**Status**
Authority Landfill	West Palm Beach	Mixed	334.0	15*	Active
Town of Palm Beach	Unincorporated	Vegetative	28.0	20+	Active
Town of Palm Beach	Unincorporated	Vegetative	5.0	20+	Active
Lake Worth Drainage District	Unincorporated	Vegetative	20.0	20+	Active

* It is projected that the capacity of the landfill will be consumed by the year 2021.

Recycling and Waste Reduction Activities

Part of the Solid Waste Authority's solid waste management program is waste reduction; that is, reducing the amount of refuse sent to the landfills. The 1988 Solid Waste Management Act established a state-wide goal of 30% recycling; with specific goals of 50% recycling of ferrous, aluminum, glass and plastic containers, and newsprint. The Authority has implemented collection and processing programs to meet, and ultimately exceed the goals established by the State. In addition to these five materials, the Authority's residential collection programs currently include aseptic packaging, magazines, corrugated cardboard gable-top containers (milk, juice, etc.), and other aluminum products. Commercial Recycling programs include office paper and corrugated cardboard, plus the same materials as the residential programs. Special waste recycling includes materials such as yard waste, construction/demolition debris, tires, white goods and used oil. This is not an exhaustive list of materials, nor will the program be limited to only these materials. As markets are developed that assure that the materials recovered are recyclable, they may be added to the recycling programs.

Beyond the state-wide recycling goal, the Solid Waste Authority has established a goal of reducing the quantity of waste being delivered for combustion or landfill by 50

Table 4 shows the progress of Palm Beach County toward achieving the recycling and waste reduction goals.

Table 4
Recycling Activity in Palm Beach County
2000 through 2004[1]

(2) Year	(3) DEP (%)	(4) DEP Tons	(5) SWA (%)	(6) SWA Tons	(7) Total MSW
99/00	30	669,238	44	813,394	2,230,794
00/01	39	876,282	51	1,171,860	2,246,877
01/02	36	816,920	51	1,221,343	2,269,222
02/03	33	768,542	51	1,287,989	2,328,915
03/04	33	829,717	43	1,035,104	2,514,295

NOTES:

1. Numbers are, as reported to DEP in Palm Beach County's Recycling and Education Grant Applications.
2. DEP fiscal year: July 1 through June 30.
3. Adjusted DEP recycling rate applied toward 30% goal. DEP calculation allows only 15% of special waste recycling.
4. Recycled tons corresponding to adjusted rate.
5. Unadjusted recycling rate. SWA calculation includes all special waste recycling.
6. Recycled tons corresponding to unadjusted rate.
7. Total MSW reported for the year. Includes materials not handled by Authority facilities.

Recycling reduces the amount of waste brought into landfills and thereby reduces the amount of land needed for landfilling. The space saved extends the life of these facilities, postponing the need to expand new facilities. The Authority anticipates that by increasing the recycling of waste, the environmental impact associated with landfilling, illegal dumping and littering will be reduced.

Household and Small Quantity Generator Hazardous Waste Collection

The Solid Waste Authority has implemented programs to accept HHW at no cost to the resident, and CESQG waste with the generator paying the cost of disposal. HHW is now collected at the Central facility on the North County Resource Recovery facility site, and at the transfer stations. CESQG waste is accepted from generators who register with the Authority.

Solid Waste Collection

The Solid Waste Authority is responsible for providing solid waste and recycling collection in unincorporated Palm Beach County. The unincorporated area is divided into nine franchise areas. These franchise areas are serviced by contract haulers that are awarded exclusive franchises through a competitive bid process. The franchise areas are designed to have similar characteristics (rural, suburban or urban) within each district, and have a geographical continuity to allow more efficient routing of collection vehicles. The current franchise agreements expire on September 30, 2008. Pursuant to the Special Act, the agreements must be awarded every five years through a competitive process.

In addition to the exclusive franchise districts for solid waste and recycling, the Authority issues franchises for roll-off collection of construction and demolition debris on a non-exclusive basis in the unincorporated area.

Closed Facilities

Landfills which have reached their ultimate capacity are closed and require monitoring and care to assure that they do not become threats to the environment or public health. The Solid Waste Authority has responsibility for six closed facilities. Several of these facilities were closed prior to the Authority assuming control, ownership or liability for the properties. For facilities closed prior to 1990, groundwater quality surrounding the facilities is monitored under permits issued by FDEP. Facilities closed after 1990 are subject to a long term care requirement under Florida Statues, which includes maintenance and monitoring of groundwater quality and the establishment of escrow accounts to fund the long term care. The following table summarizes the closed facilities of the Solid Waste Authority.

Table 5
Closed Disposal Facilities Managed by the Solid Waste Authority

Closed Disposal Facilities			
Facility	**Year Closed**	**Operator**	**Status**
Belle Glade	1990	City of Belle Glade	Long Term Care
Cross State	1978	Palm Beach County	Monitoring
Dyer	1995	Palm Beach County/SWA	Long Term Care
Lantana	1988	Palm Beach County/SWA	Monitoring
Pahokee	1984	Palm Beach County/SWA	Monitoring
West Lake Park	1968	Palm Beach County	Monitoring

LEVEL OF SERVICE - COLLECTION AND DISPOSAL

As the entity responsible for collection of solid waste in the unincorporated county, the Authority establishes the Level of Service (LOS) for unincorporated area collections as part of the collection franchises. As the service provider for solid waste disposal county wide, it is also the responsibility of the Solid Waste Authority to establish a LOS for disposal on a county-wide basis.

Collection LOS

The LOS for collection in the unincorporated county is established through the collection franchises managed by the Authority. The LOS for collection is as follows:

Component	Level of Service
Residential	Twice per week garbage collection; Twice per week bulk trash collection; Once per week vegetation collection; Once per week recyclables collection.
Commercial	Minimum once per week garbage and trash; Recyclables collection is available to all businesses.

Disposal LOS

At the most basic level, the LOS for disposal is 100 percent. That is, the Authority will manage all the solid waste it receives. Beyond this simple point, the LOS for disposal serves as the basis for determining the life of the disposal system and for determining the need for additional capacity and its timing. Additionally, the LOS is the basis for the Authority's rate structure.

The Authority expresses its disposal LOS in two ways. For long range planning purposes, the LOS for disposal is based on the county-wide per capita waste generation rate, as measured by the amount of waste delivered to Authority facilities for disposal. This basis for developing the per capita generation rate is discussed at greater length in the following section on population and waste generation. The LOS for disposal is 9.54 pounds per capita per day. This per capita generation rate excludes recyclable materials delivered to private facilities, and wastes such as yard waste and construction/demolition debris delivered to private recycling facilities.

For billing purposes and when necessary to determine the LOS by land use, the SWA uses waste generation rates determined by waste generation studies. The latest waste generation study was completed in 1997. The waste generation rates for residential property are expressed in tons per year for four categories of residential property: single family, mobile homes, multi-family with four units or less per building, and multi-family

with five units or greater per building. For the purpose of the SWA's non-ad valorem special assessment the two multi-family categories are combined.

The waste generation rates for commercial property are expressed in pounds per square foot per year in categories based on the Property Appraiser's classification (PA code). For the purpose of the SWA's non-ad valorem special assessment, commercial properties are further grouped into one of four categories: low generators, medium generators, high generators, and non-generators.

The waste generation rates for residential and commercial property are presented below.

Table 6
Residential and Commercial Waste Generation Rates

Residential Generation Rates

Category	Garbage/Trash (TPY)	Vegetation (TPY)	Total
Single Family	1.10	0.85	1.95
Mobile Home	1.10	0.58	1.68
Multi-Family < 5 Units	0.72	-	0.72
Multi-Family >= 5 Units	0.72	-	0.72

Commercial Generation Rates

PA Code	Use	Lbs/Sq. Ft.	Category
37	Dept. Store	1.72	Low
60	Auditorium	1.96	Low
62	Bank	1.33	Low
68	Mortuary	1.90	Low
72	Parking Structure	0.30	Low
81	Hvy. Manufacturing	1.50	Low
83	Mini Warehouse	1.83	Low
91	Churches	1.03	Low
5399	Hospitals with Incinerators	1.32	Low
9299	Museums	1.12	Low
17	Dormitory	8.10	Medium
34	Strip Store	4.00	Medium
35	Retail Shop	7.47	Medium
36	Discount Store	4.92	Medium
38	Neigh. Shop. Center	5.34	Medium
39	Community Shop. Center	5.34	Medium
40	Shop. Center Regional	5.34	Medium
41	Shop. Ctr. Super Reg.	5.34	Medium

4299	Pharmacy-Stand Alone	2.30	Medium
44	Hotel	4.28	Medium
45	Hotel/Motel/Resort/RV Park	4.28	Medium
46	Low Rise Motel	4.28	Medium
47	High Rise Motel	4.28	Medium
49,50,51	Office-Lo Rise	2.52	Medium
52	Medical Office	2.97	Medium
53	Hospital	3.62	Medium
54	Nursing Home	2.17	Medium
58	Bowling Alley	2.02	Medium
59	Arena	2.08	Medium
61	Theater	8.46	Medium
63	Branch Bank	6.22	Medium
65	Garage	6.61	Medium
66	Vehicle Sales/Rep.	6.53	Medium
67	Service Shop	6.74	Medium
69	Clubhouse	4.87	Medium
71	Transport Term.	2.09	Medium
73	Nursery/Daycare	5.63	Medium
75	Auto Sales/Svc.	3.85	Medium
80	Light Manufacturing	4.58	Medium
82	Dist. Warehouse	2.25	Medium
84	Warehouse	5.20	Medium
85	Aircraft Hangar	6.10	Medium
86	Barns	5.17	Medium
87	Pre-Fab Metal Bldg.	5.73	Medium
88	Tech. Manufacturing	2.22	Medium
90	School	7.68	Medium
92	Educational/Religious	3.71	Medium
42	Supermarket	16.35	High
43	Convenience Store	21.33	High
55	Bar/Nightclub	12.37	High
56	Restaurant	25.58	High
57	Fast Food Restaurant	40.03	High
64,74	Service Station	16.21	High
70	Cold Storage/Packing	13.34	High

FUTURE CONDITIONS

Population Growth and Waste Generation Rates

Effective solid waste infrastructure management requires evaluating both existing demand and projecting future capacity needs. Two key components are the per capita waste generation rate, upon which the LOS is based, and the population growth rate. Using this information, the waste processing and disposal capacity of the existing system and planned additions can be evaluated to determine the life span of the landfill. Because landfill disposal capacity of any given facility is finite and non-renewable, ISWM systems are designed to conserve landfill capacity.

To calculate the amount of solid waste to be disposed at Authority facilities and, therefore, the projected facilities demand, population projections, per capita generation rates, and historical records are used. This data is compiled and entered into the Authority's Landfill Depletion Model, which is discussed in detail later in this Chapter.

Recent projections indicate that the population of Palm Beach County is anticipated to increase from an estimated 1,265,900 people in 2005 to 1,916,200 people in 2030. The SWA uses the University of Florida Bureau of Economic and Business Research medium permanent population projections as published in Florida Population Studies. BEBR projections are presented in 5 year intervals. The periodic growth rates are as follows:

Date Range	Ave. Annual Growth Rates
2005-2010	2.19%
2010-2015	1.77%
2015-2020	1.62%
2020-2025	1.45%
2025-2030	1.27%

The between interval population estimates are calculated through interpolation using the periodic growth factors

Per capita waste generation rates are developed using the actual quantities of waste delivered to Authority facilities and the annual estimate of population from the University of Florida. The SWA uses two per capita generation rates: one for Class I material (garbage, recyclables, sludge and special wastes) and one for Class III material (trash, building debris, land clearing debris and vegetation). These rates are calculated by dividing the delivered pounds by the estimated population and dividing by 365 days. For fiscal year 2005, the Authority received 2,203,456 tons of MSW and recyclables. The population of Palm Beach County was estimated at 1,265,900. The per capita solid waste generation rate is estimated at 9.54 pounds per day. A breakdown of incoming waste by classification according to Authority scale data is presented in Table 6.

Table 7
2005 Waste Generation Unit Rates
Pounds Per Capita Per Day

Waste Classification	Tons	Pounds Per Capita
Garbage	1,129,444	4.89
Trash	210,279	.91
Vegetative	265,503	1.15
Building Debris/Land Clearing	147,008	.64
Sludge	78,846	.34
Fill	220,220	.95
Tires	2,438	.01
Miscellaneous	14,103	.06
Subtotal MSW	2,067,841	8.95
Recyclables	135,615	.59
Total MSW	**2,203,456**	**9.54**

Following a period of relatively stable per capita generation rates in the 1990's, the per capita generation rate has increased steadily since the year 2000. Outside of vegetation, the average generation rates of Class 3 material (excluding fill) for the years 2001 through 2005 were as follows: 1.22, 1.23, 1.21, 1.23, and 1.56 pounds per person per day. The increase in the most recent year was the result of increased building debris caused by hurricanes Frances and Jeanne. It is anticipated that the per capita generation rate of Class 3 material will remain at or near the current level during this period of high storm activity.

Vegetation is a significant component of the Class 3 waste stream. The per capita generation rate of vegetation has remained relatively stable over the past three years. The rates for the years 2001 through 2005 were as follows: .92, .99, 1.11, 1.15, and 1.15. It is anticipated that the per capita generation of vegetation will remain stable in the future. The vast majority of the vegetation received by the Authority is recovered and diverted for alternative uses, including feedstock for the compost facility, boiler fuel for the Okeelanta power plant, and landfill side slope stabilization.

The Class 1 generation rate (excluding sludge) has increased steadily since the 2001 fiscal year. The rates for the past five years were as follows: 4.98, 5.08, 5.15, 5.34, and 5.54. While the recent hurricane activity has certainly contributed to the most recent increases, it is the Authority's view that the bulk of the increase is due to other factors, including a strong economy, an active real estate market and in particular sales of existing homes, and the increasing use of disposables. The Authority believes the Class 1 per capita generation rate will continue to rise for the foreseeable future.

Table 8
Historical Per Capita Generation Rates

	Class 1 Material	Class 3 Material	Total	Vegetation
1995/1996	4.63	2.08	6.71	.60
1996/1997	4.74	1.95	6.69	.73
1997/1998	4.85	2.24	7.09	1.01
1998/1999	5.02	2.41	7.43	1.04
1999/2000	4.97	2.24	7.21	1.00
2000/2001	4.98	2.14	7.11	.92
2001/2002	5.08	2.22	7.30	.99
2002/2003	5.15	2.32	7.46	1.11
2003/2004	5.34	2.38	7.73	1.15
2004/2005	5.54	2.71	8.24	1.15

Class 1 rate excludes sludge, which is relatively stable and largely diverted for composting. Class 3 rate excludes fill material, which is diverted for reuse and fluctuates significantly due to market conditions and Authority need. Class 3 material includes vegetation.

It must be noted that the per capita waste generation rates used to evaluate system capacity are not comparable to or derivative of the residential generation rates used for Annual Special Assessment purposes. The residential rates used for the Special Assessment incorporate only residential generation, whereas the rates used herein include both the residential and commercial solid waste impact as a function of permanent population. Additionally, these generation rates include only the waste the Authority receives and do not include materials delivered to permitted recyclers or shipped out of county. For the purpose of planning for long term disposal capacity, it is assumed that the material not coming to the Authority's system will continue to be diverted from the system. To the extent that this assumption is incorrect, the estimated landfill life will be shorter than forecast. But given the fact that the Authority performs an annual review of waste generation and consumption data as part of the landfill depletion model update, any substantive change will be detected, its potential impact evaluated, and any planning revisions made long before the disposal capacity of the landfill can be significantly impacted.

Forecasting Landfill Capacity

The principles of integrated solid waste management as put forth in the Environmental Protection Agency's hierarchy of integrated solid waste management are designed to minimize the quantity of waste disposed in landfills. The recycling, composting, and resource recovery programs that make up a part of the Authority's solid waste management system divert materials from landfill disposal and decrease the volume of landfill space consumed.

Despite the existence of these programs, the Authority recognizes the unique characteristics of landfilling as a waste disposal option, not the least of which is the reality that landfill space, unlike other forms of infrastructure, is a depleting resource. Recycling, organics reclamation, and resource recovery are all factors in increasing the life of a given landfill volume, however given existing technology, there will always be a need to landfill some portion of the waste stream. It is reasonable to assume that although the need to provide replacement capacity can be delayed through recycling, organics reclamation, and resource recovery programs, it cannot be prevented. The availability of landfill capacity is a driving force behind the solid waste management system decision making process.

Prudent planning requires identifying the time at which the need for replacement capacity becomes critical and taking the required steps to ensure that replacement capacity is available. Although replacement landfill capacity can be secured in several ways, including siting a new landfill and contracting with a private landfill operator, the long lead time in siting, permitting, and constructing a landfill site, often greater than ten years, necessitates effective long range planning in order to ensure viability of available options. The Authority's primary long range planning tool is the Landfill Depletion Model.

The Landfill Depletion Model is intended to forecast the estimated life of the Authority's North County landfills in order to assist with facility planning decisions and to assess the impact of alternatives and alternative states of nature on landfill life. As a planning tool, the model is useful in identifying the point or points in time at which a decision is required in order to ensure the availability of disposal capacity.

The Landfill Depletion Model considers the dynamic interrelationships between the available processing and disposal options, population projections and growth rates, per capita generation rates, recycling rates, diversion rates, incineration capacity and reduction effectiveness, landfill compacted densities, and cover material requirements and produces a projected date of landfill depletion. With this date established and the anticipated lead time known, the latest date at which a decision must be made can be determined.

Because of the many factors impacting the rate of landfill depletion and in order to minimize the possibility of falling behind on the critical path, the Landfill Depletion Model is run on an annual basis when the latest population projections become available. The following is a description of the procedures followed in the annual update of the model.

Landfill Depletion Model Procedures

Population projections and per capita waste generation rates are used to forecast annual waste generation for the next 30 years. The annual waste tonnages are adjusted downward to account for recycling, incineration, and waste reduction activities. The net

landfill tonnage is converted to cubic yards and the landfill depletion determined using estimated compacted densities.

Population Projections

Palm Beach County is one of the most rapidly growing areas in the country. Recent projections indicate that the population of Palm Beach County is anticipated to increase from an estimated 1,265,900 people in 2005 to 1,916,200 people in 2030, an average annual increase of almost 1.7%. Both the population growth and the timing of population growth are critical to properly assessing landfill longevity.

The Authority uses the University of Florida Bureau of Economic and Business Research medium permanent population projections as published in ***Population Studies*** annually in February. These population projections are the same projections used by Palm Beach County Planning and Zoning for planning purposes. The BEBR projections are presented in 5 year intervals. The between interval population estimates are calculated through interpolation using the periodic growth factors.

Tourism being one of Palm Beach County's largest economic contributors, there is an annual surge in population between Thanksgiving and Easter. Due to the difficulty in predicting seasonal population, which fluctuates with general economic conditions and the weather, among other factors, the solid waste generation projections are made using only permanent population. As a result of this, the per capita generation rates used in the model may not be comparable to those of other jurisdictions.

Per Capita Generation Rates

Two per capita generation rates are utilized in the model: one for Class I material (garbage) and one for Class III material (trash). Class I material is delivered to the North County Resource Recovery Facility for incineration with material in excess of the plant's capacity landfilled directly in the Class I landfill. Class III material is delivered to the Class III landfill for processing and disposal.

In order to determine the assumed per capita generation rates, Authority incoming waste tonnages for the preceding several years are reviewed in an effort to identify any trends. The source of data is Authority scale reports. In the absence of any discernible trend, the waste tonnage from the previous year is divided by the BEBR medium permanent population estimate for the previous year to produce the generation rates in pounds per person per year. The per capita generation rates used in the model reflect only the material the Authority receives or reasonably expects to receive. Currently, considerable amounts of heavy construction and demolition debris and clean vegetation are delivered to private recyclers permitted by the Authority. Material that is currently diverted to private recyclers is assumed to continue to be delivered to private recyclers unless there is some compelling reason to believe that the situation will change. Socioeconomic, regulatory, and other factors that could affect the estimate are evaluated for their potential impact.

The model can be programmed to incorporate changing per capita generation rates using an average annual growth/reduction rate. As indicated earlier in this text, the per capita generation of Class 1 material in Palm Beach County is increasing. The Authority's planning assumptions currently include a continuing increase in the per capita generation of Class 1 material. Class 3 waste generation is expected to remain stable. Again, factors which could possibly result in a future change in per capita generation, such as regulatory action covering packaging and disposable products, are considered. For a complete discussion of the Authority's per capita waste generation assumptions readers are urged to read the Landfill Depletion Model which is included as Appendix F.

Given the fact that the Authority performs an annual review of waste generation and consumption data as part of the annual landfill depletion model update, any substantive changes in factors which may affect the generation of solid waste will be detected, their potential impact evaluated, and any planning revisions made long before the disposal capacity of the landfill is significantly impacted.

Waste Disposal

Class I material is assumed to be delivered to the plant unless the plant is at capacity, in which case it is delivered to the Class I landfill as raw garbage. Class III material is assumed to be delivered to the Class III landfill, except as follows. Currently, considerable quantities of Class III material are commingled at the transfer stations and delivered to the Resource Recovery Facility or diverted to the Class 1 landfill for operational reasons. Operational constraints at the transfer stations, particularly in the southern part of the County, will most likely result in the commingling continuing. Additionally, the SWA diverts a large percentage of building debris and C&D processor residue to the Class 1 landfill because of the gypsum content in this material and the potential for odor. This commingling is considered in the Authority's landfill projections.

Recycling and Materials Recovery

The total annual generation of Class I and Class III material is adjusted to account for recycling and waste reduction activities. The Class I waste stream is adjusted to account for recovered residential and commercial recyclables delivered to the Materials Recycling Facility as well as ferrous metals and aluminum recovered at the Resource Recovery Facility. A review of current recycling rates, recycling trends and projected enhancements of the existing programs is required to establish the assumptions used in the model.

The Class III waste stream is adjusted downward to account for the diversion of clean yard waste and other materials to alternative processing and recovery. Recent performance in these activities is used to forecast future Class III recycling success.

Resource Recovery Facility Performance

The Resource Recovery Facility has a rated capacity of 624,000 tons per year, however the plant has surpassed 800,000 tons of processible waste for all of the past ten years. The

residuals from the plant include ash, process residue, and unprocessibles. These residuals are landfilled in the Class I landfill. Recent plant performance is evaluated to determine the estimated reduction provided by the plant. Unprocessibles typically amount to approximately 3% of total delivered waste and the Operating and Maintenance Agreement with the plant operator contracted by the Authority specifies a minimum 60% reduction by weight. Present and projected future plant performance is evaluated in order to establish a forecast for probable average future performance.

As the addition of a third boiler to the Resource Recovery Facility is an option, the model includes a scenario for the addition of a third boiler, which is assumed to provide increased throughput to 1,100,000 tons of processible waste per year beginning in the year 2012 or sooner. The SWA is presently investigating options for expanding incineration capacity, including the third boiler and/or a second waste to energy facility.

Compacted Densities

Incoming solid waste tonnage is converted to consumed landfill volume by multiplying by the average compacted density. Although industry standards do exist, in reality landfill compacted densities vary widely based on the type of material landfilled and the operating procedures employed. Because the Authority landfills large quantities of ash and process residue from the RDF Resource Recovery Facility in the Class I landfill and diverts nearly all clean vegetation, the accuracy of industry averages cannot be relied upon for Authority system planning purposes.

To avoid uncertainty in estimating the compacted densities the Authority conducts an annual survey to determine the volume of landfill space consumed. The landfill is surveyed at least annually and the calculated waste volume for the prior year is subtracted from that for the present year to determine the volume depleted in the year. Using Authority waste tonnage data, the average landfill compacted density for the year and life-to-date is calculated. These densities are used to arrive at the density assumptions used in the model.

Landfill Cover

Because daily cover is included in the annual volume used in the density calculation, it is not addressed in the model. Final cover consuming landfill volume is assumed to be 5% of the total landfill volume and is accounted for by reducing the available landfill capacity by 5%.

Available Landfill Volume

The available landfill volumes have been calculated by the SWA's engineers, Camp, Dresser, and McKee, using CAD analysis. CDM estimates total landfill volume at 51,884,000 cubic yards prior to settlement, of which 9,698,800 cubic yards are in Class 3 cells. This estimate assumes landfilling to 167 feet NGVD, which is 7 feet above the permitted height, with settlement to 160 feet. Because the Landfill Depletion Model uses compacted densities that include settlement, the volume above 160 feet NGVD, an estimated 1,760,000 yards, has been deducted for the purpose of the model. Therefore, the total

estimated landfill volume is 50,124,427 cubic yards. Through September 30, 2005, 8,835,794 cubic yards of Class 1 volume and 4,839,917 cubic yards of Class 3 volume have been depleted.

The Authority has two landfill depletion scenarios, referred to as the "Maximize Class I" and the "Balanced Life" scenarios. The "Maximize Class I" scenario consists of 262 acres and 40,754,579 cubic yards of Class I space and 72 acres and 9,369,848 cubic yards of Class III space. The "Balanced Life" scenario assumes that the Authority manages the site in such a manner as to provide capacity for both Class 1 and Class 3 material at the North County landfill through the life of the site. Because current projections indicate that the Authority will exhaust the Class 3 cells by 2015, seven years before the Class 1 cells will be depleted, balancing the life of the site will require landfilling Class 3 material in the Class 1 cells.

The landfill depletion model provides results for these scenarios and can be programmed to evaluate other potential scenarios if necessary. The Authority is currently considering accelerating the development of the replacement landfill site in order to reserve capacity for Resource Recovery Facility Residues at the existing site through 2040.

Unforeseen Events

The waste generation rates used in the model do not include an allowance for increased depletion resulting from a hurricane or other natural disaster. Additionally, the model assumes that the Resource Recovery Facility will be operating without any extended outages other than scheduled maintenance and minor outages. To the extent that these assumptions do not hold true, the estimated landfill life will be shorter than that predicted by the model.

Uncertainty

As with any forecast, assumptions based on current experience and expected future occurrences are relied upon to predict future events. To the extent that assumptions prove to be unrealistic or expected future occurrences do not materialize, actual results will deviate from the forecast and that deviation may be substantial. The danger of a substantial deviation is mitigated somewhat by the frequency of the analysis. Nonetheless, understanding the variability of the results is essential.

For this reason, the Landfill Depletion Model analysis is programmed with the ability to perform various sensitivity analyses and this type of analysis is performed every time the model is updated. Several states of nature consisting of an optimistic, pessimistic, and most likely set of assumptions are evaluated with the result being a range of time within which landfill depletion is probable. Although it is unlikely that all of the pessimistic or all of the optimistic assumptions will be the most accurate, such an occurrence is possible. For this reason, the Landfill Depletion Model results must be viewed with the inherent uncertainties in mind.

Recognizing the inherent uncertainties, the Landfill Depletion Model is by design a conservative document. Relatively conservative assumptions are used in an effort to

reduce the possibility of over-estimating the life of the landfill. Given the rapidity of regulatory and technological change in the solid waste industry along with the general trend away from landfill disposal, decreased consumption of landfill capacity in the future is probable. More responsible approaches to packaging, decreased use of disposable products, decreased use of non-recyclable materials, the ability to recycle and reuse a wider variety of materials, approved alternative uses for incinerator ash, and changes in landfill technology have the potential to significantly increase landfill longevity. As any of the above go from concept to reality, the model will be adjusted accordingly.

Identifying Future Facility Needs

Given the information available on the current capacity of the various components of the solid waste system, and the growth of the waste stream due to increases in population and per capita generation, it is possible to project needs for future facilities for the system. These can be addressed both in terms of additional capacity and the time at which the capacity will be required, to determine both the potential size of a facility and the dates siting, construction and operations should be commenced. Identification of a future need does not in and of itself dictate the specific siting of a facility, but it does represent a recognition that the existing waste transfer, processing and disposal capacity is not unlimited and should be regularly examined for adequacy. Options may remain open to forego new facilities, but these options may involve consequences for existing facility capacities.

Just as siting is not explicitly addressed, the operational characteristics of future facilities are not dictated by simply identifying a requirement for additional capacity or facilities in the future. Questions of location, ownership and operational responsibility are all part of the decision making process that arises out of the need for additional transfer, processing and disposal capacity.

An important aspect of planning for future facility needs is the lead time necessary to develop new capacity. It may take a minimum of three to five years to develop a transfer station or recycling facility, while ten years or more may be necessary to site and develop a disposal facility. This lead time makes it important to regularly evaluate the capacity of system components, to enable the policy and operational decisions regarding future facilities to be made with sufficient time to avoid delays or problems.

As indicated earlier in this report, the major components of the current system are 5 active Authority Transfer Stations, with a sixth proposed for South West County, plus composting, ferrous processing, materials recycling, waste to energy and landfill facilities. The following paragraphs discuss each of these system elements in turn, and identify in general terms the needs and options currently available.

Transfer Stations

The South County Transfer Station is significantly overcapacity and opportunities for expansion are limited. This facility was designed and constructed prior to development of the legislatively mandated recycling programs and the Authority's waste reduction and recycling goals, and is not able to accommodate source separated materials as efficiently as the Authority's newer facilities. In addition the Solid Waste Management Plan, as initially developed, proposed an additional transfer facility in the south portion of the county, and the absence of that facility is contributing to the capacity overloads at the South County and to a lesser degree the Central County facilities. The Authority is currently in the process of completing the site acquisition for the Southwest County Transfer Station. Once completed, this facility will provide an additional 2,400 tons per day of capacity alleviating the capacity shortage in the southern part of the County and accommodating future growth.

The Authority has moved aggressively to expand the Central County Transfer Station in Lantana. The construction of the new Central County Transfer Station is nearing completion. At a cost of approximately $28 million, this six bay facility with approximately 58,000 square feet of tipping floor area is the largest in the Authority's system. The design of the future Southwest County Transfer Station will be based on this design. Phase II of the Lantana project includes the renovation of the existing transfer station building, which will be dedicated to transporting recyclables. The capacity of the combined facilities will be in excess of 3,400 tons per day.

In FY 2004, the Authority acquired the industrial property adjacent to the West Central Transfer Station. The Authority intends to renovate the existing structure to serve as a transfer station for vegetative waste and recyclable materials. This expansion will free up tipping floor capacity in the existing transfer station building, which is necessary to accommodate future growth. This project is currently in the design phase.

Planned improvements to the North County Transfer Station in Jupiter include the construction of a vegetation handling area outside the main building. This will free up tipping floor capacity in the existing building, which is necessary to accommodate future growth.

These planned improvements are expected to provide sufficient capacity to accommodate projected growth in the County for the next 30 years.

Organics Reclamation

The compost facility is essentially at capacity. This facility is somewhat unique in that its capacity to accept and process waste water treatment sludge is allocated via contractual arrangements with waste water facilities in the county. The construction and operating costs of the compost facility are also allocated on a shared basis between the waste water utilities and the Authority. It is also important to note that composting is

only one alternative these facilities have available as options for beneficial reuse or disposal.

One such alternative is biosolids pelletization. With the goal of halting the land application of sludge within the Okeechobee Basin, the Authority along with Palm Beach County, the Loxahatchee River Environmental Control District, the City of Boca Raton, and the South County Regional Waste Water Treatment Board formed a partnership to jointly build and operate a sludge pelletization facility on the Authority's North County site. The Authority has contracted with New England Fertilizer Company for the design, construction and operation of the facility. As an added benefit, landfill gas from the adjacent landfill will be used to fuel the sludge dryers. This project is nearing construction start.

Additional compost facility capacity will merit consideration only if waste water facilities seek to develop this option in cooperation with the Authority, and continue to pay their pro-rata share of construction and operating costs. The Authority has no plans to expand the compost facility at this time.

Ferrous Processing

The primary source of ferrous materials for this facility is the waste to energy facility. While some incremental increase in ferrous recovery at the waste to energy plant may result in additional material available for processing, it is unlikely that the capacity of the ferrous processing facility will be exceeded within the projected life of the existing facility or the contract with the facility operator.

The ferrous processing facility is located within the footprint of the landfill at the North County facility, meaning that the facility will eventually need to be relocated in order to complete landfill construction. The processing equipment can be relocated, and several alternative locations are available on the North County site. Keeping the facility in close proximity to the waste to energy plant is essential to maximizing efficiency.

Materials Recycling

The existing Residential Materials Recycling Facility and its associated facility for processing paper from the commercial waste stream, the CMRF, is located in the footprint of the landfill adjacent to the ferrous processing facility, and will likewise require relocation at a future date. The Authority is currently in the process of securing a site. The existing RMRF was significantly expanded to 600 tons per day, assuming two eight hour shifts, in 1998. The current average throughput is approximately 400 tons per day operating one shift 5-6 days per week.

Waste to Energy

The capacity of the waste to energy facility has been reached, and the Authority is currently evaluating options for expanding combustion capacity. Options include the

addition of a third boiler to the existing Resource Recovery Facility and/or the construction of a second incinerator. The Authority currently landfills nearly 500,000 tons per year of unprocessed combustible waste that exceeds the plant's capacity, and the amount continues to increase. The results of the landfill depletion model indicate that the benefits of increased combustion capacity upon the life of the existing landfill are limited however the potential benefit with respect to the future landfill site is significant.

Landfill

The need for future disposal capacity is certain. As the one component of the integrated system which is ultimately depleted, planning for future disposal capacity is an inevitable activity. The goal of this plan, through the use of the landfill depletion model, is to predict the dates when these activities should begin. This is important because recent activities around the country have demonstrated that the lead time necessary for the development of a new landfill disposal site can range from seven years to more than ten years, depending on the particular circumstances involved.

In 1996, the Authority sold the property which had been acquired in the southern part of the developed coastal area of the county, and concurrently acquired a parcel of equivalent size in the more western area of the county. This site is referred to as the Western Site. The 1,600 acre site is expected to provide approximately 230 million cubic yards of airspace, which is approximately 4.5 times the capacity of the existing landfill. The expected life of this site is 50 years, assuming no increase in combustion capacity, and significantly longer otherwise.

The landfill depletion model is used as a tool to determine when the time has arrived to address future disposal capacity needs. That time is now. Starting now allows for the potential to study alternatives to landfill development and/or development alternatives for a future landfill site. Questions of facility ownership (private vs. public), operational responsibility (private vs. public) and location (existing site, alternative in-county site, or out of county site) can all be considered as matters of policy. Given the time available, the Authority has the security of having land already available should unforeseen events accelerate the pace of landfill depletion.

Appendix A

Palm Beach County Solid Waste Act
Chapter 2001-331, Laws of Florida

SWA
SOLID WASTE AUTHORITY

CHAPTER 2001-331

HOUSE BILL NO. 945

An act relating to the Solid Waste Authority of Palm Beach County, a dependent special district in Palm Beach County; codifying the Authority's charter, chapter 75-473, Laws of Florida, as amended, pursuant to s. 189.429, F.S.; providing legislative intent; amending, codifying, and reenacting all special acts relating to the Solid Waste Authority of Palm Beach County as a single act; providing a short title; providing declaration of legislative intent; providing for application to incorporated and unincorporated areas; providing definitions; providing purposes and powers; providing exemption from taxation; providing prohibition, permits, and penalty; providing enforcement; providing injunctive relief; providing judicial review; providing severability; repealing all prior special acts related to the Authority; providing an effective date.

Be It Enacted by the Legislature of the State of Florida:

SECTION 1. Pursuant to section 189.429, Florida Statutes, this act constitutes the codification of all special acts relating to the Solid Waste Authority of Palm Beach County. It is the intent of the Legislature in enacting this law to provide a single, comprehensive special act charter for the Solid Waste Authority of Palm Beach County, including all current legislative authority granted to the Authority by its several legislative enactments and any additional authority granted by this act.

SECTION 2. Chapters 75-473, 77-626, 79-536, 79-539, 79-542, 84-501, 84-502, 86-433, 88-544, 91-334, 93-345, and 94-462, Laws of Florida, relating to the Solid Waste Authority of Palm Beach County, are codified, reenacted, amended, and repealed as herein provided.

SECTION 3. The charter for the Solid Waste Authority of Palm Beach County is re-created and reenacted to read:

SECTION 1. Short title.—This act may be known and cited as the "Palm Beach County Solid Waste Act."

SECTION 2. Declaration of legislative intent.—In order to enhance the beauty and quality of our environment, conserve our natural resources, prevent the spread of disease and creation of nuisances, protect the public health, safety, and welfare, and provide a coordinated resource recovery and

waste management program for Palm Beach County, it is necessary to form a countywide authority for the management of solid waste to meet the expanding problems related to the processing and disposal of solid waste within Palm Beach County to:

(1) Provide for the safe and sanitary processing and disposal of solid waste.

(2) Provide a coordinated countywide program for the management of hazardous waste and control of solid waste processing and disposal in cooperation with federal, state, and local agencies responsible for the prevention, control, or abatement of air, water, and land pollution.

(3) Require the municipalities and the county to plan for and develop an adequate solid waste collection system.

SECTION 3. Creation of countywide solid waste authority.—In order to effectuate the intent and purpose of this act as set forth in section 2, the Solid Waste Authority of Palm Beach County is created as a dependent special district. Its board shall consist of the seven members of the Board of County Commissioners of Palm Beach County. A quorum of the board shall be four members.

SECTION 4. Application to incorporated and unincorporated areas.—This act shall apply to both the incorporated and unincorporated areas of Palm Beach County.

SECTION 5. Definitions.—As used in this act, unless some other meaning is plainly intended:

(1) "Act" means this act and all amendments thereto.

(2) "Authority" means the Solid Waste Authority of Palm Beach County.

(3) "Clerk" means Clerk of the Circuit Court of Palm Beach County, Florida.

(4) "Cost of acquisition and/or construction" means the cost of acquiring, constructing, reconstructing, improving, extending, equipping, and furnishing any resource recovery and solid waste management facilities, including the cost of demolishing, removing, or relocating any buildings, structures, or utilities on lands acquired or to be acquired, including the cost of acquiring lands to which such buildings, structures, or utilities may be moved or relocated, the cost of all labor and materials, the cost of financing charges, discounts on the purchase price of bonds

otherwise permitted hereunder, and interest on the bonds of the Authority prior to, during, and for a period not exceeding 2 years after completion thereof, payments under and fees and expenses in connection with any derivative agreements, the cost of establishing and funding initial reserves, the cost of engineering, financial, and legal services plans, specifications, studies, surveys, estimates of cost and of revenues, and other expenses necessary or incidental to determining the feasibility or practicability of any such construction or acquisition, administrative expenses, and such other costs and expenses as may be necessary or incidental to such acquisition, construction, reconstruction, improvement, extension, equipping, or furnishing, the financing thereof, placing such resource recovery and solid waste management facilities in operation, and the issuance of bonds under this act.

(5) "County" means Palm Beach County, Florida.

(6) "Department" means the Department of Environmental Protection or any successor agency performing a like function.

(7) "Derivative agreements" means contracts commonly known as investment contracts, interest rate swap agreements, or contracts providing for payments based on levels of or changes in interest rates, or contracts to exchange cash flows or a series of payments, to hedge payment, rate, spread, of similar exposure, which the governing body of the Authority determines to be necessary, desirable, or appropriate to achieve a desirable effective interest rate in connection with bonds, notes, or bond anticipation notes issued by the Authority.

(8) "Director" means the Executive Director of the Solid Waste Authority of Palm Beach County or his or her duly authorized representative.

(9) "Disposal" means the disposition of solid waste by resource recovery, processing, recycling, or the placing of solid waste materials on the land for final disposition, or any combination thereof.

(10) "Fiscal year" means the year beginning October 1 of each year and ending September 30 of the following year.

(11) "General obligation bonds" means bonds or other obligations secured by the full faith and credit and taxing power of the Authority and payable from ad valorem taxes levied and collected on all taxable property in Palm Beach County, without limitation of rate or amount, and may be additionally secured by the pledge of either or both the proceeds of special assessments levied against benefited property or revenues derived from solid waste disposal systems.

(12) "Hazardous waste" has the same meaning as the term is defined in section 403.703(21), Florida Statues, or any successor law or regulation.

(13) "Municipality" means all incorporated municipalities or special taxing districts exercising municipal powers in relation to collection and disposal of solid waste, lying and being in Palm Beach County, Florida.

(14) "Person" or "persons" means any and all persons, natural or artificial, including any individual, firm, or association, any facility, or any municipality or private corporation organized or existing under the laws of the State of Florida or any other state and any county or governmental agency of this state or the Federal Government.

(15) "Processing" means the act of modifying or altering the nature of solid waste materials to facilitate reuse, transfer, transport, and disposal, including, but not limited to, systems employing physical, thermal, organic, or chemical techniques.

(16) "Property appraiser" means the Property Appraiser of Palm Beach County, Florida.

(17) "Recycling" means any process by which solid waste materials are recovered and reused in manufacturing, agricultural, power production, and other processes.

(18) "Resource recovery" means the process by which materials in solid was retaining useful physical or chemical properties are reused or recycled for the same or other purposes, including use as an energy source.

(19) "Revenue bonds" means bonds or other obligations of the Authority secured by and payable from the rates, fees, charges, and other income collected by the Authority from the users of its resource recovery and solid waste management facilities, or by pledge of the full faith and credit of the Authority, or by a combination thereof.

(20) "Solid waste" means garbage, sewage, sludge, septage, rubbish, refuse, and other discarded solid or liquid materials resulting from domestic, industrial, commercial, agricultural, and governmental operations, but does not include solid or dissolved materials in domestic sewage, storm drainage, or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluents, dissolved materials in irrigation return flows, or other common water pollutants.

(21) "Solid waste system" or "resource recovery and solid waste management facilities" or "project" means any plant, facility, or property and additions, extensions, and improvements thereto, at any time constructed or acquired as part thereof, useful or necessary or having the capacity for future use for resource recovery or solid waste management and, without limiting the generality of the foregoing, shall include vehicles used for transport from transfer stations to treatment sites and incinerators for the purposes of reducing the volume of or disposing of solid waste by burial, as well as proper disposal of residue from incineration, and shall include all real and personal property and any interest therein, rights, easements, and franchises of any nature whatsoever, and equipment, machinery, furnishings, fixtures, and replacements, relating to any such solid waste system and necessary or convenient for the operation thereof.

(22) "Tax collector" means the Tax Collector of Palm Beach County, Florida.

(23) "Transport" means the act of movement of solid waste materials to facilitate processing, reuse, and disposal.

(24) "Waste management" means the systematic control of the generation, storage, collection, transport, treatment, processing, recycling, recovery, and disposal of solid waste.

SECTION 6. Purposes and powers.—For the purposes of this act, all of Palm Beach County is deemed to be a special district. In addition to other powers, duties, and responsibilities necessary to carry out the provisions of this act, the Authority shall have the power to:

(1) Adopt and from time to time thereafter alter, rescind, modify, or amend rules, guideline, and orders necessary for its operation in accordance with chapter 403, Florida Statutes, and all successor laws. No such rules or amendments thereto shall be adopted or become effective until after a public hearing has been held by the Authority pursuant to notice published in a newspaper of general circulation in the county at least 21 days prior to the hearing. When approved by the Authority, such rules shall have the force and effect of law. Nothing in this act shall be construed so as to prevent the Authority from adopting rules which are more strict and extensive than those imposed by the department.

(2) Adopt a resource recovery and waste management program for Palm Beach County that shall provide for the transportation, storage, separation, processing, recovery, recycling, or disposal of solid waste

generated or existing within the county and modify and update such program or plan as necessary or as may be required by law.

(3) Acquire, at its discretion, personal or real property or any interest therein by gifts, lease, eminent domain, or purchase. The Authority may enter upon any land or water for the purpose of making surveys and may exercise the right of eminent domain whenever public necessity or convenience requires in accordance with chapters 73 or 74, Florida Statutes, and other applicable law.

(4) Appoint an executive director to be responsible to the Authority and who shall serve at its pleasure. There shall be such other officers and employees as may be provided by the Authority. The officers shall be appointed or removed by the executive director subject to confirmation by the Authority. The employees shall be appointed and removed by the executive director. The Authority shall fix the salary of the executive director and shall have, but may delegate to the executive director, the power to fix the salaries of all other officers and employees of the Authority. The Authority shall also have the power to employ or appoint engineers, accountants, attorneys, and such other personnel as may be required for the operation and management of the Authority and to fix their compensation.

(5) Require surety bonds for any of the officers and employees in such amounts as the Authority deems necessary. The premiums for the bonds shall be paid in the same manner as any other operating expense.

(6) Sue and be sued, implead and be impleaded, and complain and defend in all courts.

(7) Adopt, use, and alter a corporate seal.

(8) Acquire, construct, reconstruct, improve, maintain, equip, furnish, and operate at its discretion such resource recovery and waste management facilities as are required to carry out the purposes and intent of this act and to meet the requirements of chapter 403, Florida Statues, and other applicable law.

(9) Conduct studies, develop programs, provide continuing management and monitoring of waste projects, programs, and facilities directly or indirectly affecting the solid waste management system in Palm Beach County, and contract for such periods as may be agreed upon by the parties, with governmental agencies, individuals, public or private corporations, municipalities, or any other person in carrying out the purposes of this act and the requirements of chapter 403, Florida Statutes, and other applicable law.

(10) Fix, alter, charge, and establish reasonable rates, fees, and other charges for the facilities provided by the Authority, including, but not limited to, planning, permitting, inspection, collection, enforcement, and disposal site developing and operation, which rates, fees, and charges must be sufficient to cover all costs for said normal functions and facilities, including, but not limited to, permits, fees, and disposal costs.

(11) Without limitation, borrow money and issue evidence of indebtedness and accept property, gifts, or grants or loans of money from the Federal Government, state government, and other sources, public or private, which loans and grants shall be expended in accordance with the purposes and provisions of this act.

(12) Issue revenue bonds.

(a) The Authority shall have the power and is hereby authorized to issue revenue bonds for the purpose of paying all or part of the costs of acquisition and/or construction of resource recovery and waste management facilities. The issuance of such revenue bonds shall be authorized by resolution of the Authority, which resolution may be adopted at a regular or special meeting by a majority vote of members voting thereon and at the same meeting at which it is introduced. Such revenue bonds may be issued in one or more series and shall bear such date or dates of issuance, bear interest at such rate or rates, not exceeding the maximum rate permitted under section 215.84, Florida Statutes, or any successor statute, mature at such time or times, not exceeding 40 years from their respective dates of issuance, be subject to such terms of redemption, with or without premium, be issued in such form, registered or not, with or without interest coupons, entitle the holder thereof to such conversion or registration privileges, be executed in such manner, be in such denomination or denominations, payable in such medium of payment at such place or places, which may be any bank or trust company within or without the state, have such rank or priority, be secured in such manner, and have such other characteristics as may be provided in the resolution of the Authority authorizing the issuance of such bonds or in such subsequent resolutions as the Authority may adopt prior to the issuance of such bonds. All bonds issued under this act shall have and are hereby declared to be and to have all the qualities and incidents of negotiable instruments under the Uniform Commercial Code—Investment Securities Laws of the state. The Authority may sell such bonds at private sale and in such manner and for such price or prices as it may determine to be in the best interest of the Authority, but no such bonds shall be sold at a price as will yield to the purchaser thereof income at a rate exceeding the maximum rate permitted under section 215.84, Florida Statutes, or any successor statute, as computed according to the standard tables of bond

values. If said bonds are sold at public sale, a notice of such sale shall be published at least once at least 10 days prior to the date of such sale in a newspaper published and circulated in the county and in a financial newspaper or journal circulating in New York City, New York. The Authority may issue interim bonds, notes, certificates, or receipts, with or without coupons, exchangeable for definitive bonds when such bonds have been executed and are available for delivery.

(b) The Authority shall fix and revise from time to time the rates, fees, or other charges for the services and facilities furnished by the Authority, and such rates, fees, or other charges shall be so fixed and adjusted as to provide sufficient funds to pay the principal of and interest on all bonds issued as the same become due and payable for such purposes, and including the cost of operating, maintaining, and repairing the facilities of the Authority and all such other payments required by the proceedings providing for the issuance of such bonds. Such rates, fees, or other charges shall not be subject to supervision or regulation by the state, any political subdivision, or any commission, board, or agency.

(c) The Authority, in the issuance of revenue bonds, shall have the authority to pledge all or any part of the revenues derived from the operation of the facilities of the Authority and shall have the power to determine the rank or priority of such pledge of revenues for any purpose, including different issues of bonds, and to grant to the holders of the bonds a lien on all or any part of the revenues prior to the use of such revenues for any other purposes.

(d) All revenues received by the Authority shall be deemed to be trust funds to be held and applied as provided in this act. The Authority may also provide that each issue of bonds or any combined issue of bonds may be secured by a trust agreement by and between the Authority and a corporate trustee, which may be any trust company or bank within or without the state. Such trust agreement may pledge or assign the revenues to be received and provide for the rank and priority between different trust agreements for different issues of bonds. The resolution or resolutions providing for the issuance of bonds or such trust agreements may contain such provisions for protecting and enforcing the rights and remedies of the holders of the bonds as may be reasonable and proper, not in violation of the law, including covenants setting forth the duties of the Authority relating to the construction, acquisition, improvement, maintenance, operation, repair, and cost of any project or facility, as is customary in trust agreements or trust indentures securing bonds or debentures of corporations, and may contain such other provisions as the Authority may deem reasonable and proper for the security of the holders of such bonds.

(e) The Authority is also hereby authorized to issue refunding bonds for the purpose of refunding any bonds of the Authority then outstanding, including the payment of any redemption premium thereon, and interest accrued or to accrue to maturity or to the prior redemption of such outstanding bonds, as the case may be, or for the combined purpose of refunding such outstanding bonds and paying the cost of acquisition and/or construction of one or more projects. The issuance of such revenue refunding bonds shall be authorized by resolution of the board of the Authority in the same manner as provided in paragraph (a). Such refunding bonds may be issued to refund such outstanding bonds as they mature and become payable, or as they are called for redemption prior to their stated dates of maturity, and the Authority shall be authorized to invest the proceeds or part of the proceeds of such refunding bonds, pending the dates of maturity of such outstanding bonds or the dates upon which such outstanding bonds are to be called prior to their stated dates of maturity, in such lawful securities as the Authority shall deem desirable, for the purpose of refunding such outstanding bonds in the manner provided in this paragraph. The issuance of such revenue refunding bonds, the maturities and other details thereof, the rights of the holders thereof, the security for the payment thereof, and the rights, duties, and obligations of the Authority in respect of the same shall be governed by the provisions of this act insofar as the same may be applicable.

(f) The Authority shall also have power to issue notes prior to the issuance of bonds, but such notes shall mature in not less than 3 years and the payment thereof shall be subject to any prior pledge of the revenues of the Authority or any ad valorem taxes of the Authority.

(g) The Authority may also issue bond anticipation notes after the authorization of the issuance of bonds in the manner provided in section 215.431, Florida Statutes, or successor law.

(13) Enter into interest rate swap agreements in connection with tax-exempt bonds and to issue debt to finance payments under such interest rate swap agreements. The use of interest rate swap agreements to reduce borrowing costs will enable the Authority to have flexibility to finance or refinance projects relating to its solid waste system in a more economically efficient manner. The Authority, other special districts, and municipalities already have the express power to enter into interest rate swap agreements and other derivative products with respect to their taxable bonds under the Taxable Bond Act of 1987, part VII, chapter 159, Florida Statutes. The Legislature finds that the ability of the Authority to enter into derivative agreements shall serve a public purpose by reducing interest costs to the Authority and enhancing the marketability of the Authority's bonds, notes, or bond anticipation notes. Further, such derivative agreements afford the Authority the ability to achieve the lowest

effective borrowing costs or terms most suitable to the Authority. The provisions of this paragraph are designed to serve a public purpose by providing for the health, safety, welfare, and economic well-being of the people of the county. Further, these provisions are intended to provide express authority to exercise the powers granted hereby and shall not be construed in limitation of any existing powers of the Authority to enter into or carry out any derivative agreements. This paragraph shall be a supplemental and alternative authority to any other provisions of special or general law.

(14) Seek injunctive relief in a court of competent jurisdiction to prevent the violation of this act or any resolution, rule, or regulation adopted pursuant to the powers granted by this act without the necessity of showing of a public nuisance in such legal proceedings.

(15) Sell or otherwise dispose of any byproducts produced by the operation of resource recovery or waste management facilities to any governmental agency, individual, public or private corporation, municipality or any other person.

(16) Levy ad valorem tax on the taxable property in the special district solely for the purposes of this act and not to exceed 1 mill on the dollar, subject to referendum. Property taxes determined and levied under this section shall be certified by the Authority to the property appraiser and extended, assessed, and collected in accordance with the provisions of chapter 197, Florida Statutes. At any time after making a tax levy under this section and certifying the same to the county and the state, the Authority may issue tax anticipation notes of indebtedness in anticipation of the collection of such taxes.

(17) When the fees or charges for the services and facilities and any waste disposal or resource recovery facility are not paid when due and payable and are in default for 30 days or more, following written notice to such delinquent customer, discontinue and shut off the supply of the services and facilities of said system to the person, firm, corporation, or other body, public or private, so supplied with such services or facilities until such fees, rates, or charges, including legal interest, penalties, and charges for the shutting off and discontinuance or the restoration of such services or facilities, are fully paid. Such delinquent fees or charges, together with legal interest, penalties, and charges for the shutting off and discontinuance or the restoration of such services or facilities, and reasonable attorney's fees, costs, and other expenses may be recovered by the Authority in a court of competent jurisdiction.

(18) Transfer, sell, or assign to any governmental agency, individual, public or private corporation, municipality, or other person, at whatever

terms it deems reasonable, any property which it finds is not needed to carry out the purposes of this act.

(19) As necessary to carry out its resource recovery and/or disposal plans or programs when necessary to carry out any other provision of this act, require that all wastes collected by public or private agencies from any municipality or unincorporated area of the county be transported to Authority-designated processing and disposal facilities in a manner and form as may be mandated in accordance with this act, particularly paragraphs (2) and (8) of this section. This act shall not be construed to preclude public or private agencies from operating permitted transfer stations, provided that solid waste transferred or transported therefrom shall be delivered to Authority-designated processing and disposal facilities as set forth in this section.

(20) Perform any and all governmental functions of the county, or of any municipality, related to solid waste provided for by general law, including, but not limited to, chapter 403, Florida Statutes, or any successor law, pursuant to written contract or interlocal agreement. For those purposes, the Authority may employ the special assessment procedures contained in sections 7 and 8 of this act. The Palm Beach County Board of County Commissioners shall set for the unincorporated portions of the county all fees necessary to accomplish the purposes of this paragraph, and the governing body of any municipality shall set the required fees for its respective jurisdiction. Any such fees must be sufficient to pay all costs incurred by the Authority in connection with the solid waste services to be provided, including the cost of billing services.

(21) Establish a mandatory collection system for the county and impose reasonable rates, fees, and charges to all users of said system. The Authority may establish annual collection special assessments for users of this collection system in like manner as the disposal assessments provided for in this section or sections 7 or 8.

(22) Grant franchises and contracts, issue permits, or otherwise provide for the collection of solid waste in the county and receive the assignment of such franchises, contracts, and permits, and establish reasonable rates, fees, and charges therefor.

(23) In connection with or incidental to, the sale and issuance of bonds, enter into any contracts which the Authority determines to be necessary or appropriate to achieve a desirable, effective interest rate in connection with the bonds or notes by means of, but not limited to, contracts commonly known as investment contracts, funding agreements, interest rate swap agreements, currency swap agreements, forward payment conversion agreements, or futures; contracts providing for

payments based on levels of or changes in interest rates; contracts to exchange cash flows or a series of payments; or contracts including, without limitation, options, puts, or calls, to hedge payment, rate, spread, or similar exposure. Such contracts or arrangements may also be entered into by the Authority in connection with, or incidental to, entering into any agreement which secures bonds or provides liquidity therefor. Such contracts and arrangements shall be made upon the terms and conditions established by the Authority after giving due consideration for the credit worthiness of the counterparties, where applicable, including any rating by a nationally recognized rating service or by any other criteria as may be appropriate.

(24) Notwithstanding the prohibition against extra compensation set forth in section 215.425, Florida Statutes, provide for an extra compensation program, including a limp-sum bonus payment program, to reward outstanding employees whose performances exceed standards, if the program provides that a bonus payment may not be included in an employee's regular base rate of pay and may not be carried forward in subsequent years.

Section 7. Special assessments; methods of levy and collection.—Since all improved properties in the county receive a direct, substantial benefit by the provision of solid waste disposal and collection services by the Authority, the Authority shall have the additional power to impose, levy, collect, or have collected, in accordance with the provisions of chapter 197, Florida Statutes or section 7, 8 or 9 of this charter, the annual disposal special assessments herein authorized and defined as a means of financing the construction and/or acquisition of additions, extensions, and improvements to the solid waste system, the payment of the principal of and interest on bonds issued pursuant to this act, the cost of operating, maintaining, and repairing the solid waste system, and all other payments that are required to be made by the Authority in connection with the purposes of this act.

(1) Definitions.—For the purposes of this section and sections 8 and 9, the following terms shall have the following meanings:

(a) "Addendum to annual disposal special assessment roll" or "addendum" means the list prepared by and confirmed by the Authority each fiscal year containing the same information as the annual disposal special assessment roll as to any parcels of improved real property not incorporated on the corresponding annual disposal special assessment roll and incorporating any changes as to the information specified for any parcel or improved real property on the corresponding annual disposal special assessment roll, including any additions to or deletions from such annual disposal special assessment roll.

(b) "Annual disposal special assessment" means the annual disposal special assessment imposed upon a parcel or parcels of improved real property for this disposal of solid waste for the applicable fiscal year based upon the classification of the use of such parcel or parcels of improved real property as set for the in the rate resolution.

(c) "Annual disposal special assessment roll" means the list prepared and confirmed by the Authority each fiscal year containing a summary description of each parcel of improved real property, the name and address of the owner of each such parcel as indicated on the records maintained by the property appraiser, and the amount of the annual disposal special assessment applicable to each parcel of improved real property.

(d) "Collection" means, with respect to solid waste services, the process whereby solid waste is removed and transported to a solid waste facility.

(e) "Governmental agencies" means all state, federal, or local agencies or units of government located within the county, including, but not limited to, the School Board of Palm Beach County, all county agencies and departments, all municipalities within the county, all special districts and municipal service taxing units with all or part of their boundaries within the county, and any municipality or special district or other unit of government, the boundaries of which are not within the county but which is the owner of improved real property within the county.

(f) "Improved real property" means all real property located within the county that generates or is capable of generating solid waste and that contains buildings, structures, or other improvements designed or constructed for and capable of use or used for human habitation, human activity, or commercial enterprises.

(g) "Owner" means the person or persons owning an interest in improved real property.

(h) "Rate resolution" means the resolution or resolutions of the Authority described in paragraph (3)(b) of this section and paragraph (2)(b) of section 8 of this charter.

(2) Purpose.—It is the purpose of this section to require all persons within the county and all governmental agencies to us exclusively the solid waste system operated and maintained by the Authority or designated by the Authority for the disposal of all solid waste generated within both the incorporated and unincorporated areas of the county; to establish a

schedule of assessments for all improved real property in both the incorporated and unincorporated areas of the county to pay for the cost of financing, operating, and maintaining the solid waste system; to establish the method and procedure for the classification of such improved real property in the establishment of such schedule of annual disposal special assessments; to provide for a method and procedure for the collection of such assessments from the owners of such improved real property; and to provide for the operation of the solid waste system.

(3) Determination of annual disposal special assessments; public hearing.—On or before October 1 of each year, the Authority shall hold a public hearing for the following purposes:

(a) To adopt a budget for the operation and maintenance of the solid waste system for the ensuing fiscal year, including moneys for the payment of the principal of and interest on bonds and other outstanding or anticipated indebtedness, including all reserves necessary therefore, for the payment of necessary reserves for capital expenditures and the renovation, improvements, and replacements of existing facilities of the solid waste system, for the enforcement and administration of the billing and collection of the annual disposal special assessments providing for hereunder, including necessary reserves for anticipated delinquent or uncollectible annual disposal special assessments, and for the payment of the current operation and maintenance of the solid waste system.

(b) To adopt a rate resolution incorporating a schedule of annual disposal special assessments to impose upon the owners of all improved real property in both the incorporated and unincorporated areas of the county which shall constitute a lien as provided for in paragraph (5) and to establish the classification of the use of such parcel of improved real property in order to provide revenues which, together with other moneys of the Authority lawfully available therefore, shall be sufficient to fund the budget referred to in paragraph (a). The rates established by the Authority in each year under the provisions of the rate resolution shall be sufficient to provide moneys for the purposes described in paragraph (a), and the Authority shall not establish rates over and above the rates that are necessary to comply with the provisions of paragraph (a) and the budgetary requirements of any proceedings of the Authority heretofore or hereafter adopted in connection with the issuance of any of its bonds, notes, or other evidence of indebtedness.

Notice of said public hearing shall be published in a newspaper of general circulation in the county at least twice, with the first publication being at least 20 days prior to the date set for the public hearing. Said public hearing may be continued to a date certain without the necessity of further newspaper advertisement or public notice.

(4) Scope of annual disposal special assessment; discount for early payment; delinquency.—

(a) The annual disposal special assessments incorporated in the rate resolution applicable to each parcel of improved real property shall be the annual disposal special assessments for each such parcel of improved real property for the disposal of all solid waste generated or capable of being generated as determined by the Authority on each such parcel of improved real property during the ensuing fiscal year.

(b) The annual disposal special assessments shall be imposed against the owners of all improved real property in both the incorporated and unincorporated areas of the county if such real property is improved real property on or before September 1 prior to the fiscal year in which the annual disposal special assessments are imposed.

(c) The owner and description of each parcel of improved real property shall be that designated on the real property records maintained by the property appraiser.

(d) The annual disposal special assessments shall be due and payable 30 days after the mailing of the original annual disposal special assessments billing. On all annual disposal special assessments imposed and collected, discounts for early payment thereof shall be at the rate of 4 percent in the month of November and at any time within 30 days after the mailing of the original annual disposal special assessments billings; 3 percent in the month of December; 2 percent in the month of January; and 1 percent in the month of February. The annual disposal special assessments paid in March shall be without discount. The annual disposal special assessments shall become delinquent if not fully paid by March 31 of the fiscal year for which the annual disposal special assessments are imposed. All delinquent annual disposal special assessments shall bear an initial penalty of 3 percent of the full amount of the annual disposal special assessments if not paid by March 31 of the fiscal year for which the annual disposal special assessments are imposed and an additional penalty of 1 percent per month on the delinquent principal amount on the first day of June and on the first day of each month thereafter until the annual disposal special assessments are paid in full.

(5) Annual disposal special assessments shall constitute a lien on improved real property.—All annual disposal special assessments imposed against the owners of improved real property shall constitute, and are hereby imposed as, liens against such improved real property as of October 1 of the fiscal year for which the annual disposal special

assessments are imposed. Until fully paid and discharged or barred by law, the annual disposal special assessments shall be prior to all other liens, except that such liens shall be on parity with a lien of state, county, and municipal taxes, and any lien for charges for services created pursuant to section 159.17, Florida Statutes. If any annual disposal special assessment liens become delinquent by not being fully paid by March 31 of the fiscal year for which the annual disposal special assessments are imposed and remain delinquent, the Authority shall cause to be prepared a notice of lien containing the amount of the delinquent annual disposal special assessments, including the amount of the first penalty, a legal description of the improved real property against which the lien is imposed, and the name of the owner of such real property as indicated on the real property records maintained by the property appraiser of the county. Said notice of lien shall be recorded in the public records of the county on or about September 30 of the fiscal year for which the annual disposal special assessments were levied, or as soon thereafter as the Authority shall determine. A copy of the notice of lien shall be served on the owner of record as provided in section 713.18, Florida Statutes, within 10 days after the notice of lien is recorded.

(6) Notification and payment of annual disposal special assessments; discharge of recorded liens.—The Authority shall collect the payment of all current or delinquent annual disposal special assessments from November 1 of the fiscal year for which the annual disposal special assessments are imposed until paid for satisfied as herein provided. The Authority shall mail notices of the annual disposal special assessments to the owners of each parcel of improved real property in the manner and containing the information as follows:

(a) The first notice shall be mailed on or about November 1 of each fiscal year to all owners, and such notice shall contain the amount of the annual disposal special assessments for the then-current fiscal year and a schedule of the discounts available to the owners for early payments. Such notice shall further advise the owners that failure to pay the annual disposal special assessments in a timely manner may result in a loss of title.

(b) The second notice shall be mailed on or about March 31 of such fiscal year to those owners who have failed to pay any or all of the then-due-and-owing annual disposal special assessments, and such notice shall contain a schedule of the initial penalty for nonpayment and shall further advise the owner that a notice of lien will be filed by the Authority against that parcel of improved real property on the public records of the county provided for that purpose. However, if such annual disposal special assessments, together with any penalties thereon, are received prior to September 30 of the fiscal year for which the annual disposal

special assessments were levied, then such notice of lien will not be filed. Such notice shall further advise the owners that failure to pay the annual disposal special assessments in a timely manner may result in a loss of title.

(c) The third notice shall be mailed on or before June 1 of such fiscal year to those owners who have failed to pay any or all of the then-due-and-owing annual disposal special assessments, and such notice shall contain a schedule of the additional penalty incurred by the owners for each month from June 1 and thereafter.

In addition to the collection of any penalties, the Authority shall recover from the owner any cost that may be incurred in connection with such delinquent payments. When any such lien or liens have been fully paid or discharged, the Authority shall properly cause evidence of the satisfaction and discharge of such lien to be provided. Said lien or liens shall not be assigned by the Authority to any person.

(7) Enforcement of delinquent annual disposal special assessments.—All delinquent annual disposal special assessment liens may be enforced at any time by the Authority at least 30 days subsequent to the date of the service of the notice of lien for the amount due under such recorded liens, including all penalties, plus costs and a reasonable attorney's fee, by proceeding in a court of equity to foreclose such liens in the manner in which a mortgage lien is foreclosed under the laws of Florida, or the collection and enforcement of payment thereof may be accomplished by any other method authorized by law. It shall be lawful to join in any complaint or foreclosure, or any such legal proceeding, any one or more lots or parcels of land that are the subject of a lien or liens. The Authority is authorized and directed to execute and deliver, upon request, a written certification certifying the amount, including all penalties, plus costs, due for delinquent annual disposal special assessments or under any recorded liens for any parcel of real property, or certifying that no such annual disposal special assessments are due, except current and nondelinquent annual disposal special assessments.

(8) Calculation of annual disposal special assessments.—

(a) Based upon the rate resolution, the Authority shall cause to be prepared an annual disposal special assessment roll. Such annual disposal special assessment roll shall contain a summary description of each parcel of improved real property within the county on or before September 1 prior to the fiscal year for which the annual disposal special assessments are to be imposed, the name and address of the owner of each parcel of improved real property, the rate applicable to each parcel of improved real property as specified in the rate resolution, and the amount

of the annual disposal special assessments applicable to each parcel of improved real property. The summary description of each parcel of improved real property shall be in such detail as to permit ready identification of each parcel on the real property records. The information specified above to be included in the annual disposal special assessment roll shall conform to that maintained by the property appraiser on the real property records.

(b) Upon completion of the preparation of the annual disposal special assessment roll, the Authority shall at any regular or special meeting review the annual disposal special assessment roll for preparation in conformity with the rate resolution. The Authority shall make such changes or additions as necessary to conform such annual disposal special assessment roll to the rate resolution. If, upon the completion of such review, the Authority shall be satisfied that the annual disposal special assessment roll has been prepared in conformity with the rate resolution, the Authority shall ratify and confirm the annual disposal special assessment roll and certify that the annual disposal special assessment roll is correct and proper and is to be used in collecting the annual disposal special assessments.

(c) On or before October 1 of the fiscal year for which the annual disposal special assessment roll is confirmed, the Authority shall cause to be prepared an addendum to the annual disposal special assessment roll containing the addition or deletion of any parcels of improved real property not incorporated into or deleted from the annual disposal special assessment roll but constituting improved real property on September 1 prior to the fiscal year for which the annual disposal special assessments are imposed. Included in such addendum shall be any change in the information specified for each parcel of improved real property on the annual disposal special assessment roll. Such addendum to the annual disposal special assessment roll shall contain information required for the annual disposal special assessment roll and shall be reviewed by the Authority and certified as the annual disposal special assessment roll of the Authority.

Section 8. Collection of annual disposal special assessments by tax collector; alternative method of levy and collection.—The Authority may, to the extent permitted by law, utilize the office of the tax collector for the purpose of collecting the annual disposal special assessments imposed under this act. The Authority may, in connection with the collection of the annual disposal special assessment, proceed in the manner set forth in this section as an alternative to that set forth in section 7 of this charter, or as provided by Chapter 197, Florida Statutes, as it may be amended from time to time. In the event the Authority chooses to follow the method of collection set forth in this section, it must first enter into written

agreements with the property appraiser and the tax collector to perform the duties as outlined in this section. Said agreements shall be entered into voluntarily and at the sole options of the property appraiser and the tax collector, and shall provide for reimbursement to them of all costs associated with their duties hereunder.

(1) Purpose.—It is the purpose of this section to provide for an additional and alternative, but in no event exclusive, method and procedure for the collection of annual disposal special assessments from the owners of all improved real property in both the incorporated and unincorporated areas of the county, in the same manner as the collection of ad valorem taxes by the county and through the tax bill issued by the tax collector.

(2) Determination of annual disposal special assessments; public hearing.—On or before July 3 of each year, or such other date as may be specified by Chapter 197, Florida Statutes, the Authority shall hold a public hearing for the following purposes:

(a) To adopt a budget for the operation and maintenance of the solid waste system for the ensuing fiscal year, including moneys for the payment of the principal and interest on bonds and other outstanding or anticipated indebtedness, including all reserves necessary therefrom, for the payment of necessary reserves for capital expenditures and the renovation, improvements, and replacements of existing facilities of the solid waste system, for the enforcement and administration of the billing and collection of the annual disposal special assessments provided for hereunder, including necessary reserves for anticipated delinquent or uncollectible annual disposal special assessments, and for the payment of the current operation and maintenance of the solid waste system.

(b) To adopt a rate resolution incorporating a schedule of annual disposal special assessments to be imposed upon the owners of all improved real property in both the incorporated and unincorporated areas of the county to establish the classification of the use of such parcel or parcels of improved real property in order to provide the revenues to fund the budget referred to in paragraph (a). Such rate resolution adopted at the public hearing shall further authorize the collection of the annual disposal special assessments in the same manner as the collection of ad valorem taxes by the county and through the utilization of the office of the tax collector of the county.
Notice of said public hearing shall be published in a newspaper of general circulation in the county at least twice, with the first publication being at least 20 days prior to the public hearing. Additional notice shall also be provided to each affected property owner by first class mail of both the potential for loss of his or her title through the use of the ad valorem

collection method and the time and place of said public hearing. Said public hearing may be continued to a date certain without the necessity of further newspaper advertisement or public notice.

(3) Scope of annual disposal special assessments.—

(a) The annual disposal special assessments incorporated in the rate resolution applicable to each parcel of improved real property shall be the annual disposal special assessments for each such parcel of improved real property for the disposal of all solid waste generated on each such parcel of improved real property during the ensuing fiscal year.

(b) The annual disposal special assessments shall be imposed against the owners of all real property in both the incorporated and unincorporated areas of the county if such real property is improved real property on or before January 1 prior to the fiscal year in which the annual disposal special assessments are imposed.

(c) The owner and description of each parcel of improved real property shall be that designated on the real property records maintained by the property appraiser.

(4) Enforcement and collection.—The annual disposal special assessments shall be due and payable on November 1 of each year or at such other times as prescribed by the amended tax bill. Such annual disposal special assessments shall be collected and enforced by the tax collector in the same manner that ad valorem taxes are collected, including, but not limited to, provisions of law relating to discount for early payment, prepayment by installment method, and penalty for delinquent payment.

(5) Annual disposal special assessments shall constitute a lien on improved real property.—All annual disposal special assessments imposed against the owners of improved real property shall constitute, and are hereby imposed as, liens against such improve real property as of October 1 of the fiscal year for which the annual disposal special assessments are imposed. Until fully paid and discharged or barred by law, the annual disposal special assessments shall remain liens equal in rank and dignity with the lien of the county ad valorem taxes and superior in rank and dignity to all other liens, encumbrances, titles, and claims in, to, or against the real property involved. If any annual disposal special assessment liens become delinquent by not being fully paid by March 31 of the fiscal year for which the annual disposal special assessments are imposed and remain delinquent, the Authority shall cause to be prepared a notice of lien containing the amount of the delinquent annual disposal special assessments, including the amount of the first penalty, a legal

description of the improved real property against which the lien is imposed, and the name of the owner of such real property as indicated on the real property records maintained by the property appraiser of the county. The Authority shall cause to be mailed on or before June 1 of such fiscal year to those owners who have failed to pay any or all of the then-due-and-owing annual disposal special assessments a notice of intention to file lien, and such notice shall contain a schedule of the additional penalty incurred by the owners for each month from June 1 and thereafter and a notice that a lien will be filed if not paid on or before September 30. If the assessment is not paid, a notice of lien shall be recorded in the public records of the county on or about September 30 of the fiscal year for which the annual disposal special assessments were levied, or as soon thereafter as the Authority shall determine.

(6) Payment of annual disposal special assessments.—It shall be the duty of the tax collector, pursuant to law, to collect payments of all annual disposal special assessments referred to in this section. The tax collector shall distribute the annual disposal special assessments so collected to the Authority at the times and in the manner provided by law. The tax collector shall mail to all owners of improved real property such notices as are required by law.

(7) Enforcement of delinquent annual disposal special assessments.—All delinquent annual disposal special assessment liens may be enforced by the Authority in the manner provided by law.

(8) Certification to property appraiser and tax collector.—

(a) Upon adoption by the Authority of the rate resolution provided herein, the Authority shall forthwith deliver a certified copy of the rate resolution to the property appraiser and tax collector. Based upon said rate resolution and pursuant to written contracts between the Authority and the property appraiser and the Authority and the tax collector, the property appraiser shall include the annual disposal special assessments on the tax notice issued pursuant to section 197.3635, Florida Statutes, or any successor laws, and the tax collector shall collect the annual disposal special assessments as provided by law.

(b) Nothing contained in this section shall be construed or interpreted to preclude the Authority from submitting, within its discretion, a separately prepared notice of the annual disposal special assessments imposed on certain improved real property to the owner of such property if, in the opinion of the Authority, such procedure shall facilitate the billing and collection of such annual disposal special assessments, which notice shall be in addition to the notice submitted by the property appraiser.

(9) Additional proceedings.—The Authority shall conform with and shall do and provide such additional proceedings as may be necessary to enable the Authority to collect the annual disposal special assessments in the same manner as the collection of ad valorem taxes of the county and through the utilization of the office of the tax collector to the extent that the general law relating to the method of collection shall require further and additional notices or other proceedings of the Authority.

Section 9. Annual disposal special assessments to governmental agencies; applicability of annual disposal special assessments to tax-exempt improved real property.—

(1)(a) The Authority shall bill all governmental agencies owning improved real property within both the incorporated and unincorporated areas of the county and said governmental agencies shall pay the annual disposal special assessments imposed under the applicable classification specified in the rate resolution.

(b) The discounts for early payment shall not be applicable to the annual disposal special assessments imposed against governmental agencies owning real property. Such governmental agencies shall pay in the manner provided herein the full annual disposal special assessments imposed.

(c) The annual disposal special assessments imposed against governmental agencies shall become delinquent if not fully paid within 60 days from the date the notice of such annual disposal special assessments is mailed. All delinquent annual disposal special assessments shall bear an initial penalty of 4 percent of the full amount of the annual disposal special assessments if not paid by the expiration of the 60-day period and an additional penalty of 1 percent per month on the delinquent amount, plus the initial penalty, on the first day of each month thereafter until said annual disposal special assessment are paid in full.

(d) The Authority shall have the authority to enforce the collections of any delinquent annual disposal special assessments by the institution of an appropriate action against the governmental agency in a court of competent jurisdiction for a judgment for the amount due under such annual disposal special assessments, including all penalties, plus costs and a reasonable attorney's fee.

(e) The provisions of paragraphs (5), (6), and (7) of section 7 of this charter and paragraphs (5) and (6) of section 8 of this charter shall not be applicable to the annual disposal special assessments imposed against improved real property owned by any governmental agency.

(2) Applicability of annual disposal special assessments to tax-exempt improved real property.—The tax exemption of property from taxation under chapter 196, Florida Statutes, or any other law or constitutional provision shall not relieve the owner of any improved real property in the county from the provisions hereof or from the imposition by the Authority of the annual disposal special assessments applicable to such improved real property as specified in the rate resolution.

Section 10. Limitations on franchises.—The Authority shall adopt by resolution a procedure for granting exclusive franchises, subject to the following limitations:

(1) No franchise, contract, or permit shall be granted or extended for a period of time exceeding 5 years.

(2) A public hearing shall be held prior to the adoption of any rates, fees, or charges to the public.

(3) No exclusive franchise shall be granted except pursuant to a procedure adopted by the Authority which shall include the following minimum requirements:

(a) The entire process shall comply with Chapter 286, Florida Statutes.

(b) The procedure shall encourage competition among potential franchisees.

(c) The franchise award shall occur at a regular meeting of the Authority and shall be confirmed by a subsequent resolution, which shall contain sufficient findings to demonstrate that the award was in the best interest of the public to be served thereby.

(d) Any party aggrieved by the franchise award may appeal the award in writing, within 30 days after the award, to the Authority, which shall decide said appeal by written order within 60 days after its receipt by the Authority. An unsuccessful appellant may thereafter appeal the Authority's decision by writ of certiorari to the circuit court.

Section 11. Exemption from taxation.—The property, moneys, and other assets of any countywide authority created hereunder and all of its revenues or other income shall be exempt from all taxation, licenses, fees, or other charges of any kind imposed by the state or by the county or by any municipality, political subdivision, taxing district, or other public agency or body of the state.

Section 12. Prohibition; permits; penalty.—

(1) It is unlawful to violate this act or the rules duly adopted pursuant to it. After the effective date of this act, no person shall:

(a) Place or deposit any solid waste in or on the lands or waters located within the county except in a manner consistent with the countywide solid waste program.

(b) Burn solid waste except in a manner consistent with the countywide solid waste program.

(c) Accomplish or authorize any act inconsistent with the provisions of this act and those of Chapter 403, Florida Statutes.

(2) No person shall operate, maintain, construct, expand, or modify any resource recovery or waste management facility without first having applied for and received a valid operating permit from the Authority.

(3) Any person found in violation of any provision of this act or any rules adopted pursuant to it commits a misdemeanor of the second degree and shall be punished as provided by law. If such violation be continuing, each 24-hour day or fraction, thereof during which such violation occurs shall constitute a separate offense.

Section 13. Enforcement.—The director of the Palm Beach County Health Department shall determine compliance with the provisions of this act which relate to sanitary collection, storage, processing, and disposal of solid waste, in accordance with the provisions of Palm Beach County Environmental Control Ordinance No. 78-5 and any amendments thereto. Any and all violations shall be reported in writing and a copy of the official inspection report shall be presented to the violator and a copy of said inspection report shall also be delivered to the executive director of the Authority.

(1) If any resource recovery or management facility fails to comply with the provisions of the rules adopted by the department or the Authority pursuant to Chapter 403, Florida Statutes, or under this act, the director of the Palm Beach County Health Department shall give the violator a reasonable time, by formal notice, within which to correct such violation. Should the violation continue beyond the time specified for correction, the director of the Palm Beach County Health Department shall notify the environmental control officer, in writing, of such failure to correct the violation.

(2) Upon notice of the director of the Palm Beach County Health Department that a resource recovery or waste management facility has failed to correct violations, the environmental control officer shall notify the Palm Beach County Environmental Control Hearing Board of such noncompliance, whereupon the hearing board shall, within 45 days after such notice, order the violator to appear before it to show cause why remedial action should not be taken. Any meetings before the hearing board shall be conducted in accordance with the provisions of Palm Beach County Environmental Control Ordinance No. 78-5 and any amendments thereto.

(3) If, after due public hearing, the hearing board upholds the violation, the hearing board shall make a decision setting forth findings of fact and such conclusions of law as are required in view of the issues presented. The decision shall contain an order framed in the manner of a writ of injunction requiring the violator to refrain from committing, creating, maintaining, or permitting the violation and take such affirmative action as the hearing board deems reasonable and necessary under the circumstances to correct such violation.

Section 14. Injunctive relief.—If preventive or corrective measures are not taken in accordance with any order of the hearing board, or if the environmental control officer finds that a violation of the provisions of this act exists so as to create an emergency requiring immediate action to protect human health or welfare, the environmental control officer may institute proceedings in the Circuit Court for Palm Beach County to enforce this act or rules or orders pursuant thereto. Such injunctive relief may include both temporary and permanent injunctions. Any proceedings initiated under this section shall be brought for and in the name of the Authority.

Section 15. Judicial review.—Any person aggrieved by any action or decision of the hearing board may seek appropriate judicial review.

Section 4. If any provision of this act or the application thereof to any person or circumstance is held invalid, the invalidity shall not affect other provisions or applications of the act which can be given effect without the invalid provision of application, and to this end the provisions of this act are declared severable.

Section 5. This act shall be construed as a remedial act and shall be liberally construed to promote the purpose for which it is intended.

Section 6. Chapter 75-473, 77-626, 79-536, 79-539, 79-542, 84-501, 84-502, 86-433, 88-544, 91-334, 93-345, and 94-462, Laws of Florida, are repealed.

Section 7. This act shall take effect upon becoming a law.

Approved by the Governor May 25, 2001.

Filed in Office Secretary of State May 25, 2001.

Appendix B

Solid Waste Authority Rule I
Solid Waste Management Permits

RULE I

SOLID WASTE MANAGEMENT PERMITS

1. Scope of Rule.

1.1 This Rule sets forth procedures on how to obtain a solid waste management facility permit from the Solid Waste Authority of Palm Beach County. This Rule also provides requirements and procedures for the issuance, denial, renewal, extension, transfer, modification, suspension, and revocation and enforcement of solid waste management facility permits. This Rule shall not preclude the application of any other permit requirements or procedures for certain types of facilities or activities as contained in other rules of the Authority.

2. Definitions.

2.1 When used in this Rule, unless the context clearly indicates otherwise, the term:

(a) "Authority" means the Solid Waste Authority of Palm Beach County.

(b) "Biohazardous Waste" means any solid waste or liquid waste which may present a threat of infection to humans. The term includes, but is not limited to, nonliquid human tissue and body parts; laboratory and veterinary waste which contains human disease-causing agents; discarded sharps; human blood, human blood products, and body fluids.

(c) "Clean debris" means any solid waste which is virtually inert and which is not a pollution threat to ground or surface waters and is not a fire hazard and which is likely to retain its physical and chemical structure under expected conditions of disposal or use. The term includes uncontaminated concrete, including embedded pipe or steel, brick, glass, ceramics and any wastes designated by the Department.

(d) "Compost" means solid waste which has undergone biological decomposition of organic matter, and has been disinfected using composting or similar technologies, and has been stabilized to a degree which is potentially beneficial to plant growth and which is used or sold for use as a soil amendment, artificial top soil, growing medium amendment or other similar uses.

(e) "Composting" means the process by which biological decomposition of organic solid waste is carried out under controlled aerobic conditions, and which stabilizes the organic fraction into a material which can easily and

safely be stored, handled and used in an environmentally acceptable manner. The presence of anaerobic zones within the composting material will not cause the process to be classified as other than composting. Simple exposure of solid waste under uncontrolled conditions resulting in natural decay is not composting.

(f) "Comprehensive Plan" means the Comprehensive Solid Waste Management Plan, Resource Recovery and Recycling Program for the Solid Waste Authority of Palm Beach County, as adopted by the Authority.

(g) "Construction and demolition debris" means solid waste generally considered to be not water soluble and nonhazardous in nature, including, but not limited to, steel, glass, brick, concrete, asphalt roofing materials.

(h) "County" means Palm Beach County, Florida.

(i) "Department" means the State of Florida Department of Environmental Regulation or any successor or agency performing a like function.

(j) "Disposal" means the disposition of solid waste by resource recovery or the placing of solid waste materials on the land for final disposition, or any combination thereof.

(k) "Executive Director" means the Executive Director of the Authority or his designee.

(l) "Facility" means all contiguous land, and structures, other appurtenances, and improvements on the land for the processing, storage or disposal of solid waste or recyclable materials. A facility may consist of several operational units.

(m) "Garbage" means all kitchen and table food waste, animal or vegetative waste that is attendant with or results from the storage, preparation, cooking or handling of food materials.

(n) "Generation" means the act or process of producing solid waste or recyclable materials.

(o) "Health Unit" means the Palm Beach County Public Health Unit.

(p) "Municipality" means all incorporated municipalities or special taxing districts exercising municipal powers in relation to collection and disposal of solid waste, lying and being in Palm Beach County, Florida.

(q) "Operation" means the disposal, storage, processing or treatment of solid waste or recyclable materials at and by a Solid Waste Management facility.

(r) "Operation permit" means the legal authorization granted by the Authority to operate or maintain any facility for a specified period of time.

(s) "Palm Beach County Solid Waste Act" means Chapter 75-473, Laws of Florida, as amended.

(t) "Permit" means an operation permit as defined herein.

(u) "Permit condition" means a statement or stipulation which is issued with a permit and which must be complied with.

(v) "Person" means any and all persons, natural or artificial, including any individual, firm or association, facility or any municipal or private corporation organized or existing under the laws of the State of Florida or any other state and any county or governmental agency of this state or the federal government.

(w) "Pollution" means the presence in the outdoor atmosphere or waters in the state of any substances, contaminants, noise, or manmade or man-induced impairment of air, land or waters or alteration of the chemical, physical, biological, or radiological integrity of air, land or water in quantities or at levels which are or may be potentially harmful or injurious to human health or welfare, animal or plant life, or property or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation unless authorized by applicable law.

(x) "Processing" means the act of modifying or altering the nature of solid waste materials to facilitate reuse, transfer, transport, and/or disposal including but not limited to, systems employing physical, thermal, organic and/or chemical techniques.

(y) "Recovered materials" means those materials which have a known recycling potential, can feasibly be recycled, and have been diverted or removed from the solid waste stream for sale, use or reuse, by separation, collection, or processing.

(z) "Recycling," means any process by which solid waste, or materials which would otherwise become solid waste, are collected, separated, or processed and reused or returned to use in the form of raw materials or products.

(aa) "Resource Recovery" means the process by which materials in solid waste retaining useful physical and/or chemical properties are reused or recycled for the same or other purposes.

(bb) "Recyclable material" means those materials which are capable of being recycled and which would otherwise be processed or disposed of as solid waste.

(cc) "Sludge" means the accumulated solids, residues, and precipitates generated as a result of waste treatment or processing, including wastewater treatment, water supply treatment, or operation of an air pollution control facility, and mixed liquids and solids pumped from septic tanks, grease traps, privies, or similar waste disposal appurtenances.

(dd) "Solid waste" means garbage, trash, construction and demolition debris, sewage sludge, rubbish, refuse, white goods and other discarded solid or liquid materials resulting from domestic, industrial, commercial, agricultural, and governmental operations, but does not include solid or dissolved material in domestic sewage, storm drainage or other significant pollutants in water resources such as silt, dissolved materials in irrigation return flows, or other water pollutants.

(ee) "Solid waste management" means the process by which solid waste is collected, transported, stored, separated, processed, or disposed of in any way, according to an orderly, purposeful, and planned program.

(ff) "Solid waste management facility" means any solid waste recycling facility, volume reduction facility, transfer station, or other facility, the purpose of which is resource recovery, recycling, processing, or storage of solid waste or recovered materials. The term does not include facilities which use or ship recovered materials unless such facilities are managing solid waste.

(gg) "Time of Retention" means the amount of time data, reports and records must be retained by the permittee. Time of Retention shall be 12 months unless otherwise specified.

(hh) "Trash" means combinations of yard trash and construction and demolition debris along with other debris such as paper, cardboard, cloth, glass, street sweepings, plastic and other like matter.

(ii) "Transfer Station" means a site the primary purpose of which is to store or hold solid waste for transport to a processing or disposal facility.

(jj) "Storage" means the containment or holding of solid waste or recyclable materials, on a temporary basis, in such a manner as not to constitute disposal of such solid waste or recyclable materials.

(kk) "Transport" means the act of movement of solid waste materials to facilitate processing, reuse, and/or disposal.

(11) "Volume reduction facility" means incinerators, pulverizers, compactors, shredding and baling facilities, composting facilities, and other facilities which accept and process solid waste for recycling.

(mm) "Waste Management" means the systematic control of the generation, storage, collection, transport, treatment, processing, recycling, recovery and disposal of solid waste.

(nn) "White goods" means solid waste consisting of inoperative and discarded refrigerators, ranges, water heaters, freezers, and other similar domestic or commercial large appliances.

(oo) "Yard trash" means solid waste consisting of vegetative matter resulting from landscaping maintenance and land-clearing operations.

3. Conflict of Definitions.

3.1 In case of conflict between definitions contained herein and as they may be stated elsewhere, the definitions stated herein shall prevail. Definitions in other Solid Waste Authority rules may be used to clarify the meaning of terms used in this Rule unless use of such definition would defeat the purpose or alter the intended effect of the provisions of this Chapter.

4. General Prohibition.

4.1 No solid waste management facility in Palm Beach County shall be operated, maintained, expanded, or modified without the appropriate and currently valid permit issued by the Authority, unless the source is exempted by Authority rule. The Authority may issue a permit only after it receives reasonable assurance that the construction and operation of the facility will not cause violation of any of the provisions of the Palm Beach County Solid Waste Act, the Comprehensive Plan or the rules promulgated thereunder. A permitted facility may only be operated, maintained, expanded or modified in a manner that is consistent with the terms of the permit.

5. Exemptions.

5.1 The following solid waste management facilities are exempted from the permit requirements of the Rule. The following exemptions do not relieve any facility from any other requirements of the Palm Beach County Solid Waste Act, the Comprehensive Plan or rules of the Authority.

(a) Facilities operated by the Authority pursuant to its responsibilities under the Palm Beach County Solid Waste Act and the Comprehensive Plan.

(b) Structural changes which will not change the quality, nature or quantity of an existing and permitted solid waste management facility which will not cause pollution.

(c) Processing, storage or transport of solid waste or recovered materials, generated by a household, by the occupants of that household.

6. Procedure to Obtain Permit; Application.

6.1 Any person desiring to obtain a permit from the Authority shall apply on forms prescribed by the Authority and shall submit the number of completed applications and such additional information as the Authority by law may require.

6.2 Processing fees for all permits shall be established by the Governing Board of the Authority as part of the annual budget.

6.3 All fees shall be deposited in an Account created by the Authority.

6.4 To be considered by the Authority, each application must be accompanied by the proper processing fee, except for applications filed by state agencies created pursuant to Chapter 20, F.S., and water management districts created pursuant to Chapter 373, F.S. The fee shall be paid by check, payable to the Solid Waste Authority of Palm Beach County. The fee is non-refundable except as provided in this section.

6.5 When an application is received without the required fee, the Authority shall either return the unprocessed application or arrange with the applicant for the pick up of the application.

6.6 Upon receipt of the proper application fee, the permit processing time requirements stated in this Rule shall begin.

6.7 Any substantial modification to a complete application shall require an additional processing fee determined pursuant to the schedule set forth in Section 6.2 of this Rule and shall restart the time requirements of Section 7.

For purposes of this Subsection, the term "substantial modification" shall mean a modification which is reasonably expected to lead to substantially different volumes or types of wastes processed which require a detailed review.

7. Permit Processing.

7.1 Within 30 days after receipt of an application for a permit and the correct processing fee the Authority shall review the application and shall request submittal of additional information required by this Rule or any other rules or regulations.

7.2 Within 30 days after receipt of such additional information, the Authority shall review it and may request only that information needed to clarify such additional information or to answer new questions raised by or directly related to such additional information.

7.3 If the applicant believes the request of the Authority for such additional information is not authorized by law or rule, the Authority, at the applicant's request, shall begin to process the permit application. Such a request by the applicant shall be in writing and shall be clearly labeled as a request for the Authority to process the application. The applicant's request shall state the reasons why the applicant believes the Authority request for additional information is not authorized by law or rule. The applicant shall clearly state that the applicant requests the Authority to process the application without that information.

7.4 Permits shall be presented to the Governing Board of the Authority to be approved or denied within 90 days after receipt of the original application, the last item of timely requested additional material, or the applicant's written request to begin processing the permit application, whichever occurs last.

8. Consultation.

8.1 The applicant, is encouraged to consult with Authority personnel before submitting an application, or at any other time concerning the operation, expansion, or modification of any solid waste management facility. However, any representation by the Authority shall not relieve any person from any requirement of Florida law, rules or regulations, or Authority rules or regulations.

9. Standards for Issuing or Denying Permits; Issuance; Denial.

9.1 A permit shall be issued to the applicant upon such conditions as the Authority may direct, only if the applicant affirmatively provides the Authority with

reasonable assurance based on plans, data or other information, that the construction, expansion, modification, operation, or activity of the facility will not be contravention of the Palm Beach County Solid Waste Act, the Comprehensive Plan or Authority rules, or other applicable law.

9.2 A permit shall be issued by the Authority only if the applicant affirmatively demonstrates that the facility has received the appropriate permits, approvals or proof of exemption from the Department, Health Unit, Local Zoning Authority, and any additional state or local agencies regulating the construction or operation of the facility.

9.3 If, after review of the application and all the information, the Authority determines that the applicant has not provided reasonable assurance that the construction, modification, expansion, or operation of the facility will be in accord with applicable laws, plans or rules, the Authority shall deny the permit.

9.4 The Authority may issue any permit with specific conditions necessary to provide reasonable assurance that Authority rules or applicable law or rules can be met.

9.5 No Authority permits shall be issued for a term of more than five (5) years unless otherwise specified by statute, rule, or order of the Authority.

9.6 No permit shall be issued for an facility subject to a Department or Health Unit notice of violation or judicial action initiated by the Department. Upon resolution of the enforcement action by agreement, permit, final order, or judicial action a permit may be granted subject to the applicable requirements of Authority rules. This prohibition shall only be applicable when the enforcement action involves the same activity as the activity for which a permit is being sought. The Authority shall take into consideration a permit applicant's violation of any Department or Health Unit rules at any facility when determining whether the applicant has provided reasonable assurances that Authority standards will be met.

9.7 The applicant shall be promptly notified if the Authority intends to deny the application, and shall be informed of the reasons for the intended denial, and of the right to request a hearing before the Governing Board of the Authority.

9.8 The issuance of a permit does not relieve any person from complying with the requirements of Chapter 403, F.S., Department rules, Health Unit rules, or rules of Department approved local programs.

10. Modification of Permit Conditions.

10.1 For good cause and after notice the Authority may require the permittee to conform to a new or additional conditions. The Authority shall allow the permittee a reasonable time to conform to the new or additional conditions and on application of the permittee the Authority may grant additional time.

10.2 For the purpose of this Section, good cause shall include, but not be limited to, any of the following:

(a) A showing that an improvement in solid waste management activities can be accomplished because of technological advances without unreasonable hardship.

(b) Adoption or revision of Florida Statutes, rules, or standards which require the modification of a permit condition for compliance.

(c) Revision of the Palm Beach County Solid Waste Act, the Comprehensive Plan or Authority rules which require the modification of a permit condition for compliance.

10.3 A permittee may request a modification of a permit by applying to the Authority.

11. Renewals and Extensions.

11.1 Renewals. The Authority shall notify the permittee 120 days prior to the expiration date of a permit . Failure to receive this notification shall not absolve the permittee from making a timely application for permit renewal.

11.2 Prior to ninety days before the expiration of any Authority operation permit, the permittee shall apply for a renewal of a permit. If the application is submitted prior to 90 days before the expiration of the permit, it will be considered timely. When the application for renewal is timely, the existing permit shall remain in effect until the renewal application has been finally acted upon.

11.3 If the renewal application is submitted 60 days or less from the expiration date, it will not be considered timely.

11.4 Permits shall be renewed after administrative review by the Executive Director. Permit conditions may be subject to modification at the time of renewal pursuant to Section 10 of this Rule.

12. Suspension and Revocation.

12.1 Permits shall be effective until suspended or revoked by the Governing Board of the Authority, surrendered, or expired and shall be subject to the provisions

of the Palm Beach County Solid Waste Act, the Comprehensive Plan or Authority rules, or other applicable law.

12.2 Failure to comply with pollution control laws and rules shall be grounds for suspension or revocation.

12.3 A permit issued pursuant to this rule shall not become a vested property right in the permittee. The Governing Board of the Authority may revoke any permit issued by it if it finds that the permit holder or his agent:

(a) Submitted false or inaccurate information in his application or operational reports.

(b) Has violated law, Department or Health Unit orders, rules or permit conditions.

(c) Has failed to submit operational reports or other information required by Authority rules.

(d) Has refused lawful inspection.

12.4 No revocation shall become effective except after notice is served by personal service or certified mail, upon the person or persons named therein and a hearing held if requested within the time specified in the notice. The notice shall specify the provision of the law, or rule alleged to be violated, or the permit condition or Department or Health Unit order alleged to be violated, and the facts alleged to constitute a violation thereof.

13. Enforcement.

13.1 Enforcement of the provisions of this rule and the permits issued thereunder shall be conducted by the Health Unit pursuant to the Palm Beach County Solid Waste Act.

14. Financial Responsibility.

14.1 The Authority shall require an applicant to submit proof of financial responsibility and may require the applicant to post an appropriate bond to guarantee compliance with the law and Authority rules. Acceptable form for bonds shall be cash, irrevocable letter of credit or surety bond. Bond amounts shall be determined based on site plans, types of waste received, quantities of waste stored and any other factors that may affect the operation of the facility. Bond amounts shall be made a condition of the permit and approved by the Governing Board of the Authority.

15. Transfer of Permits.

15.1 A permit is issued in the name of a person. Upon sale or legal transfer of a permitted facility, the new owner must apply by letter for a transfer of permit within thirty (30) days. Unless the transferor notifies the Authority of the transfer and to whom transferred, the transferor will remain liable for performances in accord with the permit until the transferee applies for a transfer of permit. Transfer of permits shall not become final until approved by the Governing Board of the Authority. The transferee shall be subject to the permit conditions and financial responsibility provisions contained in the permit.

15.2 Once transferred the permit will remain in effect until the original expiration date. A permit may not be transferred to a new operational location. Relocation of facilities shall require the permittee to apply for a new permit.

16. Facility Operation - Problems.

16.1 If the permittee is temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by hazard of fire, wind or by other cause, the permittee shall immediately notify the Authority. Notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with Authority rules.

17. Permit Conditions.

17.1 All permits issued by the Authority shall include the following general conditions:

(a) The terms, conditions, requirements, limitations and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Palm Beach County Solid Waste Act.

(b) This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit shall constitute grounds for revocation and enforcement action by the Authority.

(c) The issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other permit that may be required for other aspects of the total project which are not addressed in this permit.

(d) This permit conveys no title to land or water, does not constitute recognition or acknowledgment of title.

(e) 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 or Health Unit rules.

(f) The permittee shall properly operate and maintain the facility and systems that are installed and used by the permittee to achieve compliance with the conditions of this permit, or other permits 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) The permittee, by accepting this permit, specifically agrees to allow authorized Authority personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:

1. Have access to and copy any records that must be kept under conditions of the permit; upon reasonable prior notice

2. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

3. Sample or monitor any substances at any location reasonably necessary to assure compliance with this permit or Authority rules.

4. Reasonable time and reasonable prior notice may depend on the nature of the concern being investigated.

(h) 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 Authority with the following information:

1. A description of and cause of noncompliance; and

2. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to

enforcement action by the Authority or by the Department for penalties or for revocation of this permit.

(i) 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 Authority may be used by the Authority as evidence in any enforcement case involving the permitted facility arising under the Florida Statutes or Authority rules. Such evidence shall be used to the extent it is consistent with Florida Rules of Civil Procedure and appropriate evidentiary rules.

(j) The permittee agrees to comply with changes in Authority 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 Authority rules to challenge the appropriateness or validity of such changed rules or statutes.

(k) This permit is transferable only upon Authority approval in accordance with Authority rules. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Authority.

(1) This permit or a copy thereof shall be kept at the work site of the permitted activity.

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

(n) When requested by the Authority, 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 the relevant facts were not submitted or were incorrect in the permit application or in any report to the Authority, such facts or information shall be corrected promptly.

Appendix C

Solid Waste Authority Rule II
Hazardous Waste Services Authorization

RULE II

HAZARDOUS WASTE SERVICES AUTHORIZATION

1. Scope of Rule.

1.1 This Rule sets forth procedures on how to obtain a hazardous waste services authorization from the Solid Waste Authority of Palm Beach County. The hazardous waste services authorization allows Conditionally Exempt Small Quantity Generators to dispose of their hazardous waste at Solid Waste Authority Hazardous Waste Collection Facilities. This Rule also provides requirements and procedures for the issuance, denial, renewal, extension, transfer, modification, and revocation of hazardous waste services authorizations. This Rule shall not preclude the application of any other authorization requirements or procedures for certain types of facilities or activities as contained in Federal, State, or local laws and regulations or other rules of the Authority.

2. Definitions.

2.1 When used in this Rule, unless the context clearly indicates otherwise, the term:

(a) "Authority" means the Solid Waste Authority of Palm Beach County.

(b) "Conditionally Exempt Small Quantity Generator" means a generator generating less than 100 kg of hazardous waste in a calendar month.

(c) "Comprehensive Plan" the Comprehensive Solid Waste Management Plan, Resource Recovery and Recycling Program for the Solid Waste Authority of Palm Beach County, as adopted by the Authority.

(d) "County" means Palm Beach County, Florida.

(e) "DER" means the State of Florida Department of Environmental Regulation.

(f) "Director" means the Executive Director of the Solid Waste Authority of Palm Beach County or his duly authorized representative.

(g) "Generator" means any person whose act or process produces hazardous waste or whose act first causes a hazardous waste to be subject to regulation.

(h) "Large Quantity Generator" means a generator who generates over 1000 kg of hazardous waste in a calendar month.

(i) "Health Unit" means the Palm Beach County Public Health Unit.

(j) "Household Hazardous Waste" means any hazardous waste generated by households, including single and multiple dwellings and other residential sources.

(k) "Hazardous Waste" means a hazardous waste as defined in the Code of Federal Regulations, Chapter 40, Part 261.3.

(1) "Hazardous Waste Services Authorization" is the legal authorization granted to a conditionally exempt small quantity generator by the Authority, to deliver hazardous waste to a Solid Waste Authority Hazardous Waste Management facility.

(m) "Palm Beach County Solid Waste Act" means Chapter 75-473, Laws of Florida, as amended.

(n) "Authorization" means a hazardous waste services authorization as defined herein.

(o) "Authorization condition" means a statement or stipulation which is issued with an authorization and which must be complied with.

(p) "Person" means any and all persons, natural or artificial, including any individual, firm or association, facility or any municipal or private corporation organized or existing under the laws of the State of Florida or any other state and any county or governmental agency of this state or the federal government.

(q) "Small Quantity Generator" means a generator who generates more than 100 kg, but less than 1000 kg of hazardous waste in a calendar month.

3. Conflict of Definitions.

In case of conflict between definitions contained herein and as they may be stated elsewhere, the definitions stated herein shall prevail. Definitions in other Authority rules may be used to clarify the meaning of terms used in this Rule unless use of such definition would defeat the purpose or alter the intended effect of the provisions of this Rule.

4. Prohibitions.

4.1 No hazardous waste shall be delivered or disposed of at any Authority facility by large quantity generators or small quantity generators.

4.2 No hazardous waste shall be delivered or disposed of at any Authority facility by Conditionally Exempt Small Quantity generators without the appropriate and currently valid authorizations issued by the Authority.

5. Exemptions.

5.1 The following generators are exempted from the authorization requirements of the Rule:

(a) Household Hazardous Waste generators.

(b) Facilities constructed and operated by the Authority pursuant to its responsibilities under the Palm Beach County Solid Waste Act and the Comprehensive Plan.

5.2 These exemptions do not relieve any generator from any other requirements of Federal, State or local laws or regulations, the Palm Beach County Solid Waste Act, the Comprehensive Plan or rules of the Authority.

6. Procedure to Obtain Authorization; Application.

6.1 Any person desiring to obtain an authorization from the Authority shall apply on form prescribed by the Authority and shall submit the number of completed applications and such additional information as the Authority by law may require.

6.2 Processing fees for all authorizations shall be established by the Governing Board of the Authority as part of the annual budget.

6.3 Processing fees shall be deposited in an account created by the Authority.

6.4 To be considered by the Authority, each application must be accompanied by the proper processing fee, except for applications filed by state agencies created pursuant to Chapter 20, F.S., and water management districts created pursuant to Chapter 373, F.S. The fee shall be paid by check, payable to the Solid Waste Authority of Palm Beach County. The fee is non-refundable except as provided in this section.

6.5 When an application is received without the required fee, the Authority shall either return the unprocessed application or arrange with the applicant for the pick up of the application.

6.6 Upon receipt of a complete application and the processing fee, the processing time requirements stated in this Rule shall begin.

6.7 Any substantial modification to a complete application shall require an additional processing fee determined pursuant to the schedule set forth in Section 6.2 of this Rule and shall restart the time requirements of Section 7. For purposes of this Subsection, the term "substantial modification" shall mean a modification which is reasonably expected to lead to substantially different volumes or types of wastes which require a detailed review.

7. Authorization Processing.

7.1 Within 30 days after receipt of an application for authorization and the correct processing fee the Authority shall review the application or request submittal of additional information.

7.2 Within 30 days after receipt of such additional information, the Authority shall review it and may request only that information needed to clarify such additional information or to answer new questions raised by or directly related to such additional information.

7.3 If the applicant believes the request of the Authority for such additional information is not authorized by law or rule, the Authority, at the applicant's request, shall begin to process the authorization application. Such a request by the applicant shall be in writing and shall be clearly labeled as a request for the Authority to process the application. The applicant's request shall state the reasons why the applicant believes the Authority request for additional information is not authorized by law or rule. The applicant shall clearly state that the applicant requests the Authority to process the application without that information.

7.4 Authorizations shall be approved or denied within 90 days after receipt of the original application, the last item of timely requested additional material, or the applicant's written request to begin processing the authorization application, whichever occurs last.

8. Consultation.

8.1 The applicant is encouraged to consult with Authority personnel before submitting an application. However, any representation by the Authority shall not relieve any person from any requirement of Federal, State or local laws and regulations or Authority Rules.

9. Standards for Issuing or Denying Authorizations; Issuance; Denial.

9.1 An authorization shall be issued to the applicant in such conditions as the Authority may direct, only if the applicant affirmatively provides the Authority with reasonable assurance that the waste generated and delivered to the Solid Waste Authority shall not be in contravention of the Federal, State, or local laws and regulations, the Palm Beach County Solid Waste Act, the Comprehensive Plan or Authority rules.

9.2 If, after review of the application and all the information, the Authority determines that the applicant has not provided reasonable assurance that the waste will be managed in accord with applicable laws, plans or rules, the Authority shall deny the authorization.

9.3 The Authority may issue any authorization with specific conditions necessary to provide reasonable assurance that Authority rules can be met.

9.4 No authorization shall be issued for a term of more than five (5) years.

9.5 No authorization shall be issued to a generator subject to a DER or Health Unit notice of violation or judicial action initiated by the DER or Health Unit. Upon resolution of the enforcement action by agreement, final order, or judicial action an authorization may be granted subject to the applicable requirements of Authority rules. This prohibition shall only be applicable when the enforcement action involves the activity as the activity for which an authorization is being sought. The Authority shall take into consideration an authorized applicant's violation of any DER rules at any facility when determining whether the applicant provided reasonable assurances that Authority standards will be met.

9.6 The applicant shall be promptly notified if the Authority intends to deny the application, and shall be informed of the reasons for the intended denial.

9.7 The issuance of an authorization does not relieve any person from complying with the requirements of Federal, State, or local laws or regulations.

10. Modification of Authorization Conditions.

10.1 For good cause and after notice, the Authority may require the authorized party to conform to new or additional conditions. The Authority shall allow the authorized party a reasonable time to conform to the new or additional conditions and on application of the authorized party the Authority may grant additional time.

10.2 For the purpose of this Section, good cause shall include, but not be limited to, any of the following:

(a) A showing that an improvement in hazardous waste management activities can be accomplished because of technological advances without unreasonable hardship.

(b) Adoption or revision of Federal Statute or Regulation, Florida Statutes, rules, or standards or local ordinances which require the modification of an authorization condition for compliance.

(c) Revision of the Palm Beach County Solid Waste Act, the Comprehensive Plan or Authority rules which require the modification of an authorization condition for compliance.

(d) Circumstances beyond the control of the Authority which prevent the Authority from disposing of any previously approved waste stream at a federally permitted treatment, storage or disposal facility.

10.3 An authorized party may request a modification of an authorization by applying to the Authority.

11. Renewals.

11.1 Prior to ninety days before the expiration of any Authority authorization, the authorized party shall apply for a renewal of an authorization on forms and in a manner prescribed by the Authority. A renewal application shall be timely and sufficient. If the application is submitted prior to ninety days before expiration of the authorization, it will be considered timely and sufficient. If the renewal application is submitted at a later date, it will not be considered timely and sufficient unless it in submitted and made complete prior to the expiration of the operation authorization. When the application for renewal is timely and sufficient, the existing authorization shall remain in effect until the renewal application has been finally acted upon by the Authority.

12. Suspension and Revocation.

12.1 Authorizations shall be effective until suspended, revoked, surrendered, or expired at shall be subject to the provisions of the Palm Beach County Solid Waste Act, the Comprehensive Plan or Authority rules.

12.2 Failure to comply with Federal, State or local pollution control laws and regulations shall be grounds for suspension or revocation.

12.3 An authorization issued pursuant to this rule shall not become a vested property right to the authorized party. The Authority may revoke any authorization issued if it finds that the authorization holder or his agent:

(a) Submitted false or inaccurate information in his application or operational reports.

(b) Has violated law, DER orders, rules, local ordinances or authorization conditions.

(c) Has failed to submit reports or other information required by Authority rules.

(d) Has refused lawful inspection.

12.4 No revocation shall become effective except after notice is served by personal service or certified mail. The notice shall specify the grounds for the revocation, including the provision of the law, rule or local ordinance alleged to be violated, or the authorization condition or DER order alleged to be violated, and the facts alleged to constitute a violation thereof.

13. Financial Responsibility.

13.1 The Authority may require an applicant to submit proof of financial responsibility and may require the applicant to post an appropriate bond to guarantee compliance with the law and Authority rules.

14. Transfer of Authorizations.

14.1 An authorization is issued in the name of a person. Upon sale or legal transfer of an authorized facility, the new owner must apply by letter for a transfer of authorization within thirty (30) days. Unless the transferor notifies the Authority of the transfer and to whom transferred, the transferor will remain liable for performances in accord with the authorization until the transferee applies for a transfer of authorization.

15. Facility Operation - Problems.

15.1 If the authorized party is temporarily unable to comply with any of the conditions of the authorization, the authorized party shall immediately notify the Authority. Notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence. Such notification does not release the authorized party from any liability for failure to comply with Federal, State or local laws or regulations, or Authority rules.

16. Authorization Conditions.

16.1 All Hazardous Waste Services Authorizations issued by the Authority shall include the following general conditions:

(a) The terms, conditions, requirements, limitations and restrictions set forth in this authorization, are "authorization conditions" and are binding and enforceable pursuant to Palm Beach County Solid Waste Act. The authorized party is placed on notice that the Authority will review this authorization periodically and may revoke the authorization for any violation of these conditions.

(b) This authorization is valid only for the specific wastes applied for and indicated in the approved application. Any unauthorized deviation from the approved application, specifications, or conditions of this authorization may constitute grounds for revocation by the Authority.

(c) The issuance of this authorization 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 authorization is not a waiver of or approval of any other authorization that may be required for other aspects of the total project which are not addressed in this authorization.

(d) This authorization conveys no title to land or water, does not constitute recognition or acknowledgment of title.

(e) This authorization does not relieve the authorized party 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 authorized source, or from penalties therefore; nor does it allow the authorized party to cause pollution in contravention of Florida Statutes, DER rules or local ordinances, unless specifically authorized.

(f) The authorized party, by accepting this authorization, specifically agrees to allow authorized personnel of the Authority and/or the Health Unit, upon presentation of credentials or other documents as say be required by law and at reasonable times, access to the premises where the authorized activity is located or conducted to:

1. Have access to and copy any records that must be kept under conditions of the authorization;

2. Inspect the facility, equipment, practices, or wastes regulated under this authorization; and

3. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this authorization or Authority rules.

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

(g) If, for any reason, the authorized party does not comply with or will be unable to comply with any condition or limitation specified in this authorization, the authorized party shall immediately provide the Authority with the following information:

1. A description of and cause of noncompliance; and

2. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. The authorized party shall be responsible for any and all damages which may result and may be subject to enforcement action by the Authority or by the DER for penalties or for revocation of this authorization.

(h) In accepting this authorization, the authorized party understands and agrees that all records, notes, monitoring data and other information relating to the hazardous wastes generated which are submitted to the Authority say be used as evidence in any enforcement case involving the authorized facility arising under Federal, State, or local laws or regulations, or Authority rules. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

(i) The authorized party agrees to comply with changes in Federal, State or local laws or regulations, or Authority rules and after a reasonable time for compliance; provided, however, the authorized party does not waive any other rights granted by Federal, State or local laws or regulations, or Authority rules.

(j) This authorization is transferable only upon Authority approval in accordance with Rule Section 14, as applicable. The authorized party shall be liable for any non-compliance of the authorized activity until the transfer is approved by the Authority.

(k) This authorization or a copy thereof shall be prominently displayed at the work site of the authorized activity.

(1) Upon request, the authorized party shall furnish all records and data required under Authority rules. During enforcement actions by the DER or Health Unit, the retention period for all records will be extended automatically unless otherwise stipulated by the Authority.

(m) When requested by the Authority, the authorized party shall within a reasonable time furnish any information required by authorization or law which is needed to determine compliance with the authorization. If the authorized party becomes aware the relevant facts were not submitted or were incorrect in the authorization application or in any report to the Authority, such facts or information shall be corrected promptly.

Appendix D

Solid Waste Authority Rule III
Standards and Criteria for Materials Recovery Facilities

Rule III

Standards and Criteria for Materials Recovery Facilities

1. Scope of Rule.

1.1 This Rule sets forth the standards and criteria to be used in evaluating permit applications for materials recovery facilities issued pursuant to Solid Waste Authority Rule I. This rule shall not preclude the application of any other permit requirements or procedures for certain types of facilities or activities as contained in other rules of the Authority.

2. Definitions.

2.1 All definitions contained in Chapter 75-473, Laws of Florida, as amended, and Solid Waste Authority Rule I, to the extent they are consistent with the definitions of this rule, are applicable to the terms used in this rule.

2.2 When used in this rule, unless the context clearly indicates otherwise, the term:

(a) "Acceptable Materials" means construction and demolition debris, yard trash, and other recyclable materials which have been source separated .

(b) "Construction and demolition debris" means discarded materials generally considered to be not water-soluble and nonhazardous in nature, including, but not limited to, steel, glass, brick, concrete, asphalt roofing material, pipe, gypsum wallboard, and lumber, from the construction or destruction of a structure as part of a construction or demolition project or from the renovation of a structure, and including rocks, soils, tree remains, trees, and other vegetative matter that normally results from land clearing or land development operations for a construction project, including such debris from construction of structures at a site remote from the construction or demolition project site. Mixing of construction and demolition debris with other types of solid waste will cause it to be classified as other than construction and demolition debris. The term also includes:

(i) Clean cardboard, paper, plastic, wood, and metal scraps from a construction project;

(ii) Except as provided in FS 403.707(13)(j), unpainted, non-treated wood scraps from facilities manufacturing materials used for construction of structures or their components and unpainted, non-treated wood pallets provided the wood scraps and pallets are separated from other solid waste where generated and the generator of such wood scraps or pallets implements reasonable

practices of the generating industry to minimize the commingling of wood scraps or pallets with other solid waste; and

(iii) De minimis amounts of other nonhazardous wastes that are generated at construction or destruction projects, provided such amounts are consistent with best management practices of the industry.

(d) "Materials recovery facility"(MRF) means a solid waste management facility that provides for the extraction from solid waste of recyclable materials, materials suitable for use as a fuel or soil amendment, or any combination of such materials.

(e) "Recovered Screened Materials - Yard Trash" (RSM) means the recovered screened material resulting from the processing of yard trash, as defined by the Department. This material shall be managed in a manner consistent with Department regulations and policies.

(f) "Recovered Screened Materials - C/D" (RSM) means the recovered screened material resulting from the processing of construction and demolition debris from which all Class I solid waste has been removed. This material shall be treated and managed in a manner consistent with Department regulations and policies.

(g) "Source separated" means recovered materials are separated from solid waste where the solid waste and recovered materials are generated. The term does not require that various types of recovered materials be separated from each other and recognizes de minimis solid waste, in accordance with industry standards and practices, may be included in the recovered material.

(h) "Recovered Materials Processing Facility"(RMPF) means a facility that provides for the processing of only source separated recyclable materials

(h) "Processing capacity" means the volume or tonnage of materials that a solid waste management facility is capable of processing per day through use of site specific processing equipment and manpower as detailed in an approved operational plan.

(i) "Special wastes" means solid wastes that can require special handling and management, including but not limited to white goods, waste tires, used oil, lead-acid batteries, construction and demolition debris, ash residue, yard trash and biological wastes.

(j) "Speculative Accumulation" is the recovery and stockpiling of materials removed from solid waste, for which no feasible means of recycling is readily available.

3. Conflict of Definitions.

3.1 In case of conflict between definitions contained herein and as they may be stated elsewhere, the definitions stated herein shall prevail. Definitions stated elsewhere may be used to clarify the meaning of terms used in this rule, unless use of such definitions would defeat the purpose or alter the intended provisions of this rule.

4. Prohibitions.

4.1 No materials recovery facility will be permitted to process any material that is not source separated, except for yard waste and construction/demolition debris (C/D).

4.2 No materials recovery facility shall be operated, maintained, expanded or modified without the appropriate and currently valid permit issued by the Authority. The Authority may issue a permit to a materials recovery facility only after it receives reasonable assurance that the operation of the materials recovery facility will not cause a violation of any of the provisions of the Palm Beach County Solid Waste Act, Authority Plans, or any rules promulgated thereunder.

4.3 No materials recovery facility may engage in the speculative accumulation of materials.

5. Standards and Criteria.

5.1 Materials Recovery Facilities shall be designed and operated to recycle a minimum of fifty percent (50%) of each individual waste stream or waste type received by the facility.

5.2 Materials Recovery Facilities are permitted to recycle only acceptable materials, as defined herein.

5.3 Applications for Materials Recovery Facilities shall include site plans of sufficient detail to show the size, location and volume of stockpile areas for each individual waste stream or waste type, and for each recovered material produced.

5.4 Materials Recovery Facilities shall weigh all incoming waste and source separated materials, as well as all wastes and recovered materials leaving the facility.

5.5 Proof of financial responsibility shall be provided in the form of cash, irrevocable letter of credit or surety bond. The amount of the bond shall be

based upon the cost to load, transport to Authority facilities and dispose of the permitted quantities of stockpiled wastes identified on the site plan.

(a) In the event another agency requires a bond as a condition of approval, and said bond provides proof of financial responsibility for items identical to those required by the Authority, the Authority may, at its option, waive the requirement for a bond.

6. Reporting Requirements.

6.1 All Materials Recovery Facilities shall report their recycling activities on a monthly basis and on Authority approved report forms.

(a) All quantities of materials received, processed, recovered, stockpiled, transshipped and shipped for disposal shall be reported in tons.

(b) All Facility Report Forms shall be submitted to the office of Special Programs by the fifteenth day of each month and shall document the facility's previous month's recycling activities.

7. Exemptions.

7.1 Recovered Materials Processing Facilities shall be exempt from the provisions of this rule.

Appendix E

Solid Waste Authority Rule IV
Standards and Criteria for Roll-off Collection Service

YOUR PARTNER FOR
SOLID WASTE SOLUTIONS

Rule IV

Standards and Criteria for Roll-Off Collection Service

1. Scope of Rule.

1.1 This Rule sets forth the standards and criteria to be used in evaluating Permit applications for the collection of construction and demolition debris and horticultural or agricultural wastes. The roll-off collection service in unincorporated Palm Beach County shall be exclusive to the Permits granted by the Authority.

2. Definitions.

2.1 All definitions contained in Chapter 75-473, Laws of Florida, as amended, and Solid Waste Authority of Palm Beach County Rules I and III, to the extent they are consistent with the definitions of this rule, are applicable to the terms used in this rule.

2.2 When used in this rule, unless the context clearly indicates otherwise, the term:

A. **Collection** shall mean the process whereby materials collected are removed and transported to a Designated Facility.

B. **Construction and Demolition Debris (C&D)** shall mean materials generally considered to be not water soluble and non-hazardous in nature, including, but not limited to, steel, glass, brick, concrete, roofing material, pipe, gypsum wallboard, and lumber from the construction or destruction of a structure as part of a construction or demolition project. Mixing of a de minimis amount of waste other than C&D from the construction site will not automatically cause it to be classified as other than C&D.

C. **Designated Facility** shall mean an Authority owned disposal, processing, recovery, recycling or transfer facility which receives such material, or another facility if permitted or specifically designated in writing by the Authority.

7501 North Jog Road, West Palm Beach, Florida 33412 (561) 640-4000 Fax (561) 640-3400
Customer Information Services: (561) 697-2700 • South and West County: 1-866-792-4636

D. **Equipment Yard** means a real property location that shall be utilized by the Permittee for the storage and keeping of all equipment needed by the Permittee to provide all services under this Agreement in the Service Area.

E. **Hazardous Waste** shall mean solid waste as defined by the State of Florida Department of Environmental Protection as a hazardous waste in the State of Florida Administrative Codes, or by any future legislative action.

F. **Horticultural or Agricultural Waste** shall mean vegetative wastes attendant to the operation of horticultural or agricultural nurseries. Horticultural or Agricultural waste shall not include any other type of waste, including, but not limited to, Special Wastes or Garbage.

G. **Permit Administrator** shall mean the Authority's designated agent who shall act as the Authority's representative during the term of the Roll-off Collection Permits.

H. **Permittee** shall mean that person or entity that has entered into a Roll-off Collection Permit with the Authority to provide Roll-off Collection Services.

I. **Roll-off Collection Service** shall mean the Collection of only C&D roll-off containers, or the Collection of C&D by other mechanical means, at temporary locations in the Service Area, limited to new construction sites and remodeling or refurbishment sites. Such service shall not include Special Wastes, Garbage or Recyclable Materials. Roll-off Collection Service shall also mean the collection of Horticultural or Agricultural wastes, but only when the customer chooses to use roll-off containers for Horticultural or Agricultural waste.

3. Conflict of Definitions

3.1 In case of conflict between definitions contained herein and as they may be stated elsewhere, the definitions stated herein shall prevail. Definitions stated elsewhere may be used to clarify the meaning of terms used in this rule, unless use of such definitions would defeat the purpose or alter the intended provisions of this rule.

4. Prohibitions

4.1 No person shall provide Roll-off Collection Service in unincorporated Palm Beach County or any other area in which the Authority administers collection services without first obtaining a Roll-off Collection Service Permit from the Authority.

4.2 Collection of Garbage, Special Waste or any waste other than Construction and Construction and Demolition Debris, and Horticultural or Agricultural Waste, as defined in this rule, in a roll-off container, is prohibited. Mixing of wastes is prohibited.

5. Exemptions

5.1 The following activities are exempted from the permit requirements of this rule. This exception does not provide relief from any other requirements of the Authority or any other agency.

(a) Collection and transportation, for recycling or disposal, of construction and demolition debris at a residence by the occupants of that residence.
(b) Collection and transportation, for recycling or disposal, of land clearing debris.
(c) Collection and transportation, for recycling or disposal, of source separated recovered material.

6. Standards and Criteria

6.1 Permittee shall be allowed to provide Roll-Off Collection Services within unincorporated Palm Beach County.

6.2 Permittee shall maintain an Equipment Yard and office in Palm Beach County where complaints shall be received. An Equipment Yard and office must be established and maintained within Palm Beach County within six (6) months of the commencement of the Permit until October 14, 1999. Effective October 15, 1999, an Equipment Yard and office must be established within Palm Beach County before a Permit is issued.

6.3 The term of the Permits shall be for three years unless terminated by the Authority or the Permittee.

6.4 The Authority shall be paid $10,000 per year by the Permittee for each year of the Permit, beginning on the date of Permit application, with $10,000 to be paid by the Permittee on the effective date of the permit during the second and third year of the Permit.

6.5 The Permittee shall, during the term of this Permit, and any extensions hereof, maintain in full force and effect commercial general liability insurance and automobile liability insurance, which specifically covers all exposures incident to the Permittee's operations under this Permit. Worker's Compensation coverage must be maintained in accordance with statutory requirements as well as Employer's Liability Coverage in an amount not less than $100,000.00 per each accident, $100,000.00 by disease and $500,000.00 aggregate by disease.

6.6 The Permittee shall obtain, at their own expense, all Permits and licenses required by law or ordinance and maintain the same in full force and effect. Any changes of the licenses or Permits shall be reported to the Authority within ten (10) working days of the change.

6.7 All C&D and Horticultural and Agricultural Waste shall be transported to a Designated Facility.

6.8 The Permittee shall collect waste with as little disturbance as possible and shall leave any receptacle at the same point it was collected. The Permittee shall not litter or cause any spillage to occur upon the premises or the right-of-way wherein the collection shall occur. During transportation, all waste shall be contained, tied, or enclosed so that leakage, spillage, and litter is prevented. In the event of any spillage or leakage caused by the Permittee, the Permittee shall promptly clean up all spillage or leakage at no cost to the Authority or the customer.

6.9 For all collection services, the charges shall be determined through open competition, by agreement between the Permittee and the customer. The Permittee shall be responsible for billing and collecting, transportation, disposal and container rental charges for this service. However, the Permittee may not improperly dispose of waste if the customer does not pay their bill. The Permittee shall pay the Authority and/or the Authority Permitted processor for all solid waste disposal costs incurred for disposing of solid waste at the Designated Facilities.

7. Reporting Requirements

7.1 All Permittees shall report their roll-off collection activities on a quarterly basis and on Authority approved report forms.

(a) All Collection Report Forms shall be submitted to the office Customer Information Services by the fifteenth day of each month and shall document the previous quarter's collection activities.

8. Permit Conditions

8.1 Each Permit shall be issued subject to the General Conditions embodied in Solid Waste Authority Rule I, Section 17.

8.2 The General permit conditions may be supplemented with Specific permit conditions.

9. Enforcement and Fines

9.1 The conditions of a Permit issued pursuant to this rule shall be enforced as set forth in of Chapter 75-473, Laws of Florida, as amended.

9.2 Fines or loss of Permit will be incurred by the Permittee for non-compliance of Permit conditions, as set forth in the special terms and conditions.

9.3 A Permit issued under this rule may be suspended or revoked under the terms of Solid Waste Authority Rule I, Section 1.

9.4 The failure of the Authority at any time to require performance by the Permittee of any provisions hereof shall in no way affect the right of the Authority thereafter to enforce the same. Nor shall waiver by the Authority of any breach of any provisions hereof be taken or held to be waived of any succeeding breach of such provisions or as a waiver of any provision itself.

10. Indemnification

10.1 The Permittee will hold the Authority harmless from any and all liabilities, losses or damages the Authority may suffer as a result of claims, demands, costs or judgments against the Authority arising out of the wrongful acts or omission of the Permittee or its employees, which said liabilities, losses, damages, claims, demands, costs or judgment arise directly out of the matters which are the subject of this Rule and the work to be performed thereby. The Permittee shall not be responsible for nor require to indemnify or hold the Authority harmless for any act, omission, negligence or other liability to the extent caused by the act or omission in whole or in part of the Authority or any one of its employees or agents.

11. Title to Waste

11.1 The Permittee shall have no right to take, keep, process, alter remove or otherwise dispose of any collected waste without specific written authorization from the Permit Administrator.

12. Procedures to Obtain Permit; Application, Processing and Standards for Issuing or Denying Permits.

12.1 Any person desiring to obtain a permit from the Authority shall apply on forms prescribed by the Authority and shall submit the number of completed applications and such additional information as the Authority may require.

12.2 To be considered by the Authority, each application must be accompanied by the proper Permit fee, as specified in Section 4 of this Rule. The fee shall be paid by check, payable to the Solid Waste Authority of Palm Beach County. The fee is non-refundable except as provided in this section.

12.3 In addition to the requirements listed in Section 4 of this Rule, the applicant must have at least one year of roll-off collection experience. Other considerations such as references, criminal and civil litigation history, and other matters deemed pertinent to the Authority will be evaluated as part of the application review.

12.4 Within 30 days after receipt of an application for a Permit and the Permit fee, the Authority shall review the application and shall request submittal of additional information required by this Rule or any other rules or regulations.

12.5 Within 30 days after receipt of such additional information, the Authority shall review it and may request only that information needed to clarify such additional information or to answer new questions raised by or directly related to such additional information,

12.6 Permits shall be presented to the Governing Board of the Authority to be approved or denied within 90 days after receipt of the original application, the last item of timely requested additional material, or the applicant's written request to begin processing the permit application, whichever occurs last.

12.7 A Permit shall be issued to the applicant upon such conditions as the Authority may direct, only if the applicant affirmatively provides the Authority with reasonable assurance that all the terms of this Rule, as may be supplemented by specific terms and conditions, have been met and will be maintained.

12.8 The applicant shall be promptly notified if the Authority intends to deny the application and shall be informed of the reasons for the intended denial, and of the right to request a hearing before the Governing Board of the Authority.

12.9 The issuance of a Permit does not relieve any person from complying with the requirements of Chapter 403, Florida Statutes, Department of Environmental Protection Rules, OSHA rules, Department of Transportation rules, and federal, state, and local rules and ordinances.

13. Transfer of Permits

13.1 A permit is issued in the name of a person. Upon sale or legal transfer of a permitted facility, the new owner must apply by letter for a transfer of permit within thirty (30) days. Unless the transferor notifies the Authority of the transfer and to whom transferred, the transferor will remain liable for performances in accord with the permit until the transferee applies for a transfer of permit. Transfer of permits shall not become final until approved by the Governing Board of the Authority. The transferee shall be subject to the permit conditions and financial responsibility provisions contained in the permit.

13.2 Once transferred, the permit will remain in effect until the original expiration date. A permit may not be transferred to a new operational location. Relocation of facilities shall require the Permittee to apply for a new Permit.

14. Modification of Permit Conditions

14.1 For good cause and after notice, the Authority may require the Permittee to conform to a new or additional condition. The Authority shall allow the Permittee a reasonable time to conform to the new or additional conditions and on application of the Permittee the Authority may grant additional time.

14.2 For the purpose of this Section, good cause shall include, but not be limited to, any of the following:

(a) Adoption or revision of Florida Statutes, local ordinances, rules or standards that require the modification of a permit condition for compliance.

(b) Adoption or revision of the Palm Beach County Solid Waste Act, the Solid Waste Authority of Palm Beach County Comprehensive Plan or Authority Rules which require the modification of a permit condition for compliance.

14.3 A Permittee may request a modification of a permit by applying to the Authority.

14.4 **Suspension and Revocation**

15.1 Permits shall be effective until suspended or revoked by the Governing Board of the Authority, surrendered, or expired and shall be subject to the provisions of the Palm Beach County Solid Waste Act, the Solid Waste Authority of Palm Beach County Integrated Solid Waste Management Plan, Authority Rules or other applicable law.

15.2 A Permit issued to this rule shall not become a vested property right in the Permittee. The Governing Board of the Authority may revoke any permit issued by it if it finds that the permit holder or his agent:

(a) submitted false or inaccurate information in his application or operation reports;
(b) has violated law, Palm Beach County Health Department orders, rules or permit conditions;
(c) has failed to submit operational reports or other information required by Authority Rules;
(d) has refused lawful inspection.

15.3 A violation of any Permit condition shall be grounds for immediate suspension or revocation of this permit at the election of the Governing Board of the Authority

15.4 No revocation shall become effective except after notice is served by personal service or certified mail, upon the person or persons named therein and a hearing held if requested within the time specified in the notice. The notice shall specify the provision of the law, or rule alleged to be violated, or the permit condition or Department of Health Unit order alleged to be violated, and the facts alleged to constitute violation thereof.

ROC _____

Application to Provide Roll-Off Collection Services in Unincorporated Palm Beach County

1. Application Date: _____
2. Applicant: _____
   Owner(s) _____
   Principals _____
   Corporate Officers _____
3. Mailing Address: _____
   _____
   Authorized Agent _____
   Phone Number _____ Fax Number: _____
4. Equipment Yard Address _____
   _____
   _____

5. References and Years of Experience (include name, address, phone number and description of roll-off collection experience for no less than three (3) references:
   - Reference 1: _____
     _____
     _____
   - Reference 2: _____
     _____
     _____
   - Reference 3: _____
     _____
     _____

6. List Trucks, Manpower and Containers to be used in the operations of the roll-off collection services.

   _____
   _____
   _____
   _____

(If necessary, list additional resources on separate sheet and attach)

Please include application fee with application

Appendix F

Solid Waste Authority
Landfill Depletion Model

2006 LANDFILL DEPLETION MODEL

Solid Waste Authority of Palm Beach County
North County Landfills
Landfill Depletion Model

February 14, 2006

Solid Waste Authority of Palm Beach County

7501 North Jog Road
West Palm Beach, FL 33412
561-640-4000

2006 Landfill Depletion Model
February 14, 2006

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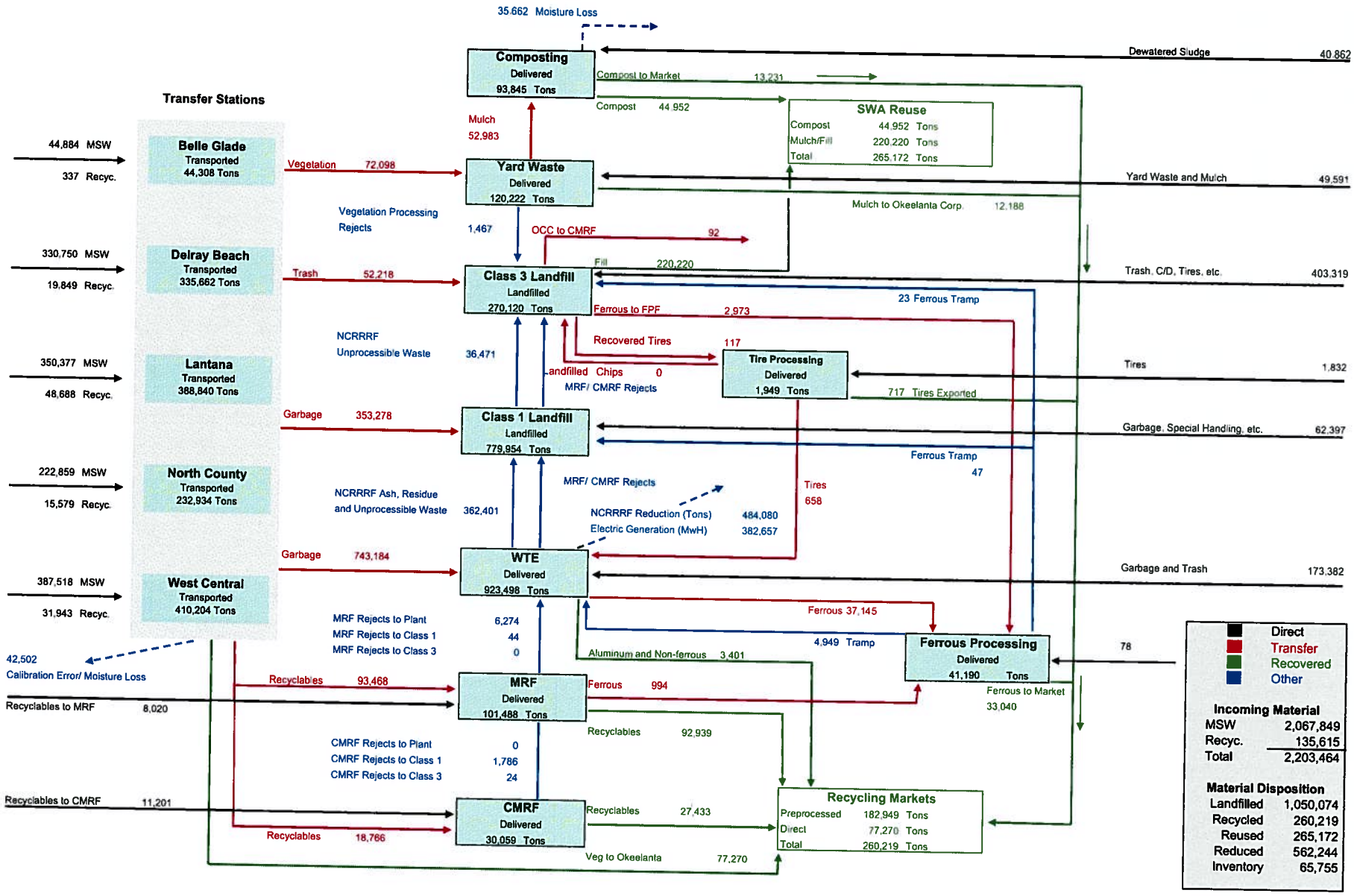
Produced By:
Daniel Pellowitz, Business Analyst
Department of the Managing Director
Solid Waste Authority of Palm Beach County
561-640-4000

Solid Waste Authority of Palm Beach County
Waste Flow Diagram - FY 2004/2005



2006 Landfill Depletion Model

February 14, 2006

1.0 Introduction

1.1 Purpose

The principles of integrated solid waste management as put forth in the Environmental Protection Agency's hierarchy of integrated solid waste management are designed to minimize the quantity of waste disposed in landfills. The recycling, composting, and resource recovery programs that make up a part of the SWA's solid waste management system divert materials from landfill disposal and decrease the volume of landfill space required to serve the Palm Beach County population.

Despite the existence of these programs, the SWA recognizes the unique characteristics of landfilling as a waste disposal option, not the least of which is the reality that landfill space, unlike other forms of infrastructure, is a depletable resource. Recycling, composting, and resource recovery are all factors in increasing the life of a given landfill volume, however given existing technology, there will always be a need to landfill some portion of the waste stream. It is reasonable to assume that although the need to provide replacement capacity can be delayed through recycling, composting, and resource recovery programs, it cannot be prevented. The availability of landfill capacity is a driving force behind the solid waste management system decision making process.

Prudent planning requires identifying the time at which the need for replacement capacity becomes critical and taking the required steps to ensure that replacement capacity is available. Although replacement landfill capacity can be secured in several ways, including siting a new landfill and contracting with a private landfill operator, the long lead time in siting, permitting, and constructing a landfill site, often greater than ten years, necessitates effective long range planning in order to ensure the viability of available options. The SWA's primary long range planning tool is the Landfill Depletion Model.

The Landfill Depletion Model is intended to forecast the estimated life of the SWA's landfills in order to facilitate facilities planning decisions and to assess the impact of alternatives and alternative states of nature on landfill life. As a planning tool, the model is useful in identifying the point or points in time at which a decision is required in order to ensure the availability of disposal capacity.

The Landfill Depletion Model considers the dynamic interrelationships between the available processing and disposal options, population projections and population growth rates, per capita generation rates, recycling rates, diversion rates, incineration capacity and reduction effectiveness, landfill compacted densities, and cover material requirements and produces a projected date of landfill depletion. With this date established and the anticipated lead time known, the latest date at which a decision must be made can be determined.

Because of the many factors impacting the rate of landfill depletion and in order to minimize the possibility of falling behind on the critical path, the Landfill Depletion Model is run on an annual basis when the latest population projections become available.

1.2 Model Description

Population projections and per capita waste generation rates are used to forecast annual waste generation for the next 30 years. The annual waste tonnages are adjusted downward to account for recycling, incineration, and waste reduction activities. The net landfill tonnage is converted to cubic yards and the landfill depletion determined using estimated compacted densities. In every period, the cubic yards depleted in the period are deducted from the remaining volume at the end of the prior period to determine the volume remaining. A negative number in the "Landfill Volume Remaining" column indicates that the landfill is at capacity. The main schedules are as follows:

Table 1	Estimated Population and Solid Waste Generation
Table 2	Class 1 Landfill Depletion
Table 2A	Class 1 Landfill Depletion - Third Boiler at NCRRRF
Table 3	Class 3 Landfill Depletion
Table 3A	Class 3 Landfill Depletion - Third Boiler at NCRRRF
Table 4	North County Landfill Depletion Under Balanced Life Scenario
Table 4A	North County Landfill Depletion Under Balanced Life Scenario- Third Boiler at NCRRRF

1.3 Prior Results

The landfill depletion model was last updated in January 2005 and was based on operating data through FY 2004. The model predicted final depletion would occur in 2021 assuming the Class 1 and Class 3 landfills reach capacity at the same time. The model further indicated that adding a third boiler to the Resource Recovery Facility in the year 2007 would extend the life of the landfill to 2024.

Although the model is a long range planning tool, an evaluation of short term performance versus actual results is an important aspect of the annual review in order to identify any short term changes which may impact long term results. The following table presents projected, actual, and percent variance data for the previous year:

	Projected	Actual	Variance
Total Solid Waste Generation	1,786,063	1,904,390	-6.6%
Class 1 Generation	1,228,496	1,279,162	-4.1%
Class 3 Generation	557,566	625,228	-12.1%
Total Generation Rate (ppd)	7.46	7.72	-3.5%
Class 1 Generation Rate	5.22	5.34	-2.3%
Class 3 Generation Rate	2.24	2.38	-6.2%
Total Landfilled Tonnage	974,362	1,050,074	-7.8%
Class 1 Landfilled Tonnage	751,760	779,954	-3.8%
Class 3 Landfilled Tonnage	222,602	270,120	-21.3%

Note:

(1) Total generation is net of out-of-county recyclables, sludge, and clean and restricted use fill.

(2) Total landfill quantity is net of recovered fill material, metals, and OCC.

(3) Per capita generation rates expressed net of fill and sludge.

Total generation of MSW and recyclables increased from 1,752,230 to 1,904,390 tons, an increase of 152,160 tons, and exceeded expectations. This change is comprised of a 67,613 ton (5.6%) increase in Class 1 material and an 84,547 ton (15.6%) increase in Class 3 material. Significant changes in the Class 1 waste stream included an increase of 62,703 tons (5.9%) of garbage. This increase resulting from both growth and the power outages caused by Hurricane Jeanne, which pushed the garbage tonnage to 96,423 tons in October 2004 versus 83,280 tons in October 2003. On the Class 3 side, building debris increased 61,689 tons (72.3%) to 147,008 tons and trash increased 18,653 tons (9.7%). The increase in building debris is largely attributable to the damage caused by hurricanes Frances and Jeanne.

Landfill consumption exceeded the projection by 7.8%. Total landfilled material amounted to 1,050,074 tons versus the projection of 974,362 tons. The Class 1 landfill quantity exceeded the projection by 28,194 tons due to higher than expected garbage tonnage. The Class 3 landfill quantity exceeded the projection by 47,518 tons primarily due to the increase in building debris.

It must be noted that the ***Landfill Depletion Model*** is a long range planning tool. Short-term variances can be expected because the assumptions in the model are designed to achieve long term results. Nothing in the above analysis indicates that any fundamental change has taken place which could impact the long term accuracy of the model.

2.0 Landfill Depletion Model Assumptions

2.1 Population

Recent projections indicate that the population of Palm Beach County is anticipated to increase from an estimated 1,265,900 people in 2005 to 1,916,200 people in 2030. Both the population growth and the timing of population growth are critical to properly assessing future waste generation and landfill longevity.

The SWA uses the University of Florida Bureau of Economic and Business Research medium permanent population projections as published in ***Florida Population Studies (Vol. 38 No.2, Bulletin No. 141)***. The BEBR population projections are the same projections used by Palm Beach County Planning and Zoning for planning purposes. The average annual growth rate from 2005 through 2030 is approximately 1.67%. The BEBR projections are presented in 5 year intervals. The between interval population estimates are calculated through interpolation using the periodic growth factors. The between interval growth rates are as follows:

Average Annual Growth Rates		Average Annual Growth Rates	
		2005-2010	2.19%
2010-2015	1.77%	2015-2020	1.62%
2020-2025	1.45%	2025-2030	1.27%

Tourism being one of Palm Beach County's largest economic contributors, there is an annual surge in population between Thanksgiving and Easter. Due to the difficulty in predicting seasonal population, which fluctuates with general economic conditions and the weather, among other factors, the solid waste generation projections are made using only permanent population. As a result of this, the per capita generation rates used in the model may not be comparable to those of other jurisdictions.

The Bureau of Economic and Business Research provides no estimate beyond 2030. The model assumes that the build-out population is the 2030 BEBR medium projection and freezes population for years beyond 2030 at the 2030 projection. Given that the projected landfill depletion date is prior to 2030, population growth beyond 2030 has a limited impact on the projection.

2.2 Waste Generation

Two per capita generation rates are utilized in the model: one for Class 1 material (garbage) and one for Class 3 material (trash). Class 1 material is delivered to the North County Resource Recovery Facility for incineration with material in excess of the plant's capacity landfilled directly in the Class 1 landfill. Class 3 material is delivered to the Class 3 landfill for processing and disposal. In order to calculate the per capita generation rates, SWA incoming waste tonnages for the preceding several years are reviewed in an effort to identify any trends. The data source is SWA scale reports. The per capita generation rates used in the model reflect only the material the SWA receives or reasonably expects to receive.

Currently, considerable quantities of primarily heavy construction and demolition debris and clean vegetation are delivered to private recyclers permitted by the SWA. Material that is currently diverted to private recyclers is assumed to continue to be delivered to private recyclers unless there is some compelling reason to believe that the situation will change. Socioeconomic, regulatory, and other factors that could affect the estimate are evaluated for their potential impact.

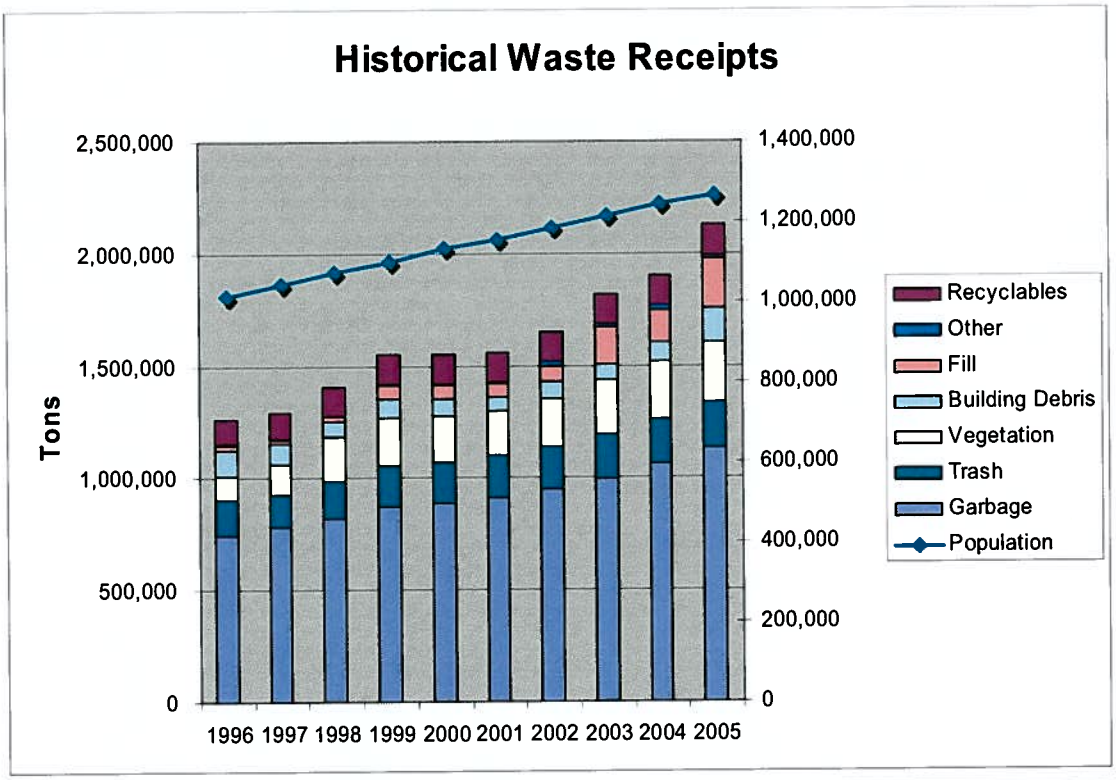
2.2.1 Per Capita Generation Rates - Discussion

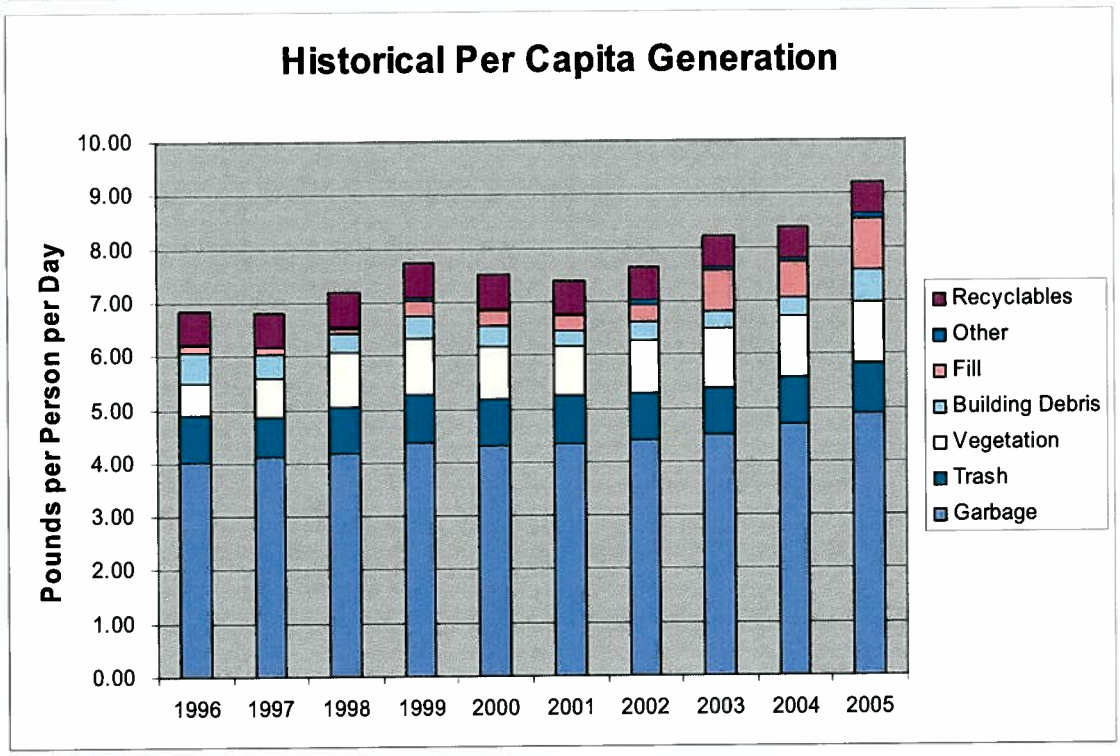
The per capita generation rate increased from 8.66 pounds per person per day in FY 2003-2004 to 9.54 in FY 2004-2005. Significant changes in specific materials include garbage (4.71 to 4.89), trash (.85 to .91), and construction debris (.38 to .64). The per capita generation rates are calculated by dividing the average daily pounds of waste received by the BEBR estimated permanent projection for April 2005. Fluctuations in the per capita generation rates can result from many factors, including changes in the waste stream, increased or decreased private sector recycling activity, and error in the population estimate.

The tons of garbage received by the SWA increased from 1,066,741 tons in FY 2003-2004 to 1,129,444 tons in FY 2004-2005, an increase of 5.9%. Last year's increase was 6.9%. The massive power outages caused by hurricanes Frances and Jeanne resulted in significant food spoilage and contributed to the increase. Recyclables deliveries increased from 130,356 tons to 135,615 tons, an increase of 4.0%. The per capita generation of recyclables increased from .57 to .59 pounds per person per day, an increase of 3.5%, reversing a five year trend of declining generation rates. This increase resulted from a reemphasis on the SWA's core recycling program.

Because the SWA operates both a Class 1 and a Class 3 landfill, incoming MSW is characterized as either Class 1 or Class 3 material. The Class 1 generation rate, which includes garbage, recyclables, direct landfill, and other special wastes increased from 5.34 to 5.54 pounds per person per day due to increased garbage deliveries. The Class 3 generation rate increased from 2.38 to 2.71 pounds per person per day due to increased construction debris deliveries. Combining the Class 1 and Class 3 generation rates presented above and including only the materials that impact the landfill, the total per capita generation rate increased from 7.73 to 8.24 pounds per person per day.

The current and historical estimated per capita waste generation rates are presented in detail on Page 6 and summarized in the table on Page 7.


Historical Waste Receipts
Tons
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
1996 1997 1998 1999 2000 2001 2002 2003 2004 2005
Recyclables
Other
Fill
Building Debris
Vegetation
Trash
Garbage
Population


Historical Per Capita Generation
Pounds per Person per Day
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1996 1997 1998 1999 2000 2001 2002 2003 2004 2005
Recyclables
Other
Fill
Building Debris
Vegetation
Trash
Garbage

Solid Waste Authority of Palm Beach County
Historical Per Capita Generation Rates

	Fiscal Year 2004/2005	2003/2004	2002/2003	2001/2002	2000/2001	1999/2000	1998/1999	Base Year 1985/1986
Population	1,265,900	1,242,270	1,211,448	1,183,197	1,154,464	1,131,184	1,098,859	753,700
Tonnage	2,203,456	1,962,951	1,880,348	1,708,332	1,613,406	1,605,097	1,603,665	1,222,930
Garbage	1,129,444	1,066,741	997,657	950,713	914,801	890,355	874,767	536,775
Trash	210,279	191,626	191,692	189,420	188,740	179,716	183,408	290,327
Vegetative	265,503	260,042	244,823	212,942	193,234	205,691	208,037	30,724
CD	147,008	85,319	72,467	75,836	66,084	74,622	87,009	354,574
Sludge	78,846	64,566	62,952	61,812	56,388	53,177	54,364	119
Clean Fill	220,220	146,155	167,054	70,839	58,804	63,683	58,313	1,733
Tires	2,438	3,694	3,224	1,499	1,878	2,192	5,407	2,690
Miscellaneous	14,103	14,452	11,236	17,416	5,398	4,877	3,124	5,988
Subtotal MSW	2,067,841	1,832,595	1,751,105	1,580,477	1,485,327	1,474,313	1,474,429	1,222,930
Recyclables	135,615	130,356	129,243	127,834	128,079	130,784	129,235	0
Total MSW	2,203,456	1,962,951	1,880,348	1,708,311	1,613,406	1,605,097	1,603,664	1,222,930
Garbage	4.89	4.71	4.51	4.40	4.34	4.31	4.36	3.90
Trash	0.91	0.85	0.87	0.88	0.90	0.87	0.91	2.11
Vegetative	1.15	1.15	1.11	0.99	0.92	1.00	1.04	0.22
CD	0.64	0.38	0.33	0.35	0.31	0.36	0.43	2.58
Sludge	0.34	0.28	0.28	0.29	0.27	0.26	0.27	0.00
Clean Fill	0.95	0.64	0.76	0.33	0.28	0.31	0.29	0.01
Tires	0.01	0.02	0.01	0.01	0.01	0.01	0.03	0.02
Miscellaneous	0.06	0.06	0.05	0.08	0.03	0.02	0.02	0.04
Subtotal MSW	8.95	8.08	7.92	7.32	7.05	7.14	7.35	8.89
Recyclables	0.59	0.57	0.58	0.59	0.61	0.63	0.64	0.00
Total MSW	9.54	8.66	8.50	7.91	7.66	7.78	8.00	8.89
Major Categories (pounds per person per day)								
Class 1	**5.54**	**5.34**	**5.15**	**5.08**	**4.98**	**4.97**	**5.02**	**3.95**
Class 3	**2.71**	**2.38**	**2.32**	**2.22**	**2.14**	**2.24**	**2.41**	**4.93**
Sludge	**0.34**	**0.28**	**0.28**	**0.29**	**0.27**	**0.26**	**0.27**	**0.00**
Fill	**0.95**	**0.64**	**0.76**	**0.33**	**0.28**	**0.31**	**0.29**	**0.01**
Garbage and Trash	**8.24**	**7.73**	**7.46**	**7.30**	**7.11**	**7.21**	**7.43**	**8.88**

Notes:

(1) Population projections are provided by BEBR.

(2) FY 2003/2004 and 2004/2005 waste tonnage impacted by Hurricanes Frances and Jeanne.

2.2.2 Assumed Per Capita Generation Rates

In the model, incoming MSW and recyclables are grouped into four major categories, Class 1 (garbage), Class 3 (trash), sludge, and fill of which sludge and fill are not considered in the model because of alternative disposal and use options.

Class 1 material consists of the following: garbage, recyclables, direct landfill, special handling, animals, and other miscellaneous wastes. Class 3 material consists of trash, vegetation, building debris, land clearing debris, tires, trailers, and asbestos. The values for the Class 1 and Class 3 categories for the last fourteen years are as follows:

	Class 1 Material	Class 3 Material	Total	*Vegetation*
1991/1992	4.66	2.28	6.94	*.25*
1992/1993	4.56	2.50	7.07	*.67*
1993/1994	4.78	2.18	6.96	*.56*
1994/1995	4.64	2.30	6.94	*.81*
1995/1996	4.63	2.08	6.71	*.60*
1996/1997	4.74	1.95	6.69	*.73*
1997/1998	4.85	2.24	7.09	*1.01*
1998/1999	5.02	2.41	7.43	*1.04*
1999/2000	4.97	2.24	7.21	*1.00*
2000/2001	4.98	2.14	7.11	*.92*
2001/2002	5.08	2.22	7.30	*.99*
2002/2003	5.15	2.32	7.46	*1.11*
2003/2004	5.34	2.38	7.73	*1.15*
2004/2005	5.54	2.71	8.24	*1.15*

The key element that must be considered in establishing the per capita generation rate assumptions in this revision of the model is the general trend in the generation rates and the probability that this trend will continue or reverse.

As previously discussed, the increase in the Class 3 generation rate resulted from increased building debris deliveries primarily from the western communities. In the aftermath of Hurricanes Frances and Jeanne and as a precaution for future storms, many homeowners in the western communities removed large standing trees from their lots. This activity resulted in the generation of considerable quantities of land clearing debris (which the SWA codes as building debris). While building debris deliveries seemed to be declining in the last several months of FY 2004-2005, they have since spiked up again following Hurricane Wilma. Since we seem to be in a period of heightened hurricane activity, which may continue for some time, an increase in the per capita generation rate appears warranted.

Outside of vegetation, the average generation rate of Class 3 material for each of the past five years in chronological order was as follows: 1.22, 1.23, 1.21, 1.23, and 1.56 pounds per person per day. Evidence suggests that the generation rate will remain high through FY 2005-2006, but should eventually subside in the absence of significant storm events. Given the high level of uncertainty, the forecast generation rate is set at the midpoint of the last two years' actual generation rates, or 1.40 pounds per person per day.

Vegetation is the second component of the Class 3 generation rate. The per capita generation rate of vegetation increased at an average annual rate of 2.8% over the previous five years but remained steady at 1.15 pounds per person per day in FY 2004-2005. The assumed generation rate of vegetation remains at 1.18 pounds per person per day. The total Class 3 generation rate is therefore set at 2.58 pounds per person per day.

The Class 1 generation rate increased 3.7% from 5.34 pounds per person per day to 5.54 pounds per person per day, the highest rate on record. Scale data for the first three months of FY 2005-2006 indicates that the rate may go even higher as garbage tonnage is up 3.3%. To what extent the recent hurricanes have affected generation is uncertain, however they do have an effect. A further increase in the per capita generation rate is warranted. The generation rate is set at

5.72 pounds per person per day. This is a 3.3% increase over the actual generation rate for FY 2004-2005.

The model provides for an average annual growth/reduction rate for the per generation rates. The SWA has always assumed that increased awareness of waste minimization, recycling, and reuse of solid waste as well as improved markets for recovered materials would help to prevent any future increase in per capita generation. Recent data indicates that this assumption may not be reasonable. The per capita generation of Class 1 material has increased an average of 2.7% per year since FY 2000-2001. The growth rate is assumed to be 1.35%, which is one half the four year growth rate, under the assumption that the growth rate will slow in the future.

It must be noted that the calculated per capita generation rates are dependent upon the BEBR annual population estimate. A low population estimate, which BEBR produced in the late 90's, and was verified by the 2000 census, will inflate the per capita generation rate. The potential for error increases as the time since the last census increases. The model does incorporate a sensitivity analysis to reflect the uncertainty in the assumptions and to accommodate alternative points of view. Readers are advised to review the sensitivity analysis presented in Section 3.2 and to consider the inherent uncertainty when using these projections.

The generation rates include only the waste the SWA receives and not materials delivered to permitted recyclers or shipped out of the county. It is assumed that the material not coming to the SWA's system will continue to be diverted from the system. To the extent that this assumption is incorrect, the estimated landfill life will be shorter than that predicted by the model. Because the SWA performs an annual review of waste generation and consumption data as part of the landfill depletion model update, any substantive changes will be detected, their potential impact evaluated, and any planning revisions made long before the disposal capacity of the landfill is significantly impacted.

2.3 Waste Disposal

Class 1 material is assumed to be delivered to the plant unless the plant is at capacity, in which case it is delivered to the Class 1 landfill as raw garbage. Class 3 material is assumed to be delivered to the Class 3 landfill, except as follows. Currently, considerable quantities of Class 3 material are either commingled at the transfer stations and delivered to the Resource Recovery Facility or diverted to the Class 1 landfill for operational reasons. Operational constraints at the transfer stations, particularly in the southern part of the county, will most likely result in the commingling continuing. Additionally, the SWA diverts a large percentage of building debris and C&D processor residue to the Class 1 landfill because of the gypsum content in this material and the potential for odor. The model incorporates the commingling of Class 3 material by including a factor for commingled Class 3 material expressed as a percent of incoming Class 3 material. The rate used in the model is 30%. This rate is comprised of an 11% commingled rate for vegetation and a 44% commingled rate for the balance of the Class 3 material.

2.4 Unforeseen Events

The waste generation rates used in the model do not include an allowance for increased depletion resulting from the landfilling of storm debris from a hurricane or other natural disaster. Through the effective use of temporary debris sites the SWA is able to manage the post-disaster cleanup and dispose of storm debris with limited impact on landfill capacity. The SWA's ability to accomplish this has been demonstrated following Hurricanes Irene, Frances, Jeanne, and Wilma.

Additionally, the model assumes that the Resource Recovery Facility will be operating without any catastrophic outages, other than scheduled maintenance and minor outages, that would result in more than 5% downtime over the life of the plant. This assumption was recently tested following a fire in the boiler building in October 2005. Despite the magnitude of the damage, the plant was fully operational within two months. The downtime in previous models was assumed to be 10% although there were no significant outages over the past fifteen years. Given the speed with which the plant was brought back online following such a destructive fire, the assumed downtime has been reduced from 10% to 5%.

2.5 Recycling Rates

The total annual generation of Class 1 and Class 3 material is adjusted to account for recycling and waste reduction activities. During FY 2004-2005, 135,615 tons of recyclables were delivered to SWA facilities (*WIMS 047C*). This is a 4.0% increase in relation to FY 2003-2004. The per capita generation of recyclables increased from .57 to .59 pounds per person per day after five consecutive decreases dating back to the high of .64 pounds per person per day reached in FY 1998-1999. Dividing the per capita generation rate for recyclables by the per capita generation rate of Class 1 material produces an average reduction rate of 10.6%, which is .2% less than last year and the fifth consecutive decline. This performance was impacted by the storm due to the combined effects of increased waste generation and interrupted recycling collection service. The SWA is endeavoring to reinvigorate the recycling program, and some improvement is assumed. The assumed Class 1 recycling rate remains at 13% of Class 1 material in the model.

On the Class 3 side the most significant recycling activity involves clean vegetation. During the year the SWA recovered and/or recycled 197,492 tons of vegetation and mulch, amounting to 74.4% of the 265,503 tons of inbound vegetative debris and up from 69.0% the prior year. Additional recovered materials included 2,973 tons of ferrous metal, 92 tons of cardboard, and 1,375 tons of tires delivered to the resource recovery facility or exported. In total, the SWA recovered and/or recycled 201,932 tons or 32.3% of the 625,228 tons of Class 3 material (net of clean fill) delivered in FY 2004-2005. Because this year's result is little changed from last year's recovery rate of 33.9%, the assumed Class 3 recycling rate remains at 33% in the model.

2.6 Compacted Densities

Forecasted incoming solid waste tonnage is converted to consumed landfill volume by multiplying by the average compacted density. Although industry standards do exist, in reality landfill compacted densities vary widely based on the type of material landfilled and the operating procedures employed. Because the SWA landfills large quantities of ash and process residue from the RDF Resource Recovery Facility in the Class 1 landfill and diverts nearly all clean vegetation, the accuracy of industry averages cannot be relied upon for SWA system planning purposes.

To avoid uncertainty in estimating the compacted densities the SWA conducts an annual survey to determine the volume of landfill space consumed. The landfill is surveyed at least annually and the calculated waste volume for the prior year is subtracted from that for the present year to determine the volume depleted during the year. Using SWA waste tonnage data, the average landfill compacted density for the year and life-to-date is calculated. These densities are used to arrive at the density assumptions used in the model. It must be noted that the densities used in the model are conservative because the consumed volume includes space consumed by cover material.

As can be seen on the following page, the average density over the life of the landfill is 1,735 pounds per cubic yard in the Class 1 landfill and 1,291 pounds per cubic yard in the Class 3 landfill. These rates are used in the model.

The model calculates the Class 1 volume depleted by applying the above compacted density to plant residues and the estimated density of raw garbage of 1,200 pounds per cubic yard to the estimated quantity of landfilled raw garbage, and summing the two. The Class 3 volume is calculated by dividing the estimated compacted density into the pounds of landfilled solid waste.

2.7 Cover Material

Because daily cover is included in the annual volume used in the density calculation, it is not addressed in the model. Final cover consuming landfill volume is assumed to be 5% of the total landfill volume. The assumption in the previous model was 15% of waste volume. The change is based upon the SWA's adopting of a "close as you go" strategy that minimizes the need for intermediate cover as well as the availability of real fill consumption data from the ongoing closure of the first four cells of the Class 1 landfill. The estimated volume consumed by final cover is accounted for by reducing the available landfill capacity by 5%.

Solid Waste Authority of Palm Beach County
Landfill Depletion Model Landfill Density Calculation

Class 1 Annual Landfill Density Estimate	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005
Direct Haul	32,991	49,569	47,158	58,061	**67,297**
Transfer	162,918	189,967	229,896	304,661	**353,278**
Non-Processible	98	94	241	51	**0**
Residue	221,788	228,021	239,510	234,499	**232,174**
Uncombusted RDF	0	1,719	277	1,179	**239**
Ash	116,310	119,562	116,294	111,032	**126,965**
Total Tonnage to Landfill Disposal	534,105	588,932	633,376	709,483	**779,953**
Cubic Yards Depleted	725,949	535,916	686,458	785,940	**959,009**
Estimated Average Density	1,471	2,198	1,845	1,805	**1,627**

Class 3 Annual Landfill Density Estimate	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005
Direct haul	168,257	176,573	263,580	268,754	**400,344**
Transfer	35,920	45,831	70,175	102,924	**91,712**
Total Tonnage	204,177	222,404	333,755	371,678	**492,056**
Transfer Out Tires	262	249	234	179	**117**
Recovered Fill	58,804	70,839	167,054	146,155	**220,220**
Recovered Road Material/Concrete	0	0	0	0	**0**
Recovered Ferrous and White Goods	3,244	3,116	2,687	2,906	**2,973**
Fuel to Okeelanta or Wheelabrator	0	0		0	**0**
Cardboard	95	46	55	81	**92**
Net Transfer to Reduction Program	0	0	0	0	**0**
Vegetation/Mulch	0	(2,166)	(1,747)	(1,976)	**(1,467)**
Total Recovered Material	62,405	72,086	168,283	147,345	**221,935**
Total Tonnage to Landfill Disposal	141,772	150,318	165,472	224,333	**270,121**
Cubic Yards Depleted	180,101	191,507	298,364	368,102	**428,853**
Estimated Average Density	1,574	1,570	1,109	1,219	**1,260**

Life to Date Average Landfill Density Estimate	Class 1		Class 3	
	Annual	*Cumulative*	Annual	*Cumulative*
Tons Disposed 10/01/98 - 9/30/99	504,930	*3,874,856*	163,903	*2,029,375*
Tons Disposed 10/01/99 - 9/30/00	543,500	*4,418,356*	143,682	*2,173,057*
Tons Disposed 10/01/00 - 9/30/01	534,105	*4,952,461*	141,772	*2,314,829*
Tons Disposed 10/01/01 - 9/30/02	588,932	*5,541,393*	150,318	*2,465,147*
Tons Disposed 10/01/02 - 9/30/03	633,376	*6,174,769*	165,472	*2,630,619*
Tons Disposed 10/01/03 - 9/30/04	709,483	*6,884,252*	224,333	*2,854,952*
Tons Disposed 10/01/04 - 9/30/05	779,953	*7,664,205*	270,121	*3,125,073*
Cubic Yards Depleted at 9/30/99 (1)		4,616,000		3,132,000
Estimated Average Density to 9/30/99		**1,679**		**1,296**
Cubic Yards Depleted at 9/30/00		5,142,522		3,372,990
Estimated Average Density to 9/30/00		**1,718**		**1,289**
Cubic Yards Depleted at 9/30/01 (1)		5,868,471		3,553,091
Estimated Average Density to 9/30/01		**1,688**		**1,303**
Cubic Yards Depleted at 9/30/02 (1)		6,404,387		3,744,598
Estimated Average Density to 9/30/02		**1,730**		**1,317**
Cubic Yards Depleted at 9/30/03 (1)		7,090,845		4,042,962
Estimated Average Density to 9/30/03		**1,742**		**1,301**
Cubic Yards Depleted at 9/30/04 (1)		7,876,785		4,411,064
Estimated Average Density to 9/30/04		**1,748**		**1,294**
Cubic Yards Depleted at 9/30/05 (1)		8,835,794		4,839,917
Estimated Average Density to 9/30/05		**1,735**		**1,291**

(1) Yardage Pro-Rated for density calculation to account for timing differences.
(2) Yardage based on annual survey.

2.8 Available Landfill Volumes

The available landfill volumes have been calculated by the SWA's engineers, Camp Dresser and McKee, using CAD analysis. CDM estimates total landfill volume at 51,884,000 cubic yards prior to settlement, of which 9,698,800 cubic yards are within Class 3 cells. This estimate assumes landfilling to 167 feet NGVD, 7 feet above the permitted height of 160 feet, with settlement to 160 feet. Because the Landfill Depletion Model uses compacted densities that include settlement, the volume above 160 feet NGVD, an estimated 1,760,000 yards, has been deducted for the purpose of the model. Therefore, the total estimated landfill volume is 50,124,427 cubic yards. Through September 30, 2005, 8,835,794 cubic yards of Class 1 volume and 4,839,917 cubic yards of Class 3 volume have been depleted.

The SWA uses two landfill depletion scenarios, referred to as the "Maximize Class 1" and the "Balanced Life" scenarios. The "Maximize Class 1" scenario consists of 262 acres of Class 1 capacity and 72 acres of Class 3 capacity. With the 1,760,000 cubic yards deducted from the Class 1 and Class 3 landfills on a proportional basis, there is an estimated 40,754,579 cubic yards of Class 1 space and 9,369,848 cubic yards of Class 3 space (Class 3 Cells 1-6 and 8). The "Balanced Life" scenario allows for the landfilling of Class 3 material in the Class 1 cells to balance the life of the site and to eliminate the need to operate two sites concurrently. The landfill depletion model provides results for these scenarios and can be programmed to evaluate other potential scenarios if necessary.

2.9 Resource Recovery Facility (NCRRRF)

The rated capacity of the NCRRF is 624,000 tons per year, however the plant has surpassed 800,000 tons of processible waste for the past ten years. Processible waste processed at the NCRRRF in FY 2004-2005 totaled 884,005 tons, compared to 847,337 tons in FY 2003-2004, 870,197 tons in FY 2002-2003, 871,748 tons in FY 2001-2002, 857,608 tons in FY 2000-2001, and 810,049 tons in FY 1999-2000. In FY 2003-2004, the facility lost power for several days due to damage caused by Hurricane Frances, reducing throughput by approximately 20,000 tons. In October 2005 a fire at the plant resulted in a complete shutdown for nearly seven weeks and reduced throughput for an additional week. Due to this fire, the SWA anticipates a reduction in throughput for FY 2005-2006 to approximately 770,000 tons. Additionally, the SWA anticipates a 50% reduction in throughput in FY 2011 during a major retrofit. For this reason, out of conservatism, throughput at the current level is not assumed.

In the previous model the assumed plant throughput was 780,000 tons, reflecting 10% downtime. In the current model, the assumed throughput is changed to 817,000 tons, reflecting the following: the SWA's long range planning assumption of 860,000 tons of processible waste per year; the long term successful operating history of the plant; and a reduction in the estimated downtime to 5% based on the rapid recovery time from the two recent unscheduled outages.

The residuals from the plant include ash, process residue, and unprocessibles. Unprocessibles are estimated at 3.9% of total delivered waste in the present model, which is equal to the average of the past five years (3.0% in FY 2000-2001, 3.6% in FY 2001-2002, 4.3% in FY 2002-2003, 4.1% in FY 2003-2004, and 4.3% in FY 2004-2005). Process residue and ash totaled 39.4% in FY 2000-2001, 38.4% in FY 2001-2002, 40.9% in FY 2002-2003, 40.8% in FY 2003-2004, and 40.6% in FY 2004-2005. The Operating and Maintenance Agreement with the plant operator requires a minimum 60% reduction over the life of the contract, therefore ash and residue are estimated at 40% of processible waste.

As the addition of a third boiler to the Resource Recovery Facility is an option, the model includes a scenario for the addition of a third boiler with increased throughput to 1,100,000 tons of processible waste beginning in the year 2012. The SWA is presently investigating options for expanding incineration capacity. The quantity of potentially combustible waste landfilled is climbing. In FY 2004-2005, the SWA landfilled 353,278 tons of combustible Class 1 waste, compared to 304,661 tons in FY 2003-2004 and 229,896 tons in FY 2002-2003.

3.0 Model Results

3.1 Summary of Results

The summary results of the landfill depletion model for the two space allocation scenarios and the two Resource Recovery Facility scenarios are presented below in Table 3.1 and in the following paragraphs. The landfill depletion model results are included in Appendix A of the Report for further inspection.

In the "Maximize Class 1" scenario, the estimated landfill depletion dates for the Class 1 and Class 3 landfills are 2022 and 2015, respectively, compared to 2023 and 2016 in the prior model. In the "Balanced Life" scenario, final depletion is expected to take place in 2021, which is unchanged from the previous model. The volume allocation associated with the balanced life scenario is approximately 75% Class 1 and 25% Class 3 landfill volume.

Constructing a third boiler at the Resource Recovery Facility in 2012 is anticipated to add approximately one year to the life of the site on a balanced basis, placing the ultimate depletion in the year 2022, down from 2024 in the previous model. The change is the result of moving the anticipated online date from 2007 to 2012, which is consistent with current planning. The volume allocation associated with the balanced life scenario and the third boiler is approximately 74% Class 1 and 26% Class 3.

Table 3.1 Landfill Depletion Using Present Landfill Configuration

Scenario		Maximize Class 1	Balanced Life
Two Boiler Results	Class 1	2022 (262 AC)	2021
	Class 3	2015 (72 AC)	2021
Three Boiler Results	Class 1	2023 (262 AC)	2022
	Class 3	2015 (72 AC)	2022

3.2 Special Scenario - Reserve Landfill Capacity for Resource Recovery Residues

Because the SWA's Resource Recovery Facility is anticipated to be operational until at least 2040, the SWA may wish to reserve capacity for process residue and ash at the current landfill. The model was used to evaluate this alternative. If the SWA ceases landfilling all unprocessed waste at the current site at the end of FY 2018, it is estimated that sufficient capacity would exist to accommodate unprocessibles, process residue, and ash through FY 2030. If the SWA wishes to reserve capacity through FY 2040, the SWA would have to cease landfilling at the current site at the end of FY 2016.

If the SWA adds a third boiler to the Resource Recovery Facility, in order to reserve capacity through FY 2030 the SWA would have to cease landfilling all unprocessed waste at the end of FY 2019. If the SWA wishes to reserve capacity through FY 2040, the SWA would have to cease landfilling at the current site at the end of FY 2015.

3.3 Sensitivity Analysis - Three States of Nature

The above results are based upon a set of assumptions that represents a reasonable best guess. As with any model, these assumptions are based upon current circumstances and information. Some assumptions will inevitably vary; therefore, the actual results will deviate from the projections. In order to ascertain the potential magnitude of these

deviations, the model has been run using "Most Likely", "Optimistic", and "Pessimistic" assumption sets.

The assumptions under the Optimistic and Pessimistic assumption sets are modified as follows:

Assumptions	Optimistic	Pessimistic
Generation Rates	5% Lower	5% Higher
Recycling Rates	20% Higher	5% Lower
Compacted Densities	10% Higher	10% Lower

Generation Rates

The range for the Class 1 generation rate is somewhat conservative because the calculated annual generation rate has been below the optimistic assumption thirteen of the last fourteen years and has never exceeded the high end of the range. The Class 3 generation rate has been relatively stable for the past five years and even before that the variation in Class 3 deliveries generally resulted from fluctuations in vegetation, which is largely recycled. The Class 3 generation rate hasn't exceeded the pessimistic assumption in recent history and has been lower than the optimistic assumption twelve of the last fourteen years.

Recycling Rates

The 20% increase in the Class 1 recycling rate under the "optimistic" assumption set assumes the introduction of new programs to collect additional materials, such as mixed paper and commercial paper. The 5% lower assumption under the "pessimistic" assumption set assumes no new programs and a slight erosion in participation.

Compacted Densities

The Class 1 and Class 3 life-to-date compacted densities have been within the assumed ranges for more than ten years.

Sensitivity Results

The results of the sensitivity analysis are presented on Page 15. The analysis indicates that based on the current configuration, on a balanced basis the landfill is reasonably expected to be fully depleted at a time ranging from 2019 to 2023. Assuming addition of a third boiler at the NCRRRF in 2012 and using the current landfill configuration, the landfill can be reasonably expected to be depleted during the time period ranging from 2019 to 2025.

This exercise was undertaken to demonstrate how the estimate can vary given the realization of extreme values of the key assumptions. On a balanced life basis, the earliest predicted depletion date is 2019, which is three years beyond the life of the bonds issued to finance the existing SWA facilities. Given an estimated ten year lead time to site, permit, and construct a replacement landfill, the earliest a decision regarding the development of future capacity must be made is approximately 2009. If a 3rd boiler is constructed at the NCRRRF a decision is required by 2009. If the SWA decides to reserve capacity for plant material through 2030 or longer, a decision may be required sooner.

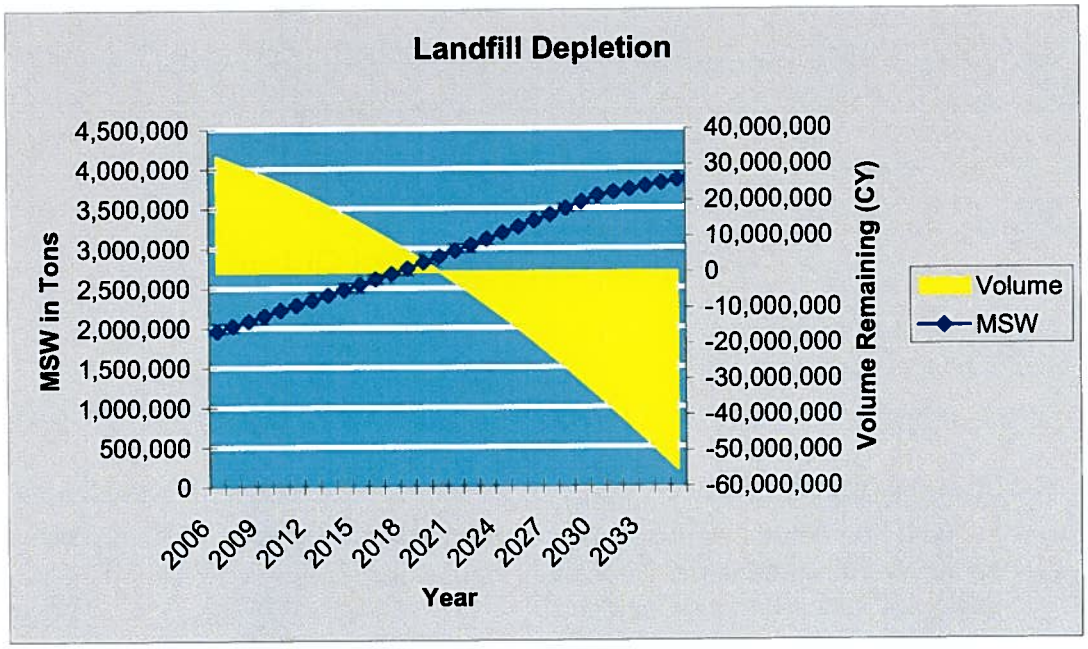
4.0 Summary and Conclusions

The landfill depletion model is designed to forecast the estimated life of the SWA's North County landfills in order to facilitate facilities planning decisions and assess the impact of alternatives and alternative states of nature on landfill life. The model was last updated in January 2005 and was based on 2003-2004 operating data and existing assumptions. Given current information and expectations of future events, the ***2006 Landfill Depletion Model*** predicts the estimated life of the North County landfills as follows:

Table 4.1 Summary Depletion Model Results

Depletion Results for Current Configuration	
Acreage	334
Available Capacity	50,124,427
Remaining Capacity	36,448,716
Two Boiler Depletion Year and Years Remaining	**2021 (16 years)**
Two Boiler Landfill Consumption	Class 1: 75%; Class 3: 25%
Three Boiler Depletion Year and Years Remaining	**2022 (17 years)**
Three Boiler Landfill Consumption	Class 1: 76%; Class 3: 24%

The above estimates are based on a reasonable Most Likely set of assumptions. As with any forecast, the result is subject to uncertainty. The most critical factor affecting the results is the increasing per capita generation rates. Should actual performance deviate from the assumptions adopted herein, results will vary. As this analysis is performed annually, any events that could potentially impact the life of the landfill will be identified long before depletion and afford the SWA the opportunity to plan accordingly.



Scenario Summary	Current Values:	Most Likely	Optimistic	Pessimistic
Assumptions:				
Class_1_Gen_Rate	5.72	5.72	5.43	6.01
Class_3_Gen_Rate	2.58	2.58	2.45	2.71
Class_1_Recycling	13.00%	13.00%	15.60%	12.40%
Class_3_Recycling	33.00%	33.00%	33.00%	33.00%
Class_1_Cover	5.00%	5.00%	5.00%	5.00%
Class_3_Cover	5.00%	5.00%	5.00%	5.00%
Garbage_Density	1,200	1,200	1,320	1,080
Trash_Density	1,291	1,291	1,420	1,162
Plant_Residuals_Density	1,735	1,735	1,909	1,562
Class_3_Plant_Residue_Density	1,735	1,735	1,909	1,562
Class_1_Growth_Rate	1.35%	1.35%	1.35%	1.35%
Class_3_Growth_Rate	0.00%	0.00%	0.00%	0.00%
Results:				
Class_1_Depletion	2022	2022	2024	2020
Class_3_Depletion	2015	2015	2016	2014
Balanced_Depletion	2021	2021	2023	2019
Class1_3Boil_Depletion	2023	2023	2026	2021
Class3_3Boil_Depletion	2015	2015	2016	2014
Balanced_Depletion_3_Boilers	2022	2022	2025	2019

Appendix A

Landfill Depletion Model Output

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Palm Beach County
Landfill Depletion Model Summary Results

		Maximixe Class 1
Total Estimated Volume (Net of 5% Final Cover)		47,618,206
Class 1 (Net of 5% Final Cover)		38,716,850
Class 3 (Net of 5% Final Cover)		8,901,356
Volume Depleted to Date		
Class 1		8,835,794
Class 3		4,839,917
Total		13,675,711
Additional Volume		
None		
		0
Class 1 Allocation	0.00%	0
Class 3 Allocation	0.00%	0
Estimated Acreage		
Class 1		262.00
Class 3		72.00
Total		334.00
Volume Remaining		
Class 1		29,881,056
Class 3		4,061,439
Total		33,942,495
Estimated Depletion		
Class 1		**2022**
Class 3		**2015**
Balanced Life		**2021**
Class 1 w/ Third Boiler in the Year 2012		**2023**
Class 3 w/ Third Boiler in the Year 2012		**2015**
Balanced Life w/ Third Boiler in the Year 2012		**2022**

Assumptions

	Class 1	Class 3
Per Capita Generation Rate	5.72	2.58
Recycling Rate	13%	33%
Cover Material as a Percent of Landfill Volume	5%	5%
Raw Waste Density in Pounds per Cubic Yard	1,200	1,291
Plant Residue Density in Pounds per Cubic Yard	1,735	1,735
Per Capita Generation Growth Rate	1.35%	0.00%

Landfill Configuration Includes Current Configuration

Palm Beach County
Estimated Permanent Population Growth
Table 1A

Year Ended September	Palm Beach County Estimated Permanent Population
1999	1,042,196
2000	1,131,184
2001	1,154,464
2002	1,183,197
2003	1,211,448
2004	1,242,270
2005	1,265,900
2006	1,293,931
2007	1,322,582
2008	1,351,868
2009	1,381,803
2010	1,412,400
2011	1,437,586
2012	1,463,220
2013	1,489,312
2014	1,515,869
2015	1,542,900
2016	1,568,084
2017	1,593,680
2018	1,619,693
2019	1,646,131
2020	1,673,000
2021	1,697,417
2022	1,722,190
2023	1,747,325
2024	1,772,826
2025	1,798,700
2026	1,821,609
2027	1,844,810
2028	1,868,306
2029	1,892,101
2030	1,916,200

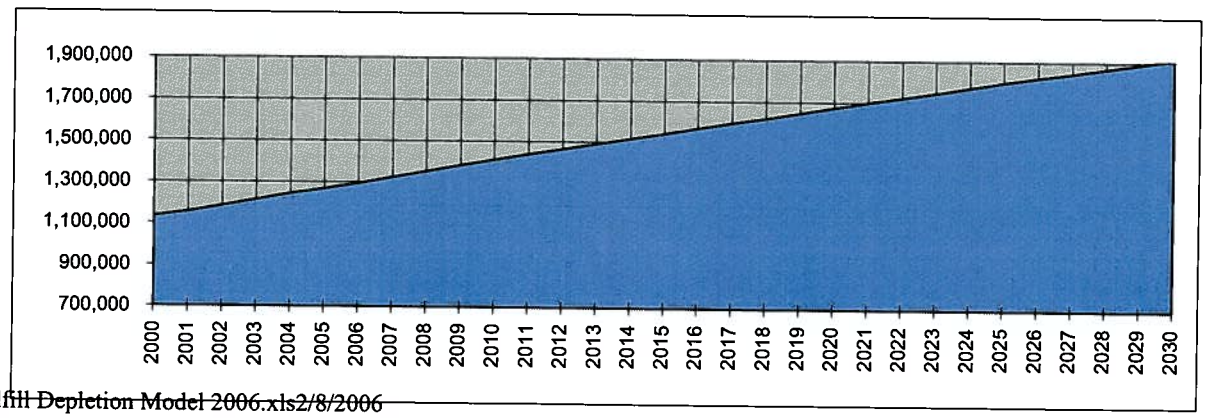
BEBR Estimated Permanent Population	
1995	962,802
1996	981,793
1997	1,003,684
1998	1,020,521
1999	1,042,196
2000	1,131,184
2004	1,242,270
2005	1,265,900
2010	1,412,400
2015	1,542,900
2020	1,673,000
2025	1,798,700
2030	1,916,200
1995-2000	3.22%
2000-2004	2.34%
2004-2005	1.88%
2005-2010	2.19%
2010-2015	1.77%
2015-2020	1.62%
2020-2025	1.45%
2025-2030	1.27%

(1) Population estimates from Bureau of Economic and Business Research, Florida Population Studies, Bulletin No. 141, February 2005.

(2) Population estimates calculated as follows:

r=ln(p2005/P2000)/5
r=ln(1.10406)/5
r=.0198

P2001= P2000x(e^(nr))
P2004=1,131,184x(e^(4*.0198))
P2004=1,131,184x1.08242
P2004 = 1,224,417



Solid Waste Authority of Palm Beach County

Landfill Depletion Model

Table 1: Estimated Population and Solid Waste Generation

	Palm Beach County Permanent Population	Daily Per Capita Class 3 Generation	Annual Per Capita Class 3 Generation	Annual Estimated Class 3 Generation	Daily Per Capita Class 1 Generation	Annual Per Capita Class 1 Generation	Annual Estimated Class 1 Generation	Daily Per Capita MSW Generation	Annual Per Capita MSW Generation	Annual Estimated MSW Generation
	(1)	lbs	lbs	tons	lbs	lbs	tons	lbs	lbs	tons
2006	1,293,931	2.58	942	609,247	5.72	2,088	1,350,734	8.30	3,030	1,959,982
2007	1,322,582	2.58	942	622,738	5.80	2,116	1,399,282	8.38	3,058	2,022,020
2008	1,351,868	2.58	942	636,527	5.88	2,145	1,449,575	8.46	3,086	2,086,103
2009	1,381,803	2.58	942	650,622	5.95	2,174	1,501,676	8.53	3,115	2,152,298
2010	1,412,400	2.58	942	665,029	6.04	2,203	1,555,649	8.62	3,145	2,220,678
2011	1,437,586	2.58	942	676,887	6.12	2,233	1,604,765	8.70	3,174	2,281,652
2012	1,463,220	2.58	942	688,957	6.20	2,263	1,655,431	8.78	3,204	2,344,389
2013	1,489,312	2.58	942	701,243	6.28	2,293	1,707,697	8.86	3,235	2,408,940
2014	1,515,869	2.58	942	713,747	6.37	2,324	1,761,614	8.95	3,266	2,475,361
2015	1,542,900	2.58	942	726,474	6.45	2,356	1,817,232	9.03	3,297	2,543,707
2016	1,568,084	2.58	942	738,333	6.54	2,387	1,871,828	9.12	3,329	2,610,160
2017	1,593,680	2.58	942	750,384	6.63	2,420	1,928,063	9.21	3,361	2,678,447
2018	1,619,693	2.58	942	762,632	6.72	2,452	1,985,988	9.30	3,394	2,748,620
2019	1,646,131	2.58	942	775,081	6.81	2,485	2,045,653	9.39	3,427	2,820,734
2020	1,673,000	2.58	942	787,732	6.90	2,519	2,107,111	9.48	3,461	2,894,843
2021	1,697,417	2.58	942	799,229	6.99	2,553	2,166,724	9.57	3,495	2,965,953
2022	1,722,190	2.58	942	810,893	7.09	2,587	2,228,025	9.67	3,529	3,038,918
2023	1,747,325	2.58	942	822,728	7.18	2,622	2,291,059	9.76	3,564	3,113,787
2024	1,772,826	2.58	942	834,735	7.28	2,658	2,355,877	9.86	3,599	3,190,612
2025	1,798,700	2.58	942	846,918	7.38	2,694	2,422,529	9.96	3,635	3,269,447
2026	1,821,609	2.58	942	857,705	7.48	2,730	2,486,504	10.06	3,672	3,344,208
2027	1,844,810	2.58	942	868,629	7.58	2,767	2,552,168	10.16	3,709	3,420,797
2028	1,868,306	2.58	942	879,692	7.68	2,804	2,619,567	10.26	3,746	3,499,259
2029	1,892,101	2.58	942	890,896	7.79	2,842	2,688,745	10.37	3,784	3,579,641
2030	1,916,200	2.58	942	902,243	7.89	2,880	2,759,750	10.47	3,822	3,661,993
2031	1,916,200	2.58	942	902,243	8.00	2,919	2,797,007	10.58	3,861	3,699,250
2032	1,916,200	2.58	942	902,243	8.11	2,959	2,834,767	10.69	3,900	3,737,009
2033	1,916,200	2.58	942	902,243	8.22	2,999	2,873,036	10.80	3,940	3,775,279
2034	1,916,200	2.58	942	902,243	8.33	3,039	2,911,822	10.91	3,981	3,814,065
2035	1,916,200	2.58	942	902,243	8.44	3,080	2,951,132	11.02	4,022	3,853,374
Annual Growth Rate to 2030	1.65%	0.00%	0.00%	1.65%	1.35%	1.35%	3.02%	0.98%	0.98%	2.64%

Sources and Notes:

(1) Bureau of Business and Economic Research, University of Florida, Florida Population Studies; As summarized in Table 1A

(2) Per capita generation rates include commercial generation and thus are not related to the residential household generation rates used in the Assessment Billing Program

(3) Waste quantity includes only waste received at SWA facilities.

Solid Waste Authority of Palm Beach County

Landfill Depletion Model

Table 2: Estimated Class 1 Landfill Depletion - Current Two Boiler System

	Class 1 Waste Generation *Tons*	Class 1 Waste less Recycling *Tons*	Class 3 Diverted to Class 1 *Tons*	NCRRF Unprocessible Waste *Tons*	Uncombusted Waste Landfilled *Tons*	Process Residue, Ash, and RDF Landfilled *Tons*	Class 1 Waste Landfilled *Tons*	Class 1 Volume Consumed *CY*	Class 1 Volume Remaining *CY*
Total Estimated Volume to +160 NGVD									**38,716,850**
Volume Depleted Through Fiscal Year 2004/2005									**8,835,794**
Remaining volume based on 262.00 Acres of Class 1 Landfill									**29,881,056**
2006	1,350,734	1,175,139	182,774	0	507,757	326,800	834,557	1,222,976	28,658,080
2007	1,399,282	1,217,376	186,821	0	554,041	326,800	880,841	1,300,116	27,357,963
2008	1,449,575	1,261,131	190,958	0	601,933	326,800	928,733	1,379,936	25,978,028
2009	1,501,676	1,306,458	195,187	0	651,488	326,800	978,288	1,462,529	24,515,499
2010	1,555,649	1,353,415	199,509	0	702,767	326,800	1,029,567	1,547,993	22,967,506
2011	1,604,765	1,396,145	203,066	0	749,055	326,800	1,075,855	1,625,140	21,342,365
2012	1,655,431	1,440,225	206,687	0	796,756	326,800	1,123,556	1,704,642	19,637,723
2013	1,707,697	1,485,697	210,373	0	845,913	326,800	1,172,713	1,786,570	17,851,153
2014	1,761,614	1,532,604	214,124	0	896,572	326,800	1,223,372	1,871,001	15,980,151
2015	1,817,232	1,580,992	217,942	0	948,778	326,800	1,275,578	1,958,012	14,022,139
2016	1,871,828	1,628,490	221,500	0	999,834	326,800	1,326,634	2,043,104	11,979,035
2017	1,928,063	1,677,415	225,115	0	1,052,374	326,800	1,379,174	2,130,671	9,848,364
2018	1,985,988	1,727,810	228,790	0	1,106,443	326,800	1,433,243	2,220,787	7,627,577
2019	2,045,653	1,779,718	232,524	0	1,162,086	326,800	1,488,886	2,313,525	5,314,052
2020	2,107,111	1,833,186	236,320	0	1,219,350	326,800	1,546,150	2,408,965	2,905,088
2021	2,166,724	1,885,050	239,769	0	1,274,663	326,800	1,601,463	2,501,153	403,935
2022	2,228,025	1,938,382	243,268	0	1,331,493	326,800	1,658,293	2,595,870	(2,191,935)
2023	2,291,059	1,993,222	246,818	0	1,389,884	326,800	1,716,684	2,693,188	(4,885,123)
2024	2,355,877	2,049,613	250,421	0	1,449,878	326,800	1,776,678	2,793,177	(7,678,300)
2025	2,422,529	2,107,600	254,075	0	1,511,519	326,800	1,838,319	2,895,914	(10,574,214)
2026	2,486,504	2,163,258	257,311	0	1,570,414	326,800	1,897,214	2,994,071	(13,568,285)
2027	2,552,168	2,220,386	260,589	0	1,630,819	326,800	1,957,619	3,094,746	(16,663,031)
2028	2,619,567	2,279,023	263,908	0	1,692,774	326,800	2,019,574	3,198,006	(19,861,036)
2029	2,688,745	2,339,208	267,269	0	1,756,321	326,800	2,083,121	3,303,916	(23,164,952)
2030	2,759,750	2,400,983	270,673	0	1,821,500	326,800	2,148,300	3,412,547	(26,577,500)
2031	2,797,007	2,433,396	270,673	0	1,853,913	326,800	2,180,713	3,466,569	(30,044,069)
2032	2,834,767	2,466,247	270,673	0	1,886,764	326,800	2,213,564	3,521,321	(33,565,390)
2033	2,873,036	2,499,541	270,673	0	1,920,058	326,800	2,246,858	3,576,811	(37,142,202)
2034	2,911,822	2,533,285	270,673	0	1,953,802	326,800	2,280,602	3,633,051	(40,775,253)
2035	2,951,132	2,567,484	270,673	0	1,988,001	326,800	2,314,801	3,690,050	(44,465,303)

Assumptions:

MSW Growth Rate	**3.02%**
Recycling Rate (Net of Ferrous)	**13.00%**
Recycling Growth Rate	**0.00%**
Cover Material	**5.00%**
Raw Garbage Density In Lbs per Cubic Yard	**1,200**
Process Residue Density In Lbs per Cubic Yard	**1,735**
Daily Average Plant Throughput, Design	**2,000**
Plant Capacity (Processible Tons)	**817,000**
Process Residue, Ash, and RDF to Landfill	**40.00%**
Unprocessibles to Landfill (Percent of Delivered)	**3.90%**
Percent of Unprocessibles to Class 1	**0.00%**

Estimated Depletion

Max. Class 1	**2022**
Balanced Life	**2021**

Solid Waste Authority of Palm Beach County

Landfill Depletion Model

Table 2A: Estimated Class 1 Landfill Depletion - Proposed Three Boiler System

	Class 1 Waste Generation *Tons*	Class 1 Waste less Recycling *Tons*	Class 3 Diverted to Class 1 *Tons*	NCRRF Unprocessible Waste *Tons*	Uncombusted Waste Landfilled *Tons*	Process Residue, Ash, and RDF Landfilled *Tons*	Class 1 Waste Landfilled *Tons*	Class 1 Volume Consumed *CY*	Class 1 Volume Remaining *CY*
Total Estimated Volume to +160 NGVD									**38,716,850**
Volume Depleted Through Fiscal Year 2004/2005									**8,835,794**
Remaining volume based on 262.00 Acres of Class 1 Landfill									**29,881,056**
2006	1,350,734	1,175,139	182,774	0	507,757	326,800	834,557	1,222,976	28,658,080
2007	1,399,282	1,217,376	186,821	0	554,041	326,800	880,841	1,300,116	27,357,963
2008	1,449,575	1,261,131	190,958	0	601,933	326,800	928,733	1,379,936	25,978,028
2009	1,501,676	1,306,458	195,187	0	651,488	326,800	978,288	1,462,529	24,515,499
2010	1,555,649	1,353,415	199,509	0	702,767	326,800	1,029,567	1,547,993	22,967,506
2011	1,604,765	1,396,145	203,066	0	749,055	326,800	1,075,855	1,625,140	21,342,365
2012	1,655,431	1,440,225	206,687	0	502,271	440,000	942,271	1,344,324	19,998,042
2013	1,707,697	1,485,697	210,373	0	551,429	440,000	991,429	1,426,252	18,571,789
2014	1,761,614	1,532,604	214,124	0	602,087	440,000	1,042,087	1,510,683	17,061,106
2015	1,817,232	1,580,992	217,942	0	654,293	440,000	1,094,293	1,597,694	15,463,413
2016	1,871,828	1,628,490	221,500	0	705,349	440,000	1,145,349	1,682,786	13,780,627
2017	1,928,063	1,677,415	225,115	0	757,889	440,000	1,197,889	1,770,353	12,010,274
2018	1,985,988	1,727,810	228,790	0	811,958	440,000	1,251,958	1,860,468	10,149,805
2019	2,045,653	1,779,718	232,524	0	867,601	440,000	1,307,601	1,953,207	8,196,598
2020	2,107,111	1,833,186	236,320	0	924,865	440,000	1,364,865	2,048,646	6,147,952
2021	2,166,724	1,885,050	239,769	0	980,178	440,000	1,420,178	2,140,834	4,007,118
2022	2,228,025	1,938,382	243,268	0	1,037,008	440,000	1,477,008	2,235,552	1,771,566
2023	2,291,059	1,993,222	246,818	0	1,095,399	440,000	1,535,399	2,332,869	(561,304)
2024	2,355,877	2,049,613	250,421	0	1,155,393	440,000	1,595,393	2,432,859	(2,994,163)
2025	2,422,529	2,107,600	254,075	0	1,217,034	440,000	1,657,034	2,535,595	(5,529,758)
2026	2,486,504	2,163,258	257,311	0	1,275,929	440,000	1,715,929	2,633,752	(8,163,510)
2027	2,552,168	2,220,386	260,589	0	1,336,334	440,000	1,776,334	2,734,428	(10,897,938)
2028	2,619,567	2,279,023	263,908	0	1,398,290	440,000	1,838,290	2,837,687	(13,735,625)
2029	2,688,745	2,339,208	267,269	0	1,461,836	440,000	1,901,836	2,943,598	(16,679,223)
2030	2,759,750	2,400,983	270,673	0	1,527,015	440,000	1,967,015	3,052,229	(19,731,453)
2031	2,797,007	2,433,396	270,673	0	1,559,428	440,000	1,999,428	3,106,251	(22,837,704)
2032	2,834,767	2,466,247	270,673	0	1,592,279	440,000	2,032,279	3,161,003	(25,998,706)
2033	2,873,036	2,499,541	270,673	0	1,625,573	440,000	2,065,573	3,216,493	(29,215,200)
2034	2,911,822	2,533,285	270,673	0	1,659,317	440,000	2,099,317	3,272,733	(32,487,932)
2035	2,951,132	2,567,484	270,673	0	1,693,516	440,000	2,133,516	3,329,732	(35,817,664)

Assumptions:

MSW Growth Rate	**3.02%**
Recycling Rate (Net of Ferrous)	**13.00%**
Recycling Growth Rate	**0.00%**
Cover Material	**5.00%**
Raw Garbage Density in Lbs per Cubic Yard	**1,200**
Process Residue Density in Lbs per Cubic Yard	**1,735**
Daily Average Plant Throughput	**2,000**
Plant Capacity (Processible Tons)	**817,000**
Process Residue, Ash, and RDF to Landfill	**40.00%**
Unprocessibles to Landfill (Percent of Delivered)	**3.90%**
Add Third Boiler in Year	**2012**
New Plant Capacity	**1,100,000**
Percent of Unprocessibles to Class 1	**0.00%**

Estimated Depletion

Max. Class 1	**2023**
Balanced Life	**2022**

Solid Waste Authority of Palm Beach County

Landfill Depletion Model

Table 3: Estimated Class 3 Landfill Depletion - Current Two Boiler System

	Class 3 Waste Generation *Tons*	Class 3 Waste Reduction *Tons*	Class 3 Waste Net *Tons*	NCRRF Unprocessible Waste *Tons*	Class 3 Diverted to Class 1 *Tons*	Class 3 Waste Landfilled *Tons*	Class 3 Volume Consumed *CY*	Class 3 Volume Remaining *CY*
Total Estimated Volume to +160 NGVD								**8,901,356**
Volume Depleted Through Fiscal Year 2004/2005								**4,839,917**
Remaining Volume based on 72.00 Acres of Class 3 Landfill								**4,061,439**
2006	609,247	201,052	408,196	33,156	(182,774)	258,578	400,585	3,660,854
2007	622,738	205,504	417,234	33,156	(186,821)	263,569	408,318	3,252,536
2008	636,527	210,054	426,473	33,156	(190,958)	268,671	416,222	2,836,314
2009	650,622	214,705	435,917	33,156	(195,187)	273,886	424,301	2,412,013
2010	665,029	219,459	445,569	33,156	(199,509)	279,217	432,559	1,979,455
2011	676,887	223,373	453,514	33,156	(203,066)	283,604	439,356	1,540,099
2012	688,957	227,356	461,601	33,156	(206,687)	288,070	446,275	1,093,824
2013	701,243	231,410	469,833	33,156	(210,373)	292,616	453,317	640,507
2014	713,747	235,537	478,211	33,156	(214,124)	297,243	460,484	180,023
2015	726,474	239,737	486,738	33,156	(217,942)	301,952	467,779	(287,756)
2016	738,333	243,650	494,683	33,156	(221,500)	306,339	474,576	(762,333)
2017	750,384	247,627	502,757	33,156	(225,115)	310,798	481,484	(1,243,817)
2018	762,632	251,669	510,964	33,156	(228,790)	315,330	488,505	(1,732,322)
2019	775,081	255,777	519,304	33,156	(232,524)	319,936	495,640	(2,227,963)
2020	787,732	259,952	527,780	33,156	(236,320)	324,617	502,892	(2,730,855)
2021	799,229	263,745	535,483	33,156	(239,769)	328,871	509,482	(3,240,337)
2022	810,893	267,595	543,298	33,156	(243,268)	333,187	516,168	(3,756,505)
2023	822,728	271,500	551,228	33,156	(246,818)	337,565	522,952	(4,279,457)
2024	834,735	275,463	559,273	33,156	(250,421)	342,008	529,834	(4,809,292)
2025	846,918	279,483	567,435	33,156	(254,075)	346,516	536,818	(5,346,109)
2026	857,705	283,043	574,662	33,156	(257,311)	350,507	543,000	(5,889,110)
2027	868,629	286,647	581,981	33,156	(260,589)	354,549	549,262	(6,438,372)
2028	879,692	290,298	589,394	33,156	(263,908)	358,642	555,604	(6,993,975)
2029	890,896	293,996	596,900	33,156	(267,269)	362,788	562,026	(7,556,001)
2030	902,243	297,740	604,503	33,156	(270,673)	366,986	568,530	(8,124,531)
2031	902,243	297,740	604,503	33,156	(270,673)	366,986	568,530	(8,693,060)
2032	902,243	297,740	604,503	33,156	(270,673)	366,986	568,530	(9,261,590)
2033	902,243	297,740	604,503	33,156	(270,673)	366,986	568,530	(9,830,120)
2034	902,243	297,740	604,503	33,156	(270,673)	366,986	568,530	(10,398,649)
2035	902,243	297,740	604,503	33,156	(270,673)	366,986	568,530	(10,967,179)

Assumptions:

MSW Growth Rate	**1.65%**
Recycling/Reduction Rate	**33.00%**
Recycling Growth Rate	**0.00%**
Cover Material	**5.00%**
Trash Density in Lbs per Cy	**1,291**
Percent of NCRRRF Unprocessibles to Class 3	**100.00%**
Percent of Class 3 Material Diverted to Class 1	**30.00%**

Estimated Depletion

Max. Class 1	**2015**
Balanced Life	**2021**

Solid Waste Authority of Palm Beach County

Landfill Depletion Model

Table 3A: Estimated Class 3 Landfill Depletion - Proposed Three Boiler System

	Class 3 Waste Generation *Tons*	Class 3 Waste Reduction *Tons*	Class 3 Waste Net *Tons*	NCRRF Unprocessible Waste *Tons*	Class 3 Diverted to Class 1 *Tons*	Class 3 Waste Landfilled *Tons*	Class 3 Volume Consumed *CY*	Class 3 Volume Remaining *CY*
Total Estimated Volume to +160 NGVD								**8,901,356**
Volume Depleted Through Fiscal Year 2004/2005								**4,839,917**
Remaining Volume based on 72.00 Acres of Class 3 Landfill								**4,061,439**
2006	609,247	201,052	408,196	33,156	(182,774)	258,578	400,585	3,660,854
2007	622,738	205,504	417,234	33,156	(186,821)	263,569	408,318	3,252,536
2008	636,527	210,054	426,473	33,156	(190,958)	268,671	416,222	2,836,314
2009	650,622	214,705	435,917	33,156	(195,187)	273,886	424,301	2,412,013
2010	665,029	219,459	445,569	33,156	(199,509)	279,217	432,559	1,979,455
2011	676,887	223,373	453,514	33,156	(203,066)	283,604	439,356	1,540,099
2012	688,957	227,356	461,601	44,641	(206,687)	299,555	464,067	1,076,032
2013	701,243	231,410	469,833	44,641	(210,373)	304,101	471,109	604,923
2014	713,747	235,537	478,211	44,641	(214,124)	308,727	478,276	126,646
2015	726,474	239,737	486,738	44,641	(217,942)	313,437	485,572	(358,925)
2016	738,333	243,650	494,683	44,641	(221,500)	317,824	492,369	(851,294)
2017	750,384	247,627	502,757	44,641	(225,115)	322,283	499,277	(1,350,571)
2018	762,632	251,669	510,964	44,641	(228,790)	326,815	506,297	(1,856,868)
2019	775,081	255,777	519,304	44,641	(232,524)	331,421	513,433	(2,370,301)
2020	787,732	259,952	527,780	44,641	(236,320)	336,102	520,685	(2,890,986)
2021	799,229	263,745	535,483	44,641	(239,769)	340,356	527,274	(3,418,260)
2022	810,893	267,595	543,298	44,641	(243,268)	344,671	533,960	(3,952,220)
2023	822,728	271,500	551,228	44,641	(246,818)	349,050	540,744	(4,492,964)
2024	834,735	275,463	559,273	44,641	(250,421)	353,493	547,627	(5,040,591)
2025	846,918	279,483	567,435	44,641	(254,075)	358,001	554,610	(5,595,201)
2026	857,705	283,043	574,662	44,641	(257,311)	361,992	560,793	(6,155,994)
2027	868,629	286,647	581,981	44,641	(260,589)	366,034	567,054	(6,723,048)
2028	879,692	290,298	589,394	44,641	(263,908)	370,127	573,396	(7,296,444)
2029	890,896	293,996	596,900	44,641	(267,269)	374,273	579,818	(7,876,262)
2030	902,243	297,740	604,503	44,641	(270,673)	378,471	586,322	(8,462,584)
2031	902,243	297,740	604,503	44,641	(270,673)	378,471	586,322	(9,048,906)
2032	902,243	297,740	604,503	44,641	(270,673)	378,471	586,322	(9,635,228)
2033	902,243	297,740	604,503	44,641	(270,673)	378,471	586,322	(10,221,550)
2034	902,243	297,740	604,503	44,641	(270,673)	378,471	586,322	(10,807,872)
2035	902,243	297,740	604,503	44,641	(270,673)	378,471	586,322	(11,394,194)

Assumptions:

MSW Growth Rate	**1.65%**
Recycling/Reduction Rate	**33.00%**
Recycling Growth Rate	**0.00%**
Cover Material	**5.00%**
Trash Density in Lbs per Cy	**1,291**
Percent of NCRRRF Unprocessibles to Class 3	**100.00%**
Percent of Class 3 Material Diverted to Class 1	**30.00%**

Estimated Depletion

Max. Class 1	**2015**
Balanced Life	**2022**

Solid Waste Authority

Landfill Depletion Model

Table 4: Estimated Landfill Depletion Assuming Balanced Life - Current Two Boiler System

	Class 1 Landfill Volume Depleted	Class 3 Landfill Volume Depleted	Total Landfill Volume Depleted	Cumulative Class 1 Volume Depleted	Cumulative Class 3 Volume Depleted	Cumulative Class 1 Percentage Volume	Cumulative Class 3 Percentage Volume	Landfill Volume Remaining
Total Estimated Volume to +160 NGVD								**47,618,206**
Volume Depleted Through Fiscal Year 2004/2005								**13,675,711**
Remaining Volume								**33,942,495**
2006	1,222,976	400,585	1,623,561	10,058,770	5,240,502	65.75%	34.25%	**32,318,933**
2007	1,300,116	408,318	1,708,434	11,358,887	5,648,820	66.79%	33.21%	**30,610,499**
2008	1,379,936	416,222	1,796,157	12,738,822	6,065,041	67.75%	32.25%	**28,814,342**
2009	1,462,529	424,301	1,886,830	14,201,351	6,489,342	68.64%	31.36%	**26,927,512**
2010	1,547,993	432,559	1,980,552	15,749,345	6,921,901	69.47%	30.53%	**24,946,960**
2011	1,625,140	439,356	2,064,496	17,374,485	7,361,257	70.24%	29.76%	**22,882,464**
2012	1,704,642	446,275	2,150,917	19,079,127	7,807,532	70.96%	29.04%	**20,731,547**
2013	1,786,570	453,317	2,239,887	20,865,697	8,260,848	71.64%	28.36%	**18,491,660**
2014	1,871,001	460,484	2,331,485	22,736,699	8,721,332	72.28%	27.72%	**16,160,175**
2015	1,958,012	467,779	2,425,791	24,694,711	9,189,112	72.88%	27.12%	**13,734,383**
2016	2,043,104	474,576	2,517,681	26,737,815	9,663,688	73.45%	26.55%	**11,216,703**
2017	2,130,671	481,484	2,612,156	28,868,486	10,145,173	74.00%	26.00%	**8,604,547**
2018	2,220,787	488,505	2,709,292	31,089,273	10,633,678	74.51%	25.49%	**5,895,255**
2019	2,313,525	495,640	2,809,166	33,402,798	11,129,318	75.01%	24.99%	**3,086,089**
2020	2,408,965	502,892	2,911,857	35,811,762	11,632,211	75.48%	24.52%	**174,232**
2021	2,501,153	509,482	3,010,635	38,312,915	12,141,693	75.94%	24.06%	**(2,836,402)**
2022	2,595,870	516,168	3,112,038	40,908,786	12,657,861	76.37%	23.63%	**(5,948,441)**
2023	2,693,188	522,952	3,216,139	43,601,973	13,180,813	76.79%	23.21%	**(9,164,580)**
2024	2,793,177	529,834	3,323,012	46,395,150	13,710,647	77.19%	22.81%	**(12,487,592)**
2025	2,895,914	536,818	3,432,731	49,291,064	14,247,465	77.58%	22.42%	**(15,920,323)**
2026	2,994,071	543,000	3,537,071	52,285,135	14,790,465	77.95%	22.05%	**(19,457,394)**
2027	3,094,746	549,262	3,644,008	55,379,881	15,339,727	78.31%	21.69%	**(23,101,402)**
2028	3,198,006	555,604	3,753,609	58,577,886	15,895,331	78.66%	21.34%	**(26,855,011)**
2029	3,303,916	562,026	3,865,942	61,881,802	16,457,357	78.99%	21.01%	**(30,720,953)**
2030	3,412,547	568,530	3,981,077	65,294,350	17,025,886	79.32%	20.68%	**(34,702,030)**
2031	3,466,569	568,530	4,035,099	68,760,919	17,594,416	79.63%	20.37%	**(38,737,129)**
2032	3,521,321	568,530	4,089,851	72,282,240	18,162,946	79.92%	20.08%	**(42,826,980)**
2033	3,576,811	568,530	4,145,341	75,859,052	18,731,475	80.20%	19.80%	**(46,972,321)**
2034	3,633,051	568,530	4,201,581	79,492,103	19,300,005	80.46%	19.54%	**(51,173,902)**
2035	3,690,050	568,530	4,258,580	83,182,153	19,868,535	80.72%	19.28%	**(55,432,482)**

Assumptions: **See Table 1, Table 2, and Table 3.**

Solid Waste Authority of Palm Beach County

Landfill Depletion Mode

Table 4A: Estimated Landfill Depletion Assuming Balanced Life - Proposed Three Boiler System

	Class 1 Landfill Volume Depleted	Class 3 Landfill Volume Depleted	Total Landfill Volume Depleted	Cumulative Class 1 Volume Depleted	Cumulative Class 3 Volume Depleted	Cumulative Class 1 Percentage Volume	Cumulative Class 3 Percentage Volume	Landfill Volume Remaining
Total Estimated Volume to +160 NGVD								**47,618,206**
Volume Depleted Through Fiscal Year 2004/2005								**13,675,711**
Remaining Volume								**33,942,495**
2006	1,222,976	400,585	1,623,561	10,058,770	5,240,502	65.75%	34.25%	**32,318,933**
2007	1,300,116	408,318	1,708,434	11,358,887	5,648,820	66.79%	33.21%	**30,610,499**
2008	1,379,936	416,222	1,796,157	12,738,822	6,065,041	67.75%	32.25%	**28,814,342**
2009	1,462,529	424,301	1,886,830	14,201,351	6,489,342	68.64%	31.36%	**26,927,512**
2010	1,547,993	432,559	1,980,552	15,749,345	6,921,901	69.47%	30.53%	**24,946,960**
2011	1,625,140	439,356	2,064,496	17,374,485	7,361,257	70.24%	29.76%	**22,882,464**
2012	1,344,324	464,067	1,808,391	18,718,809	7,825,324	70.52%	29.48%	**21,074,073**
2013	1,426,252	471,109	1,897,361	20,145,061	8,296,433	70.83%	29.17%	**19,176,712**
2014	1,510,683	478,276	1,988,959	21,655,744	8,774,709	71.16%	28.84%	**17,187,753**
2015	1,597,694	485,572	2,083,265	23,253,437	9,260,281	71.52%	28.48%	**15,104,487**
2016	1,682,786	492,369	2,175,155	24,936,223	9,752,650	71.89%	28.11%	**12,929,333**
2017	1,770,353	499,277	2,269,630	26,706,576	10,251,926	72.26%	27.74%	**10,659,703**
2018	1,860,468	506,297	2,366,766	28,567,045	10,758,224	72.64%	27.36%	**8,292,937**
2019	1,953,207	513,433	2,466,640	30,520,252	11,271,657	73.03%	26.97%	**5,826,297**
2020	2,048,646	520,685	2,569,331	32,568,898	11,792,341	73.42%	26.58%	**3,256,966**
2021	2,140,834	527,274	2,668,109	34,709,733	12,319,616	73.80%	26.20%	**588,858**
2022	2,235,552	533,960	2,769,512	36,945,285	12,853,576	74.19%	25.81%	**(2,180,655)**
2023	2,332,869	540,744	2,873,613	39,278,154	13,394,320	74.57%	25.43%	**(5,054,268)**
2024	2,432,859	547,627	2,980,486	41,711,013	13,941,947	74.95%	25.05%	**(8,034,754)**
2025	2,535,595	554,610	3,090,205	44,246,608	14,496,557	75.32%	24.68%	**(11,124,959)**
2026	2,633,752	560,793	3,194,545	46,880,360	15,057,349	75.69%	24.31%	**(14,319,504)**
2027	2,734,428	567,054	3,301,482	49,614,788	15,624,404	76.05%	23.95%	**(17,620,986)**
2028	2,837,687	573,396	3,411,083	52,452,476	16,197,799	76.41%	23.59%	**(21,032,069)**
2029	2,943,598	579,818	3,523,416	55,396,074	16,777,617	76.75%	23.25%	**(24,555,485)**
2030	3,052,229	586,322	3,638,551	58,448,303	17,363,939	77.10%	22.90%	**(28,194,036)**
2031	3,106,251	586,322	3,692,573	61,554,554	17,950,261	77.42%	22.58%	**(31,886,609)**
2032	3,161,003	586,322	3,747,325	64,715,556	18,536,583	77.73%	22.27%	**(35,633,934)**
2033	3,216,493	586,322	3,802,815	67,932,050	19,122,905	78.03%	21.97%	**(39,436,749)**
2034	3,272,733	586,322	3,859,055	71,204,782	19,709,227	78.32%	21.68%	**(43,295,804)**
2035	3,329,732	586,322	3,916,054	74,534,514	20,295,549	78.60%	21.40%	**(47,211,858)**

Assumptions: **See Table 1, Table 2, and Table 3.**

Appendix B

Historical Incoming Waste Tonnage

Solid Waste Authority of Palm Beach County
Historical Solid Waste Tonnages
Adjusted for Revised Solid Waste Densities

85/86	Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furn.	Garbage	LC	Pesticide	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
	OCT	0.00	0.00	32.65	23,716.52	0.00	273.71	23.91	0.00	118.75	0.00	42,504.37	0.00	1.74	329.35	3.75	0.00	22,933.28	3,407.00	93,345.03
	NOV	0.00	0.00	12.24	23,075.80	0.00	473.52	0.00	0.00	141.25	0.00	41,433.41	0.00	12.88	43.04	0.00	0.00	24,610.05	2,415.65	92,217.84
	DEC	0.00	0.00	58.18	27,322.69	0.00	181.56	17.25	0.00	37.50	0.00	45,837.13	0.00	0.18	1,124.52	0.00	0.00	23,147.46	2,041.56	99,768.03
	JAN	0.00	0.00	25.28	26,489.35	0.00	143.27	36.89	0.00	228.75	0.00	46,896.31	0.00	15.15	273.62	4.52	0.00	30,082.72	1,862.85	106,058.71
	FEB	0.00	0.00	25.61	22,411.99	0.00	111.69	4.37	0.00	43.75	0.00	43,533.76	603.38	0.84	209.93	4.25	0.00	21,172.99	2,015.95	90,138.51
	MAR	0.00	0.00	14.89	19,738.94	0.00	108.36	3.22	0.00	63.64	0.00	49,707.50	3,421.84	47.39	360.65	4.30	0.00	20,162.28	2,022.01	95,655.02
	APR	0.00	0.00	25.56	22,019.13	0.00	124.56	4.42	0.00	90.00	0.00	45,560.25	10,059.82	0.66	333.27	0.45	0.00	23,828.78	2,510.97	104,557.87
	MAY	0.00	0.00	57.31	17,657.65	0.00	65.71	0.00	0.00	18.75	0.00	44,131.03	18,623.31	32.85	77.54	3.55	0.00	24,649.83	2,815.36	108,132.89
	JUN	0.00	0.00	21.24	21,010.29	0.00	182.23	4.89	0.00	360.00	0.00	44,881.97	17,375.65	2.36	3,727.63	1.00	0.00	25,140.90	3,172.81	115,880.96
	JUL	0.00	0.00	9.71	18,951.68	0.00	212.54	10.09	0.00	438.75	0.00	45,445.73	11,316.05	2.15	74.82	1.00	0.00	27,363.67	3,076.43	106,902.61
	AUG	0.00	0.00	23.17	19,665.82	0.00	373.49	8.93	0.00	195.00	0.00	42,704.94	12,186.03	16.05	63.36	7.70	0.00	23,020.79	2,809.52	101,074.80
	SEP	0.00	0.00	40.82	25,350.12	0.00	439.80	4.68	0.00	36.92	0.00	44,138.87	13,578.23	19.09	606.22	3.67	0.00	22,406.48	2,573.91	109,198.80
	Total	**0.00**	**0.00**	**346.66**	**267,409.95**	**0.00**	**2,690.44**	**118.65**	**0.00**	**1,773.06**	**0.00**	**536,775.27**	**87,164.31**	**151.34**	**7,223.95**	**34.19**	**0.00**	**288,519.24**	**30,724.02**	**1,222,931.09**
	Average	**0.00**	**0.00**	**28.89**	**22,284.16**	**0.00**	**224.20**	**9.89**	**0.00**	**147.76**	**0.00**	**44,731.27**	**7,263.69**	**12.61**	**602.00**	**2.85**	**0.00**	**24,043.27**	**2,560.34**	**101,910.92**
	Percent	**0.00%**	**0.00%**	**0.03%**	**21.87%**	**0.00%**	**0.22%**	**0.01%**	**0.00%**	**0.14%**	**0.00%**	**43.89%**	**7.13%**	**0.01%**	**0.59%**	**0.00%**	**0.00%**	**23.59%**	**2.51%**	**100.00%**

86/87	Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furniture	Garbage	LC	Pesticide	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
	OCT	0.00	0.00	28.36	33,776.62	0.00	393.77	0.00	0.00	48.75	0.00	45,630.98	16,590.42	4.58	290.22	2.30	0.00	18,833.42	2,699.80	118,299.22
	NOV	0.00	0.00	35.32	28,495.31	0.00	261.49	8.77	0.00	27.50	0.00	45,504.00	13,112.31	2.66	281.09	1.05	0.00	16,581.92	2,186.44	106,497.86
	DEC	0.00	0.00	62.87	31,451.67	0.00	413.85	44.54	0.00	57.32	0.00	55,055.42	11,845.30	1.27	269.71	8.33	0.00	16,425.12	2,097.92	117,733.31
	JAN	0.00	0.00	60.67	30,277.69	0.00	411.70	10.72	0.00	150.62	0.00	51,699.26	8,856.43	0.38	660.98	5.59	0.00	16,772.10	2,270.95	111,177.09
	FEB	0.00	0.00	100.20	29,516.31	0.00	1,078.77	7.71	0.00	85.25	0.00	47,977.67	9,284.64	1.68	117.89	2.50	0.00	18,070.80	2,079.60	108,323.02
	MAR	0.00	0.00	35.46	17,241.63	0.00	363.16	10.84	0.00	998.88	0.00	55,711.68	8,426.25	3.75	44.54	0.95	0.00	17,750.43	2,587.70	103,175.27
	APR	0.00	0.00	42.75	20,831.52	0.00	352.68	11.94	0.00	904.41	0.00	50,328.29	4,609.04	2.18	77.00	0.00	0.00	17,033.33	2,875.57	97,068.72
	MAY	0.00	0.00	77.52	23,435.69	0.00	305.82	0.00	0.00	322.29	0.00	48,960.85	4,957.82	12.12	3.63	3.90	0.00	16,032.65	2,521.97	96,634.27
	JUN	0.00	0.00	23.43	25,624.36	0.00	318.31	6.30	0.00	281.98	0.00	48,957.20	4,176.42	0.14	14.95	0.00	0.00	17,931.40	3,207.66	100,542.15
	JUL	0.00	0.00	33.14	24,345.24	0.00	300.39	0.00	0.00	208.12	0.00	49,564.90	3,889.55	10.04	39.45	1.25	0.00	17,884.48	3,288.51	99,565.06
	AUG	0.00	0.00	47.99	23,557.19	0.00	368.11	7.77	0.00	253.39	0.00	45,242.56	4,685.84	0.47	99.52	3.70	0.00	16,262.77	2,835.51	93,364.81
	SEP	0.00	0.00	96.14	22,885.71	0.00	434.22	3.51	0.00	288.68	0.00	48,129.41	4,062.24	8.01	286.98	0.00	0.00	18,587.31	2,980.59	97,762.80
	Total	**0.00**	**0.00**	**643.85**	**311,438.92**	**0.00**	**5,002.27**	**112.10**	**0.00**	**3,627.19**	**0.00**	**592,762.22**	**94,496.26**	**47.28**	**2,185.96**	**29.57**	**0.00**	**208,165.74**	**31,632.22**	**1,250,143.56**
	Average	**0.00**	**0.00**	**53.65**	**25,953.24**	**0.00**	**416.86**	**9.34**	**0.00**	**302.27**	**0.00**	**49,396.85**	**7,874.69**	**3.94**	**182.16**	**2.46**	**0.00**	**17,347.14**	**2,636.02**	**104,178.63**
	Percent	**0.00%**	**0.00%**	**0.05%**	**24.91%**	**0.00%**	**0.40%**	**0.01%**	**0.00%**	**0.29%**	**0.00%**	**47.42%**	**7.56%**	**0.00%**	**0.17%**	**0.00%**	**0.00%**	**16.65%**	**2.53%**	**100.00%**

SWA scale system output converts volume transactions to tonnage using assumed waste densities. Currently available information allows the retrieval of tonnage information on volume transactions. For 92/93 and on "actuals" are used. For prior years, assumed weights have been replaced with more accurate estimates based on reasonable and reliable density estimates. Animals not included due to inconsistent recording. Animal tonnage is insignificant.

87/88

Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furniture	Garbage	LC	Pesticide	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
OCT	0.00	0.00	210.76	23,142.60	0.00	203.09	7.83	0.00	307.68	0.00	50,145.73	3,761.04	0.55	216.55	0.00	0.00	18,797.22	3,223.35	100,016.39
NOV	0.00	0.00	211.58	21,954.85	0.00	75.88	3.82	0.00	899.60	0.00	50,279.05	3,069.62	0.24	162.25	0.00	0.00	17,028.29	2,546.12	96,231.30
DEC	0.00	0.00	215.23	22,949.80	0.00	93.09	9.50	0.00	318.23	0.00	53,532.36	2,812.24	3.67	1,052.80	1.62	0.00	16,727.68	1,960.80	99,677.01
JAN	0.00	0.00	45.98	20,303.32	0.00	162.03	35.04	0.00	224.63	0.00	52,228.10	4,137.48	0.74	83.03	1.12	0.00	17,945.73	1,270.15	96,437.34
FEB	0.00	0.00	71.86	19,236.14	0.00	205.13	14.48	0.00	929.91	0.00	53,829.24	3,425.54	0.80	940.59	0.00	0.00	17,840.77	1,274.36	97,768.82
MAR	0.00	0.00	124.40	24,563.60	0.00	138.00	8.63	0.00	940.87	0.00	58,845.36	3,345.92	0.55	19.45	7.24	0.00	18,832.27	1,554.55	108,380.83
APR	0.00	0.00	116.41	21,334.22	0.00	84.34	5.74	0.00	1,460.20	0.00	52,492.48	3,685.82	0.00	22.53	0.00	0.00	18,192.37	1,501.67	98,895.78
MAY	0.00	0.00	110.49	21,145.85	0.00	136.40	63.25	0.00	786.55	0.00	53,790.68	5,028.27	0.23	22.65	1.00	0.00	19,491.15	1,530.05	102,106.57
JUN	0.00	0.00	186.33	26,428.47	0.00	259.92	200.65	0.00	394.63	0.00	54,840.00	3,378.51	23.07	0.00	2.65	0.00	20,494.74	1,850.50	108,059.47
JUL	0.00	0.00	153.27	25,460.82	0.00	125.89	263.15	0.00	677.80	0.00	51,892.97	2,277.22	2.35	207.87	1.40	0.00	19,431.31	1,728.82	102,222.88
AUG	0.00	0.00	140.45	30,459.67	0.00	168.71	55.92	0.00	122.71	0.00	56,676.19	3,671.20	0.00	320.77	3.92	0.00	20,605.62	2,373.05	114,598.21
SEP	0.00	0.00	158.48	27,851.54	0.00	195.96	4.21	0.00	165.84	0.00	50,675.04	4,385.25	0.81	66.96	2.42	0.00	19,089.34	2,219.36	104,815.21
Total	**0.00**	**0.00**	**1,745.24**	**284,830.84**	**0.00**	**1,848.44**	**672.22**	**0.00**	**7,228.65**	**0.00**	**639,227.20**	**42,978.11**	**33.01**	**3,115.45**	**21.37**	**0.00**	**224,476.49**	**23,032.78**	**1,229,209.80**
Average	**0.00**	**0.00**	**145.44**	**23,735.90**	**0.00**	**154.04**	**56.02**	**0.00**	**602.39**	**0.00**	**53,268.93**	**3,581.51**	**2.75**	**259.62**	**1.78**	**0.00**	**18,706.37**	**1,919.40**	**102,434.15**
Percent	**0.00%**	**0.00%**	**0.14%**	**23.17%**	**0.00%**	**0.15%**	**0.05%**	**0.00%**	**0.59%**	**0.00%**	**52.00%**	**3.50%**	**0.00%**	**0.25%**	**0.00%**	**0.00%**	**18.26%**	**1.87%**	**100.00%**

88/89

Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furniture	Garbage	LC	Pesticide	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
OCT	0.00	0.00	87.69	26,181.30	0.00	148.86	3.98	0.00	160.12	0.00	52,270.66	3,934.36	3.99	81.09	7.27	0.00	19,745.70	2,979.17	105,604.20
NOV	0.00	0.00	115.50	20,594.23	0.00	65.51	3.21	0.00	134.98	0.00	55,707.52	4,168.16	2.84	6.56	3.65	0.00	20,423.35	2,816.71	104,042.22
DEC	0.00	0.00	22.82	19,791.84	0.00	59.12	36.39	0.00	78.28	0.00	57,471.58	4,655.35	1.51	54.53	2.25	0.00	20,760.60	3,043.60	105,977.87
JAN	0.00	0.00	36.53	18,400.88	0.00	221.87	4.54	0.00	196.23	0.00	60,790.77	4,118.88	2.24	73.82	2.75	0.00	21,503.73	2,531.37	107,883.60
FEB	0.00	0.00	10.38	16,629.32	0.00	155.11	0.00	0.00	401.14	0.00	54,998.22	6,719.66	2.12	1.90	0.00	0.00	21,886.88	2,437.62	103,242.34
MAR	0.00	0.00	18.99	18,682.59	0.00	150.81	0.00	0.00	389.27	0.00	63,944.25	7,583.63	20.20	28.09	2.80	0.00	26,236.49	2,993.14	120,050.26
APR	0.00	0.00	21.40	19,338.76	0.00	120.56	20.54	0.00	579.52	0.00	57,997.92	4,788.47	5.33	7.79	2.12	0.00	23,904.27	3,076.20	109,862.89
MAY	0.00	0.00	27.21	17,633.23	0.00	57.52	4.79	0.00	959.36	0.00	62,303.88	5,934.25	6.65	0.16	0.00	0.00	27,354.77	3,292.16	117,573.97
JUN	0.00	0.00	7.74	18,338.71	0.00	59.44	232.87	0.00	1,156.07	0.00	58,867.27	6,022.51	0.94	14.68	0.00	0.00	26,288.47	3,557.21	114,545.90
JUL	0.00	0.00	0.00	19,422.48	0.00	104.99	421.12	0.00	870.20	0.00	56,349.08	3,449.17	0.94	3,600.13	0.00	0.00	24,201.07	3,230.77	111,649.95
AUG	0.00	0.00	44.01	22,220.62	0.00	128.50	391.36	0.00	802.56	0.00	58,738.55	3,791.56	1.18	8.85	3.65	0.00	27,373.20	3,348.82	116,852.85
SEP	0.00	0.00	54.96	17,290.95	0.00	123.76	123.09	0.00	816.26	0.00	53,969.32	2,401.99	0.28	21.99	1.20	0.00	27,657.25	3,247.14	105,708.20
Total	**0.00**	**0.00**	**447.23**	**234,524.89**	**0.00**	**1,396.05**	**1,241.89**	**0.00**	**6,543.99**	**0.00**	**693,409.02**	**57,567.99**	**48.22**	**3,899.59**	**25.69**	**0.00**	**287,335.77**	**36,553.91**	**1,322,994.25**
Average	**0.00**	**0.00**	**37.27**	**19,543.74**	**0.00**	**116.34**	**103.49**	**0.00**	**545.33**	**0.00**	**57,784.09**	**4,797.33**	**4.02**	**324.97**	**2.14**	**0.00**	**23,944.65**	**3,046.16**	**110,249.52**
Percent	**0.00%**	**0.00%**	**0.03%**	**17.73%**	**0.00%**	**0.11%**	**0.09%**	**0.00%**	**0.49%**	**0.00%**	**52.41%**	**4.35%**	**0.00%**	**0.29%**	**0.00%**	**0.00%**	**21.72%**	**2.76%**	**100.00%**

89/90

Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furniture	Garbage	LC	Pesticide	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
OCT	0.00	0.00	34.55	15,313.72	0.00	66.78	9.28	0.00	478.88	0.00	56,519.68	2,248.03	0.71	2.55	2.00	0.00	24,348.26	2,919.45	101,943.88
NOV	0.00	0.00	6.85	14,758.80	0.00	188.91	9.31	0.00	498.72	0.00	57,318.34	1,997.30	0.01	0.00	0.00	0.00	22,957.82	2,555.62	100,291.68
DEC	0.00	0.00	13.63	13,037.13	0.00	190.40	2.62	0.00	455.70	0.00	56,619.71	1,835.76	0.80	23.66	0.00	0.00	20,140.62	807.94	93,127.97
JAN	0.00	0.00	63.78	11,003.99	0.00	334.94	5.72	0.00	544.58	0.00	66,560.11	1,929.79	0.00	5.82	3.14	0.00	28,276.96	2,658.09	111,386.91
FEB	0.00	0.00	107.26	11,903.85	0.00	132.15	5.32	0.00	332.27	0.00	45,456.98	2,467.67	1.82	364.42	1.50	0.00	23,693.25	2,408.02	86,874.51
MAR	0.00	0.00	121.91	14,178.32	0.00	117.73	13.22	0.00	223.16	0.00	61,876.38	2,280.23	1.15	96.84	5.87	0.00	24,046.59	2,418.85	105,380.24
APR	0.00	0.00	70.06	8,975.38	0.00	143.65	92.00	0.00	283.16	0.00	59,283.07	1,999.96	1.57	28.23	1.25	0.00	21,566.82	2,035.72	94,480.87
MAY	0.00	175.80	95.69	9,695.40	0.00	184.30	1.01	0.00	329.18	0.00	59,631.02	1,758.35	0.06	3.38	6.61	0.00	23,251.28	1,920.19	97,052.27
JUN	0.00	728.91	53.07	9,083.53	0.00	92.51	6.20	0.00	750.67	0.00	56,762.99	2,060.84	0.17	52.03	8.21	0.00	23,143.72	1,720.30	94,463.15
JUL	0.00	219.05	37.98	9,191.74	0.00	237.13	3.03	0.00	406.45	0.00	56,961.91	2,328.84	0.00	9.94	0.00	0.00	24,150.09	1,915.79	95,461.94
AUG	0.00	0.00	77.17	8,960.82	0.00	339.17	8.47	0.00	356.32	0.00	57,663.01	1,715.79	0.13	14.82	7.28	0.00	26,692.09	1,814.19	97,649.26
SEP	0.00	14.29	61.25	7,838.11	0.00	151.48	51.45	0.00	348.85	0.00	51,194.57	1,042.39	0.00	118.67	5.12	0.00	20,909.52	1,605.17	83,340.87
Total	**0.00**	**1,138.05**	**743.20**	**133,940.77**	**0.00**	**2,179.15**	**207.63**	**0.00**	**5,007.94**	**0.00**	**685,847.77**	**23,664.95**	**6.42**	**720.36**	**40.98**	**0.00**	**283,177.01**	**24,779.33**	**1,161,453.56**
Average	**0.00**	**94.84**	**61.93**	**11,161.73**	**0.00**	**181.60**	**17.30**	**0.00**	**417.33**	**0.00**	**57,153.98**	**1,972.08**	**0.54**	**60.03**	**3.42**	**0.00**	**23,598.08**	**2,064.94**	**96,787.80**
Percent	**0.00%**	**0.10%**	**0.06%**	**11.53%**	**0.00%**	**0.19%**	**0.02%**	**0.00%**	**0.43%**	**0.00%**	**59.05%**	**2.04%**	**0.00%**	**0.06%**	**0.00%**	**0.00%**	**24.38%**	**2.13%**	**100.00%**

90/91	Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furniture	Garbage	LC	Pesticide	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
	OCT	0.00	81.97	47.00	15,023.85	0.00	155.57	2,944.28	2.79	2,282.29	23.19	60,219.29	2,638.54	0.62	97.73	0.00	0.00	16,930.47	2,367.97	102,815.55
	NOV	0.00	152.42	112.59	12,342.72	0.00	123.36	2,921.79	333.82	914.45	20.37	56,903.50	1,195.99	0.54	0.96	1.30	0.00	13,911.55	1,876.25	90,811.61
	DEC	0.00	551.38	88.92	8,354.20	0.00	106.59	3,487.84	18.00	615.22	34.28	58,938.83	1,833.42	1.44	22.60	4.11	0.00	12,264.98	1,548.83	87,870.64
	JAN	0.00	162.13	31.28	9,378.26	0.00	197.17	3,676.14	405.14	619.44	28.88	65,854.11	1,284.45	2.29	27.50	7.10	0.00	14,351.88	1,743.10	97,768.87
	FEB	0.00	110.51	50.75	10,874.66	0.00	173.16	3,591.33	501.01	650.82	19.63	57,626.91	1,519.55	0.89	43.23	0.00	0.00	12,742.73	1,741.77	89,646.95
	MAR	0.00	99.10	120.83	11,729.20	0.00	170.90	19.29	523.50	730.80	18.10	61,303.55	2,064.64	0.51	15.54	2.40	0.00	14,078.65	2,060.76	92,937.77
	APR	0.00	38.37	24.84	10,741.84	0.00	173.18	6,368.85	264.17	480.14	24.89	63,033.24	2,393.04	0.22	6.48	0.00	0.00	14,569.79	2,130.92	100,249.97
	MAY	0.00	18.62	10.70	10,753.04	0.00	513.74	4,164.88	217.91	760.23	25.62	59,583.95	2,370.90	0.25	7.68	0.00	0.00	14,371.58	2,330.96	95,130.05
	JUN	0.00	49.02	55.42	10,355.46	0.00	975.99	3,713.10	85.43	760.24	24.41	52,543.94	748.90	0.07	19.30	0.00	0.00	13,240.29	2,428.46	85,000.03
	JUL	0.00	17.41	75.77	10,986.06	0.00	275.30	2,332.08	858.40	344.48	17.92	57,463.19	1,312.80	107.00	6.70	0.00	0.00	15,384.84	2,501.05	91,683.00
	AUG	0.00	6.31	160.56	9,797.51	0.00	1,365.18	2,732.13	894.21	483.60	8.14	53,990.34	2,419.23	0.13	7.33	0.00	1,612.39	13,291.99	2,652.12	89,421.16
	SEP	0.00	12.34	69.50	9,912.47	0.00	236.89	3,607.27	269.53	551.36	14.34	52,055.03	8,429.70	0.70	20.06	0.00	2,294.24	12,662.70	2,907.03	93,043.16
	Total	**0.00**	**1,299.58**	**848.16**	**130,249.25**	**0.00**	**4,467.03**	**39,558.98**	**4,373.91**	**9,193.07**	**259.77**	**699,515.88**	**28,211.16**	**114.66**	**275.11**	**14.91**	**3,906.63**	**167,801.44**	**26,289.22**	**1,116,378.76**
	Average	**0.00**	**108.30**	**70.68**	**10,854.10**	**0.00**	**372.25**	**3,296.58**	**364.49**	**766.09**	**21.65**	**58,292.99**	**2,350.93**	**9.56**	**22.93**	**1.24**	**325.55**	**13,983.45**	**2,190.77**	**93,031.56**
	Percent	**0.00%**	**0.12%**	**0.08%**	**11.67%**	**0.00%**	**0.40%**	**3.54%**	**0.39%**	**0.82%**	**0.02%**	**62.66%**	**2.53%**	**0.01%**	**0.02%**	**0.00%**	**0.35%**	**15.03%**	**2.35%**	**100.00%**

91/92	Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furniture	Garbage	LC	Pesticide	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
	OCT	0.00	97.97	60.44	14,291.72	0.00	368.07	5,653.25	126.68	633.89	11.74	59,194.73	5,611.94	0.33	13.20	8.08	3,360.38	17,724.19	3,038.68	110,195.28
	NOV	0.00	50.14	31.27	11,422.61	0.00	203.73	5,882.20	348.30	402.53	5.14	55,735.10	3,220.66	0.46	4.19	0.00	585.82	15,615.25	2,392.27	95,899.67
	DEC	0.00	125.20	207.95	10,238.59	0.00	305.73	4,621.20	93.86	302.03	4.28	61,957.35	1,891.35	0.49	777.78	0.00	39.12	14,068.06	2,606.02	97,239.00
	JAN	0.00	74.80	247.83	10,700.41	0.00	203.96	6,149.55	700.52	556.79	9.76	61,899.91	3,126.39	1.33	42.50	0.00	49.29	15,507.89	2,327.81	101,598.74
	FEB	0.00	47.65	50.30	9,091.28	0.00	261.68	5,901.09	907.57	819.70	8.08	57,714.58	4,371.96	0.57	16.10	6.92	116.04	14,135.61	1,964.27	95,413.40
	MAR	0.00	99.03	88.50	8,953.63	0.00	329.54	5,885.62	787.74	517.66	5.45	62,950.66	1,691.59	1.07	15.87	0.00	140.69	14,994.37	2,391.42	98,852.84
	APR	0.00	172.15	61.54	9,295.16	0.00	342.67	5,403.70	663.97	481.84	3.65	59,248.00	1,754.76	2.12	12.23	0.00	843.81	14,924.16	2,368.89	95,578.65
	MAY	0.00	800.29	77.87	8,078.46	0.00	333.76	6,094.16	565.52	598.91	4.21	53,686.53	1,533.65	0.48	8.81	0.00	827.11	14,408.37	2,337.96	89,356.09
	JUN	0.00	25.81	86.78	8,445.59	0.00	534.43	3,918.78	877.36	1,154.30	5.59	58,559.67	1,040.53	5.71	21.28	0.00	1,177.30	16,482.16	2,717.63	95,052.91
	JUL	0.00	127.42	105.47	10,180.89	0.00	426.52	3,572.38	638.21	616.49	4.36	53,841.19	1,533.45	0.00	29.84	4.94	1,120.77	17,079.69	2,597.87	91,879.49
	AUG	0.00	25.72	30.74	9,716.42	0.00	438.89	3,357.42	631.90	682.15	15.04	53,688.20	1,336.98	0.17	17.20	0.00	983.06	14,844.67	3,157.92	88,926.48
	SEP	0.00	148.34	43.33	9,364.14	0.00	506.17	4,205.66	562.92	783.66	4.54	54,287.71	1,312.58	1.45	40.36	5.49	613.00	16,212.91	3,962.62	92,054.87
	Total	**0.00**	**1,794.52**	**1,092.02**	**119,778.89**	**0.00**	**4,255.15**	**60,645.01**	**6,904.55**	**7,549.95**	**81.84**	**692,763.63**	**28,425.82**	**14.18**	**999.36**	**25.43**	**9,856.39**	**185,997.33**	**31,863.36**	**1,152,047.42**
	Average	**0.00**	**149.54**	**91.00**	**9,981.57**	**0.00**	**354.60**	**5,053.75**	**575.38**	**629.16**	**6.82**	**57,730.30**	**2,368.82**	**1.18**	**83.28**	**2.12**	**821.37**	**15,499.78**	**2,655.28**	**96,003.95**
	Percent	**0.00%**	**0.16%**	**0.09%**	**10.40%**	**0.00%**	**0.37%**	**5.26%**	**0.60%**	**0.66%**	**0.01%**	**60.13%**	**2.47%**	**0.00%**	**0.09%**	**0.00%**	**0.86%**	**16.14%**	**2.77%**	**100.00%**

92/93	Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furniture	Garbage	LC	Pesticide	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
	OCT	0.00	77.35	14.38	10,903.42	0.00	355.68	3,533.10	321.79	376.56	3.01	52,221.19	901.66	0.12	4.19	8.19	220.34	13,869.03	5,002.03	87,812.04
	NOV	0.00	360.79	27.92	8,825.62	0.00	394.90	2,549.39	428.23	302.53	1.50	55,468.68	561.06	0.45	21.22	0.00	2,157.91	11,487.47	3,756.22	86,343.89
	DEC	0.00	331.07	27.28	9,499.07	0.00	552.32	5,181.17	310.89	444.92	14.05	58,058.88	2,300.00	1.21	19.42	0.00	5,062.81	13,145.16	3,909.95	98,858.20
	JAN	0.00	173.61	40.13	9,114.27	0.00	434.67	6,400.60	186.23	341.62	8.81	60,202.58	1,050.70	0.71	41.92	3.63	4,579.96	12,551.50	4,215.28	99,346.22
	FEB	0.00	14.40	23.15	9,584.71	0.00	478.89	5,723.80	152.05	617.92	2.32	54,269.58	735.62	0.70	0.54	53.51	3,976.35	12,382.16	4,007.23	92,022.93
	MAR	0.00	75.68	110.47	8,841.61	0.00	530.04	6,273.66	121.46	491.57	7.54	66,710.54	2,392.36	0.98	336.72	0.00	7,070.72	16,866.14	8,198.21	118,027.70
	APR	0.00	34.12	76.43	9,944.01	0.00	383.12	5,193.91	79.52	56.98	9.32	60,680.25	2,131.30	1.27	63.35	11.05	5,985.82	16,724.81	6,605.81	107,981.07
	MAY	0.00	227.65	42.26	9,593.94	0.00	486.49	4,664.85	78.87	0.00	3.83	54,408.59	1,060.04	0.35	34.43	0.00	4,944.42	14,048.62	5,107.11	94,701.45
	JUN	0.00	564.37	5.13	9,488.19	0.00	709.25	2,861.08	123.27	0.00	5.47	56,938.35	478.75	0.00	0.86	2.47	4,029.72	17,305.44	5,757.86	98,270.21
	JUL	0.00	0.00	22.51	8,472.31	0.00	495.69	2,499.41	83.05	0.00	11.07	53,867.84	546.89	0.00	6.05	0.00	3,854.97	15,397.63	4,623.59	89,881.01
	AUG	0.00	0.00	14.73	9,564.47	0.00	480.30	2,210.00	73.47	0.00	6.02	55,685.09	1,060.26	0.00	10.20	2.14	3,433.70	16,182.33	6,013.31	94,736.02
	SEP	0.00	0.00	19.50	9,200.25	0.00	1,969.37	1,642.74	125.07	0.00	8.33	54,527.79	1,013.15	0.00	100.88	14.12	4,910.03	15,750.49	6,438.13	95,719.85
	Total	**0.00**	**1,859.04**	**423.89**	**113,031.87**	**0.00**	**7,270.72**	**48,733.71**	**2,083.90**	**2,632.10**	**81.27**	**683,039.36**	**14,231.79**	**5.79**	**639.78**	**95.11**	**50,226.75**	**175,710.78**	**63,634.73**	**1,163,700.59**
	Average	**0.00**	**154.92**	**35.32**	**9,419.32**	**0.00**	**605.89**	**4,061.14**	**173.66**	**219.34**	**6.77**	**56,919.95**	**1,185.98**	**0.48**	**53.32**	**7.93**	**4,185.56**	**14,642.57**	**5,302.89**	**96,975.05**
	Percent	**0.00%**	**0.16%**	**0.04%**	**9.71%**	**0.00%**	**0.62%**	**4.19%**	**0.18%**	**0.23%**	**0.01%**	**58.70%**	**1.22%**	**0.00%**	**0.05%**	**0.01%**	**4.32%**	**15.10%**	**5.47%**	**100.00%**

93/94

Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furniture	Garbage	LC	Pesticide	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
OCT	0.00	0.00	15.93	10,898.23	0.00	346.29	2,527.73	326.60	0.00	7.53	57,951.42	921.08	0.00	0.00	0.00	36.45	13,920.78	5,952.24	92,904.28
NOV	0.00	0.00	9.15	9,295.81	0.00	236.24	2,049.64	259.28	0.00	4.24	62,388.65	947.14	1.04	26.25	4.38	126.35	13,600.95	5,691.84	94,640.96
DEC	0.00	0.00	7.92	8,534.30	0.00	316.63	3,862.78	214.95	0.00	12.35	63,047.82	535.88	0.00	5.46	2.63	36.00	13,519.71	5,135.75	95,232.18
JAN	0.00	0.00	0.35	6,276.81	0.00	236.84	3,665.13	96.45	2.50	7.75	65,347.52	1,754.17	0.00	1.90	0.00	105.57	14,138.58	5,471.68	97,105.25
FEB	0.00	0.00	2.00	6,307.13	0.00	253.80	3,296.75	141.71	4.59	5.88	62,027.92	1,343.54	0.00	5.35	0.00	48.83	12,715.75	5,618.47	91,771.72
MAR	0.00	0.00	2.80	9,042.00	0.00	284.63	4,961.57	270.71	0.00	7.69	67,724.24	1,384.55	0.00	18.64	12.20	104.71	17,727.87	7,680.00	109,221.61
APR	0.00	0.00	0.00	6,296.71	0.00	423.56	3,881.46	288.96	461.68	7.76	62,891.49	1,738.27	0.00	0.11	0.00	51.21	16,596.09	7,319.86	99,957.16
MAY	0.00	0.00	0.00	6,896.98	0.00	377.93	4,172.70	190.47	3,080.32	3.12	60,920.42	742.46	0.00	2.22	0.00	67.42	17,328.07	8,672.39	102,454.50
JUN	0.00	0.00	2.02	5,636.53	0.00	221.16	3,419.74	138.00	3,685.28	6.58	61,485.20	1,400.25	0.00	2.69	5.77	48.30	16,592.79	11,183.68	103,827.99
JUL	0.00	0.00	0.21	5,197.67	0.00	208.80	3,820.97	132.24	6,616.33	1.12	53,447.76	1,223.95	0.00	5.37	0.00	64.41	14,684.40	9,794.67	95,197.90
AUG	0.00	0.00	10.50	5,050.35	0.00	494.78	4,393.45	150.32	6,129.79	6.60	60,436.48	2,871.95	0.00	0.88	0.00	33.21	15,023.95	12,306.78	106,909.04
SEP	0.00	0.00	1.82	4,376.04	0.00	200.69	4,016.09	153.86	6,411.05	7.45	56,355.67	900.89	0.09	0.89	0.92	37.79	15,147.24	11,711.81	99,322.30
Total	**0.00**	**0.00**	**52.70**	**83,808.56**	**0.00**	**3,601.35**	**44,068.01**	**2,363.55**	**26,391.54**	**78.07**	**734,024.59**	**15,764.13**	**1.13**	**69.76**	**25.90**	**760.25**	**180,996.18**	**96,539.17**	**1,188,544.89**
Average	**0.00**	**0.00**	**4.39**	**6,984.05**	**0.00**	**300.11**	**3,672.33**	**196.96**	**2,199.30**	**6.51**	**61,168.72**	**1,313.68**	**0.09**	**5.81**	**2.16**	**63.35**	**15,083.02**	**8,044.93**	**99,045.41**
Percent	**0.00%**	**0.00%**	**0.00%**	**7.05%**	**0.00%**	**0.30%**	**3.71%**	**0.20%**	**2.22%**	**0.01%**	**61.76%**	**1.33%**	**0.00%**	**0.01%**	**0.00%**	**0.06%**	**15.23%**	**8.12%**	**100.00%**

94/95

Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furniture	Garbage	LC	Pesticide	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
OCT	0.00	0.00	0.00	5,613.06	0.00	202.61	4,639.19	214.12	9,027.82	10.12	57,408.68	1,606.69	0.00	8.08	0.00	19.50	13,852.18	12,080.84	104,682.89
NOV	0.00	0.00	1.97	4,484.08	0.00	164.84	4,102.55	204.08	6,342.22	5.18	63,172.61	1,175.89	0.00	12.21	13.24	29.66	14,143.77	13,141.75	106,994.05
DEC	0.00	0.00	0.00	5,763.37	0.00	191.33	5,677.96	206.60	833.47	13.07	67,147.84	818.11	0.00	3.14	0.00	11.59	14,621.54	12,004.79	107,292.81
JAN	0.00	0.00	0.00	7,631.11	0.00	225.85	6,158.41	238.23	1,607.99	2.74	64,057.30	1,579.91	0.00	0.00	0.00	10.81	13,118.35	11,430.76	106,061.46
FEB	0.00	0.00	4.65	5,355.27	0.00	463.72	5,417.67	181.67	1,416.42	2.85	57,401.18	2,525.08	0.00	7.80	0.00	46.08	10,891.54	10,027.76	93,741.69
MAR	0.00	0.00	4.10	7,823.84	0.00	800.66	6,077.03	235.31	2,509.41	1.49	64,831.59	7,332.05	0.00	0.00	13.25	23.37	13,259.57	12,993.26	115,904.93
APR	0.00	0.00	10.51	6,420.77	0.00	323.54	4,883.70	220.77	2,379.72	4.27	57,667.76	2,796.72	0.00	0.00	0.00	23.90	12,583.10	11,631.56	98,946.32
MAY	0.00	0.00	1.13	7,308.66	0.00	148.32	5,265.93	237.87	3,901.20	2.11	61,356.02	3,000.30	0.00	8.36	0.00	12.43	13,444.69	12,966.37	107,653.39
JUN	0.00	0.00	1.93	5,473.81	0.00	191.70	4,361.86	179.77	3,357.07	3.09	59,899.47	1,774.45	0.00	1.69	0.00	18.11	13,712.41	13,554.72	102,530.08
JUL	0.00	0.00	0.73	5,676.56	0.00	122.51	4,679.20	156.66	2,282.42	0.20	56,095.61	1,686.89	0.00	21.63	0.00	22.30	13,850.54	11,846.61	96,441.86
AUG	0.00	0.00	0.43	6,887.81	0.00	166.29	4,063.45	334.92	2,270.35	2.15	60,087.61	2,989.14	0.19	38.80	1.66	23.92	12,726.66	11,365.38	100,958.76
SEP	0.00	0.00	2.20	8,365.02	0.00	149.53	4,019.46	503.70	1,171.57	5.50	55,633.63	2,684.50	0.09	0.00	0.00	288.87	11,947.97	12,312.68	97,084.72
Total	**0.00**	**0.00**	**27.65**	**76,803.36**	**0.00**	**3,150.90**	**59,346.41**	**2,913.70**	**37,099.66**	**52.77**	**724,759.30**	**29,969.73**	**0.28**	**101.71**	**28.15**	**530.54**	**158,152.32**	**145,356.48**	**1,238,292.96**
Average	**0.00**	**0.00**	**2.30**	**6,400.28**	**0.00**	**262.58**	**4,945.53**	**242.81**	**3,091.64**	**4.40**	**60,396.61**	**2,497.48**	**0.02**	**8.48**	**2.35**	**44.21**	**13,179.36**	**12,113.04**	**103,191.08**
Percent	**0.00%**	**0.00%**	**0.00%**	**6.20%**	**0.00%**	**0.25%**	**4.79%**	**0.24%**	**3.00%**	**0.00%**	**58.53%**	**2.42%**	**0.00%**	**0.01%**	**0.00%**	**0.04%**	**12.77%**	**11.74%**	**100.00%**

95/96

Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furn.	Garbage	LC	Pesticide	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
OCT	0.00	0.00	5.49	8,306.43	0.00	150.58	3,529.75	639.43	1,103.24	0.30	62,568.40	713.09	0.00	2.48	0.00	109.85	14,031.60	10,258.85	101,419.49
NOV	0.00	0.00	0.47	7,577.50	0.00	165.44	3,848.98	151.54	1,170.79	5.80	59,920.30	1,236.95	0.00	0.51	0.00	30.75	11,877.69	9,065.06	95,051.78
DEC	0.00	0.00	0.09	6,486.83	0.00	146.73	4,637.98	196.79	1,110.82	4.64	60,711.75	1,630.56	0.00	6.21	0.00	23.32	11,756.81	6,828.18	93,540.71
JAN	0.00	0.00	0.00	8,199.45	0.00	164.29	5,781.94	355.70	1,086.16	4.97	67,707.15	30.16	0.00	0.00	0.00	49.41	14,589.86	6,771.91	104,741.00
FEB	0.00	0.00	0.19	8,921.47	0.00	315.23	6,827.95	216.42	1,240.79	2.55	60,711.78	0.00	0.00	1.75	0.00	6.85	12,744.83	6,960.11	97,949.92
MAR	0.00	0.00	0.00	9,752.63	0.00	145.62	6,749.53	212.68	1,724.66	5.14	64,177.95	0.00	0.00	1.92	0.00	7.23	12,201.36	7,431.40	102,410.12
APR	0.00	0.00	0.00	11,704.69	0.00	273.41	6,566.69	285.33	1,489.64	2.62	64,890.16	0.00	0.00	8.26	0.00	21.58	13,827.35	7,629.74	106,699.47
MAY	0.00	0.00	0.37	9,956.33	0.00	196.96	5,977.02	253.66	1,165.88	2.70	64,875.94	0.00	0.00	0.00	3.41	15.31	14,642.38	11,365.54	108,455.50
JUN	0.00	0.00	0.22	9,174.17	0.00	65.15	4,261.28	142.95	1,704.25	4.08	58,741.40	0.00	0.00	1.77	0.00	62.75	12,867.57	11,064.11	98,089.70
JUL	0.00	0.00	0.00	9,420.41	0.00	63.50	3,693.83	166.17	4,162.89	4.62	61,493.70	0.00	0.00	1.11	4.59	9.05	14,742.65	10,223.82	103,986.34
AUG	0.00	0.00	0.03	9,586.82	0.00	152.44	4,174.49	162.07	3,233.39	6.98	59,474.35	0.00	0.00	0.00	0.00	1.16	13,345.50	10,894.01	101,031.24
SEP	0.00	0.00	2.35	9,021.73	0.00	83.17	3,486.62	324.63	2,771.44	2.51	57,535.10	0.00	0.00	0.00	0.00	5.58	13,330.75	11,579.33	98,143.21
Total	**0.00**	**0.00**	**9.21**	**108,108.46**	**0.00**	**1,922.52**	**59,536.06**	**3,107.37**	**21,963.95**	**46.91**	**742,807.98**	**3,610.76**	**0.00**	**24.01**	**8.00**	**342.84**	**159,958.35**	**110,072.06**	**1,211,518.48**
Average	**0.00**	**0.00**	**0.77**	**9,009.04**	**0.00**	**160.21**	**4,961.34**	**258.95**	**1,830.33**	**3.91**	**61,900.67**	**300.90**	**0.00**	**2.00**	**0.67**	**28.57**	**13,329.86**	**9,172.67**	**100,959.87**
Percent	**0.00%**	**0.00%**	**0.00%**	**8.92%**	**0.00%**	**0.16%**	**4.91%**	**0.26%**	**1.81%**	**0.00%**	**61.31%**	**0.30%**	**0.00%**	**0.00%**	**0.00%**	**0.03%**	**13.20%**	**9.09%**	**100.00%**

96/97	Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furn.	Garbage	LC	Pesticide	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
	OCT	24.08	0.00	0.00	4,899.37	2,604.72	74.95	5,092.65	299.32	3,420.44	9.87	63,684.82	0.00	0.00	0.30	0.00	25.27	12,500.11	12,159.05	104,794.95
	NOV	25.16	0.00	0.00	3,735.92	3,700.11	64.80	4,816.39	251.30	2,871.07	9.65	60,493.45	0.00	0.00	0.00	1.23	74.90	9,107.87	10,911.88	96,063.73
	DEC	32.73	0.00	0.00	3,539.05	3,364.94	121.22	6,343.78	253.38	2,370.37	6.20	68,224.69	0.00	0.00	0.00	0.00	4.25	9,110.56	8,784.40	102,155.57
	JAN	30.40	0.00	0.00	4,926.70	2,674.21	105.04	7,023.80	359.02	1,726.88	5.61	69,890.70	0.00	0.00	0.00	0.00	0.00	11,397.53	9,101.15	107,241.04
	FEB	38.48	0.00	0.18	5,586.94	2,458.25	137.71	5,184.91	143.22	1,943.51	4.82	64,004.73	0.00	0.00	0.91	0.00	18.64	10,277.50	8,723.38	98,523.18
	MAR	25.11	0.00	0.05	3,689.92	2,483.20	66.34	5,759.53	187.09	853.66	5.71	69,172.09	0.00	0.00	0.00	0.00	15.21	10,792.54	10,725.87	103,776.32
	APR	29.80	0.00	0.54	3,868.09	2,559.37	154.13	4,690.37	237.72	1,172.69	4.97	67,967.76	0.00	0.00	0.00	0.00	23.60	11,789.09	10,722.18	103,220.31
	MAY	24.29	0.00	1.29	3,551.83	3,433.44	62.48	4,838.42	154.68	1,295.94	4.71	66,075.02	0.00	0.00	0.00	1.95	32.44	11,359.21	11,390.90	102,226.60
	JUN	24.27	0.00	0.00	4,166.48	3,215.69	109.49	3,227.39	185.34	1,808.05	5.57	65,657.00	0.00	0.00	0.00	11.11	45.31	12,539.44	14,122.95	105,118.09
	JUL	27.17	0.00	6.29	4,738.95	3,393.17	106.50	3,323.82	143.17	779.05	7.73	62,495.40	0.00	0.00	1.97	3.38	268.59	16,303.78	15,178.51	106,777.48
	AUG	24.29	0.00	0.00	5,565.27	3,561.30	174.93	3,555.21	155.23	1,135.23	6.11	61,959.68	0.00	0.00	0.00	0.00	343.32	18,084.09	14,138.26	108,702.92
	SEP	22.07	0.00	0.00	4,599.54	2,210.41	97.91	4,044.28	119.86	174.06	4.63	63,486.23	0.00	0.00	0.00	0.00	337.57	12,813.16	15,228.09	103,137.81
	Total	**327.85**	**0.00**	**8.35**	**52,868.06**	**35,658.81**	**1,275.50**	**57,900.55**	**2,489.33**	**19,550.95**	**75.58**	**783,111.57**	**0.00**	**0.00**	**3.18**	**17.67**	**1,189.10**	**146,074.88**	**141,186.62**	**1,241,738.00**
	Average	**27.32**	**0.00**	**0.70**	**4,405.67**	**2,971.57**	**106.29**	**4,825.05**	**207.44**	**1,629.25**	**6.30**	**65,259.30**	**0.00**	**0.00**	**0.27**	**1.47**	**99.09**	**12,172.91**	**11,765.55**	**103,274.95**
	Percent	**0.03%**	**0.00%**	**0.00%**	**4.27%**	**2.88%**	**0.10%**	**4.67%**	**0.20%**	**1.58%**	**0.01%**	**63.19%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.10%**	**11.79%**	**11.39%**	**100.00%**

97/98	Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furn.	Garbage	LC	Pest/Paint	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
	OCT	30.03	0.00	3.58	5,117.25	886.16	118.56	4,658.74	125.88	1.16	6.11	63,954.20	0.00	0.00	0.00	4.26	1,371.62	14,388.30	16,310.09	106,975.94
	NOV	29.31	0.00	0.13	3,383.36	1,101.40	106.00	4,756.44	153.59	1,512.54	6.97	61,556.38	0.00	0.00	0.00	5.99	2,867.70	15,056.04	14,171.71	104,707.56
	DEC	29.28	0.00	0.01	3,556.46	3,205.38	210.00	5,623.69	166.24	2,436.99	4.43	76,370.40	0.00	0.00	0.00	0.00	933.89	26,734.87	12,500.23	131,771.87
	JAN	30.08	0.00	0.00	3,846.19	1,777.57	162.35	5,356.55	238.28	1,080.95	9.48	73,860.62	0.00	0.00	1.33	2.91	1,782.50	18,028.13	13,811.48	119,988.42
	FEB	36.99	0.00	0.00	4,012.11	1,358.45	188.23	4,859.63	473.34	549.54	4.75	68,785.89	0.00	0.00	0.00	0.00	404.81	13,510.78	15,576.43	109,760.95
	MAR	36.57	0.00	0.54	4,359.51	1,040.02	148.89	5,910.31	290.97	758.58	8.37	74,819.39	0.00	20.75	0.00	0.00	430.69	13,989.24	15,516.77	117,330.60
	APR	23.67	0.00	0.52	4,552.77	1,130.97	244.69	5,662.41	221.24	985.41	6.69	69,318.43	0.00	14.35	12.05	0.00	249.50	15,335.40	15,697.53	113,455.63
	MAY	28.53	0.00	0.00	5,992.04	1,139.68	131.46	4,937.82	123.83	1,681.89	7.87	65,843.07	0.00	14.34	8.73	0.00	646.33	15,492.87	15,707.62	111,756.08
	JUN	24.76	0.00	0.00	5,364.35	1,013.57	139.84	4,872.86	172.25	3,369.46	4.13	67,419.02	0.00	7.95	0.97	2.42	542.72	13,737.85	16,116.31	112,788.46
	JUL	23.03	0.00	0.18	5,437.23	785.44	133.26	4,153.95	132.06	2,666.90	8.44	67,195.38	0.00	14.52	0.00	0.00	323.20	14,867.14	16,981.46	112,722.19
	AUG	30.00	0.00	0.13	4,747.50	671.25	198.66	3,731.75	245.17	1,373.54	8.10	64,250.48	0.00	12.65	0.00	0.00	434.41	14,174.91	16,781.69	106,660.24
	SEP	26.91	0.00	0.00	4,666.82	935.08	132.80	3,807.38	156.46	1,984.73	8.18	67,366.88	0.00	14.19	0.00	0.00	408.72	14,759.49	17,146.63	111,414.27
	Total	**349.16**	**0.00**	**5.09**	**55,035.59**	**15,044.97**	**1,914.74**	**58,331.53**	**2,499.31**	**18,401.69**	**83.52**	**820,740.14**	**0.00**	**98.75**	**23.08**	**15.58**	**10,396.09**	**190,075.02**	**186,317.95**	**1,359,332.21**
	Average	**29.10**	**0.00**	**0.42**	**4,586.30**	**1,253.75**	**159.56**	**4,860.96**	**208.28**	**1,533.47**	**6.96**	**68,395.01**	**0.00**	**8.23**	**1.92**	**1.30**	**866.34**	**15,839.59**	**15,526.50**	**113,277.68**
	Percent	**0.03%**	**0.00%**	**0.00%**	**4.05%**	**1.11%**	**0.14%**	**4.29%**	**0.18%**	**1.35%**	**0.01%**	**60.38%**	**0.00%**	**0.01%**	**0.00%**	**0.00%**	**0.76%**	**13.98%**	**13.71%**	**100.00%**

98/99	Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furn.	Garbage	LC	Pest/Paint	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
	OCT	28.82	0.00	0.00	7,130.23	1,501.06	343.84	4,015.31	170.98	2,080.61	8.46	67,524.06	0.00	13.70	0.00	2.12	558.47	15,608.93	17,343.25	116,329.84
	NOV	25.19	0.00	0.00	7,455.80	1,149.37	469.40	4,048.61	290.72	3,932.44	11.00	70,550.44	0.00	12.15	0.00	0.00	390.38	13,409.91	15,480.43	117,225.84
	DEC	31.23	0.00	0.00	6,969.96	719.47	586.15	4,701.64	224.02	3,518.02	13.37	76,769.96	0.00	10.29	0.00	0.00	410.43	13,822.50	13,027.89	120,804.93
	JAN	27.84	0.00	0.00	5,406.54	859.03	557.00	4,909.81	224.10	4,895.99	8.08	74,846.18	0.00	13.89	0.00	0.00	498.56	14,330.34	12,688.65	119,266.01
	FEB	30.47	0.00	0.03	6,061.65	886.32	514.29	4,752.49	235.69	6,381.01	4.31	68,363.65	0.00	11.92	0.00	0.00	551.07	13,335.25	13,503.58	114,631.73
	MAR	33.42	0.00	0.82	8,064.36	617.71	551.65	5,617.34	187.52	5,558.88	14.16	78,501.86	0.00	20.93	9.30	3.36	515.21	15,231.18	16,251.54	131,179.24
	APR	26.91	0.00	0.00	7,552.92	394.53	609.04	5,487.50	220.16	4,714.67	4.97	73,092.18	0.00	15.50	0.97	0.00	594.48	16,048.17	16,508.31	125,270.31
	MAY	22.73	0.00	1.31	6,475.69	312.83	504.42	5,536.91	151.28	3,495.96	9.88	70,640.14	0.00	17.29	12.57	0.00	507.36	15,473.88	17,378.65	120,540.90
	JUN	23.94	0.00	0.00	6,216.75	422.97	496.66	4,234.26	239.25	6,203.57	12.90	76,717.83	0.00	20.26	4.14	2.33	588.58	17,126.35	19,451.23	131,761.02
	JUL	28.32	0.00	0.32	5,671.07	263.73	304.57	3,916.79	270.37	6,655.37	12.22	70,472.43	0.00	16.79	0.00	0.00	734.69	16,356.54	18,864.34	123,567.55
	AUG	22.47	0.00	0.00	6,642.06	351.04	284.76	3,709.11	158.15	6,056.03	17.40	73,471.41	0.00	19.18	0.00	14.54	732.43	15,637.78	19,997.93	127,114.29
	SEP	22.92	0.00	0.00	5,673.29	211.39	184.92	3,434.34	197.73	4,820.80	12.40	73,683.91	0.00	13.90	13.91	5.68	681.67	16,322.87	20,778.33	126,058.06
	Total	**324.26**	**0.00**	**2.48**	**79,320.32**	**7,689.45**	**5,406.70**	**54,364.11**	**2,569.97**	**58,313.35**	**129.15**	**874,634.05**	**0.00**	**185.80**	**40.89**	**28.03**	**6,763.33**	**182,703.70**	**201,274.13**	**1,473,749.72**
	Average	**27.02**	**0.00**	**0.21**	**6,610.03**	**640.79**	**450.56**	**4,530.34**	**214.16**	**4,859.45**	**10.76**	**72,886.17**	**0.00**	**15.48**	**3.41**	**2.34**	**563.61**	**15,225.31**	**16,772.84**	**122,812.48**
	Percent	**0.02%**	**0.00%**	**0.00%**	**5.38%**	**0.52%**	**0.37%**	**3.69%**	**0.17%**	**3.96%**	**0.01%**	**59.35%**	**0.00%**	**0.01%**	**0.00%**	**0.00%**	**0.46%**	**12.40%**	**13.66%**	**100.00%**

99/00

Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furn.	Garbage	LC	Pest/Paint	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
OCT	29.93	0.00	0.00	5,904.09	186.71	147.62	3,316.23	380.88	3,800.94	12.32	75,429.94	0.00	11.39	23.38	0.00	1,030.96	14,666.95	21,885.64	126,826.98
NOV	22.22	0.00	1.08	5,918.34	143.10	176.30	4,686.77	342.37	4,676.42	13.17	74,895.94	0.00	16.42	0.00	0.00	934.72	14,372.82	21,188.47	127,388.14
DEC	36.39	0.00	0.00	5,698.34	142.50	265.52	4,775.46	328.46	4,328.21	14.47	76,583.23	0.00	20.89	18.51	3.99	642.11	14,117.24	14,518.76	121,494.08
JAN	28.13	0.00	0.47	5,730.83	254.78	159.52	4,892.84	368.16	8,255.79	8.48	75,317.43	0.00	15.37	13.40	10.26	572.11	13,904.23	13,061.84	122,593.64
FEB	28.44	0.00	0.03	5,520.51	395.23	186.74	4,042.63	500.03	4,768.14	16.02	72,963.01	0.00	16.31	23.11	0.00	718.37	13,222.10	13,865.71	116,266.38
MAR	24.78	0.00	0.00	5,975.37	417.98	220.97	4,654.17	343.40	5,183.96	12.16	79,324.98	0.00	23.11	16.57	0.00	583.42	15,373.44	14,910.71	127,065.02
APR	24.21	0.00	1.49	6,369.07	680.56	174.98	3,856.13	320.53	4,551.38	13.29	72,516.07	0.00	18.09	0.00	3.16	477.10	14,384.94	14,100.39	117,491.39
MAY	25.05	0.00	0.00	5,918.17	666.43	181.38	5,099.54	305.16	6,679.88	12.67	75,451.41	0.00	19.60	11.73	2.32	692.61	15,263.85	15,577.80	125,907.60
JUN	18.82	0.00	0.50	5,521.64	633.82	145.03	4,314.36	253.55	5,659.13	17.62	71,775.00	0.00	18.25	0.00	1.35	681.82	15,272.03	15,696.86	120,009.78
JUL	25.15	0.00	0.00	5,483.15	289.30	129.49	4,425.77	284.95	5,101.21	21.16	70,910.34	0.00	16.92	9.95	5.77	708.99	15,803.54	15,388.36	118,604.05
AUG	25.49	0.00	0.00	6,444.41	438.96	231.76	4,798.54	268.68	5,162.53	17.48	74,834.09	0.00	19.58	12.56	16.23	2,543.40	17,746.71	18,723.82	131,284.24
SEP	26.23	0.00	0.00	5,386.38	503.06	96.84	4,314.51	306.84	5,514.93	24.03	70,273.57	0.00	22.43	0.00	3.49	897.56	14,532.30	16,263.53	118,165.70
Total	**314.84**	**0.00**	**3.57**	**69,870.30**	**4,752.43**	**2,116.15**	**53,176.95**	**4,003.01**	**63,682.52**	**182.87**	**890,275.01**	**0.00**	**218.36**	**129.21**	**46.57**	**10,483.17**	**178,660.15**	**195,181.89**	**1,473,097.00**
Average	**26.24**	**0.00**	**0.30**	**5,822.53**	**396.04**	**176.35**	**4,431.41**	**333.58**	**5,306.88**	**15.24**	**74,189.58**	**0.00**	**18.20**	**10.77**	**3.88**	**873.60**	**14,888.35**	**16,265.16**	**122,758.08**
Percent	**0.02%**	**0.00%**	**0.00%**	**4.74%**	**0.32%**	**0.14%**	**3.61%**	**0.27%**	**4.32%**	**0.01%**	**60.44%**	**0.00%**	**0.01%**	**0.01%**	**0.00%**	**0.71%**	**12.13%**	**13.25%**	**100.00%**

00/01

Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furn.	Garbage	LC	Pest/Paint	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
OCT	35.41	0.00	0.78	5,361.70	536.81	135.38	4,099.36	274.50	3,886.63	23.44	76,361.31	0.00	40.87	22.68	3.15	728.93	16,527.90	16,388.72	124,427.57
NOV	25.40	0.00	0.00	5,278.28	88.00	112.47	3,360.84	276.81	5,676.68	25.91	76,844.28	0.00	27.74	0.08	4.37	676.46	14,214.76	13,881.03	120,493.11
DEC	26.57	0.00	0.00	4,786.04	47.19	251.83	5,379.57	193.25	8,076.91	37.81	77,103.01	0.00	10.96	0.00	0.00	350.24	13,929.38	10,861.61	121,054.37
JAN	30.55	0.00	0.00	4,333.81	71.21	152.08	6,014.81	466.71	4,614.96	36.32	79,731.75	0.00	16.93	10.90	5.69	502.07	14,741.07	12,215.72	122,944.58
FEB	30.21	0.00	0.00	4,443.20	44.91	178.36	5,512.18	327.95	4,888.15	41.73	70,793.69	0.00	24.90	0.00	2.81	574.84	13,447.32	12,815.95	113,126.20
MAR	27.72	0.00	0.00	5,002.41	46.07	210.24	5,513.66	383.54	4,741.50	36.21	81,001.95	0.00	11.99	0.00	0.00	602.72	15,841.51	15,540.83	128,960.35
APR	31.32	0.00	1.13	4,690.49	55.56	89.37	5,323.18	326.04	3,856.28	33.72	74,681.73	0.00	12.73	0.00	11.44	574.03	15,830.68	14,469.89	119,987.59
MAY	36.32	0.00	0.21	5,970.43	78.12	112.66	5,301.67	372.14	4,474.77	12.37	77,468.21	0.00	250.78	0.26	6.38	676.77	16,927.00	17,072.76	128,760.85
JUN	24.03	0.00	0.87	6,018.64	77.29	127.91	3,727.38	499.64	4,339.29	9.59	74,775.70	0.00	18.58	0.00	2.67	770.59	17,175.61	17,514.89	125,082.68
JUL	27.16	0.00	9.64	6,080.58	119.31	150.68	3,884.75	425.79	5,204.60	14.70	78,090.39	0.00	22.49	0.00	6.15	1,635.36	16,887.58	17,414.84	129,974.02
AUG	26.85	0.00	0.00	7,141.26	96.20	193.19	4,195.53	346.38	4,318.29	12.91	77,542.10	0.00	19.52	0.00	4.40	1,458.59	16,938.83	18,410.64	130,704.69
SEP	33.22	0.00	0.00	5,607.28	109.10	69.29	4,075.55	277.57	4,726.00	12.99	70,346.37	0.00	12.75	0.00	0.00	934.04	15,018.43	17,160.18	118,382.77
Total	**354.76**	**0.00**	**12.63**	**64,714.12**	**1,369.77**	**1,783.46**	**56,388.48**	**4,170.32**	**58,804.06**	**297.70**	**914,740.49**	**0.00**	**470.24**	**33.92**	**47.06**	**9,484.64**	**187,480.07**	**183,747.06**	**1,483,898.78**
Average	**29.56**	**0.00**	**1.05**	**5,392.84**	**114.15**	**148.62**	**4,699.04**	**347.53**	**4,900.34**	**24.81**	**76,228.37**	**0.00**	**39.19**	**2.83**	**3.92**	**790.39**	**15,623.34**	**15,312.26**	**123,658.23**
Percent	**0.02%**	**0.00%**	**0.00%**	**4.36%**	**0.09%**	**0.12%**	**3.80%**	**0.28%**	**3.96%**	**0.02%**	**61.64%**	**0.00%**	**0.03%**	**0.00%**	**0.00%**	**0.64%**	**12.63%**	**12.38%**	**100.00%**

01/02

Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furn.	Garbage	LC	Pest/Paint	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
OCT	39.36	0.00	3.16	7,538.43	121.88	119.80	4,366.43	149.62	4,887.16	14.52	80,051.97	0.00	17.84	0.00	0.00	1,266.16	17,830.55	19,391.01	135,797.89
NOV	27.16	0.00	0.00	6,712.73	28.03	79.09	4,899.44	89.69	5,619.19	14.98	77,287.88	0.00	21.13	0.00	6.98	860.12	14,954.28	15,161.21	125,761.91
DEC	33.94	0.00	0.00	5,969.71	71.04	120.14	5,534.03	193.51	5,253.46	17.90	79,533.80	0.00	25.30	0.00	0.70	604.62	14,342.68	12,332.41	124,033.24
JAN	29.99	0.00	0.00	5,925.52	3.61	158.99	5,247.15	265.38	6,294.81	14.19	82,873.32	0.00	29.77	11.09	4.60	730.06	15,336.88	14,734.75	131,660.11
FEB	28.44	0.00	0.00	5,972.42	29.51	100.84	5,142.97	133.72	4,514.17	11.06	77,101.58	0.00	20.91	0.00	3.10	462.26	14,481.86	15,070.55	123,073.39
MAR	43.84	0.00	0.00	5,586.53	31.82	140.53	6,362.86	99.38	5,054.31	17.59	76,330.01	0.00	19.56	11.29	0.00	606.31	14,536.74	13,562.98	122,403.75
APR	28.25	0.00	0.00	6,365.51	106.41	204.93	6,289.43	92.74	3,197.34	13.41	82,324.53	0.00	24.95	0.00	0.00	528.30	16,461.67	15,629.01	131,266.48
MAY	36.52	0.00	0.00	7,525.60	71.01	94.16	5,567.86	3,232.51	12,496.83	15.33	81,580.75	0.00	22.95	0.00	5.05	1,060.18	16,891.76	18,804.57	147,405.08
JUN	31.68	0.00	0.00	6,227.50	66.93	66.42	5,741.94	3,593.71	3,404.02	11.86	77,740.57	0.00	23.68	0.00	3.21	1,717.47	15,493.66	17,933.31	132,055.96
JUL	38.92	0.00	4.62	5,876.28	133.85	56.93	5,078.12	4,179.39	3,979.46	9.27	82,982.94	0.00	24.66	0.00	12.21	1,630.43	17,231.18	19,140.43	140,378.69
AUG	35.03	0.00	0.00	6,298.73	111.59	94.24	3,479.61	1,368.28	4,735.51	15.31	78,707.20	0.00	27.38	0.00	0.00	2,258.45	16,478.85	20,280.77	133,890.95
SEP	36.53	0.00	0.77	4,869.94	191.27	154.96	4,102.27	3,098.28	11,402.90	13.36	74,171.20	0.00	24.02	0.00	0.86	1,874.88	14,613.66	17,285.02	131,839.92
Total	**409.66**	**0.00**	**8.55**	**74,868.90**	**966.95**	**1,391.03**	**61,812.11**	**16,496.21**	**70,839.16**	**168.78**	**950,685.75**	**0.00**	**282.15**	**22.38**	**36.71**	**13,599.24**	**188,653.77**	**199,326.02**	**1,579,567.37**
Average	**34.14**	**0.00**	**0.71**	**6,239.08**	**80.58**	**115.92**	**5,151.01**	**1,374.68**	**5,903.26**	**14.07**	**79,223.81**	**0.00**	**23.51**	**1.87**	**3.06**	**1,133.27**	**15,721.15**	**16,610.50**	**131,630.61**
Percent	**0.03%**	**0.00%**	**0.00%**	**4.74%**	**0.06%**	**0.09%**	**3.91%**	**1.04%**	**4.48%**	**0.01%**	**60.19%**	**0.00%**	**0.02%**	**0.00%**	**0.00%**	**0.86%**	**11.94%**	**12.62%**	**100.00%**

02/03 Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furn./App	Garbage	LC	Pest/Paint	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
OCT	41.83	0.00	0.00	6,004.05	261.27	341.44	5,005.58	752.25	22,889.02	17.84	79,959.99	0.00	20.03	6.76	2.84	1,463.43	15,219.54	16,544.26	148,530.13
NOV	33.83	0.00	0.00	5,456.46	185.24	392.66	4,846.04	149.83	4,005.34	25.69	78,743.07	0.00	22.30	0.00	8.50	791.07	14,211.79	16,290.02	125,161.84
DEC	39.06	0.00	0.00	4,202.38	280.94	286.43	5,555.02	164.16	8,220.82	34.64	87,215.24	0.00	23.22	8.79	11.65	1,602.60	14,311.08	13,782.12	135,738.15
JAN	34.73	0.00	1.58	5,785.14	222.08	419.77	5,702.42	206.75	8,831.75	15.89	84,947.05	0.00	35.60	0.14	7.71	1,431.45	14,778.96	14,614.32	137,035.34
FEB	31.06	0.00	0.00	5,483.43	142.04	403.10	4,786.56	186.51	7,014.66	19.52	78,843.50	0.00	18.43	0.00	0.00	1,020.31	13,676.44	15,300.88	126,926.44
MAR	33.67	0.00	0.00	6,136.99	330.64	282.84	6,603.84	136.54	8,093.68	23.85	88,486.37	0.00	23.02	0.00	7.11	1,322.04	16,440.24	20,269.31	148,190.14
APR	34.12	0.00	0.00	5,888.21	191.16	193.43	6,378.57	335.35	18,668.77	21.97	86,406.08	0.00	24.42	0.00	13.76	1,687.69	17,363.24	19,631.90	156,838.67
MAY	32.50	0.00	0.00	6,147.44	169.04	195.49	5,550.30	542.42	30,150.47	26.23	86,192.02	0.00	30.10	0.00	11.90	938.95	17,926.73	20,061.39	167,974.98
JUN	31.72	0.00	2.03	6,483.08	227.18	186.48	4,307.54	699.67	9,332.07	20.54	82,088.83	0.00	21.49	0.00	3.44	2,123.37	17,453.86	21,424.08	144,405.38
JUL	31.73	0.00	4.66	6,097.76	175.09	193.26	4,731.34	1,391.74	15,885.55	18.75	81,808.35	0.00	31.85	10.33	5.80	2,724.60	17,130.77	22,131.72	152,373.30
AUG	38.15	0.00	1.06	6,292.26	208.57	131.13	4,938.11	2,460.00	10,986.20	22.37	80,948.25	0.00	44.10	0.00	2.54	3,035.19	15,934.22	22,646.19	147,688.34
SEP	38.91	0.00	0.00	5,965.53	130.40	105.91	4,546.56	3,428.72	22,975.56	19.90	81,934.74	0.00	30.35	0.05	4.88	1,292.56	16,593.83	22,680.32	159,748.22
Total	**421.31**	**0.00**	**9.33**	**69,942.73**	**2,523.65**	**3,131.94**	**62,951.88**	**10,453.94**	**167,053.89**	**267.19**	**997,573.49**	**0.00**	**324.91**	**26.07**	**80.13**	**19,433.26**	**191,040.70**	**225,376.51**	**1,750,610.93**
Average	**35.11**	**0.00**	**0.78**	**5,828.56**	**210.30**	**261.00**	**5,245.99**	**871.16**	**13,921.16**	**22.27**	**83,131.12**	**0.00**	**27.08**	**2.17**	**6.68**	**1,619.44**	**15,920.06**	**18,781.38**	**145,884.24**
Percent	**0.02%**	**0.00%**	**0.00%**	**4.00%**	**0.14%**	**0.18%**	**3.60%**	**0.60%**	**9.54%**	**0.02%**	**56.98%**	**0.00%**	**0.02%**	**0.00%**	**0.00%**	**1.11%**	**10.91%**	**12.87%**	**100.00%**

03/04 Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furn./App	Garbage	LC	Pest/Paint	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
OCT	39.01	0.00	0.00	6,622.89	60.46	172.64	4,966.58	1,054.16	27,266.08	25.10	83,280.46	0.00	21.70	0.00	0.00	950.97	15,244.31	21,501.01	161,205.37
NOV	29.85	0.00	0.00	5,830.30	1.40	152.24	4,595.21	1,116.85	11,078.83	22.52	80,342.64	0.00	23.25	0.00	14.63	828.81	13,558.66	18,161.62	135,756.81
DEC	35.16	0.00	0.39	5,627.50	2.06	1,548.45	5,786.22	1,800.70	8,250.81	23.42	93,006.37	0.00	30.95	0.00	7.41	639.99	14,114.57	17,018.84	147,892.84
JAN	41.85	0.00	1.14	6,208.64	0.00	112.21	5,665.62	628.45	8,364.68	22.30	87,947.47	0.00	34.02	0.85	2.87	752.55	13,969.12	16,825.97	140,577.74
FEB	37.76	0.00	0.00	6,242.82	19.90	584.40	5,067.48	1,400.81	6,720.63	20.05	82,824.86	0.00	20.70	0.00	5.68	508.22	13,692.18	15,756.28	132,901.77
MAR	39.71	0.00	2.75	5,500.25	0.00	259.21	6,740.49	1,537.29	9,978.99	50.36	93,969.16	0.00	46.11	0.00	0.74	767.87	16,045.76	20,630.48	155,569.17
APR	36.50	0.00	0.16	5,702.52	0.00	161.18	7,365.53	1,353.43	7,253.87	15.49	88,504.46	0.00	28.15	0.00	2.34	1,025.76	17,615.31	21,409.11	150,473.81
MAY	29.90	0.00	2.15	5,761.06	0.00	101.33	5,275.58	135.13	8,684.55	16.91	85,063.42	0.00	21.45	0.00	14.94	694.96	17,421.34	22,872.15	146,094.87
JUN	44.54	0.00	0.00	17,687.61	0.00	126.94	5,137.44	679.63	16,514.17	21.34	86,558.12	0.00	30.55	0.00	1.07	788.17	18,322.96	24,473.37	170,385.91
JUL	33.21	0.00	0.00	6,489.77	0.00	212.42	4,783.93	1,130.05	20,717.07	25.32	85,310.33	0.00	32.60	0.00	11.92	820.77	18,926.38	23,347.59	161,841.36
AUG	39.11	0.00	0.00	6,570.04	0.00	142.02	4,557.97	2,061.44	13,836.83	22.14	88,738.61	0.00	37.05	0.00	16.44	149.60	18,636.74	26,008.31	160,816.30
SEP	30.93	0.00	0.00	6,972.31	18.94	118.64	4,623.93	759.84	7,488.84	20.34	111,183.74	0.00	22.37	0.00	2.99	1,639.68	13,492.61	22,470.24	168,845.40
Total	**437.53**	**0.00**	**6.59**	**85,215.71**	**102.76**	**3,691.68**	**64,565.98**	**13,657.78**	**146,155.35**	**285.29**	**1,066,729.64**	**0.00**	**348.90**	**0.85**	**81.03**	**9,567.35**	**191,039.94**	**250,474.97**	**1,832,361.35**
Average	**36.46**	**0.00**	**0.55**	**7,101.31**	**8.56**	**307.64**	**5,380.50**	**1,138.15**	**12,179.61**	**23.77**	**88,894.14**	**0.00**	**29.08**	**0.07**	**6.75**	**797.28**	**15,920.00**	**20,872.91**	**152,696.78**
Percent	**0.02%**	**0.00%**	**0.00%**	**4.65%**	**0.01%**	**0.20%**	**3.52%**	**0.75%**	**7.98%**	**0.02%**	**58.22%**	**0.00%**	**0.02%**	**0.00%**	**0.00%**	**0.52%**	**10.43%**	**13.67%**	**100.00%**

Significant impact from Hurricanes Frances and Jeanne

04/05 Month	Animals	Reef	Asbestos	C/D	Residue	Tires	Sludge	Direct	Fill	Furn./App	Garbage	LC	Pest/Paint	Special	Trailers	Mulch	Trash/Other	Vegetation	Total
OCT	45.11	0.00	0.00	12,590.13	0.00	118.83	5,024.78	219.48	19,906.74	20.29	96,423.44	0.00	23.18	0.00	7.49	528.27	14,551.56	22,079.64	171,538.94
NOV	41.82	0.00	0.00	12,304.79	0.00	111.32	6,442.78	128.46	21,194.71	23.02	94,856.70	0.00	27.83	0.00	20.44	1,615.77	15,188.93	21,827.72	173,784.29
DEC	31.44	0.00	0.00	12,500.47	0.00	343.09	6,707.04	681.82	25,375.23	27.02	97,800.29	0.00	39.46	0.00	0.00	259.27	22,197.92	21,320.00	187,283.05
JAN	39.57	0.00	1.87	12,275.42	3.58	238.04	6,425.29	1,695.23	17,205.22	32.22	96,296.96	0.00	27.52	0.00	8.07	671.27	18,517.96	19,580.85	173,019.07
FEB	32.89	0.00	0.00	13,802.74	0.73	311.27	6,839.97	1,534.59	18,552.60	31.46	88,239.89	0.00	19.67	0.00	0.00	651.60	16,202.42	16,720.86	162,940.69
MAR	38.87	0.00	0.00	14,014.56	0.00	385.43	8,729.67	739.67	23,859.19	23.94	104,044.42	0.00	43.49	0.00	5.35	478.83	17,880.00	18,783.71	189,027.13
APR	34.04	0.00	1.79	12,454.07	3.85	160.04	7,942.95	122.83	23,533.06	16.73	94,732.89	0.00	43.95	0.00	0.00	779.48	17,850.71	19,436.76	177,113.15
MAY	31.78	0.00	0.11	13,041.44	0.00	133.48	6,940.42	2,517.17	27,104.22	22.61	95,318.14	0.00	34.20	0.00	0.00	937.81	17,359.92	20,311.25	183,752.55
JUN	25.99	0.00	0.00	11,335.57	0.00	138.97	6,533.94	2,265.49	16,773.65	25.26	97,939.56	0.00	52.55	2.90	3.01	306.89	19,055.56	23,721.09	178,180.43
JUL	24.91	0.00	0.00	10,423.19	0.00	143.56	5,615.06	625.61	8,864.30	15.57	86,879.16	0.00	32.60	0.00	0.79	848.87	17,389.49	21,978.09	152,841.20
AUG	27.90	0.00	0.37	11,751.47	0.00	170.78	5,946.68	959.13	9,274.26	15.28	91,187.85	0.00	32.53	0.00	0.70	597.53	16,762.63	24,898.99	161,626.10
SEP	28.26	0.00	0.00	10,513.70	0.00	182.81	5,697.16	1,788.86	8,577.27	23.84	85,721.65	0.00	29.78	0.00	14.23	657.53	16,496.55	26,511.29	156,242.93
Total	**402.58**	**0.00**	**4.14**	**147,007.55**	**8.16**	**2,437.62**	**78,845.74**	**13,278.34**	**220,220.45**	**277.24**	**1,129,440.95**	**0.00**	**406.76**	**2.90**	**60.08**	**8,333.12**	**209,453.65**	**257,170.25**	**2,067,349.53**
Average	**33.55**	**0.00**	**0.35**	**12,250.63**	**0.68**	**203.14**	**6,570.48**	**1,106.53**	**18,351.70**	**23.10**	**94,120.08**	**0.00**	**33.90**	**0.24**	**5.01**	**694.43**	**17,454.47**	**21,430.85**	**172,279.13**
Percent	**0.02%**	**0.00%**	**0.00%**	**7.11%**	**0.00%**	**0.12%**	**3.81%**	**0.64%**	**10.65%**	**0.01%**	**54.63%**	**0.00%**	**0.02%**	**0.00%**	**0.00%**	**0.40%**	**10.13%**	**12.44%**	**100.00%**

Solid Waste Authority of Palm Beach County
Petition for Modification of Conditions of Certification (PA 84-20)

Appendix B
Conditions of Certification (PA 84-20)

3582061 / FTL

MALCOLM PIRNIE

STATE OF FLORIDA

DEPARTMENT

OF

ENVIRONMENTAL PROTECTION

Conditions of Certification

Palm Beach County
Resource Recovery Facility

PA 84-20K

Modified February 17, 2009

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I. CHANGE IN DISCHARGE

All discharges or emissions authorized herein shall be consistent with the terms and conditions of this certification. The discharge of any regulated pollutant not identified in the application, or more frequent than, or at a level in excess of that authorized herein, shall constitute a violation of the certification. Any anticipated facility expansions beyond the certified initial nameplate capacity of 2,000 TPD, production increases, or process modifications which may result in new, different, or increased discharge of pollutants, change in type of fuel as described in XIV.B., or expansion in steam generating capacity must be reported by submission of a supplemental application pursuant to Chapter 403, Florida Statutes.

II. NONCOMPLIANCE NOTIFICATION

If, for any reason, the Permittee (defined as the Applicant, Palm Beach County Solid Waste Authority or assigns) does not comply with or will be unable to comply with any limitation specified in this certification, the Permittee shall notify the Southeast Florida District Office of the Department of Environmental Protection (Southeast District Office) and the Palm Beach County Health Department (PBCHD) by telephone within a working day that said noncompliance occurs and shall confirm this in writing within seventy-two (72) hours of becoming aware of such conditions, and shall supply the following information:

A. A description of the discharge and cause of noncompliance; and

B. The period of noncompliance including exact dates and times, or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying event.

III. FACILITIES OPERATION

The Permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the Permittee to achieve compliance with the terms and conditions of this certification. Stoppages of landfill operations induced by weather conditions shall be allowed until the weather permits operations to resume. In the event of a malfunction of a resource recovery boiler's pollution control system that unit's furnace emissions must be shifted to the extent feasible to the remaining unit having a properly functioning pollution control system. In the event of a prolonged [thirty (30) days or more] equipment malfunction or shutdown of air pollution control equipment, operation could be permitted to continue to take place under a consent order, only if the Permittee demonstrates that such operation will be in compliance with all applicable ambient air quality standards and PSD increments, solid waste rules, domestic waste rules and industrial waste rules. Additionally, during such malfunction or shutdown, the source shall comply with all other requirements of this certification and all applicable state and federal emission standards not affected by the malfunction or shutdown which is the subject of the consent order. Administrative action will not be initiated in the event of such a malfunction for 25 days following a malfunction unless there is an imminent health threat. However, if at thirty (30) days following a malfunction compliance has not been achieved by the source, an order for Corrective Action may be immediately imposed upon the Applicant, subject to

the provisions of Chapter 120 of the Florida Statutes. Operational stoppage exceeding two hours for air pollution control systems or four hours for other systems or operational malfunctions as noted below exceeding two hours for air pollution control systems or four hours for other systems and as defined in the operational contingency plans as specified in Condition XVII are to be reported as specified in Condition II. Identified operational malfunctions which do not stop operation but do compromise the integrity the operation shall be reported to the Southeast District Office as specified in Condition II.

IV. ADVERSE IMPACT

The Permittee shall take all reasonable steps to minimize any adverse impact resulting from noncompliance with any limitation specified in this certification, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

V. RIGHT OF ENTRY

The Permittee shall allow during operational hours the Secretary of the Florida Department of Environmental Protection and/or authorized representatives, upon the presentation of credentials:

A. To enter upon the Permittee's premises where an effluent source is located or in which records are required to be kept under the terms and conditions of this certification, and

B. To have access during normal business hours (Mon.-Fri., 9:00 A.M. to 5:00 P.M.) to any records required to be kept under the conditions of this certification for examination and copying, and

C. To inspect and test any monitoring equipment or monitoring method required in this certification and to sample any discharge or pollutants, and

D. To assess any damage to the environment or violation of ambient standards.

VI. REVOCATION OR SUSPENSION

This certification may be suspended or revoked for violations of any of its conditions pursuant to Section 403.512, Florida Statutes.

VII. CIVIL AND CRIMINAL LIABILITY

This certification does, not relieve the Permittee from civil or criminal penalties for noncompliance with any conditions of this certification, applicable rules or regulations of the Department or Chapter 403, Florida Statutes, or regulations thereunder.

Subject to Section 403 511, Florida Statutes, this certification shall not preclude the institution of any legal action or relieve the Permittee from any responsibilities or penalties established pursuant to any other applicable State Statutes, or regulations.

VIII. PROPERTY RIGHTS

The issuance of this certification does not convey any property rights in either real or personal property, nor any exclusive privileges, nor 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.

IX. SEVERABILITY

The provisions of this certification are severable, and if any provision of this certification or the application of any provision of this certification to any circumstances, is held invalid, the application of such provisions to other circumstances and the remainder of the certification shall not be affected thereby.

X. DEFINITIONS

The meaning of terms used herein shall be governed by the definitions contained in Chapter 403, Florida Statutes, and any regulations adopted pursuant thereto. In the event of any dispute over the meaning of a term in these conditions which is not defined in such statutes or regulations, such dispute shall be resolved by reference to the most relevant definitions contained in any other state or federal statute or regulation. Words or phrases used herein dealing with conditions of the South Florida Water Management District (SFWMD) shall be defined by reference to Chapter 373, Florida Statutes or applicable rules of the SFWMD. Contaminated water shall include leachate and runoff that have been in contact with ash or solid waste.

XI. REVIEW OF SITE CERTIFICATION

The certification shall be final unless revised, revoked or suspended pursuant to law. At least every five years from the date of issuance of certification the Department shall review all monitoring data that has been submitted to it during the preceding five-year period for the purpose of determining the extent of the Permittee's compliance with the conditions of this certification and the environmental impact of this facility. The Department shall submit the results of its review and recommendations to the Permittee. Such review will be repeated at least every five years thereafter.

XII. MODIFICATION OF CONDITIONS

A. Pursuant to Subsection 403.516(1), Florida Statutes, the Siting Board hereby delegates to the Secretary of the Department of Environmental Protection, who further delegates to the Siting Coordination Office, the authority to modify, after notice and opportunity for hearing, any condition of this certification which would not otherwise require approval from the Siting Board.

B. This certification shall be automatically modified to conform to any subsequent amendments, modifications, or renewals made by the Department under a federally delegated or approved program to any separately issued Prevention of Significant Deterioration (PSD) permit, Title V air permit, or National Pollutant Discharge Elimination System (NPDES) permit for the certified facility. The Permittee shall send each party to the original certification proceedings (at the party's last known address as shown in the record of such proceeding) notice of requests for modifications or renewals of the above listed permits if the request involves a relief mechanism (e.g., mixing zone, variance, etc.) from standards, a relaxation of conditions included in the permit due to state permitting requirements, or the inclusion of less restrictive air emission limitations

in the air permits. The Department shall notify all parties to the certification proceeding of any intent to modify conditions under this section prior to taking final agency action.

C. All other modifications to these conditions shall be made in accordance with Section 403.516, Florida Statutes.

XIII. CONSTRUCTION

The facility shall be constructed, at a minimum, pursuant to the design standards presented in the application and the standards or plans and drawings submitted and signed by an engineer registered in the state of Florida. The Applicant shall present upon request, specific facility plans, as developed, for review by the Southeast District Office, South Florida Water Management District and PBCHD prior to construction pursuant to the portions of the plans then being submitted. Specific Southeast District Office approval of plans will be required based upon a determination of consistency with approved design concepts, regulations and these Conditions prior to initiating construction of the: leachate collection system, air pollution control equipment, wastewater treatment and disposal systems, composting operations, domestic waste and septage handling and treatment systems, stormwater runoff system, landfill closure plans and hazardous, toxic or pathological handling facilities or areas. Review and action by the Southeast District Office or SFWMD on said plans shall be accomplished in no longer than ninety (90) days from the date of a complete submittal of such plans and any action may be subject to review pursuant to Chapter 120, Florida Statutes. Approvals shall not be unreasonably withheld.

A. Control Measures

1. Stormwater Runoff

a) To control runoff during construction which may reach and thereby pollute Waters of the State, necessary measures shall be utilized to settle, filter, treat or absorb silt-containing or pollutant-laden stormwater to ensure against spillage or discharge of excavated material that may cause turbidity in excess of 29 Nephelometric Turbidity Units above background in Waters of the State. Control measures may consist of sediment traps, barriers, berms, and vegetation plantings. Exposed or disturbed soil shall be protected and stabilized as soon as possible to minimize silt and sediment-laden runoff. The pH of the runoff shall be kept within the range of 6.0 to 8.5. The Permittee shall comply with Florida Administrative Code Chapters 62-302 and 40E-4. The Permittee shall complete the forms required by 40E-4 and submit those forms and the required information to the SFWMD and Southeast District Office for approval no later than 90 days prior to start of construction, including design drawings indicating flow drainage plans during facility construction and operation. To prevent the discharge-of turbid water {greater than 29 NTU's above background) from the site during construction, a temporary berm with 3H:1V side s lopes and an elevation sufficient to contain the 25 year, 3 day storm event shall be constructed around the resource recovery site (except for the landfill areas and Jog Road) prior to commencement of work on the facility.

b) The new recovered materials processing facility (new RMPF) will be constructed as described in the licensee's petition for modification dated

November 16, 2007 and subsequent additional information submitted in support of the petition. The new operations and maintenance buildings will be constructed as described in the licensee's petition for modification dated March 20, 2008 and subsequent additional information submitted in support of the petition. Construction of the new RMPF, and the new operations and maintenance buildings shall be conducted in a manner which does not cause violations of state water quality standards. The licensee shall implement best management practices for erosion and sedimentation control to prevent violations of state water quality standards. Turbidity curtains, entrenched silt screens, hay bales or other sediment control measures shall be properly deployed and maintained throughout the construction period to prevent erosion and escape of sediments from the work area to adjacent surfaces and waters. As an initial precaution, prior to construction, sediment control measures shall be installed around the perimeter of the area to be developed, with additional devices and measures deployed in specific work areas. All areas disturbed by construction shall be stabilized and vegetated immediately after construction to prevent erosion. [Chapters 40 E-4.381, 40 E-40, and SFWMD Basis of Review]

c) At least 48 hours prior to commencement of construction of the new RMPF, and the new operations and maintenance buildings the licensee shall submit to the Department an "Environmental Resource Permit Construction Commencement" notice (Form No. 62-343.900(3), F.A.C.) indicating the actual start date and the expected completion date. When the duration of construction will exceed one year, the licensee shall submit construction status reports to the Department on an annual basis utilizing an "Annual Status Report Form" (Form No. 62-343.900(4), F.A.C.). Status Report Forms shall be submitted the following June of each year. [Chapter 40E-4.381, and 62-343.900, F.A.C.]

d) Within 30 days after completion of construction of the stormwater management system for the new RMPF and the new operations and maintenance buildings, the licensee shall submit to the Siting Office and copy the DEP SED Office a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the supplied "Environmental Resource Permit As-Built Certification by a Registered Professional" (Form No. 62-343.900(5), F.A.C.) and a copy of the "as-built" drawings. The statement of completion and certification shall be based on on-site observation of construction or review of as-built drawings for the purpose of determining if the work was completed in compliance with permitted plans and specifications. This submittal shall serve to notify the Department that the system is ready for inspection. Additionally, if deviations from the approved drawings are discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawing. All surveyed dimensions and elevations shall be certified by a registered surveyor. [Chapter 40E-4.381, and 62-343.900, F.A.C.]

e) Any delineation of the extent of a wetland or other surface water submitted as part of the application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this

license or a formal determination under section 373.421(2), F.S., provides otherwise. [Chapter 40E-4.381]

f) The surface water management system for the new RMPF shall be constructed in accordance with the signed and sealed drawings included in Appendix D of the Petition for Modification dated November 2007 and updated drawings dated 12/31/07 on file with the Siting and DEP Southeast District Offices. Retention Pond 1 and Pond 2 bottom shall be @ 16.70 feet NGVD and top of bank elevation shall be at 19.0 feet NGVD. Outfall structures shall be equipped with pollutant retardant baffles. The discharge control structures shall consist of control structure CS-A and CS-B as described below: [Chapter 40 E-4, 40 E-40, and SFWMD Basis of Review]

Structure	**Description (inches)**	**Crest Elevation (ft. NGVD)**	**Discharge Culvert**
CS-A	Weir: 1-24”(span) by 19.44”(rise) 3-inch circular bleeder	17.28 15.7 (invert)	2 - 24-inch RCP
CS-B	Weir: 1-36”(span) by 19.44”(rise 3-inch circular bleeder	16.98 15.7 (invert)	2 - 24-inch RCP

g) The surface water management system for the new Operations and Maintenance Building Project shall be constructed in accordance with the signed and sealed drawings (Sheets G-1 to G-4, Sheets 1 to 4, C-1 to C-12, CD-1 to CD-6) dated September 2008 and on file with the Southeast District. The system shall consists of Retention Pond-1 and Pond-2 with bottom elevation @ 18.0 feet NGVD and top of bank elevation @ 21.5 feet NGVD, providing a storage volume of 0.27 ac-ft.. Outfall structures shall be equipped with pollutant retardant baffles. All building floors shall be set at or above 22.5 NGVD.

The discharge control structures shall consist of control structure CS-2 as described below: [Chapter 40 E-4, 40 E-40, and SFWMD Basis of Review]

Structure	Description (inches)	Crest Elevation (ft. NGVD)	Discharge Culvert
CS-2	Weir: 1-11.5” wide 20 deg. V-Notch	19.10 17.0 (invert)	1 - 24-inch RCP. (To Jog Road Swale System)

h. Prior to start of construction, of the new RMPF and the new operations and maintenance buildings the licensee shall prepare a Storm Water Pollution Prevention Plan and submit a copy of the National Pollutant Discharge Elimination System (NPDES) Notice of Intent (NOI) to use a Construction Generic Permit (CGP) for stormwater discharges (as applicable) to the DEP NPDES Stormwater Notices Center.

2. Burning

Open burning in connection with land clearing shall be in accordance with Chapter 62-256, F.A.C., and Uniform Fire Code Section 33.101 Addendum. No additional permits shall be required, but prior to each act of burning, the Division of Forestry shall be contacted to determine if satisfactory conditions exist for burning. Open burning shall not occur if the Division of Forestry or Palm Beach County Fire and Rescue Department has issued a ban on burning due to fire hazard conditions.

3. Sanitary Wastes

Disposal of sanitary wastes from construction toilet facilities shall be in accordance with applicable regulations of the appropriate local health agency.

4. Solid Wastes

Solid wastes resulting from construction shall be disposed of in accordance with the applicable regulations of Chapter 62-701, F.A.C.

The licensee is hereby granted permission to construct and operate a Solid Waste Resource Recovery and Materials Recycling Facility (SWRRMRF) in accordance with the letter, documents and plans submitted on August 9, 1990. The operations of the associated facility shall be pursuant to all applicable portions of Chapter 17-701, F.A.C. This SWRRMRF shall be relocated when the future landfill foot-print expansion is necessitated pursuant to the future landfill phasing plans, phases IV and final, Job No. 22-046.10, SHW #875-0987D, Sheets 4 of 5 and 5 of 5, dated September 29, 1987, prepared by Post, Buckley, Schuh and Jernigan, Inc.

5. Noise

Construction noise shall not exceed either local noise ordinance specifications, or those noise standards imposed by zoning.

6. Dust

The Permittee shall employ proper dust-control techniques to minimize unconfined emissions.

7. Transmission Lines

The directly associated transmission lines from the Resource Recovery Facility electric generators to the existing Florida Power and Light Company transmission system shall be cleared, maintained and prepared without the use of herbicides. Construction of a substation on the certified site east of the Turnpike shall

not be allowed without a supplemental application and demonstration of compliance with sections 403.508(1) and (2), F.S.

8. Conservation Easement

Before the commencement of any construction herein authorized, the Permittee shall file and have recorded, in the same manner as any other instrument affecting the title to real property, a conservation easement pursuant to Section 704.06, Florida Statutes, in the office of the Clerk of the Circuit Court, Palm Beach County, for the designated conservation area identified in the mitigation plan, west of Jog Road and the Resource Recovery Facility west to the Water Catchment Area excluding operational areas.

The Permittee shall pay all recording fees. The conservation easement shall be in favor of the Department of Environmental Protection and shall restrict any activity including dredging and filling of land, cutting, eradicating or pruning of endemic vegetation beyond the scope of the approved mitigation plan indicated in Section 4.2 of the application and Condition XX. A draft conservation easement and a certified survey with a legal description shall be submitted to the Southeast District office for review and approval before it is filed (by the County) with the Clerk of the Circuit Court. Palm Beach County.

9. Written Notice

Written notice from the Department indicating that Condition No. XIII.A.8. has been satisfied shall be obtained by the Permittee prior to the beginning of any construction. All mitigation in the shell pit area shall be in accordance with the time schedule outlined in the mitigation plan approved per Condition XX.

10. Time Limitations

If the proposed construction of the resource recovery facility, within the jurisdiction area, has not been completed within 5 years of the date of certification, a permit application shall be resubmitted to the Department for evaluation and shall be accompanied by the appropriate tee.

11. Monitoring

The following surface water monitoring program shall be implemented during construction for:

Parameter: Dissolved oxygen, temperature (C), pH, total and fecal coliform bacteria, salmonella, iron, lead, copper, mercury, cadmium, zinc, silver and turbidity.

Frequency: Quarterly throughout the year except that the samples shall be collected monthly for April, June, August and September. Sampling shall begin at least 30 days prior to initial construction for background levels. All samples shall be taken for a 24 hour period, at 4 hour intervals beginning one hour before sunrise.

Sampling Locations: At the discharge to the EPB-10 canal.

Analyses: Water quality analyses should be performed at detection levels commensurate with water quality criteria for Class III waters (F.A.C. rule 62-302.530). Samples shall be collected in accordance with Standard Methods for Examination of Water and Wastewater and analyzed by a DHRS certified laboratory.

If a violation occurs for any sampled parameter, the Permittee shall, after notifying Department, institute corrective action to abate the violation if it is the result of activities of the Permittee. Corrective action may include further monitoring to determine the extent and degree of violation. Any modifications shall be coordinated with the Southeast District Office. Department approval shall be obtained prior to any action constituting a modification of this permit.

All monitoring reports shall be submitted to the DEP Southeast District Office, PBCHD and the SFWMD under a cover letter containing the following information: (1) certification number; (2) handling, storage and methods of analysis of the samples; (3) a map indicating the sampling locations; and (4) a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data. Monitoring reports shall also include the following information for each sample that is taken:

(1) time of day samples taken;

(2) depth of water body;

(3) depth of sample;

(4) antecedent weather conditions;

(5) tidal stage and direction of flow; and

(6) wind direction and velocity.

(7) status of flow from site stormwater discharge structure. (flowing or not flowing)

Monitoring reports shall be submitted to the Southeast District, PBCHD and SFWMD within 2 weeks of completion of analysis for each sampling period.

12. Protection of Vegetation

The Permittee shall develop the construction site and shall develop the mitigation areas so as to retain endangered and threatened plants, or replant these plants in another suitable environment. Any endangered or threatened plants should be staked in the field or relocated, as appropriate, prior to commencement of any construction or site preparation activities.

13. Dewatering Operations

There shall be no dewatering operations during construction without approval of SFWMD pursuant to XVI.E. Such approval may be obtained by submitting an application to SFWMD at least 90 days prior to start of dewatering operations. Any discharge of water from dewatering operations shall not violate water quality standards.

14. Borrow Material

Prior to excavation of any borrow material from the northeastern portion of the site for use on this project, a hydrogeological assessment of the effects of the existing excavation as well as continued excavation in this area shall be provided to the Department and the SFWMD. No further excavation shall take place until the Department and the SFWMD concur in writing that the location, depth, method of mining, etc., of the excavation will not pose a further threat to groundwater quality in the area.

15. Radio Tower Relocation

The radio tower shall be relocated as shown on the application materials submitted on August 9 and October 2, 1995, in accordance with the following:

a. The fill placed in the borrow pit shall be clean fill.

b. Turbidity curtains shall be placed as shown in the drawings submitted with the application and shall remain in place until the site is stabilized.

c. The side slopes of the tower pad and borrow pit shall be seeded and mulched within 48 hours of final grading.

16. Wetlands:

These conditions do not authorize dredging or filling in wetlands. Wetland areas or water bodies which are outside the specific limits of construction authorized by this license shall be protected from erosion, siltation, scouring and/or dewatering. There shall be no storage of cleared vegetation, excess lumber, scrap wood, trash, garbage, and any other type of debris within wetlands.

Prior to site preparation for, or construction of, the new RMPF, the wetland jurisdiction line of the western marsh wetland and the landward boundary of the “30’ Wetland Buffer” surrounding it, as shown on the drawing “Wetlands Exhibit” (Attachment 1) shall be clearly marked on site. Marking intervals shall be close enough for visual reference between one flag and the next. It should be noted that the boundary of the wetlands east of the project area has not yet been verified by the Department. Regarding that area, the Department has determined only that the eastern project limits are not in wetlands. The licensee is advised to clearly mark onsite the “Limit of Disturbance” as shown on the referenced drawing and to avoid impacts to areas east of this line. [Chapter 40 E-4, 40 E-40, and SFWMD Basis of Review]

Once the buffer has been marked as indicated above, a clearly visible effective construction barrier (silt fence, etc.) shall be placed along the landward boundary of the buffer as shown on the “Wetlands Exhibit” drawing (Attachment 1). Construction impacts shall not occur within the 30-foot buffer area or within the wetlands. The licensee shall request an inspection and approval of the marked wetland and buffer line, and of the barrier placement location, prior to commencing any other site preparation or construction activities. [Chapter 40 E-4, 40 E-40, and SFWMD Basis of Review]

17. Gopher Tortoise Protection

Prior to any site preparation or construction activities on the site, the licensee shall obtain the appropriate authorization from the Florida Fish and Wildlife Conservation Commission regarding protection/relocation of gopher tortoises on the site (as necessary) pursuant to Rules 68A-27.002 and 68A-27.004 (F.A.C.). A copy of the authorization should be forwarded to the DEP SED Office within 30 days of issuance. [Rules 68A-27.002 and 68A-27.004, F.A.C.]

B. Environmental Control Program

An environmental control program shall be established under the supervision of a qualified individual to assure that all construction activities conform to applicable environmental regulations and the applicable conditions of certification.

If harmful effects or irreversible environmental damage not anticipated by the application or the evidence presented at the certification hearing are detected during construction, the Permittee shall notify the Southeast District Office as required by Condition II.

C. Reporting

1. Notice of commence of construction shall be submitted to the Southeast District Office, PBCHD and SFWMD within 15 days of initiation. Starting three (3) months after construction commences, a quarterly construction status report shall be submitted to the Southeast District Office. The report shall be a short narrative describing the progress of construction,

2. Upon or immediately prior to completion of construction of the resource recovery facility or a phase thereof and upon or immediately prior to completion of all necessary preparation for the operation of each landfill cell, the Southeast District Office, PBCHD and SFWMD will be notified of a date on which a site or facility inspection should be performed in accordance with Condition V, and the inspection shall be performed within fourteen (14) days of the date of notification by Permittee.

XIV. OPERATION

A. Air

The construction and operation of the Palm Beach County Resource Recovery Facility shall be in accordance with all applicable provisions of Chapters 62-210 through 62-297, F.A.C.

Title V Air Operation Permit 0990234-013-AV, Air Construction Permits 0990234-008-AC, 0990234-009-AC and 0990234-012-AC, and PSD permit PSD-FL-108 (including subsequent modifications) are incorporated by reference herein as part of this Certification and attached as Appendix A through Appendix H.

The provisions of the above shall be conditions of this certification. The licensee shall comply with the substantive provisions and limitations set forth in Title V Air Operation Permit Number 0990234-13-AV, Air Construction Permits 0990234-008-AC, 0990234-009-AC and 0990234-012-AC, and PSD permits PSD-FL-108 as part of

these Conditions of Certification, and as those provisions may be modified, amended, or renewed in the future by the Department. Such provisions shall be fully enforceable as conditions of this certification. Any violation of such provisions shall be a violation of these Conditions of Certification.

B. Fuel

The Resource Recovery Facility shall utilize refuse such as garbage and trash (as defined in Chapter 62-701.200(9), F.A.C.) and natural gas recovered from landfills as its fuel. Use of alternate fuels except for distillate fuel oil o natural gas in start-up burners would necessitate modification to these Conditions of Certification. Refuse as fuel shall not include "hazardous waste" as defined in Chapter 62-730.030, F.A.C. The alternate fuel shall not contain more than 0.3% sulfur and not be used more than required during boiler startup or shutdown.

C. Wastewater Disposal

1. Plans drawings and specifications for leachate collection systems, pumps, lift stations, sewage collection systems, sewage treatment systems, wastewater treatment systems, deep injection wells, and wastewater collection systems shall be furnished to the Southeast District Office, PBCHD and the SFWMD for approval at least 90 days prior to start of construction for the particular of such component. All items submitted pertaining to the injection wells shall be directly distributed to the Technical Advisory Committee (TAC) for approval.

2. The deep injection well shall be designed and operated in conformance with Chapter 62-528, F.A.C., and all other applicable rules.

3. The injection well system specifications and plans shall be submitted to the Technical Advisory Committee (TAC) at the Southeast Florida District Office for review and approval prior to beginning the bidding process.

4. The surge protection system design calculations and operational features shall be submitted to all members of the department's Technical Advisory Committee (TAC) for approval prior to construction of the deep well injection system.

5. The successful bidder to construct the injection well system shall submit engineering details and drawings of the packer assembly to the TAC for approval prior to construction of the injection well system.

6. If the successful bidder chooses to use corrosion inhibitor(s) with the fresh water-in the monitoring annulus surrounding the 8" injection tubing, this choice of inhibitors shall be submitted to the TAC for approval.

7. The 40" casing for each disposal well shall be set and cemented to the base of the surficial aquifer or to the confining beds below all producing zones used for drinking water, private or public, supplied within the area of review. If the applicant proposes to set and cement the 40" casing above the Hawthorn Formation, he shall provide site specific hydrogeological information, acceptable to the TAC, confirming that confining strata do in fact exist above the Hawthorn. These data shall be obtained by

drilling a pilot hole to the top of the Hawthorn Formation prior to enlarging the hole for the 40" casing.

8. A drawing showing drilling pad dimensions and features (slopes, concrete thickness, storage tank capacities, curb height, etc.) shall be submitted to the TAC for approval prior to the drilling pad construction.

9. The applicant shall specify the disposal location-for excess mud, drill cuttings, drilling fluids, etc., for approval at the preconstruction TAC meeting. Property owner's approval will be required in addition to regulatory approval.

10. The question of the timing of the temperature logging for pilot and cased holes shall be discussed at the preconstruction TAC meeting.

11. The daily drilling log shall include at least the following:

a. Information as to the volume (amount) of weighting materials used to control artesian flow.

b. Description of the lithology encountered during drilling.

c. Results of any water quality analyses.

d. Description of any problems or unusual conditions encountered during drilling and steps that have been taken to correct them.

e. Deviation survey results.

f. Any other information required by the consultant.

The report shall run from Friday to Thursday and be mailed to all TAC members on the following Friday.

12. Upon the beginning of the operation and the injection well system, the applicant will begin a sampling and testing regimen of all individual wastewater streams for the accumulation of data anticipating adverse impacts on the injection zone, formation materials, formation fluids and well construction materials. Sampling and analysis shall also include the investigation of the chemical nature of fluids being injected with respect to hazardous waste characteristics. The parameters to be sampled for and the frequency of sampling shall be approved by the TAC before operation begins. Periodic review by the TAC will determine the need for continued sampling and/or need for additional or revised treatment before injection and/or need for revised estimates of the usable life of the injection system, increased frequency of mechanical integrity testing, etc.

13. Additional detail on proposed monitoring plans should address the following points:

a. Per 62-528,425(1)(e), F.A.C., within the area of review, the type, number, and location of wells to be used to monitor any potential migration of fluids into or in the direction of USDW's, and pressure in the USDW's; the parameters to be measured and the frequency of monitoring shall be submitted to DEP prior to well construction. The applicant should discuss how these requirements are addressed.

b. Per 62-528.425(1)(f), F.A.C., the background water quality of the injection zone and the monitoring zones shall be determined prior to injection.

14. The applicant must, per 62-528.435(9), F.A.C., submit a certificate that they have ensured through a performance bond or other appropriate means, the resources necessary to close, plug or abandon the well.

15. The cementing program shall be designed with the use of ASTM Type II Cement. Other details of the program shall be made available upon request by the TAC or any of its members.

16. It may be assumed that since the project will be generating electric power there will never be the need for any on-site source of emergency power. The contractor's design shall address the need or lack thereof for an emergency power source to maintain the continuous operation of the injection well system.

17. The application states that the injection well system will have 100% redundancy. The contractor's design shall include standby pumping capability manifolded to both wells to insure continual injection capability.

18. The Contractor shall supply to the Engineer a complete list of spare parts and special tools to be included in the O & M Manual prepared for the Operating Permit Application.

19. The Contractor shall provide or have provided the means for checking grout sample density during casing cementing.

20. Cemented casings shall not be disturbed for 24 hours after the completion of cementing.

21. The TAC chairman shall be notified at least 24 hours prior to performing any mechanical integrity testing

D. Water Discharges

1. Surface Water

Any discharges from the site stormwater system via the emergency overflow structure which result from an event LESS than a ten-year, 24-hour storm (as defined by the U.S. Weather Bureau Technical Paper No. 40, or the DOT drainage manual, or similar documents) shall meet applicable State Water Quality Standards, Chapter 62-302, F.A.C., and Chapter 40 E.2 and 40 E.4, F.A.C .

2. Monitoring Surface Water

a. Sampling of water quality in the surface water management system shall be sampled at stations labeled 1, 2, 3, 4, 5, 6, and 7 as shown on sheets 18, 19, and 20 of 25 of Appendix 10.4 of the application dated December 3, 1985, as stated below:

Location of Stations	
1.	discharge culvert at the southwest acreage of the Class I Landfill on sheet 20 of 25

2.	overflow control structure at EPB-10 west of the Class I Landfill on sheet 20 of 25
3.	box culvert at EPB-10 east of the Class I Landfill on sheet 20 of 25
4.	discharge culvert west of the Class III Landfill on sheet 19 of 25
5.	discharge culvert north west of the Class III Landfill on sheet 19 of 25
6.	return dredge line from Dyer Landfill discharging into the existing borrow lake due north of the Class III Landfill on sheet 18 of 25
7.	the center of the existing dredge lake one foot above the bottom.

Monitoring Type and Schedule	Parameters
1. General (Quarterly)	Total Organic Carbon, Dissolved Oxygen, pH, Turbidity, Specific Conductance, Chemical Oxygen Demand, Alkalinity, Total Suspended Solids, Ammonium N, Nitrate-N, Total Kjeldahl Nitrogen; Oil and Grease, Detergents, Total Coliform, Fecal Coliform, Fecal Streptococcus, Salmonella, Biochemical Oxygen Demand, Total Phosphorus and Chlorides
2. Metals (Semiannual)	Aluminum, Antimony, Beryllium, Cadmium, Copper, Cyanide, Iron, Lead, Mercury, Nickel, Selenium, Silver, Zinc, Arsenic and Chromium

b. Water quality reports shall be submitted within 30 days of receipt of analysis results to the Southeast District Office, PBCHD and SFWMD for distribution to the appropriate review personnel.

c. The monitoring program may be reviewed annually by the Department, and a determination made as to the necessity and extent of continuation of the program. Aspects of the program related to sampling, monitoring , reporting, and related time schedules may be modified in accordance with the provisions of condition number XII.

3. Groundwaters

All discharges to groundwaters, such as landfill leachate, shall be collected and treated as necessary, or otherwise be of high enough quality, to be able to meet the applicable Water Quality Standard of Section 62-520.400, F.A.C., within 100 feet of the landfill perimeter.

4. Groundwater Monitoring Program

a. Sampling of the shallow aquifer groundwater quality shall be conducted in at least eight well clusters and six interceptor wells in the site vicinity. At least one of these well clusters shall be up the hydrological slope from the landfill area to provide current background data. Other wells shall be located down the hydrologic slope from the landfill areas. All wells shall be surveyed by a state certified land surveyor and the locations of each well depicted on a topographical aerial map with the appropriate elevations noted for each well.

b. Operational background monitoring shall commence at least one year prior to operation of the resource recovery facility. Construction of monitoring wells and the collection of samples shall be in accordance with EPA recommended methods as contained in Procedures Manual for Ground Water Monitoring at Solid Waste Disposal Facilities (EPA/530/.SW-611). The wells shall be deep enough to ensure that groundwater samples can be obtained with the groundwater table elevation at its estimated lowest point and shall be protected from damage and destruction. Samples shall be analyzed in accordance with the methods described in Chapter 62-522, F.A.C. Analyses shall be performed by laboratories which are approved by the Department of Health and Rehabilitative Services to conduct analyses pursuant to Section 403.863, F.S., the State Public Water Supply Laboratory Certification Program.

c. Sampling of groundwater quality of monitoring well clusters labeled M-1, M-2, M-3, M-4, M-5, M-6, M-7, M-8, IW-1, IW-2, IW-3, IW-4, IW-5, IW-6 as shown on Figure 4.2-1 dated December 2, 1985, shall be performed quarterly for all parameters for three years and thereafter as stated below:

Monitoring Type and Schedule	Parameters
1. General (Quarterly)	pH, Specific Conductance, Temperature, Chloride, Total Organic Carbon (TOC), Sulfate, Bicarbonate, Magnesium, Organic Nitrogen, Ammonia, Nitrate, Chemical Oxygen Demand, Color, Turbidity, Total Iron, Total Dissolved Solids (TDS), Zinc, Calcium, Manganese, Total Nitrogen, Ammonium
2. Yearly (After first three years)	M.A.B.S., Organics listed in S. 17-22.104, F.A.C., Trichloroethylene, Tetrachloroethylene, Carbon Tetrachloride, Vinyl Chloride, 1,1,1-Trichloroethane, 1,2-Dichloroethane, Benzene, Ethylene Dibromide, Chlorinated Phenolic Compounds, Chlorides, Sodium, Lead, Copper, Nickel, Chromium, Cadmium, Iron, Mercury, Arsenic, Selenium, Barium, Silver, COD, Chemical Oxygen Demand, Total Coliform, Fecal Coliform, Fecal Streptococcus

d. Water quality monitoring reports shall be submitted within 30 days of receipt of analysis results to the Southeast District Office, the PBCHD and SFWMD. for distribution to the appropriate review personnel.

e. The monitoring program may be reviewed annually by the Department, and a determination made as to the necessity and extent of continuation of the program. Aspects of the program relation to sampling, monitoring, reporting, and related time schedules may be modified in accordance with the provisions of condition number XII.

f. Any existing monitoring wells (other than compliance wells required by Chapter 62 761 or 62-762, F.A.C. for release detection, and wells that are part of an approved groundwater monitoring plan) that are impacted by construction of the new RMPF and will no longer be utilized, if any, shall be properly plugged and abandoned in accordance with the requirements of Rule 62 532.500(4), F.A.C. prior to site development for the new RMPF. Compliance wells required by Chapter 62 761 or

62-762, F.A.C. for release detection, and/or wells that are part of an approved groundwater monitoring plan shall remain active. [Rules 62-532.500(4), 62-761, and 62-762, F.A.C.]

5. MRF & Operations and Maintenance Building Storm Water Systems

Perpetual operation and maintenance of the storm water system for the new RMPF and the new operations and maintenance buildings are the responsibility of the Solid Waste Authority of Palm Beach County. A maintenance schedule shall be implemented to ensure that the storm water management systems are functioning as designed. [Chapter 40 E-4, 40 E-40, and SFWMD Basis of Review]

E. Solid/Hazardous Waste

1. Operation of the associated landfill shall be done in accordance with all applicable portions of Chapter 62-701, F.A.C., including prohibitions, procedures for closing of the landfill, and final cover requirements, or, as provided in this condition (XIV.E.) in its entirety. The plans of the final landfill design shall be provided to the Department for review and approval at least 90 days prior to start of construction. The final plans for this Facility shall include provisions for the isolated temporary handling of suspected hazardous, toxic or pathological wastes. No solid wastes shall be placed in new lateral expansion cells after November 1, 1994, until water quality and leachate monitoring plans are approved pursuant to ss 62-701.510, F.A.C., and such plans are implemented. The maximum height of the Class I and III landfills shall be 160 feet NGVD with side slopes not steeper than 3H:1V (three feet horizontal to one foot vertical rise) in accordance with the application amendment dated April 29, 1994.

2. No suspected or known hazardous, toxic, or infectious wastes as defined by federal, state or local statutes, rules, regulations or ordinances shall be burned or landfilled at the site. The Permittee shall prepare and submit for approval to the South Florida District Office and PBCHD a written training program on the detection and handling of hazardous, toxic or infectious wastes.

3. Rodent and insect control shall be provided as necessary to protect the health and safety of site employees and the public. Pesticides used to control rodents, flies, and other vectors shall be as specified by the Florida Department of Agriculture and Consumer Services.

4. Storage of putrescible waste for processing shall not exceed storage capacity of the refuse bunker or tipping floor as designed on the approved plan, or be stored on the tipping floor for more than 48 hours.

5. Ash prior to transport to the landfill shall be stored in an enclosed building on an impervious surface or other method approved by the Southeast District Office. Final disposal of the ash shall be into the lined landfill or other method approved by the Southeast District Office. Any leachate generated within the building shall be collected and disposed of by a method approved by the Southeast District Office. The Southeast District Office shall notify the SFWMD of the plans and specifications regarding the above referenced method.

6. A monthly report shall be prepared detailing the amount and type (putrescible, special wastes, boiler residue, etc.) of materials landfilled at the site, and the treatment provided (see condition XIV.E.2. above). These reports shall be furnished to the Southeast District Office and PBCHD quarterly, commencing 120 days after the Resource Recovery Facility becomes operational and is producing residues.

7. The temporary hazardous waste storage and transfer facility shall be designed, constructed and operated in conformance with section 62-730.171, F.A.C. The design of the facility operational procedures, personnel training program, contingency plans and closure plans shall be submitted to the department, PBCHD and SFWMD for review and approval.

8. All cells or disposal areas will be constructed to promote leachate drainage to provide for effective leachate-collection; all leachate collection in active or inactive cells shall be pumped or transported to the leachate collection system for transmission to the treatment system. Leachate collected above the primary liner shall be monitored quarterly for conductivity, pH, copper, arsenic, zinc, phenols, oil and grease and total organic halogens. Results of such monitoring shall be reported to the Southeast District Office and PBCHD. Leachate collected between the primary and secondary liners shall be monitored quarterly for conductivity, chlorides, ammonia, iron, sulfur, nitrates, and zinc. Results will be reported to the Southeast District Office and PBCHD quarterly. The monitoring parameters set forth herein may be modified dependent upon the type of liners utilized and the manufacturer's recommendations to protect the integrity of the liners due to the classes of chemical constituents in the leachate which will be in contact with the liner(s). The Permittee shall provide the Southeast District Office with a certified letter from the liner manufacturer stating what classes of chemical constituents could damage the liners' integrity and include those parameters as part of the quarterly monitoring program noted above.

9. An EP toxicity analysis of the ash residue being land filled for the chemicals listed and using the prescribed method as set forth in 40 CFR s261, Appendix II, shall be conducted within 30 days after commencement of commercial operation. In addition, said ash residue shall be tested for dioxin (2, 3, 7, 8 - TCDD) content.

10. Results from said residue analysis shall be sent to the Southeast District Office and the PBCHD within 30 days of receipt. Results will be used to determine whether or not these materials constitute a "Hazardous Waste" as defined by applicable Federal or state regulations. Results of these analyses may also be used for correlation with groundwater monitoring information and in any subsequent modification of conditions.

11. If residue materials are determined to be a "Hazardous Waste", then measures shall be take to treat or dispose of the residues pursuant to rule promulgated by Federal, State or Local authorities, as may be applicable.

12. If the nature of materials received at the facility becomes altered, either due to modification of conditions, i.e., the facility is allowed to incinerate already known hazardous wastes such as pesticides, or if groundwater monitoring reveals

abnormal groundwater conditions which may be attributable to the landfilling of this residue, then a subsequent analysis may be required at that time.

13. There shall be no discharge to waters of the State of polychlorinated biphenyl compounds.

14. The Permittee shall provide the Southeast District office and the PBCHD with a set of full-sized (24"x 36") engineering drawings and supporting information, signed and sealed by an engineer registered in the St ate of Florida for the operational and closure phases of the landfill for review and approval at least 90 days prior to implementation of those phases. Within 90 days after completion on the closure phase of the project, the Permittee shall submit certified as-built plans signed and sealed by a Florida Registered Professional Engineer.

15. To ensure that the bottom liners are continuous throughout the cell, the liners will be installed either under the supervision of the manufacturer or by a competent experienced lining contractor according to the manufacturer's specifications. In addition, as part of quality control measures, field seams between in-place liner and newly installed liner will be tested according to ASTM specification ensure integrity between materials and certified in writing by the liner manufacturer, contractor, and engineer of record to the Southeast District Office and PBCHD. Top liners, if required, shall be installed in accordance with closure require meets of the Southeast District Office, PBCHD and SFWMD.

16. The extension of the EPB-10 canal shall be placed in properly designed and constructed reinforced concrete culverts. The landfill height above the culvert shall not exceed 40 feet.

17. No later than April 1st of each year, the licensee shall submit an Application for Recovered Materials Certification to DEP’s Bureau of Solid and Hazardous Waste, Recovered Materials Certification and Reporting Program, as applicable, in accordance with 62-722.400(1), F.A.C. unless otherwise exempt from this requirement. [Rule 62-722.400(1), F.A.C.]

F. Operational Safeguards

The overall design and layout of the facilities shall be such as to mitigate potential adverse effects to humans and the environment. Security control measures shall be utilized to prevent exposure of the public t o hazardous conditions. The Federal Occupational Safety and Health Standards will be complied with during construction and operation. The safety standards specified under Section 440.56, Florida Statutes, by the Florida Department of Employment Security, Division of Safety, will be complied with during operation.

G. Transmission Lines

The directly associated transmission lines from the Resource Recovery Facility electric generators to the Florida Power and Light Company transmission system shall be kept cleared without the use of herbicides.

H. Noise

Operational noises shall not exceed local noise ordinance limitations nor those noise standards imposed by zoning.

I. Potable Water System

The potable water system (wells, pipes, pumps and treatment facilities) shall be designed, constructed and operated in conformance with the applicable provisions of Chapters 62-550 and 62-555, F.A.C. Plans and specifications for these facilities shall be provided to the Southeast District Office and the Palm Beach County Health Department for review and approval 90 days prior to construction.

J. Wastewater Management for New RMPF

1. Washwater: Wash water from the new RMPF, including the washbay area, shall be pumped to a double-walled, high density polyethylene, above ground storage tank. The storage tank will be fitted with high level alarms and leak detection. The wash water shall be temporarily held in the storage tank prior to shipment to an offsite licensed treatment facility. [Applicant Request]

2. Domestic Wastewater: Domestic wastewater generated at the new RMPF shall be discharged to a domestic sewage pump station and conveyed via pipeline to the City of West Palm Beach domestic wastewater treatment plant. [Applicant Request]

K. Wetland Buffers – New RMPF

The licensee shall maintain the wetland buffer zone required by Condition XIII.A.16. Buffer areas shall be maintained free of invasive exotic plants (Florida Exotic Pest Plant Council's 2003 Category I Invasive Exotic Species, trash, and construction and fill material. [Chapter 40E-4.301]

L. Historical or Archaeological

If historical or archaeological artifacts are discovered at any time on the project site, the licensee shall immediately notify the appropriate Department office and the Department of State, Division of Historical Resources. [Chapter 40E-4.381]

XV. WATER MANAGEMENT DISTRICT CONDITIONS - GENERAL

A. The Solid Waste Authority shall prosecute the work authorized under the Certification in a manner so as to minimize any adverse impact of the works on fish, wildlife, natural environmental values, and water quality. The Solid Waste Authority/Vendor shall institute necessary measures during the construction period, including full compaction of any fill material placed around newly installed structures, to reduce erosion, turbidity, nutrient loading and sedimentation in the receiving waters.

B. The operational phases of the water management system authorized under this Certification shall not become effective until a Florida registered professional engineer certifies upon completion of each phase that these facilities have been constructed in accordance with the design approved by the District. Within 30 days after completion of construction of each phase, the Authority shall submit the engineer's

certification, and notify the District that the facilities are ready for inspection and approval.

C. All road centerlines shall be set or above the flood elevation generated by a three-year, twenty-four hour storm event, in accordance with Palm Beach County criteria, as may be amended, and in accordance with the South Florida Water Management District's Rule 40.E-4., as may be amended.

D. All building floors shall be set at or above flood elevations generated by a three-day, one hundred year storm event, in accordance with Palm Beach County criteria, as may be amended, and in accordance with the South Florida Water Management District's Rule 40.E-4., as may be amended.

E. Off-site discharges during construction and development shall be made only through the discharge structures authorized by this Certification.

F. No construction authorized herein shall commence until the Permittee has agreed, in writing, by letter or resolution, that it will be responsible for the construction, operation, and perpetual maintenance of the entire surface water management system, both during operation of the facility and following the closure of the whole or any part of the facility. Responsibility for the operation and maintenance of the surface water management system shall not be assigned or delegated without prior written approval of the District.

G. This Certification is based on the applicant's submitted information to the District, which reasonably demonstrates that adverse off-site water resource related impacts will not be caused by the authorized activities. The plans, drawings, and design specifications submitted by the applicant shall be considered the minimum standards for compliance. It is also the responsibility of the Permittee to ensure that adverse offsite water resource related impacts do not occur during construction.

H. The Permittee shall secure a well construction permit prior to construction, repair, or abandonment of any wells as described in Chapter 40E-3, F.A.C.

I. In the event of a declared water shortage, water use reductions may be ordered by the SFWMD in accordance with the Water Shortage Plan, Chapter 40E-2l, F.A.C.

J. This project must be constructed in compliance with and meet all requirements set forth in Chapter 373, Florida Statutes, and Chapter 40E-2, 40E-3, and 40E-4, F.A.C.

K. Should the additional industrial supply demand for the operation of the Biosolids Pelletization Facility cause the total demand for the North County Resource Recovery Facility to exceed the Facility’s allocation for withdrawal from the surficial aquifer, the demand for the Biosolids Pelletization Facility shall be provided from an alternate source other than the surficial aquifer. Should reclaimed water become available as an alternate source, the licencee shall provide an End User Feasibility Evaluation pursuant to Section 3.2.3.2 of the Water Use Basis of Review.

L. Authorized representatives of the District shall be allowed to enter the premises to inspect and observe the operation of the surface water management

system and associated landfill facilities, mitigation areas, and monitoring wells in order to determine compliance with the conditions of this Certification, as provided in Condition V.

XVI. WATER MANAGEMENT DISTRICT - SITE SPECIFIC STANDARDS

A. Prior to construction of any phase of either the Solid Waste Energy Resource Recovery Facility or the ash residue/unprocessable materials landfill a complete set paving, grading, and drainage plans with supporting calculations for the 40-acre Resource Recovery Facility and Jog Road must submitted to the South Florida Water Management District for review and written approval that the plans are in compliance with Chapters 40F-2 and 40E-4, F.A.C. Said plans shall include the following:

1. Paving, grading and drainage plans with special attention to perimeter site grading; and

2. Drainage calculations including:

a. Design storms used including depth, duration and distribution;

b. Stage-storage computations for the project and stage-discharge computations for the outfall structure(s);

c. Acreages and percentage of property proposed as:

(1) impervious surfaces (excluding water bodies)

(2) pervious surfaces (green areas)

(3) lakes, canals retention areas, etc.

(4) total acreage of the project

d. Runoff routing calculations showing discharges, elevations, and volumes detained during applicable storm events; and

e. Calculations required for determination of minimum building floor and road elevations.

B. Any subsequent modifications to the drawings and supporting calculations submitted to the South Florida Water Management District which alters the quantity or quality of discharge of water offsite shall be pursuant to Section 403.516, F.S., and Rule 62-17, F.A.C. Such modifications shall be submitted to the District for a determination that the modifications are in compliance with Chapters 40E-2 and 40E-4, F.A.C. This includes modification of the discharge route.

C. Minimum standard 24" x 36" surface water management construction plans for the project as proposed as well as any modifications shall be submitted to this District for review and written approval 30 days prior to the commencement of construction.

D. Prior to use and/or connection with any District works, the District shall be notified and the Permittee shall obtain written approval pursuant to Chapter 40E-6.041, F.A.C.

E. Prior to lowering of water levels in excavation sites, the following conditions shall be met:

1. Withdrawal rates, and depending on the methods proposed, well construction details, well and pump capacities and locations, and the data from the groundwater monitoring network shall be provided to the District for review and written approval;

2. The impacts of the proposed withdrawals shall be assessed and provided to the District;

3. No dewatering discharge shall be allowed to drain from the property; and

4. The District concurs in writing that there will be no adverse impacts as a result of the proposed withdrawals under sections 373.223(A)-(C) of the Florida Statutes.

F. Final water use rates for process and irrigation and well locations shall be submitted to the District for review and written approval prior to well construction when a Vendor and final plant design are determined.

G. Prior to closure, detailed closure plans pursuant to Chapter 62-701, F.A.C., shall be submitted to the District for review and written approval.

H. On-site areas which are dedicated for the fire station and Turnpike Interchange are considered by this District as separate from the Certification, and therefore subject to permitting requirements, pursuant to Chapter 373, F. S.

I. Any on-site hazardous materials temporary storage and transfer facility constructed at this site pursuant to the Water Quality Assurance Act should be considered separate from the Certification process and subject to regulatory permits. The design of the building and related infrastructure should be submitted to this District for review and verification that the proposed facility has been designed to prevent any stored or transferred hazardous materials from coming in contact with the surface water management system.

J. If modification and/or realignment of Northern Palm Beach County Water Control District's Canal EPB 10 is necessary, a modification must be obtained for Surface Water Management Permit No. 50-01347-S.

K. Prior to construction of either the Solid Waste Resource Recovery Facility or the ash/residue/unprocessable materials landfills, a phasing plan for the landfills shall be submitted to the District for review and written approval, including detailed drawings and supporting calculations showing how leachate will be separated from runoff in the working area (temporary berms, diversion dikes, cover material, etc.).

L. Surface Water Management plans shall be revised to include spreader swales (or District approved equivalent) to approximate sheetflow discharge into the

wetland areas. In addition, a sedimentation "trap" shall be designed, subject to District approval of calculations and discharge locations into the wetlands.

M. Discharge structures shall include a baffle, skimmer, or other mechanism suitable for preventing oil, grease, or other floatable materials from discharging to and/or from retention/detention areas.

N. Prior to landfill construction, a screw gate shall be installed on the water control structure at EPB 10, capable of restricting discharge of poor quality surface water, up to and including the 25 year, 3 day level.

O. Critical areas, including the conveyance and perimeter swales, and areas adjacent to the let down pipes or conduits shall be stabilized to prevent erosion.

P. Energy dissipators shall be used whenever let down pipes discharge into perimeter swales, or the let down pipes or conduits meet the terraces.

Q. Water quality samples shall be taken at the discharge surface water discharge structure location of the water management system into EPB 10 during periods of discharge according to the schedule below. Flow shall be measured continuously at the discharge location into EPB 10 by means of a recording flow meter. A laboratory certified by the State of Florida shall be responsible for all water quality analyses. Chain of custody documentation shall be maintained for all sampling. Reports of water quality results and discharge rates shall be submitted to this District for review and written approval on a semi-annual basis. Results of any additional stormwater quality sampling required by the Florida Department of Environmental Protection shall be provided to the District. Monitoring requirements will be evaluated by this District following two years of data collection.

Monitoring Type and Schedule	Parameters
A. General (Quarterly)	Total Organic Carbon, Dissolved Oxygen, pH, Turbidity, Specific Conductance, Chemical Oxygen Demand, Alkalinity, Total Suspended Solids, Ammonium N, Nitrate N. Total Kjeldahl Nitrogen
B. Organics (Semiannual)	Trichloroethylene, Tetrachloroethylene, Carbon Tetrachloride, Vinyl Chloride, 1,1,1,-Trichloroethane, 1,2-Dichloroethane, Benzene, Ethylene Dibromide
C. Metals (Semiannual)	Aluminum, Antimony, Beryllium, Cadmium, Copper, Cyanide, Iron, Lead, Mercury, Nickel, Selenium, Silver, and Zinc

R. Any Northern Palm Beach County Water Control District facilities which have been permitted (Surface Water Management Permit No. 5001347-S) by this District and are not yet constructed but would be affected by this project must be fully operational prior to commencement of stormwater discharge from this project. The additional 60" CMP at Florida Power and Light's transmission crossing of EPB-10, and one 12" CMP at the confluence of EPB-10 and C-17 shall be so constructed.

S. There shall be a quarterly groundwater monitoring frequency for the groundwater monitoring network. The District shall be copied on the data results of the network and any other groundwater monitoring data required by Florida Department of Environmental Protection.

T. At least 60 days prior to the commencement of construction, the District staff must have received and reviewed any pertinent additional information required to be submitted under the District's site specific standards and the conditions of certification. Written approval for the desired construction must be obtained prior to commencement of construction.

U. Sixty days prior to the commencement of construction of the transmission line, the permittee shall provide the District with the location of areas in which fill and associated facilities will be placed. Written confirmation that the fill and associated facilities will not cause adverse off-site impacts shall be received from the District prior to commencement of construction.

V. Prior to the commencement of construction of the truck wash facility, the Licensee shall submit a Water Conservation Plan, as required by Chapter 40E-2, F.A.C., in effect at that time, for review and approval by SFWMD staff. The plan shall, at a minimum, incorporate the following components:

1. An audit of the amount of water needed in the Licensee’s operational processes. The following measures shall be implemented within one year of audit completion if found to be cost effective in the audit:

a. Implementation of a leak detection and repair program;

b. Implementation of a recovery/recycling or other program providing for technological, procedural or programmatic improvements to the Licensee's facilities; and

c. Use of processes to decrease water consumption.

2. Development and implementation of an employee awareness program concerning water conservation.

3. Procedures and time-frames for implementation shall be included in the conservation plan.

XVII. OPERATIONAL CONTINGENCY PLANS

A. Operating Procedures

The permittee shall develop and furnish the Southeast District a copy of written operating instructions for all aspects of the operation which are critical to keeping the facility working properly. The instructions shall also include procedures for the handling of suspected hazardous, toxic and infectious wastes.

B. Contingency Plans

The Permittee shall develop and furnish the Southeast District Office written contingency plans for the continued operation of the system in event of breakdown. Stoppages which compromise the integrity of the operations must have appropriate contingency plans. Such contingency plans should identify critical spare parts to be maintained on site.

C. Current Engineering Plans

The Permittee shall maintain a complete current set of modified engineering plans, equipment data books, catalogs and documents in order to facilitate the smooth acquisition or fabrication of spare parts or mechanical modifications.

D. Application Modifications

The permittee shall furnish appropriate modifications to drawings and plot plans submitted as part of the application, including operational procedures for isolation and containment of hazardous wastes.

XVIII. TRANSFER OR ASSIGNMENTS OF RIGHTS, DUTIES, OR OBLIGATIONS

If contractual rights are transferred under this certification, notice of such transfer or assignment shall immediately be submitted to the Department of Environmental Protection and South Florida Water Management District by the previous certification holder (Permittee) and Assignee. Included within the notice shall be the identification of the entity responsible for compliance with the certification. Any assignment or transfer shall carry with it full responsibility for the limitations and conditions of this certification.

XIX. PROPRIETARY DOCUMENTS OR INFORMATION - CONFIDENTIALITY

Proprietary or confidential data, documents or information submitted or disclosed to any agency shall be identified as such by the Permittee and shall be maintained as such pursuant to applicable Florida law.

XX. MITIGATION

A. On-Site Restoration and Mitigation.

1. Within ninety (90) days of certification issuance, the Palm Beach Solid Waste Authority shall submit an on-site restoration and mitigation plan (hereinafter "The Plan"). The purpose of the Plan and its implementation is the mitigation of the impact of the project on the site's wetlands and values associated therewith. The Plan shall indicate in a detailed manner the on-site measures and improvements necessary to accomplish all restoration and mitigation, (I) set forth in the application as amended, (ii) as required below and (iii) as may be required by the department of Environmental Protection.

2. The Plan shall include but not be limited to a specification of the commencement and completion dates of all anticipated restoration and mitigation work including a specification of all revegetation of the shell pit mining areas, creation of littoral zones around all lakes, interconnection of wetland areas, areas of wetlands to be created (including the type and extent thereof which shall be not less than 190 acres), dredge and fill volumes, elevations, methods of construction, nature and extent of required improvements to accomplish the above referenced work, and planting schedules together with methods to insure vegetative survival for each area. As part of the plan it shall also be required that (I) littoral zones will be constructed around all existing and proposed borrow lakes, (ii) where it can be done with a reasonable probability of success, cypress trees proposed for elimination shall be transplanted to areas of wetland creation or roost enhancement, and (iii) willow, cypress and other hardwood species shall be planted on the spoil windrows of the abandoned pit south of the roost area to provide future roost availability, and the existing roost shall be monitored over a seven year period.

3. The Plan shall be submitted to the Department of Environmental Protection, the Florida Fish and Wildlife Conservation Commission, the U.S. Fish and Wildlife Service, Treasure Coast Regional Planning Council, and other appropriate governmental authorities or agencies.

4. The Department of Environmental Protection shall review the Plan and it shall be subject to the approval of the Department of Environmental Regulation in consultation with the Florida Fish and Wildlife Conservation Commission, U.S. Fish and Wildlife Service and Treasure Coast Regional Planning Council. The Palm Beach County Solid Waste Authority in he event of disapproval of the Plan by the Department of Environmental Protection shall include such revisions therein as may be required by the Department of Environmental Protection.

5. The Palm Beach County Solid Waste Authority shall complete all restoration and mitigation work set forth in the Plan approved by the Department of

Environmental Protection in accordance with the time schedules set forth in the approved Plan.

B. Off-Site Restoration and Mitigation.

1. The off-site restoration and mitigation area is an area of approximately 3400 acres in the L-8 Marsh area of the J. W. Corbett wildlife management area designated by the Florida Fish and Wildlife Conservation Commission and shown on Exhibit A attached hereto and made part hereof (hereinafter referred to as the "preservation area").

2. The Solid Waste Authority shall perform a detailed hydrological study the scope and content. of which shall be subject to approval by the Department of Environmental Protection in consultation with the Florida Fish and Wildlife Conservation Commission, U.S. Fish and Wildlife Service and Treasure Coast Regional Planning Council. The purpose of the hydrological study shall be to identify and detail those modifications and improvements that would be necessary to the preservation area in order to restore a hydroperiod to this area which approximates the natural wetland hydroperiod. The Solid Waste Authority shall pay all costs, engineering and otherwise, for such study and the study shall be completed within two years from the date that certification has been issued. The Solid Waste Authority will at its sole cost and expense make such modifications and improvements to the preservation area including but not limited to payment of all engineering and permitting fees, all costs of labor, material, equipment and physical improvements (all of the foregoing being collectively hereinafter referred to as the "improvements") as identified in the approved hydrological study to restore a hydroperiod to the preservation area which approximates the natural wetland hydroperiod for such area.

3. The hydrological study shall be submitted to the Department of Environmental Protection, the Florida Fish and Wildlife Conservation Commission, U.S. Fish and Wildlife Service and Treasure Coast Regional Planning Council and other appropriate governmental authorities or agencies.

4. The Department of Environmental Protection shall review the hydrological study and the Proposed implementation thereof. The study and the implementation shall be subject to the approval of the Department of Environmental Protection in consultation with the Florida Fish and Wildlife Conservation Commission, U.S. Fish and Wildlife Service and Treasure Coast Regional Planning Council.

5. The Palm Beach County Solid Waste Authority in the event of disapproval of the recommendations contained in the hydrological study by the Department of Environmental Protection stall include such revisions therein as may be required by the Department of Environmental Protection.

6. In the event that the improvements required by the approved hydrological study are projected to significantly exceed $420,000.00 plus the inflation factor as set forth below then the Palm Beach County Solid Waste Authority may apply to the Department of Environmental Protection for consideration to (I) reduce the size and scope of the mitigation and restoration project or (ii) utilize alternative methods to accomplish the required mitigation and restoration as set forth above. The fact that the

cost of the improvements in the approved hydrological study are projected to significantly exceed the amount set forth above, shall not, entitle the Palm Beach County Solid Waste Authority, as a matter of right, to reduce or modify the mitigation required herein. Whether, and the extent to which, the mitigation or restoration requirements shall be reduced or modified shall rest solely in the discretion of the Department of Environmental Protection in consultation with the Florida Fish and Wildlife Conservation Commission, U.S. Fish and Wildlife Service and Treasure Coast Regional Planning Council.

7. The Palm Beach County Solid Waste Authority shall complete all restoration and mitigation work set forth in the approved hydrological study including the implementation measures contained therein, within five years from the date of certification issuance.

8. Inflation Factor:

In paragraph B.6. the sum of $420,000.00 is referred to. The actual number to be utilized in place of $420,000.00 in condition B.6. shall be a sum using $420,000.00 as a base and adding any increase in the index thereto; i.e., in the event there has been a 10% increase in the index from December 3, 1985, through the end of the time period under consideration then there shall be an increase of 10% in the sum of $420,000.00. The Solid Waste Authority shall make no application for. modification of the mitigation and restoration until after the completion of the approved hydrological study. For purposes of projecting and determining the actual amount to be utilized in condition B.6. with reference to the $420,000.00, as to improvements to be constructed in the future, there shall be added to the $420,000.00 the following: (i) a sum which represents the percentage increase in the index from December 3, 1985, through the date of approval of the hydrological study and (ii) a sum representing the estimated percentage increase in the index through the date a specific improvement is projected to be constructed in the approved hydrological study. The estimated percentage increase shall be the average annual increase in the index from December 3, 1985, through the date of approval of the hydrological study; i.e., if the average annual increase has been 10% and a specific , improvement is to be constructed nine months after the approval of the hydrological study there shall be added [in addition to the amount referred to in (i)] to the $420,000.00 the sum of $31,500.00 representing three quarters of the 10% increase.

Index: The term index as utilized herein shall mean: The Engineering News-Record, Construction Cost Index, published by McGraw-Hill, Inc.

In the event that the Construction Cost Index is discontinued then the Department of Environmental Protection shall choose another index similar in nature to utilize in connection with this off-site mitigation and restoration condition.

XXI. CITY OF WEST PALM BEACH

Prior to construction of new buildings or additions to existing buildings of 1,000 or more gross square feet at the site, SWA shall demonstrate that it complies with Section 94-35 (Site Plan Review) of the City Of West Palm Beach Code of Ordinances.

[Section 94-35 (Site Plan Review) City Of West Palm Beach Code of Ordinances, and 403.511(4), F.S.]

XXII. HISTORY

Issued 07/29/86; signed by Governor Graham
Modification 01/13/92; signed by Secretary Browner
Modification 11/09/94; signed by Secretary Wetherell
Modification 12/19/95; signed by Secretary Wetherell
Modification 03/27/96; signed by Secretary Wetherell
Modification 08/29/97; signed by Secretary Wetherell
Modification 12/07/2000, signed by Deputy Secretary Green
Modification 4/10/2006, signed by Siting Administrator Oven
Modification 8/27/2007; signed by Siting Administrator Halpin
Modification 04/08/2008; signed by Siting Administrator Halpin
Modification 12/12/2008; signed by Siting Administrator Halpin

Attachment I. Wetlands Exhibit

Appendix A. Current Air Title V Operation Permit

Appendix B. Air PSD Permit 108A

Appendix C. Air PSD Permit 108C

Appendix D. Air PSD Permit 108D

Appendix E. Air PSD Permit 108F

Appendix F. Air Construction Permit 0990234-008-AC

Appendix G. Air Construction Permit 0990234-009-AC

Appendix H. Air Construction Permit 0990234-012-AC

Solid Waste Authority of Palm Beach County
Petition for Modification of Conditions of Certification (PA 84-20)

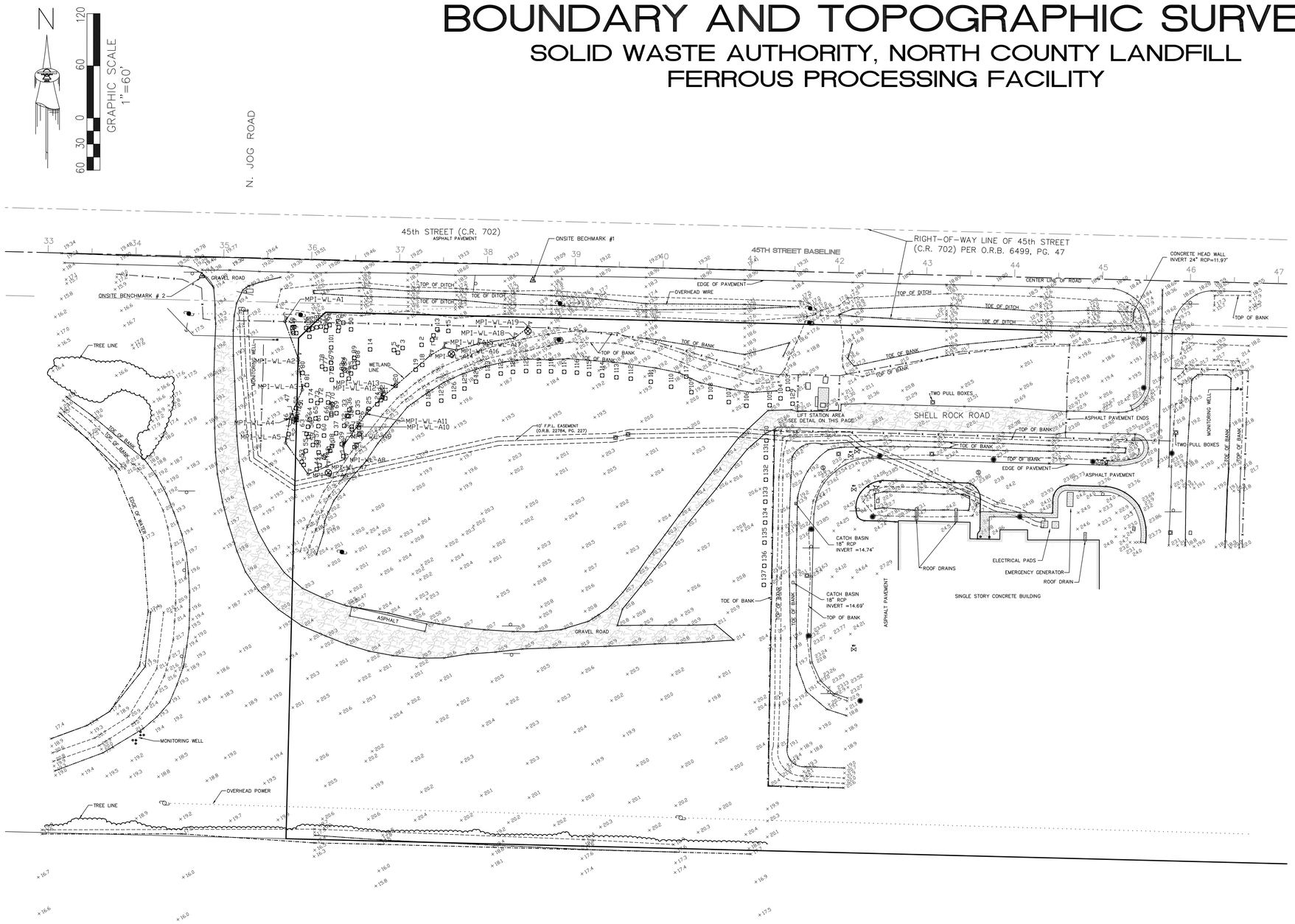
Appendix C
Tree Survey

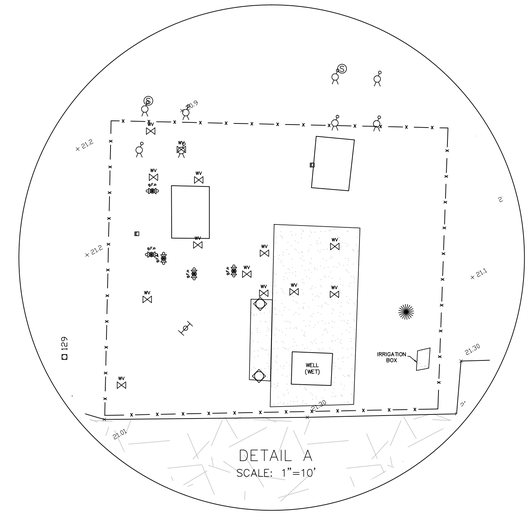
3582061 / FTL

MALCOLM PIRNIE

BOUNDARY AND TOPOGRAPHIC SURVEY

SOLID WASTE AUTHORITY, NORTH COUNTY LANDFILL
FERROUS PROCESSING FACILITY





ONSITE BENCHMARK # 1
SET 5/8" IRON ROD/CAP
"G & O, LB 3935"
N = 882977.488
E = 780377.358
Z = 18.875'

ONSITE BENCHMARK # 2
SET 5/8" IRON ROD/CAP
"G & O, LB 3935"
N = 882982.381
E = 780000.878
Z = 19.500'

LEGEND:

C.R.	COUNTY ROAD
Δ	CENTRAL ANGLE OF CURVE
FND.	FOUND
ID	IDENTIFICATION
L	ARC LENGTH OF CURVE
O.R.B.	OFFICIAL RECORDS BOOK
P.B.C.	PALM BEACH COUNTY
PG.	PAGE
R	RADIUS OF CURVE
R/W	RIGHT OF WAY
S.W.A.	SOLID WASTE AUTHORITY
	ELECTRIC BOX
	BOLLARD
	POWER POLE CONCRETE
	CONCRETE
—x—x—	6' CHAIN LINK FENCE
	SIGN
x 19.6	SPOT ELEVATION ON NATURAL GROUND
x 19.06	SPOT ELEVATION ON IMPERVIOUS SURFACE
	WETLAND FLAG
	GOPHER TURTLE HOLE
	PULL BOX
	POWER POLE WOOD
	GUY ANCHOR
	MAIL BOX
	AIR RELEASE VALVE (WATER)
(D)	LEGAL DESCRIPTION
(M)	AS MEASURED GRID DISTANCE
	TREE
S WV	MANHOLE SANITARY
	WATER VALVE
BFP	BACK FLOW PREVENTER
	ELECTRIC OUTLET
	WATER METER
PVB	PRESSURE VACUUM BREAKER
	STREET LIGHT
	CENTER LINE
	FIRE HYDRANT
RCP	REINFORCED CONCRETE PIPE

POINT TABLE (TREE)

POINT NUMBER	DESCRIPTION
1	8"PINE
2	13"PALM
3	6"PINE
4	6"PINE
5	7"PINE
6	6"CYPRESS
7	4"CYPRESS
8	4"CYPRESS
9	4"CYPRESS
10	5"CYPRESS
11	6"CYPRESS
12	5"CYPRESS
13	6"CYPRESS
14	11"PINE
15	7"PINE
16	4"CYPRESS
17	21"PALM
18	4"PINE
19	7"PINE
20	10"PINE
21	4"PINE
22	4"PINE
23	4"PINE
24	7"PINE
25	9"PINE
26	4"UNKNOWN
27	15"PALM
28	11"PALM
29	14"PALM
30	17"PALM
31	7"PINE
32	19"PALM
33	14"PALM
34	14"PINE
35	5"PINE
36	6"CYPRESS
37	15"PALM
38	13"PALM
39	4"UNKNOWN
40	7"UNKNOWN
41	5"CYPRESS
42	10"CYPRESS
43	7"CYPRESS
44	8"CYPRESS
45	8"CYPRESS
46	15"PALM
47	15"PALM
48	16"PALM
49	4"UNKNOWN
50	9"PINE
51	13"PALM
52	15"PINE
53	6"UNKNOWN
54	8"UNKNOWN
55	11"CYPRESS
56	16"PINE
57	15"PALM
58	11"PALM
59	15"PALM
60	9"PINE
61	10"PINE
62	11"PINE
63	5"UNKNOWN
64	9"PINE
65	17"PALM
66	9"PINE
67	6"UNKNOWN
68	16"PALM

POINT TABLE (TREE)

POINT NUMBER	DESCRIPTION
69	16"PALM
70	7"CYPRESS
71	6"CYPRESS
72	7"CYPRESS
73	7"CYPRESS
74	8"CYPRESS
75	4"CYPRESS
76	4"CYPRESS
77	6"CYPRESS
78	5"CYPRESS
79	4"CYPRESS
80	8"PINE
81	10"PINE
82	4"CYPRESS
83	4"CYPRESS
84	4"CYPRESS
85	5"CYPRESS
86	6"CYPRESS
87	4"CYPRESS
88	4"CYPRESS
89	5"CYPRESS
90	4"CYPRESS
91	6"CYPRESS
92	4"CYPRESS
93	4"CYPRESS
94	4"CYPRESS
95	4"CYPRESS
96	5"CYPRESS
97	5"CYPRESS
98	5"CYPRESS
99	4"CYPRESS
100	4"CYPRESS
101	4"CYPRESS
103	2"MAPLE
104	3"MAPLE
105	2"MAPLE
106	3"MAPLE
107	3"MAPLE
108	3"MAPLE
109	3"MAPLE
110	3"MAPLE
111	3"MAPLE
112	3"MAPLE
113	3"MAPLE
114	3"MAPLE
115	3"MAPLE
116	2"MAPLE
117	2"MAPLE
118	2"MAPLE
119	2"MAPLE
120	2"MAPLE
121	2"MAPLE
122	2"MAPLE
123	2"MAPLE
124	2"MAPLE
125	2"MAPLE
126	3"MAPLE
127	2"MAPLE
128	2"MAPLE
129	3"MAPLE
130	2"OAK
131	2"OAK
132	2"OAK
133	2"OAK
134	2"OAK
135	2"OAK
136	2"OAK
137	2"OAK

See Sheet 1 of 2 for Boundary Survey

SURVEYOR'S NOTES

1.THE TOPOGRAPHIC SURVEY AS SHOWN HEREON COMPRISES ONLY A PORTION OF THE PARCEL PER CLIENTS REQUEST

2.TREE DIAMETER SIZES AS SHOWN ON THE TABLE WERE MEASURED AT BREAST HEIGHT.

REVISIONS:	DATE:

ENGINEERS * ARCHITECTS * PLANNERS * SCIENTISTS * SURVEYORS * PHOTOGRAMMETRISTS
GREENHORNE & O'MARA, INC.
3223 COMMERCE PLACE, SUITE 100
WEST PALM BEACH, FL 33407
(561) 686-7707
ANNAPOLIS, MD * FAIRFAX, VA * FREDERICKSBURG, VA * LAUREL, MD
MECHANICSBURG, PA. * RALEIGH, NC * ROCKVILLE, MD * ST. PETERSBURG, FL * WALDORF, MD

BOUNDARY & TOPOGRAPHIC SURVEY FOR:
SOLID WASTE AUTHORITY
NORTH COUNTY LANDFILL
FERROUS PROCESSING FACILITY
PALM BEACH COUNTY FLORIDA

DESIGN	1"=60' SCALE
EJ DRAWN	2 OF 2
TT/JA CHECKED	
11/03/09 DATE	180500.FER.6430.001 DRAWING NO.

J:\survey\SWA\NCLF\Ferrous_plant_topo_surv\FERROUS PLANT.dwg\FERROUS PLANT BDY & TOPO.dwg

Solid Waste Authority of Palm Beach County
Petition for Modification of Conditions of Certification (PA 84-20)

Appendix D
Traffic Concurrency Letter

3582061 / FTL

MALCOLM PIRNIE

Department of Engineering and Public Works
P.O. Box 21229
West Palm Beach, FL 33416-1229
(561) 684-4000
www.pbcgov.org

Palm Beach County Board of County Commissioners

Jeff Koons, Chairman

Burt Aaronson, Vice Chairman

Karen T. Marcus

Shelley Vana

Steven L. Abrams

Jess R. Santamaria

Priscilla Taylor

County Administrator

Robert Weisman

CENTENNIAL CELEBRATION

"An Equal Opportunity Affirmative Action Employer"

August 3, 2009

Mr. Charles Wu
Director - Planning & Zoning
City of West Palm Beach
P.O. Box 3366
West Palm Beach, FL 33402

RE: Solid Waste Authority – Ferrous Processing (FPF)
Project #: 090702
TRAFFIC PERFORMANCE STANDARDS REVIEW

Dear Charles:

The Palm Beach County Traffic Division has reviewed the traffic statement for the proposed relocation of the processing facility project entitled **Solid Waste Authority – Ferrous Processing** pursuant to the Traffic Performance Standards in Article 12 of the Palm Beach County Land Development Code. The project is summarized as follows:

Location:	South side of 45th Street, west of the Florida Turnpike.
Municipality:	West Palm Beach
PCN #:	74-42-43-03-00-000-3010
Existing Uses:	Vacant
New Proposal:	New Ferrous Processing Facility
New Daily Trips:	128
New PH Trips:	13 AM and 13 PM
Build-Out:	Year Ending 2010

Based on our review, the Traffic Division has determined that the proposed relocation project meets the Traffic Performance Standards of Palm Beach County. No building permits are to be issued by the City, after the build-out date, specified above. The County traffic concurrency approval is subject to the Project Aggregation Rules set forth in the Traffic Performance Standards Ordinance.

If you have any questions regarding this determination, please contact me at 684-4030 or e-mail me at matefi@pbcgov.org

Sincerely,

Masoud Atefi - MSCE
TPS Administrator, Municipalities - Traffic Division

MA:sf
cc: Jeff D. Gower, PE - Malcolm Pirnie, Inc.

File: General - TPS - Mun - Traffic Study Reviews
N:\TRAFFIC\ma\Admin\Approvals\2009\090702.doc

Solid Waste Authority of Palm Beach County
Petition for Modification of Conditions of Certification (PA 84-20)

Appendix E
Environmental Resources Permit

3582061 / FTL

MALCOLM PIRNIE

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Solid Waste Authority of Palm Beach County
Environmental Resource Permit
Ferrous Processing Facility

Attachment A

Application Forms (A, C, & E)

3582061 / FTL

FORM #: 62-343.900 (1)
FORM TITLE: JOINT ENVIRONMENTAL RESOURCE PERMIT APPLICATION
DATE: March 26, 2004

SECTION A

FOR AGENCY USE ONLY	
ACOE Application #	DEP/WMD Application #
Date Application Received	Date Application Received
Proposed Project Lat.	Fee Received $
Proposed Project Long.	Fee Receipt #

PART 1:
Are any of the activities described in this application proposed to occur in, on, or over wetlands or other surface waters? ☐ yes ☒ no
Is this application being filed by or on behalf of a government entity or drainage district? ☒yes ☐no

PART 2:
A. Type of Environmental Resource Permit Requested (check at least one). See Attachment 2 for thresholds and descriptions.

- ☐ Noticed General - include information requested in Section B.
- ☐ Standard General (Single Family Dwelling) - include information requested in Sections C and D.
- ☒ Standard General (all other Standard General projects) - include information requested in Sections C and E.
- ☐ Individual (Single Family Dwelling) - include information requested in Sections C and D.
- ☐ Individual (all other Individual projects) - include information requested in Sections C and E.
- ☐ Conceptual - include information requested in Sections C and E.
- ☐ Mitigation Bank Permit (construction) - include information requested in Sections C and F. (If the proposed mitigation bank involves the construction of a surface water management system requiring another permit defined above, check the appropriate box and submit the information requested by the applicable section.)
- ☐ Mitigation Bank (conceptual) - include information requested in Sections C and F.

B. Type of activity for which you are applying (check at least one)

- ☐ Construction or operation of a new system, other than a solid waste facility, including dredging or filling in, on or over wetlands and other surface waters.
- ☒ Construction, expansion or modification of a solid waste facility.
- ☐ Alteration or operation of an existing system which was not previously permitted by a WMD or DEP.
- ☐ Modification of a system previously permitted by a WMD or DEP.
  Provide previous permit numbers:_____
  - ☐ Alteration of a system
  - ☐ Abandonment of a system
  - ☐ Removal of a system
  - ☐ Extension of permit duration
  - ☐ Construction of additional phases of a system

C. Are you requesting authorization to use Sovereign Submerged Lands?
☐yes ☒no
(See Section G and Attachment 5 for more information before answering this question.)

D. For activities in, on, or over wetlands or other surface waters, check type of federal dredge and fill permit requested:
☐Individual ☐Programmatic General ☐General
☐Nationwide ☒Not Applicable

E. Are you claiming to qualify for an exemption? ☐yes ☒no
If yes, provide rule number if known. _____

PART 3: **A. OWNER(S) OF LAND**	**B. ENTITY TO RECEIVE PERMIT (IF OTHER THAN OWNER)**
Name Mark Hammond	Name
Title and Company Executive Director, Solid Waste Authority of Palm Beach County	Title and Company
Address 7501 N. Jog Road	Address
City, State, Zip West Palm Beach, FL 33412	City, State, Zip
Telephone and Fax (561) 640-4600 and (561) 640-3400	Telephone and Fax
E-mail Address: (optional) mhammond@swa.org	E-mail Address: (optional)
C. AGENT AUTHORIZED TO SECURE PERMIT	**D. CONSULTANT (IF DIFFERENT FROM AGENT)**
Name Christopher C. Tilman, P.E.	Name
Title and Company Senior Consultant, Malcolm Pirnie, Inc.	Title and Company
Address 4315 Metro Parkway, Suite 520	Address
City, State, Zip Fort Myers, FL 33916	City, State, Zip
Telephone and Fax (239) 332-1300 and (239) 332-1789	Telephone and Fax
E-mail Address: (optional) ctilman@pirnie.com	E-mail Address: (optional)

PART 4: (Please provide metric equivalent for federally funded projects):

A. Name of Project, including phase if applicable: Ferrous Processing Facility Relocation

B. Is this application for part of a multi-phase project? ☐ Yes ☒ No

C. Total applicant-owned area contiguous to the project? **1,320** ac.; _____ ha.

D. Total area served by the system: **8.95** ac.; _____ ha.

E. Impervious area for which a permit is sought: **4.63** ac.; _____ ha.

F. Volume of water that the system is capable of impounding: **4.4** ac. ft.; _____ m^3

G. What is the total area of work in, on, or over wetlands or other surface waters?
0 ac.; _____ ha.; _____ sq. ft.; _____ sq. m.

H. Total volume of material to be dredged: **0** yd^3; _____ m^3

I. Number of new boat slips proposed: **0** wet slips; **0** dry slips

PART 5:

Project location (use additional sheets if needed):
County(ies)Palm Beach

Section(s) 3	Township 42S	Range 42E
Section(s)	Township	Range
Section(s)	Township	Range

Land Grant name, if applicable: N/A

Tax Parcel Identification Number: 74-42-42-34-00-000-1010

Street Address, Road or other location: Southeast corner of Jog Road and 45th Street intersection, west of Florida Turnpike

City, Zip Code, if applicable: West Palm Beach, FL 33412

PART 6: Describe in general terms the proposed project, system, or activity.

The Solid Waste Authority (Authority) of Palm Beach County is proposing to relocate the existing Ferrous Processing Facility (FPF) from its current location, which is adjacent to the existing landfill within the Palm Beach Renewable Energy Park (Park), formerly known as the North County Resource Recovery Facility Campus. The new location is approximately one mile south, at the southeast corner of Jog Road and 45th Street, west of the newly constructed Biosolids Pelletizer Facility (BPF), and west of the Florida Turnpike. The relocation of the existing FPF is necessary as a result of the ultimate build-out of the Authority's Central Landfill.

The proposed project involves construction of the new ferrous processing facility, access road, parking area, and stormwater management system serving the project area. The proposed stormwater management system is designed to treat runoff from 8.95 acres of project area and consists of a combination of swales and dry retention areas. Stormwater resulting from a storm event greater than 25-year, 72-hour storm will be discharged into the Southwest Borrow Lake via an overflow weir.

PART 7:

A. If there have been any pre-application meetings, including on-site meetings, with regulatory staff, please list the date(s), location(s), and names of key staff and project representatives.
September 2, 2009, FDEP Southeast District Office, 400 N Congress Avenue, Suite 200, West Palm Beach, FL 33401, Indarjit Jagnarine (FDEP), Christopher Tilman and Kushala Gowda (Malcolm Pirnie).

B. Please identify by number any MSSW/Wetland Resource/ERP/ACOE Permits pending, issued or denied for projects at the location, and any related enforcement actions.

Agency	Date	No.\Type of Application	Action Taken
USACOE	10/20/1986	85IPB-21054 Dredge & Fill Permit	Issued
USACOE	04/01/1999	198501054-IP-TM	Issued

C. Note: The following information is required for projects proposed to occur in, on or over wetlands that need a federal dredge and fill permit or an authorization to use state owned submerged lands. Please provide the names, addresses and zip codes of property owners whose property directly adjoins the project (excluding application) and/or (for proprietary authorizations) is located within a 500 ft. radius of the applicant's land. Please attach a plan view showing the owner's names and adjoining property lines. Attach additional sheets if necessary. **N/A**

1. 2.

3. 4.

5. 6.

7. 8.

PART 8:

A. By signing this application form, I am applying, or I am applying on behalf of the applicant, for the permit and any proprietary authorizations identified above, according to the supporting data and other incidental information filed with this application. I am familiar with the information contained in this application and represent that such information is true, complete and accurate. I understand this is an application and not a permit, and that work prior to approval is a violation. I understand that this application and any permit issued or proprietary authorization issued pursuant thereto, does not relive me of any obligation for obtaining any other required federal, state, water management district or local permit prior to commencement of construction. I agree, or I agree on behalf of the applicant, to operate and maintain the permitted system unless the permitting agency authorizes transfer of the permit to a responsible operation entity. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

Christopher C. Tilman, P.E.
Typed/Printed Name of Applicant (If no Agent is used) or Agent (If one is so authorized below)

_____ _____
Signature of Applicant/Agent Date
Senior Consultant
(Corporate Title if applicable)

AN AGENT MAY SIGN ABOVE ONLY IF THE APPLICANT COMPLETES THE FOLLOWING:

B. I hereby designate and authorize the agent listed above to act on my behalf, or on behalf of my corporation, as the agent in the processing of this application for the permit and/or proprietary authorization indicated above; and to furnish, on request, supplemental information in support of the application. In addition, I authorize the above-listed agent to bind me, or my corporation, to perform any requirements which may be necessary to procure the permit or authorization indicated above. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

Mark Hammond		
Typed/Printed Name of Applicant	Signature of Applicant	Date

Executive Director
(Corporate Title if applicable)

Please note: The applicant's original signature (not a copy) is required above.

PERSON AUTHORIZING ACCESS TO THE PROPERTY MUST COMPLETE THE FOLLOWING:

C. I either own the property described in this application or I have legal authority to allow access to the property, and I consent, after receiving prior notification, to any site visit on the property by agents or personnel from the Department of Environmental Protection, the Water Management District and the U.S. Army Corps of Engineers necessary for the review and inspection of the proposed project specified in this application. I authorize these agents or personnel to enter the property as many times as may be necessary to make such review and inspection. Further, I agree to provide entry to the project site for such agents or personnel to monitor permitted work if a permit is granted.

Mark Hammond		
Typed/Printed Name of Applicant	Signature of Applicant	Date

Executive Director
(Corporate Title if applicable)

SECTION C

Environmental Resource Permit Notice of Receipt of Application

Note: this form does not need to be submitted for noticed general permits.
This information is required in addition to that required in other sections of the application. Please submit five copies of this notice of receipt of application and all attachments with the other required information. Please submit all information on 8 1/2" x 11" paper.

Project Name	Ferrous Processing Facility Relocation
County	Palm Beach County
Owner	Solid Waste Authority of Palm Beach County
Applicant:	Mark Hammond
Applicant's Address:	7501 N Jog Road, West Palm Beach, FL 33412

1. Indicate the project boundaries on a USGS quadrangle map. Attach a location map showing the boundary of the proposed activity. The map should also contain a north arrow and a graphic scale; show Section(s), Township(s), and Range(s); and must be of sufficient detail to allow a person unfamiliar with the site to find it.

See Attachment B, Figure 1 for project location and USGS quadrangle map.

2. Provide the names of all wetlands, or other surface waters that would be dredged, filled, impounded, diverted, drained, or would receive discharge (either directly or indirectly), or would otherwise be impacted by the proposed activity, and specify if they are in an Outstanding Florida Water or Aquatic Preserve:

No wetland impacts are anticipated from the proposed project. Runoff from the project area produced by the 25-year, 72-hour storm (Design Storm) will be treated in the proposed on-site dry retention areas. Stormwater volume resulting from a storm event greater than the 25-year, 72-hour storm will be discharged to the Southwest Borrow Lake via an overflow weir with a control elevation of 21.5 feet, NGVD.

3. Attach a depiction (plan and section views), which clearly shows the works or other facilities proposed to be constructed. Use multiple sheets, if necessary. Use a scale sufficient to show the location and type of works.

See Attachment C for Permit Drawings.

4. Briefly describe the proposed project (such as "construct dock with boat shelter", "replace two existing culverts", "construct surface water management system to serve 150 acre residential development"):

The proposed project involves relocation of the existing Ferrous Processing Facility, which is located north of Class I landfill, to a new location adjacent to the Biosolids Pellitizer Facility (BPF) at the intersection of Jog Road and 45th Street, within the boundary of the existing Power Plant Site Act (PPSA) certified site.

5. Specify the acreage of wetlands or other surface waters, if any, that are proposed to be filled, excavated, or otherwise disturbed or impacted by the proposed activity:

filled NA ac.; NA excavated ac.;

other impacts NA ac. (temporary impacts)

6. Provide a brief statement describing any proposed mitigation for impacts to wetlands and other surface waters (attach additional sheets if necessary):

There are no anticipated impacts to the wetlands; therefore, no mitigation is proposed.

FOR AGENCY USE ONLY

Application Name:
Application Number:
Office where the application can be inspected:

Note to Notice recipient: The information in this notice has been submitted by the applicant, and has not been verified by the agency. It may be incorrect, incomplete or may be subject to change.

SECTION E

INFORMATION REQUESTED FOR STANDARD GENERAL, INDIVIDUAL AND CONCEPTUAL ENVIRONMENTAL RESOURCE PERMIT APPLICATIONS NOT RELATED TO A SINGLE FAMILY DWELLING UNIT

Please provide the information requested below if the proposed project requires either a standard general, individual, or conceptual approval environmental resource permit and is not related to an individual, single family dwelling unit, duplex or quadruplex. The information listed below represents the level of information that is usually required to evaluate an application. The level of information required for a specific project will vary depending on the nature and location of the site and the activity proposed. Conceptual approvals generally do not require the same level of detail as a construction permit. However, providing a greater level of detail will reduce the need to submit additional information at a later date. If an item does not apply to your project, proceed to the next item. Please submit all information that is required by the Department on either 8 1/2 in. X 11 in. paper or 11 in. X 17 in. paper. Larger drawings may be submitted to supplement but not replace these smaller drawings.

I. Site Information

A. Provide a map(s) of the project area and vicinity delineating USDA/SCS soil types.

See Attachment B, Figure 3 for USDA/SCS soil map.

B. Provide recent aerials, legible for photo interpretation with a scale of 1" = 400 ft, or more detailed, with project boundaries delineated on the aerial.

See Attachment B, Figure 4 for an aerial map of the project area.

C. Identify the seasonal high water or mean high tide elevation and normal pool or mean low tide elevation for each on site wetland or surface water, including receiving waters into which runoff will be discharged. Include dates, datum, and methods used to determine these elevations.

There are no wetlands within the project area. The seasonal high ground water elevation for the proposed project area was estimated to be 18 feet NGVD based on the Geotechnical Report and Borehole Permeability Tests Report. Please see Attachment D. Runoff from the project area produced by the 25-year, 72-hour storm (Design Storm) will be treated in the proposed on-site dry retention areas. Stormwater volume resulting from a storm event greater than the 25-year, 72-hour storm will be discharged to the Southwest Borrow Lake via an overflow weir with a control elevation of 21.5 feet, NGVD.

D. Identify the wet season high water tables at the locations representative of the entire project site. Include dates, datum, and methods used to determine these elevations.

The seasonal high water table (SHWT) was estimated to be 18 feet NGVD. See Attachment D for Geotechnical Report and Borehole Permeability Tests Report.

II. Environmental Considerations

A. Provide results of any wildlife surveys that have been conducted on the site, and provide any comments pertaining to the project from the Florida Game and Fresh Water Fish Commission and the U.S. Fish and Wildlife Service.

Malcolm Pirnie biologists performed a habitat and protected species evaluation on the project site in December 2008 and May 2009. These evaluations were focused on the delineation of adjacent wetland habitats, , and the search for listed species that may be residing within the project boundaries. A single

gopher tortoise burrow was noted during the evaluations; however a gopher tortoise was never seen. The burrow location was marked with a GPS and currently the project boundary setback is 25-feet or greater from the burrow location. At this time the gopher tortoise burrow will not be disturbed and no further permitting is necessary based on this assumption.

An additional effort was made to determine the distance to the Authority's rookery and nearest nesting concentration of the rookery. This was performed to determine potential impacts due to noise and activity of the construction and operation of the new ferrous processing facility (Facility) to the rookery inhabitants. As a result of the noise study, it has been determined that the construction and operation activities will not affect the rookery inhabitants.

B. Provide a description of how water quantity, quality, hydroperiod, and habitat will be maintained in on-site wetlands and other surface waters that will be preserved or will remain undisturbed.

N/A

C. Provide a narrative description of any proposed mitigation plans, including purpose, maintenance, monitoring, and construction sequence and techniques, and estimated costs.

N/A

D. Describe how boundaries of wetlands or other surface waters were determined. If there has ever been a jurisdictional declaratory statement, a formal wetland determination, a formal determination, a validated informal determination, or a revalidated jurisdictional determination, provide the identifying number.

A wetland delineation has been performed on the project site and no wetland habitats exist within the project boundaries. An adjacent roadside wetland habitat does exist outside of the existing earthen berm to the north of the project area. The roadside wetland habitat consists mainly of herbaceous swale habitat with adjacent shrub and tree species along the berm. There are also wetland habitats located south of the project boundary, mainly consisting of melalueca dominated swamp habitat. These resources are separated from the project site by a Florida Power & Light electrical easement.

Wetland boundaries were determined using the U. S. Army Corps of Engineers (USACOE) Method pursuant to Section 404 of the Clean Water Act and the Florida Unified Wetland Delineation Method. The USACOE exerts jurisdiction over Waters of the U.S. (WOUS) and are defined in 33 CFR Part 328.3 and include ponds, streams, and wetlands. Wetlands were identified based on the 1987 Corps of Engineers Wetland Delineation Manual. The State of Florida extends jurisdiction in Peninsular Florida under the Part IV, Ch.373, F.S., to all surface waters including ponds, streams, and wetlands on the platted property. The State of Florida and its political subdivisions delineates wetland boundaries under the provisions of Ch. 62-340, F.A.C., as ratified by the Florida Legislature in sections 373.421 and .4211, F.S. and known as the Florida Unified Wetland Delineation Method.

E. Impact Summary Tables:

1. For all projects, complete Tables 1, 2 and 3 as applicable.

N/A

2. For docking facilities or other structures constructed over wetlands or other surface waters, provide the information requested in Table 4.

N/A

3. For shoreline stabilization projects, provide the information requested in Table 5.

N/A

III. Plans

Provide clear, detailed plans for the system including specifications, plan (overhead) views, cross sections (with the locations of the cross sections shown on the corresponding plan view), and profile (longitudinal) views of the proposed project. The plans must be signed and sealed by an appropriate registered professional as required by law. Plans must include a scale and a north arrow. These plans should show the following:

A. Project area boundary and total land area, including distances and orientation from roads or other land marks;

See Attachment C for Permit Drawings.

B. Existing land use and land cover (acreage and percentages), and on-site natural communities, including wetlands and other surface waters, aquatic communities, and uplands. Use the Florida Land Use Cover & Classification System (FLUCCS)(Level 3) for projects proposed in the South Florida Water Management District, the St. Johns River Water Management District, and the Suwannee River Water Management District and use the National Wetlands Inventory (NWI) for projects proposed in the Southwest Florida Water Management District. Also identify each community with a unique identification number which must be consistent in all exhibits.

See Attachment B, Figure 6 for FLUCCS map and Attachment G, Drainage Calculations for land cover information.

C. The existing topography extending at least 100 feet off the project area, and including adjacent wetlands and other surface waters. All topography shall include the location and a description of known benchmarks, referenced to NGVD. For systems waterward of the mean high water (MHW) or seasonal high water lines, show water depths, referenced to mean low water (MLW) in tidal areas or seasonal low water in non-tidal areas, and list the range between MHW and MLW. For docking facilities, indicate the distance to, location of, and depths of the nearest navigational channel and access routes to the channel.

See Attachment E for boundary survey and topographical map.

D. If the project is in the known flood plain of a stream or other water course, identify the following: 1) the flood plain boundary and approximate flooding elevations; and 2) the 100-year flood elevation and floodplain boundary of any lake, stream or other watercourse located on or adjacent to the site;

See Attachment B, Figure 7 for the floodplain map. The proposed project does not lie within the 100-year flood zone.

E. The boundaries of wetlands and other surface waters within the project area. Distinguish those wetlands and other surface waters that have been delineated by any binding jurisdictional determination;

No jurisdictional determination has been performed on the property for this project.

F. Proposed land use, land cover and natural communities (acreage and percentages), including wetlands and other surface waters, undisturbed uplands, aquatic communities, impervious surfaces, and water management areas. Use the same classification system and community identification number used in III (B) above.

See Attachment B, Figure 6 for FLUCCS map and Attachment G, Drainage Calculations for land cover information.

G. Proposed impacts to wetlands and other surface waters, and any proposed connections/outfalls to other surface waters or wetlands;

There are no anticipated impacts to wetlands. Runoff from the project area will be treated in the proposed dry retentions areas. Stormwater volume resulting from a storm event greater than the 25-year, 72-hour storm will be discharged to the Southwest Borrow Lake via an overflow weir with a control elevation of 21.5 feet, NGVD. See Attachment C, Permit Drawings for the location of dry retention areas.

H. Proposed buffer zones;

See Attachment C, Permit Drawings for buffer zones.

I. Pre- and post-development drainage patterns and basin boundaries showing the direction of flows, including any off-site runoff being routed through or around the system; and connections between wetlands and other surface waters;

See Attachment G for Drainage Calculations and Attachment C for Permit Drawings.

J. Location of all water management areas with details of size, side slopes, and designed water depths;

See Attachment C for Permit Drawings including details of proposed swales and dry retention areas.

K. Location and details of all water control structures, control elevations, any seasonal water level regulation schedules; and the location and description of benchmarks (minimum of one benchmark per structure);

See Attachment C for Permit Drawings.

L. Location, dimensions and elevations of all proposed structures, including docks, seawalls, utility lines, roads, and buildings;

See Attachment C for Permit Drawings.

M. Location, size, and design capacity of the internal water management facilities;

See Attachment C for Permit Drawings including details of proposed swales and dry retention areas, Attachment G for Drainage Calculations, and Attachment H for ICPR Report.

N. Rights-of-way and easements for the system, including all on-site and off-site areas to be reserved for water management purposes, and rights-of-way and easements for the existing drainage system, if any;

Please see Appendix C, Permit Drawings for location of Right-of-Way and easements.

O. Receiving waters or surface water management systems into which runoff from the developed site will be discharged;

The proposed stormwater management system will be designed in accordance with FDEP regulations and/or South Florida Water Management District's (SFWMD) Basis of Review (BOR) criteria. This system will consist of a combination of conveyance swales and dry retention areas on the west side of the New FPF and along the proposed roadway. The dry retention areas will be designed to retain and treat runoff produced by the 25-year, 72-hour storm from the entire project area. Stormwater volume resulting from a storm event greater than the 25-year, 72-hour storm will be discharged to the Southwest Borrow Lake via an overflow weir with a control elevation of 21.5 feet, NGVD. See Attachment G for Drainage Calculations and Attachment C for Permit Drawings.

P. Location and details of the erosion, sediment and turbidity control measures to be implemented during each phase of construction and all permanent control measures to be implemented in post-development conditions;

See Attachment C for Permit Drawings including Sediment and Erosion Control Details. During construction, the contractor will use hay bales, silt fences, and other turbidity barriers at appropriate locations to prevent offsite surface water degradation.

Q. Location, grading, design water levels, and planting details of all mitigation areas;

N/A

R. Site grading details, including perimeter site grading;

See Attachment C for Permit Drawings including Grading Plan.

S. Disposal site for any excavated material, including temporary and permanent disposal sites;

Any excavated material requiring disposal will be disposed of in the County owned Class I or Class III Landfill.

T. Dewatering plan details;

Dewatering plans if required will be provided by the Contractor.

U. For marina facilities, locations of any sewage pumpout facilities, fueling facilities, boat repair and maintenance facilities, and fish cleaning stations;

N/A

V. Location and description of any nearby existing offsite features which might be affected by the proposed construction or development such as stormwater management ponds, buildings or other structures, wetlands or other surface waters.

N/A

W. For phased projects, provide a master development plan.

This is not a phased project.

IV. Construction Schedule and Techniques

Provide a construction schedule, and a description of construction techniques, sequencing and equipment. This information should specifically include the following:

A. Method for installing any pilings or seawall slabs;

N/A

B. Schedule of implementation of temporary or permanent erosion and turbidity control measures;

Appropriate erosion and turbidity control measures will be placed in accordance with the construction schedule. These measures will be implemented by the site contractor at the appropriate time and location to prevent erosion or turbidity in onsite or off-site surface waters. See Attachment C, Permit Drawings for sediment and erosion control notes and details.

C. For projects that involve dredging or excavation in wetlands or other surface waters, describe the method of excavation, and the type of material to be excavated;

N/A

D. For projects that involve fill in wetlands or other surface waters, describe the source and type of fill material to be used. For shoreline stabilization projects that involve the installation of riprap, state how these materials are to be placed, (i.e., individually or with heavy equipment) and whether the rocks will be underlain with filter cloth;

N/A

E. If dewatering is required, detail the dewatering proposal including the methods that are proposed to contain the discharge, methods of isolating dewatering areas, and indicate the period dewatering structures will be in place (Note: a consumptive use or water use permit may by required);

Dewatering may be required for some construction activities. The necessary dewatering plans and permits will be provided by the Contractor prior to construction.

F. Methods for transporting equipment and materials to and from the work site. If barges are required for access, provide the low water depths and draft of the fully loaded barge;

Equipment and materials will be transported to the site utilizing the existing paved roadway.

G. Demolition plan for any existing structures to be removed; and

See Attachment C for Permit Drawings.

H. Identify the schedule and party responsible for completing monitoring, record drawings, and as-built certifications for the project when completed.

The Engineer of Record and construction firm selected by the Solid Waste Authority for this project will provide these services.

V. Drainage Information

A. Provide pre-development and post-development drainage calculations, signed and sealed by an appropriate registered professional, as follows:

See Attachment G for signed and sealed Drainage Calculations and Attachment H for ICPR Report.

1. Runoff characteristics, including area, runoff curve number or runoff coefficient, and time of concentration for each drainage basin;

See Attachment G for signed and sealed Drainage Calculations and Attachment H for ICPR Report.

2. Water table elevations (normal and seasonal high) including aerial extent and magnitude of any proposed water table draw down;

See Attachment D for Geotechnical Report and Borehole Permeability Tests Report and Attachment H for ICPR Report.

3. Receiving water elevations (normal, wet season, design storm);

See Attachment G for signed and sealed Drainage Calculations and Attachment H for ICPR Report.

4. Design storms used including rainfall depth, duration, frequency, and distribution;

See Attachment G for signed and sealed Drainage Calculations and Attachment H for ICPR Report.

5. Runoff hydrograph(s) for each drainage basin, for all required design storm event(s);

See Attachment G for signed and sealed Drainage Calculations and Attachment H for ICPR Report.

6. Stage-storage computations for any area such as a reservoir, close basin, detention area, or channel, used in storage routing;

See Attachment G for signed and sealed Drainage Calculations and Attachment H for ICPR Report.

7. Stage-discharge computations for any storage areas at a selected control point, such as control structure or natural restriction;

See Attachment G for signed and sealed Drainage Calculations and Attachment H for ICPR Report.

8. Flood routings through on-site conveyance and storage areas;

See Attachment G for signed and sealed Drainage Calculations.

9. Water surface profiles in the primary drainage system for each required design storm event(s);

See Attachment G for signed and sealed Drainage Calculations and Attachment H for ICPR Report.

10. Runoff peak rates and volumes discharged from the system for each required design storm event(s);

See Attachment G for signed and sealed Drainage Calculations and Attachment H for ICPR Report.

11. Tail water history and justification (time and elevation); and

N/A

12. Pump specifications and operating curves for range of possible operating conditions (if used in system).

N/A

B. Provide the results of any percolation tests, where appropriate, and soil borings that are representative of the actual site conditions;

See Attachment D for Geotechnical Report and Borehole Permeability Tests Report.

C. Provide the acreage, and percentages of the total project, of the following:

1. Impervious surfaces, excluding wetlands;

See Attachment G for signed and sealed Drainage Calculations.

2. Pervious surfaces (green areas, not including wetlands);

See Attachment G for signed and sealed Drainage Calculations.

3. Lakes, canals, retention areas, other open water areas; and

See Attachment G for signed and sealed Drainage Calculations.

4. Wetlands.

See Attachment B, Figure 2 for Wetland map.

D. Provide an engineering analysis of floodplain storage and conveyance (if applicable), including:

1. Hydraulic calculations for all proposed traversing works;

N/A

2. Backwater water surface profiles showing upstream impact of traversing works;

N/A

3. Location and volume of encroachment within regulated floodplain(s); and

See Attachment B, Figure 7 for floodplain map of the project area.

4. Plan for compensating floodplain storage, if necessary, and calculations required for determining minimum building and road flood elevations.

Floodplain compensation plan is not applicable. See Attachment B, Figure 7 for floodplain map. Refer Attachment G, Drainage Calculations for minimum building and road elevations.

E. Provide an analysis of the water quality treatment system including:

1. A description of the proposed stormwater treatment methodology that addresses the type of treatment, pollution abatement volumes, and recovery analysis; and

The proposed stormwater management system will be designed in accordance with FDEP regulations and/or South Florida Water Management District's (SFWMD) Basis of Review (BOR) criteria. This system will consist of a combination of conveyance swales and dry retention areas on the west side of the New FPF and along the proposed roadway. Treatment will be provided in the proposed stormwater dry retention areas, which will be adequately sized to treat runoff from the project area. See Attachment G for Drainage Calculations including treatment calculations, and Attachment H for ICPR Report.

2. Construction plans and calculations that address stage-storage and design elevations, which demonstrate compliance with the appropriate water quality treatment criteria.

See Attachment C for Permit Drawings. See Attachment G for Drainage Calculations including stage vs. storage calculations and Attachment H for ICPR Report.

F. Provide a description of the engineering methodology, assumptions and references for the parameters listed above, and a copy of all such computations, engineering plans, and specifications used to analyze the system. If a computer program is used for the analysis, provide the name of the program, a description of the program, input and output data, two diskette copies, if available, and justification for model selection.

See Attachment G for Drainage Calculations including stage vs. storage calculations, Attachment H for ICPR Report, and Attachment C for Permit Drawings.

VI. Operation and Maintenance and Legal Documentation

A. Describe the overall maintenance and operation schedule for the proposed system.

Solid Waste Authority of Palm Beach County will be responsible for the overall maintenance and operation of the proposed system.

B. Identify the entity that will be responsible for operating and maintaining the system in perpetuity if different than the permittee, a draft document enumerating the enforceable affirmative obligations on the entity to properly operate and maintain the system for its expected life, and documentation of the entity's financial responsibility for long-term maintenance. If the proposed operation and maintenance entity is not a

property owner's association, provide proof of the existence of an entity, or the future acceptance of the system by an entity which will operate and maintain the system. If a property owner's association is the proposed operation and maintenance entity, provide copies of the articles of incorporation for the association and copies of the declaration, restrictive covenants, deed restrictions, or other operational documents that assign responsibility for the operation and maintenance of the system. Provide information ensuring the continued adequate access to the system for maintenance purposes. Before transfer of the system to the operating entity will be approved, the permittee must document that the transferee will be bound by all terms and conditions of the permit.

Solid Waste Authority of Palm Beach County will be responsible for the operation and maintenance of the system.

C. Provide copies of all proposed conservation easements, storm water management system easements, property owner's association documents, and plats for the property containing the proposed system.

See Attachment E for Boundary Survey, Attachment I for Legal Description of the site, and Attachment J for easements.

D. Provide indication of how water and waste water service will be supplied. Letters of commitment from off-site suppliers must be included.

Water and wastewater service will be provided by the City of West Palm Beach.

E. Provide a copy of the boundary survey and/or legal description and acreage of the total land area of contiguous property owned/controlled by the applicant.

See Attachment E for the Boundary Survey and Attachment I for Legal Description of the site.

VII. Water Use

A. Will the surface water system be used for water supply, including landscape irrigation, or recreation.

N/A

B. If a Consumptive Use or Water Use permit has been issued for the project, state the permit number.

N/A

C. If no Consumptive Use or Water Use permit has been issued for the project, indicate if such a permit will be required and when the application for a permit will be submitted.

N/A

D. Indicate how any existing wells located within the project site will be utilized or abandoned.

N/A

Solid Waste Authority of Palm Beach County
Environmental Resource Permit
Ferrous Processing Facility

Attachment B

Application Figures

3582061 / FTL

APPLICATION FIGURES

FIGURE TITLE	FIGURE NUMBER
Site Location and USGS Quadrangle Map	1
Wetlands Map	2
Soil Survey Map	3
Aerial Map	4
Gopher Tortoise Burrow Location Map	5
FLUCCS Map	6
Floodplain Map	7

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MALCOLM PIRNIE

SWA SOLID WASTE AUTHORITY

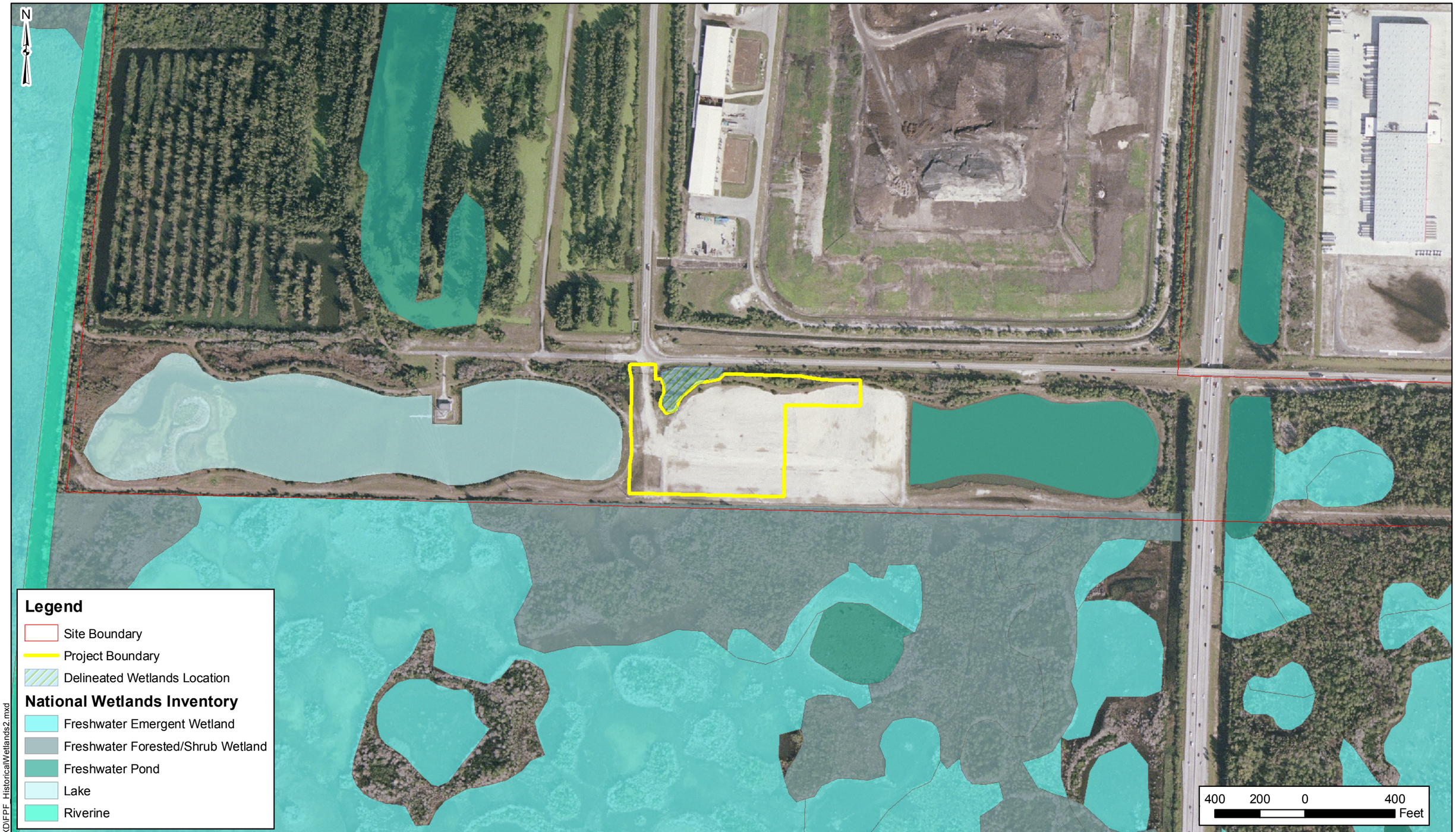
Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Environmental Resource Permit

Site Location and USGS Quadrangle Map

January 2010

FIGURE 1



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MALCOLM PIRNIE

SWA SOLID WASTE AUTHORITY

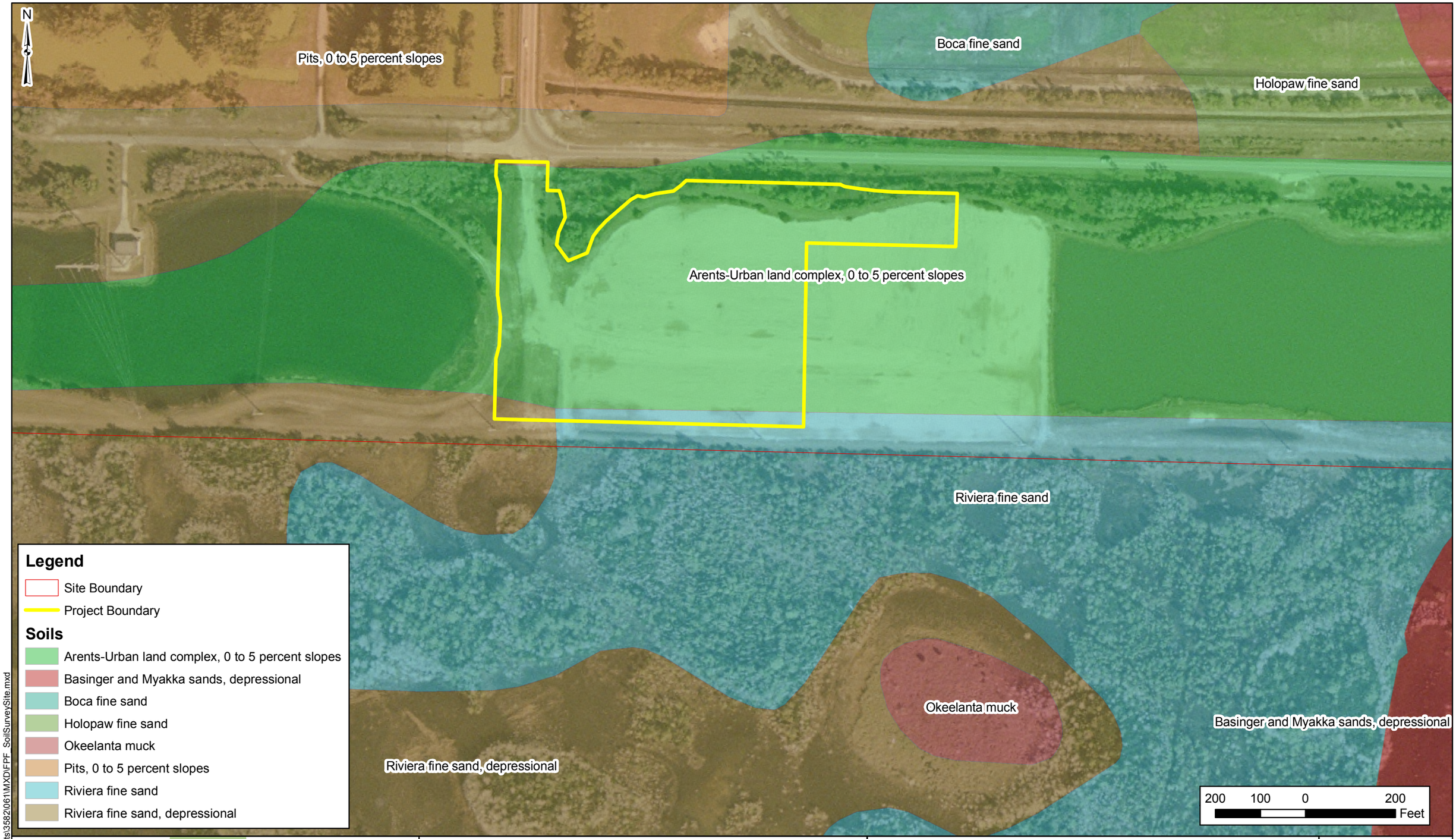
Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Environmental Resource Permit

Wetlands Map

January 2010

FIGURE 2



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MALCOLM PIRNIE

SWA SOLID WASTE AUTHORITY

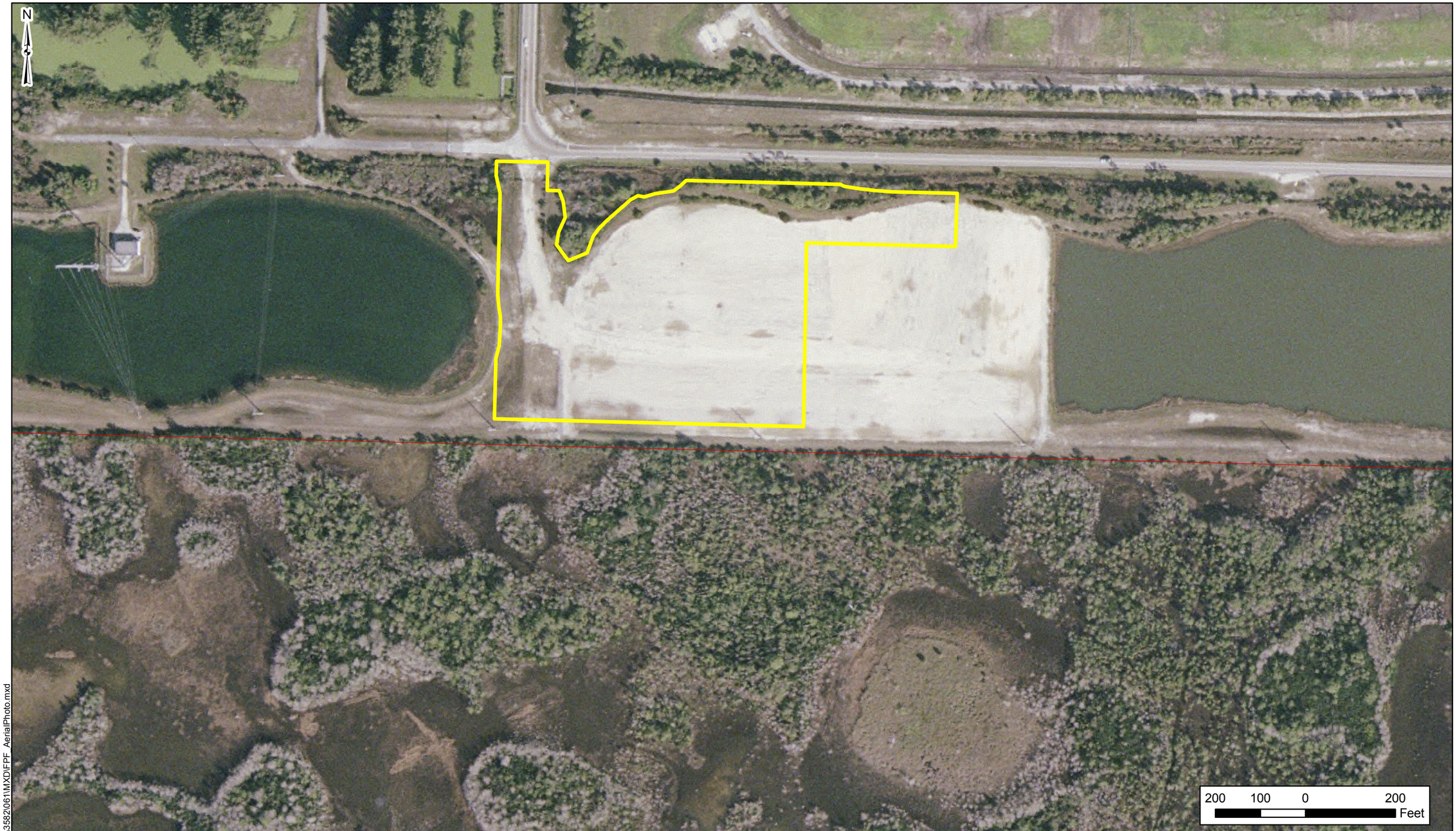
Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Environmental Resource Permit

Soil Survey Map

January 2010

FIGURE 3



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MALCOLM PIRNIE

SWA SOLID WASTE AUTHORITY

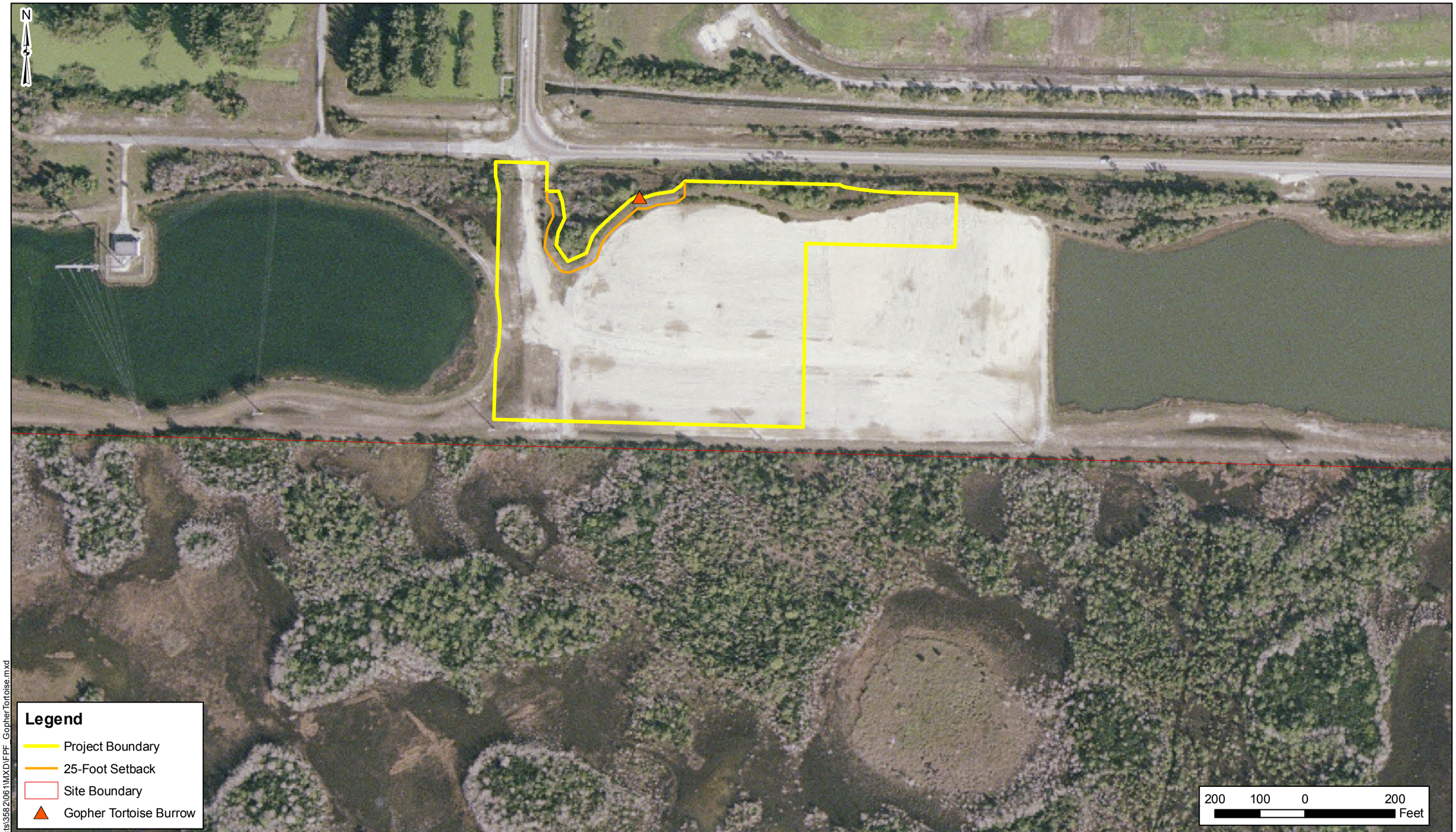
Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Environmental Resource Permit

Aerial Photograph Map

January 2010

FIGURE 4



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MALCOLM PIRNIE

SWA SOLID WASTE AUTHORITY

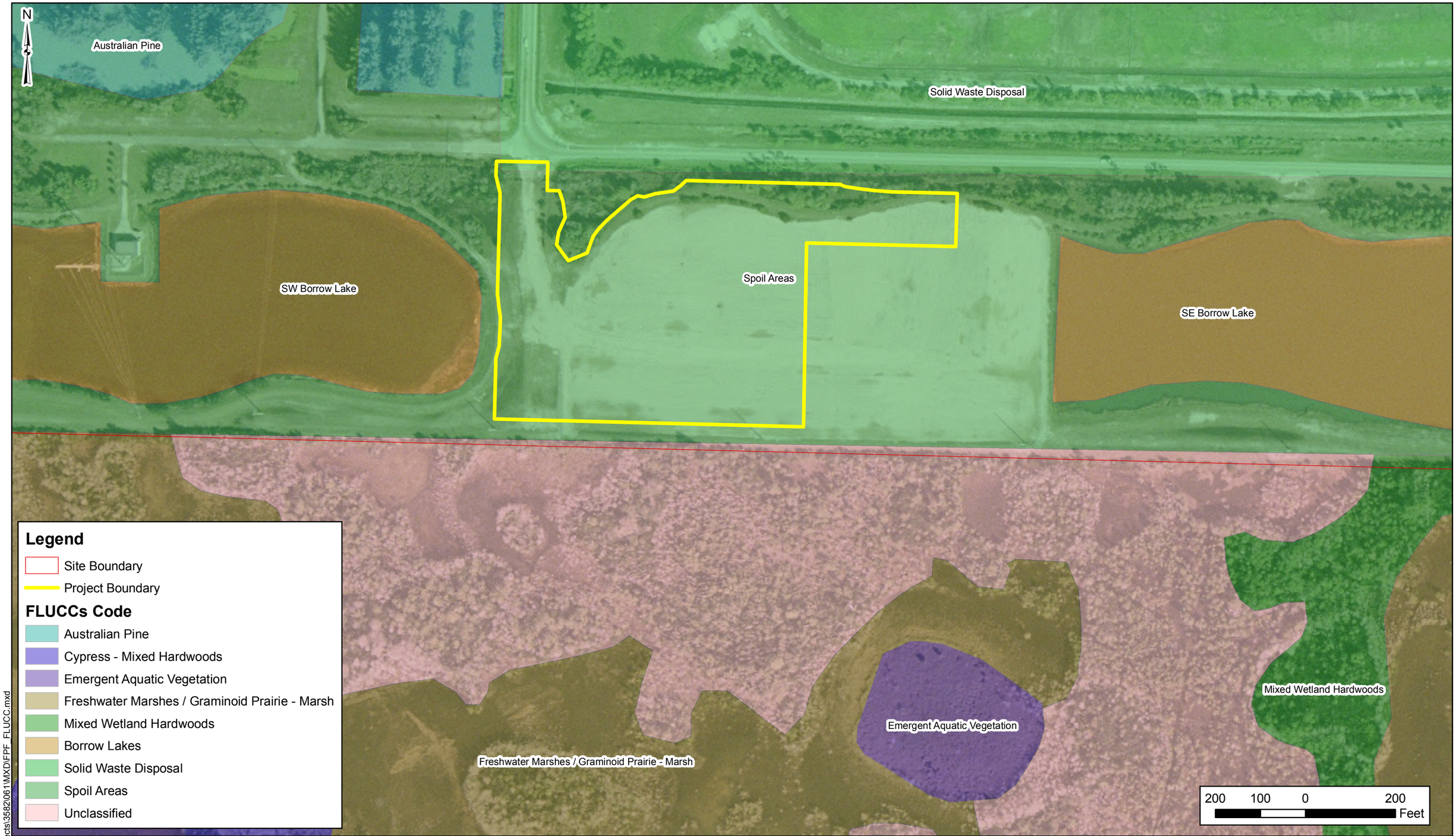
Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Environmental Resource Permit

Gopher Tortoise Burrow Location Map

January 2010

FIGURE 5



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MALCOLM PIRNIE

SWA SOLID WASTE AUTHORITY

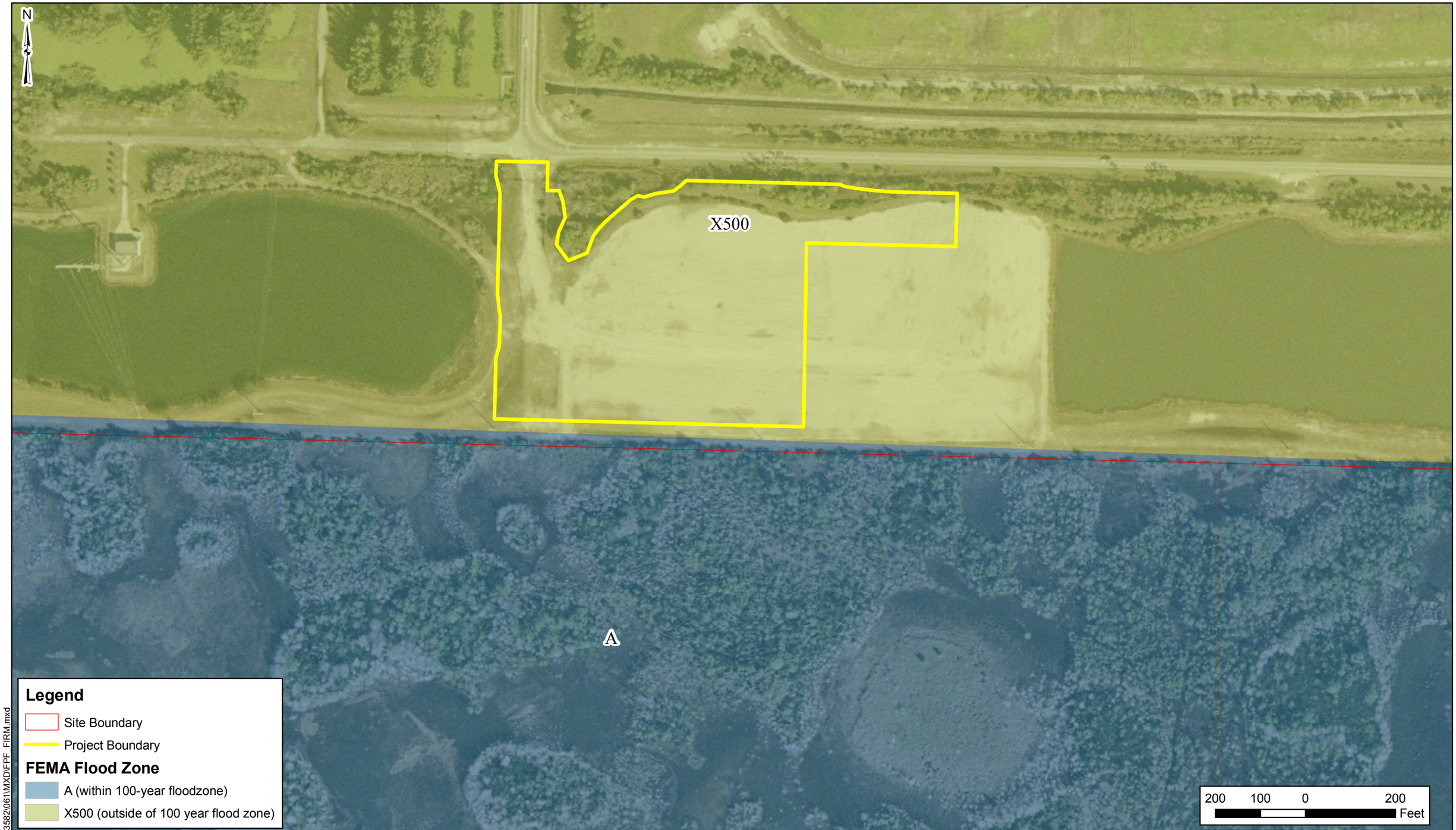
Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Environmental Resource Permit

FLUCCS Map

January 2010

FIGURE 6



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MALCOLM PIRNIE

SWA SOLID WASTE AUTHORITY

Solid Waste Authority of Palm Beach County

Ferrous Processing Facility
Environmental Resource Permit

Floodplain Map

January 2010

FIGURE 7

Solid Waste Authority of Palm Beach County
Environmental Resource Permit
Ferrous Processing Facility

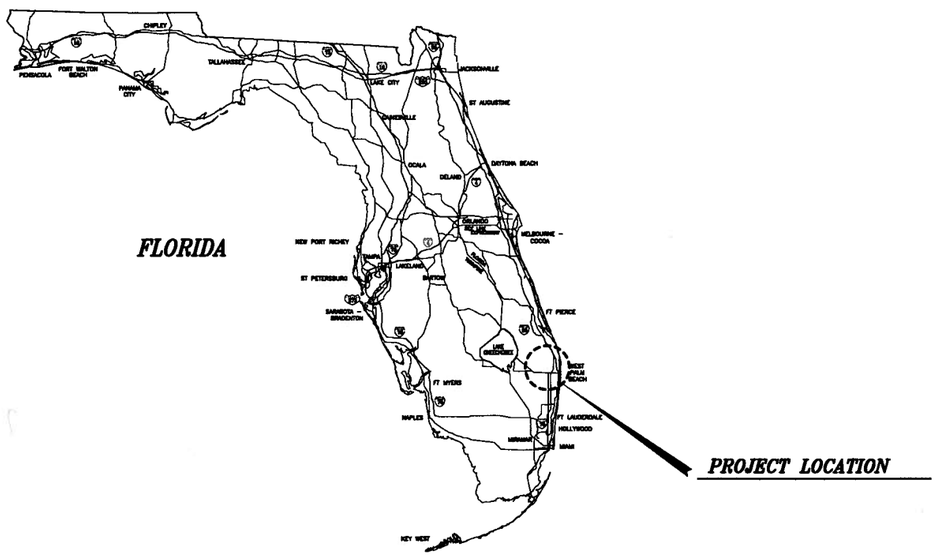
Attachment C

Permit Drawings

3582061 / FTL

SOLID WASTE AUTHORITY OF PALM BEACH COUNTY
FERROUS PROCESSING FACILITY RELOCATION PROJECT
ENVIRONMENTAL RESOURCE PERMIT

JANUARY 2010

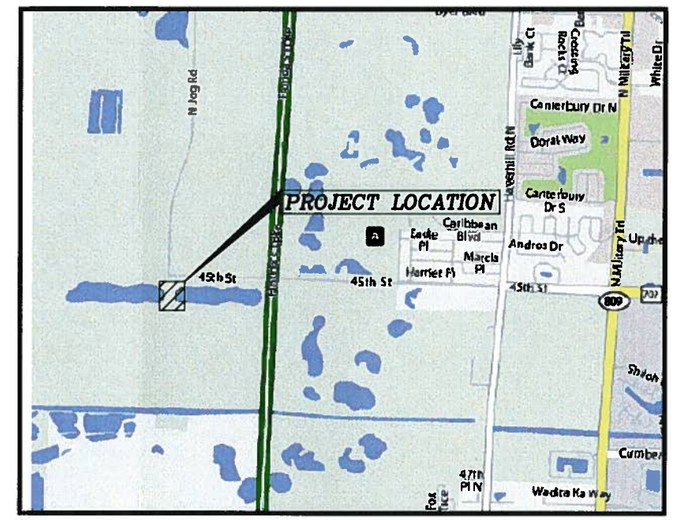


VICINITY MAP

SWA
SOLID WASTE AUTHORITY

INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET AND INDEX OF DRAWINGS
2	GENERAL INFORMATION
3	EXISTING SITE PLAN
4	PROPOSED SITE PLAN
5	BASIN BOUNDARY MAP
6	GRADING AND DRAINAGE PLAN
7	SITE CROSS SECTIONS
8	TYPICAL SECTIONS AND DETAILS
9	EROSION CONTROL DETAILS



LOCATION MAP

MALCOLM PIRNIE

CERTIFICATE OF AUTHORIZATION NO. 67
INDEPENDENT ENVIRONMENTAL ENGINEERS,
SCIENTISTS AND CONSULTANTS
8201 PETERS ROAD, SUITE 3400
PLANTATION, FL 33324
PHONE (954) 761-3460
FAX (954) 761-7939

PIRNIE PROJECT NO.: 3582061

PERMIT DRAWINGS
NOT FOR CONSTRUCTION

PREPARED FOR:
SOLID WASTE AUTHORITY OF PALM BEACH COUNTY
MARK HAMMOND, EXECUTIVE DIRECTOR
7501 N JOG ROAD WEST PALM BEACH, FL 33412

User:BENSON Spec:PIRNIE STANDARD File:K:\ACAD\PROJ\3582061\ERP Drawings\PERMIT SHEET 1 - COVER 091109.DWG Scale:1:1 Date:01/05/2010 Time:12:19 Layout:G-1

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING SITE CONDITIONS OF WORK. WORK PERFORMED SHALL BE IN FULL COMPLIANCE WITH THE REQUIREMENTS OF PALM BEACH COUNTY, DESIGN ENGINEER AND ALL OTHER AGENCIES WHICH MAY EXERT JURISDICTION. WHEN CONFLICTS OCCUR BETWEEN REQUIREMENTS SHOWN ON THESE DRAWINGS/SPECIFICATIONS AND REGULATORY CRITERIA, THE MORE STRINGENT REQUIREMENT SHALL PREVAIL. THE CONTRACTOR SHALL VERBALLY BRING CONFLICTS TO THE ATTENTION OF THE DESIGN ENGINEER IMMEDIATELY, FOLLOWED BY AN OFFICIAL WRITTEN NOTIFICATION WITHIN 24 HOURS BEFORE BEGINNING WORK.

2. EXISTING UNDERGROUND FACILITIES HAVE NOT BEEN PHYSICALLY LOCATED BY THE DESIGN ENGINEER. DETERMINING AND VERIFYING THE ACTUAL LOCATION AND ELEVATIONS OF EXISTING UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY. BEFORE COMMENCING WORK, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES WHICH MAY HAVE BURIED OR AERIAL UTILITIES WITHIN OR NEAR THE CONSTRUCTION AREA. (PROVIDE 48 HOURS MINIMUM NOTICE TO UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION). THE CONTRACTOR IS FULLY RESPONSIBLE FOR DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE UNDERGROUND UTILITIES. THE OWNER AND DESIGN ENGINEER ASSUME NO LIABILITY FOR DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE CONTRACTOR'S OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES, NOR FOR TEMPORARY BRACING AND SHORING OF SAME. SCHEDULE AND EXECUTE WORK INVOLVING EXISTING UTILITIES IN ORDER TO MINIMIZE INTERRUPTION OF SERVICES. WHENEVER SUCH INTERRUPTION IS NECESSARY FOR COMPLETION OF THE WORK, NOTIFY THE DESIGN ENGINEER AND THE COUNTY AT LEAST 48 HOURS IN ADVANCE. WORK TO REPAIR/RESTORE UTILITY SERVICE SHALL BE PERFORMED AS REQUIRED BY THE APPROPRIATE UTILITY. IF IT IS NECESSARY TO SHORE, BRACE, OR SWING A UTILITY, CONTACT THE UTILITY COMPANY OR DEPARTMENT AFFECTED AND OBTAIN THEIR PERMISSION REGARDING THE METHOD TO USE FOR SUCH WORK. COSTS RELATED TO SERVICE, MAINTENANCE, INTERRUPTION, REPAIR, RELOCATION AND RESTORATION ARE TO BE INCLUDED IN THE CONTRACTOR'S BID. DELAYS OR INCONVENIENCES CAUSED TO THE CONTRACTOR BY THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT, AND NO EXTRA COMPENSATION SHALL BE PAID.

3. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR REQUIRED PERMITS WHICH MAY BE REQUIRED THAT PERTAIN TO HIS CONTRACTED WORK. SUCH PERMITS SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE CONTRACTOR BEGINNING WORK ON THE PORTION OF THE PROJECT REQUIRING SAID PERMITS.

4. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION STAKING TO INCLUDE HORIZONTAL AND VERTICAL CONTROL FOR ALIGNMENT OF WORK. SURVEY WORK TO ESTABLISH THE HORIZONTAL AND VERTICAL CONTROL SHALL BE UNDER THE GUIDANCE AND DIRECT SUPERVISION OF A REGISTERED PROFESSIONAL SURVEYOR AND MAPPER.

5. TREES, SHRUBS, ETC., ALONG THE LINES OF CONSTRUCTION SHALL BE PROTECTED WHERE POSSIBLE UNLESS NOTED OTHERWISE ON THE DRAWINGS. NO TREES LARGER THAN THREE INCHES (3") IN DIAMETER SHALL BE DESTROYED WITHOUT PRIOR APPROVAL OF THE DESIGN ENGINEER AND COUNTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF DAMAGED TREES WITH TREES OF SIMILAR QUANTITIES AND SPECIES, SIZED AT THE DIRECTION OF THE COUNTY AT NO COST TO THE COUNTY.

6. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AREAS FOR STORAGE OF MATERIALS AND EQUIPMENT. SECURITY OF CONSTRUCTION EQUIPMENT AND MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR.

7. ALL INFORMATION REGARDING EXISTING CONDITIONS SHOWN ON THESE CONSTRUCTION DRAWINGS HAS BEEN FURNISHED TO THE ENGINEER BY GREENHORNE & O'MARA, INC., 3223 COMMERCE PLACE, SUITE 100, WEST PALM BEACH, FLORIDA. (561) 686-7707.

8. THE ENGINEER CANNOT GUARANTEE THAT TEMPORARY BENCHMARKS (TBM'S) OR OTHER SURVEY CONTROL POINTS WILL NOT BE DISTURBED PRIOR TO CONSTRUCTION. BEFORE COMMENCING WORK, THE CONTRACTOR SHALL SATISFY HIMSELF AS TO THE ACCURACY OF ALL SURVEY OR EXISTING SITE INFORMATION AS INDICATED IN THE DRAWINGS OR SPECIFICATIONS. SHOULD THE CONTRACTOR DISCOVER ANY ERRORS, INACCURACIES OR OMISSIONS IN THE SURVEY DATA, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER. BEFORE BEGINNING WORK, TAKE CARE TO PRESERVE ALL CONTROL STAKES, BENCHMARKS, REFERENCE POINTS AND PROPERTY CORNERS. THE OWNER WILL GRANT NO CLAIM FOR DAMAGES OR LOSS OF TIME BY THE CONTRACTOR DUE TO LOSS OR DISTURBANCE OF SURVEY CONTROL POINTS. CONTROL STAKES, BENCHMARKS, REFERENCE POINTS AND PROPERTY CORNERS DISTURBED BY THE CONTRACTOR'S WORK SHALL BE REPLACED BY A FLORIDA REGISTERED PROFESSIONAL SURVEYOR AND MAPPER WHO WILL BE SELECTED BY AND PAID BY THE CONTRACTOR. THE OWNER WILL NOT MAKE FINAL PAYMENT TO THE CONTRACTOR UNTIL ALL DISTURBED OR DESTROYED PROPERTY CORNERS AND PERMANENT BENCHMARKS HAVE BEEN REPLACED BY THE FLORIDA REGISTERED SURVEYOR AND MAPPER. THE SURVEYOR SHALL CERTIFY THAT SUCH MARKERS HAVE BEEN REPLACED IN ACCORDANCE WITH THE STATE OF FLORIDA ADMINISTRATIVE CODE, CHAPTER 61G17-6, "MINIMUM TECHNICAL STANDARDS".

9. RESTORE ALL PRIVATE AND PUBLIC PROPERTY AFFECTED BY THIS WORK TO A CONDITION EQUAL TO OR BETTER THAN EXISTED BEFORE COMMENCING CONSTRUCTION WORK, UNLESS SPECIFICALLY EXEMPTED BY THE DRAWINGS. RESTORATION WORK INCLUDES, BUT IS NOT LIMITED TO PAVEMENT, BASE, SUBGRADE, CONCRETE CURBS, THERMOPLASTIC TRAFFIC MARKINGS, SIDEWALKS, STORM WATER PIPE, ETC. ALL RESTORATION WORK SHALL BE PER FDOT STANDARDS AND SPECIFICATIONS AND FDOT PERMIT REQUIREMENTS. IF THERE IS A CONFLICT WITH FDOT REQUIREMENTS AND THE CONTRACT DOCUMENTS, THE MORE STRINGENT REQUIREMENT SHALL GOVERN. IF ADDITIONAL TOPOGRAPHY

   OR ANY OTHER INFORMATION IS NECESSARY FOR THE CONTRACTOR TO RECONSTRUCT ALL FACILITIES TO PRE CONSTRUCTION GRADES AND DIMENSIONS, THE ACQUISITION OF SUCH ADDITIONAL INFORMATION SHALL BE THE CONTRACTOR'S RESPONSIBILITY, AND AT HIS EXPENSE. RECONSTRUCT ALL FACILITIES TO PRECONSTRUCTION GRADES AND DIMENSIONS, UNLESS OTHERWISE NOTED. WATER, FERTILIZE AND SUPPLY ALL ITEMS AND CARE NECESSARY TO MAINTAIN THE HEALTH OF ALL NEW VEGETATION AND VEGETATION REMOVED AND REPLACED, AT NO EXPENSE TO THE OWNER, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

10. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC MAINTENANCE IN ACCORDANCE WITH THE SPECIFICATIONS, U.S. DEPARTMENT OF TRANSPORTATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND OTHER GOVERNING AGENCY'S SPECIFICATIONS. IN THE EVENT OF A CONFLICT, THE MORE STRINGENT SPECIFICATION OR REQUIREMENT SHALL GOVERN. PROVIDE ALL NECESSARY BARRICADES, WARNING SIGNS, DELINEATORS, FLAGMEN, PILOT CARS, ETC., REQUIRED FOR TRAFFIC CONTROL AND/OR MAINTENANCE.

11. PROVIDE ANY TEMPORARY CONTROLS AND/OR STRUCTURES REQUIRED TO MAINTAIN SUITABLE AND SAFE WORKING CONDITIONS AT ALL TIMES. SUCH ITEMS SHALL BE REMOVED ONCE THAT PORTION OF WORK HAS BEEN COMPLETED.

12. STORE CONSTRUCTION EQUIPMENT AND MATERIALS ONLY IN THOSE AREAS APPROVED BY THE OWNER. SECURITY OF CONSTRUCTION EQUIPMENT AND MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR. PUBLIC RIGHTS-OF-WAY MAY NOT BE UTILIZED FOR STORAGE OF EQUIPMENT OR MATERIALS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENTITY WHICH OWNS THE RIGHT-OF-WAY.

13. UPON COMPLETION OF THE PROJECT, PROVIDE A AS-BUILT SURVEY OF ALL IMPROVEMENTS IN AUTOCAD FORMAT. THE AS-BUILT SURVEY MUST BE PREPARED BY A FLORIDA REGISTERED SURVEYOR AND MAPPER IN ACCORDANCE WITH THE STATE OF FLORIDA ADMINISTRATIVE CODE, CHAPTER 61G17-6, "MINIMUM TECHNICAL STANDARDS". AS A MINIMUM, AS-BUILT DRAWINGS FOR PIPELINE CONSTRUCTION SHALL SHOW CONSTRUCTED HORIZONTAL AND VERTICAL LOCATIONS OF ALL BENDS, FITTINGS AND VALVES, AND ELEVATIONS AT ALL LOCATIONS WHERE PROPOSED DESIGN ELEVATIONS ARE SHOWN ON THE DRAWINGS. THE AS-BUILT SURVEY SHALL BE TIED INTO THE STATE PLANE COORDINATE SYSTEM.

14. THE STATIONS AND OFFSETS FOR PROPOSED WATER MAIN ARE APPROXIMATE.

15. SPECIAL EMPHASIS ON EXCAVATION SAFETY AND TRENCH CONSTRUCTION:

   A. OSHA'S EXCAVATION SAFETY STANDARDS 29, CFR PART 1926.650-652 SUBPART P, AS WELL AS FLORIDA'S TRENCH SAFETY ACT (FLORIDA STATUTE 90-96) ARE CONSIDERED AS COMPLIMENTARY TO THESE CONTRACT DOCUMENTS. IF THERE IS ANY DUPLICATION, REDUNDANCY OR CONFLICT BETWEEN THE STIPULATIONS OF THESE CONTRACT DOCUMENTS AND THOSE STANDARDS, THE MOST STRINGENT REQUIREMENT SHALL GOVERN. THE CONTRACTOR SHALL ALSO COMPLETE THE FLORIDA TRENCH SAFETY ACT STATEMENT PROVIDED IN THE CONTRACT DOCUMENTS.

   B. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT EXCAVATIONS DO NOT ENDANGER WORKMEN, EXISTING STRUCTURES, UTILITIES, OR OTHER FACILITIES. IF SUCH CONDITIONS OCCUR WHICH MAY ENDANGER WORKMEN, EXISTING STRUCTURES, UTILITIES, OR OTHER FACILITIES, IMMEDIATELY INSTALL AND MAINTAIN ADEQUATE SHEETING AND BRACING PER OSHA SPECIFICATIONS. CEASE ALL WORK UNTIL THE SHEETING AND BRACING HAS BEEN PROPERLY AND COMPLETELY INSTALLED. INSTALL THE SHEETING AND BRACING IN A MANNER THAT WILL ALLOW REMOVAL WITHOUT INJURING OR ENDANGERING WORKMEN, THE WORK, ADJACENT STRUCTURES, AND THE LIKE. PROMPTLY AND COMPLETELY FILL ALL VOIDS CAUSED BY THE WITHDRAWAL OF SHEETING WITH SAND AND COMPACT TO A DEGREE EQUAL TO THE SURROUNDING SOIL. REMOVE THE SHEETING AS THE WORK PROGRESSES OR, AT THE DISCRETION OF THE ENGINEER, CUT THE SHEETING OFF BELOW FINISHED GRADE AND LEAVE IN PLACE.

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND RELOCATING ALL INFORMATION AND TRAFFIC SIGNS TEMPORARILY DURING CONSTRUCTION. SIGN SHOULD BE VISIBLE TO MOTORIZED VEHICLES. REPOSITION SIGNS IN PRE-CONSTRUCTION LOCATION IMMEDIATELY AFTER CONSTRUCTION IS COMPLETED.

17. THE CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE PROPERTY AT ALL TIMES.

18. ALL AFFECTED GRASSED AREAS SHALL BE RESTORED WITH THE APPLICATION OF ARGENTINE BAHIA SOD OR IDENTICAL SOD AS IN PRE-CONSTRUCTION. ANY SOD LAID ON A INCLINE SHALL BE PROPERLY PINNED.

19. CONTRACTOR SHALL ASSURE THAT ALL CATCH BASINS, MITERED END SECTIONS, CONCRETE CURBING, PIPE AND INSTALLATIONS CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE CURRENT EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

LEGEND

	ELECTRIC BOX
	BOLLARD
	POWER POLE CONCRETE
	CONCRETE
—X—X—	6'CHAIN LINK FENCE
	SIGN
X 19.06	SPOT ELEVATION
	WETLAND FLAG
	GOPHER TURTLE HOLE
	PULL BOX
	POWER POLE WOOD
	GUY ANCHOR
19.06	TREE
S	MANHOLE SANITARY
	WATER METER
	LAMP
℄	CENTER LINE

PERMIT DRAWINGS
NOT FOR CONSTRUCTION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
1/6/10	CCT	ERP PERMIT SUBMITTAL #1			

MALCOLM PIRNIE

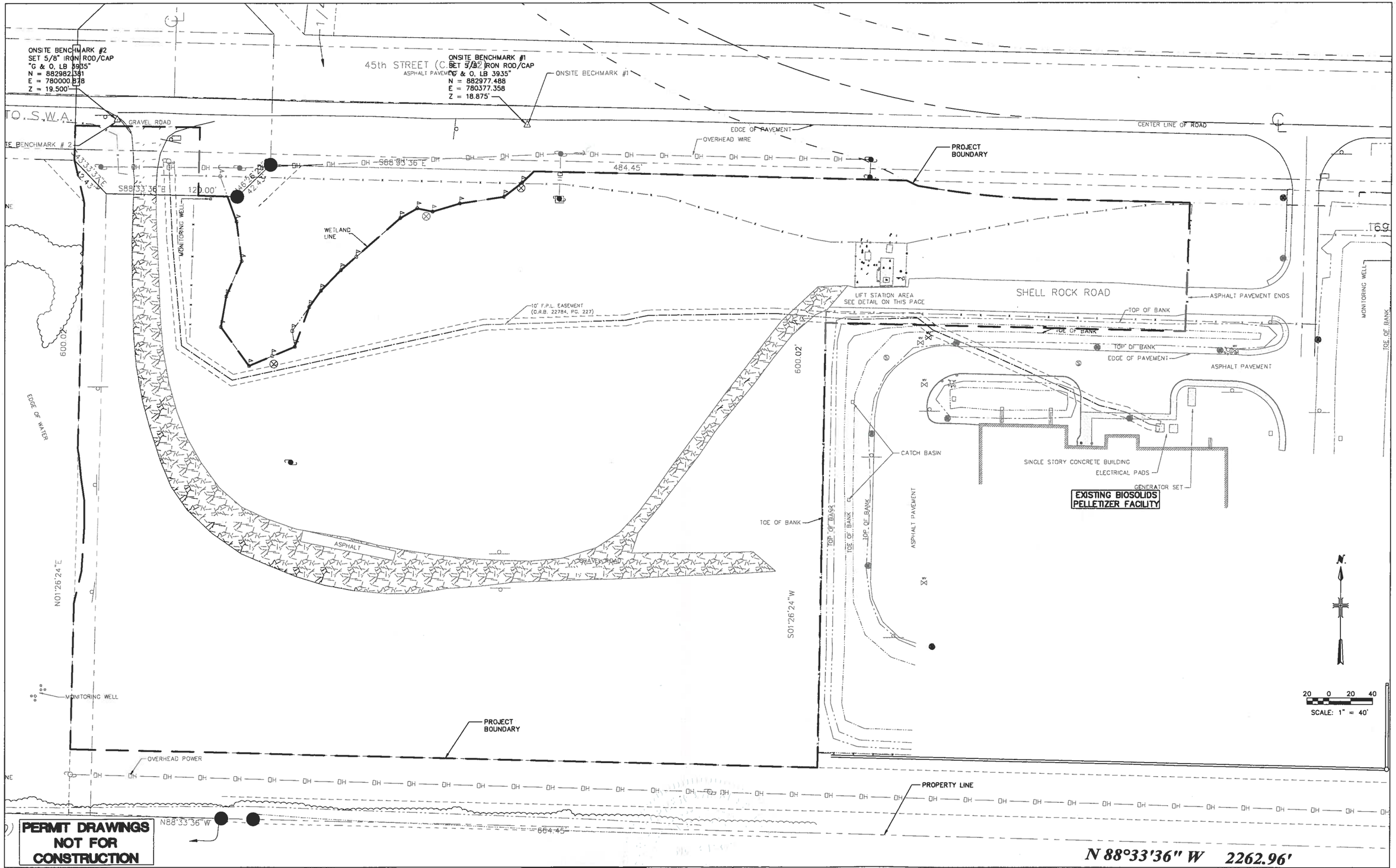
PREPARED BY: 1-14-10
CHRISTOPHER C. TILMAN
FLORIDA P.E. No. 61903

SOLID WASTE AUTHORITY OF PALM BEACH COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID

FERROUS PROCESSING FACILITY
ENVIRONMENTAL RESOURCE PERMIT
GENERAL
GENERAL NOTES

JANUARY 2010
SHEET NO. 2

User: BENSON Spec: PIRNIE STANDARD File: K:\ACAD\PROJ\3582061\ERP Drawings\PERMIT SHEET 2 - GENERAL NOTES 091109.DWG Scale: 1:1 Date: 01/05/2010 Time: 16:19 Layout: Layout1



PERMIT DRAWINGS NOT FOR CONSTRUCTION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
1/6/10	CCT	ERP PERMIT SUBMITTAL #1			

MALCOLM PIRNIE

PREPARED BY:
1-14-10
CHRISTOPHER C. TILMAN
FLORIDA P.E. No. 61903

SOLID WASTE AUTHORITY OF PALM BEACH COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

FERROUS PROCESSING FACILITY
ENVIRONMENTAL RESOURCE PERMIT

CIVIL

EXISTING SITE PLAN

JANUARY 2010

SHEET NO. 3

User: BENSON Spec: PIRNIE STANDARD File: K:\ACAD\PROJ\3582961\ERP Drawings\PERMIT SHEET 3 - EXISTING SITE PLAN 091109.DWG Scale: 1:1 Date: 01/05/2010 Time: 12:57 Layout: Layout1

ONSITE BENCHMARK #2
SET 5/8" IRON ROD/CAP
"G & O, LB 3935"
N = 882982.381
E = 780000.878
Z = 19.500'

ONSITE BENCHMARK #1
SET 5/8" IRON ROD/CAP
"G & O, LB 3935"
N = 882977.488
E = 780377.358
Z = 18.875'

45TH STREET

TO S.W.A.

N=882976.19
E=780020.00

MATCH NEW ROAD SURFACE WITH EXISTING EOP

N=882934.87
E=780383.57

PROJECT BOUNDARY

N=882926.27
E=780725.76

PROJECT AREA = 8.95 AC
PERVIOUS AREA = 4.60 AC

10' ADDITIONAL ROW

N=882905.98
E=780985.96

1026'-3"

N=882898.57
E=780414.05

N=882896.54
E=780514.01

DELINEATED WETLAND LIMITS

CB-1
N=882868.14
E=780436.94

CB-2
N=882867.06
E=780489.93

RELOCATE EXISTING FENCE TO NEW LOCATION

MONITORING WELL

N=882863.72
E=780560.09

25' WETLAND SETBACK

N=882863.77
E=780362.73

N=882815.83
E=780292.08

N=882814.85
E=780673.83

N=882812.84
E=780812.81

N=882811.39
E=780920.55

N=882816.10
E=780983.79

131'-6"

RELOCATE EXISTING SIDEWALK ALONG NEW TURN RADIUS

N=882784.62
E=780235.72

N=882834.58
E=780412.75

N=882832.55
E=780512.70

24'-0"

330'-10"

24' ASPHALT ROAD

MATCH NEW ROAD SURFACE WITH EXISTING EOP

N=882764.40
E=780014.12

N=882768.88
E=780650.93

N=882725.06
E=780158.14

N=882723.68
E=780081.92

N=882773.23
E=780417.59

233'-6"

RELOCATE EXISTING FENCE TO NEW LOCATION

N=882788.19
E=780982.21

N=882765.75
E=780275.93

N=882697.35
E=780145.62

N=882728.77
E=780202.28

C-2

C-1

N=882699.47
E=780076.04

N=882672.26
E=780163.31

N=882670.88
E=780087.09

574'-9"

EXISTING BIOSOLIDS PELLETIZER FACILITY

15'-0"

FUTURE ROAD

BHP-1

C-3

362'-6"

PROPOSED FERROUS PROCESSING FACILITY
FFE=23 FT NGVD

380'-0"

408'-0"

MONITORING WELL

BHP-2

D-1

OVERHEAD WIRE

N=882398.42
E=780269.35

375'-0"

692'-0"

N=882388.13
E=780644.24

PROPERTY LINE

40' FLORIOA POWER AND LIGHT TRANSMISSION CORRIDOR EASEMENT

TREE LINE

PERMIT DRAWINGS
NOT FOR
CONSTRUCTION

N 88°33'36" W 2262.96'

LEGEND

1. LIFT STATION
2. SCALE HOUSE (FUTURE)
3. PRIMARY ACCESS – INGRESS/EGRESS (EXISTING
4. SECONDARY ACCESS – INGRESS/EGRESS
5. PRIMARY FPF ACCESS – (50')
6. SECONDARY FPF ACCESS – (25')
7. VISITOR EMPLOYEE PARKING AREA – (10'x20' STALLS W/ 1 HCAP)
8. STORMWATER DETENTION/RETENTION AREAS

SOIL BORING, TEST WELL

N

20 0 20 40
SCALE: 1" = 40'

User:BENSON Spec:PIRNIE STANDARD File:K:\ACAD\PROJ\358206\ERP Drawings\PERMIT SHEET 4 - PROPOSED SITE PLAN 091109.DWG Scale:1:1 Date:01/08/2010 Time:10:50 Layout:Layout1

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
1/6/10	CCT	ERP PERMIT SUBMITTAL #1			

MALCOLM PIRNIE

PREPARED BY:
1-14-10
CHRISTOPHER C. TILMAN
FLORIDA P.E. No. 61903

SOLID WASTE AUTHORITY OF PALM BEACH COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

FERROUS PROCESSING FACILITY
ENVIRONMENTAL RESOURCE PERMIT

CIVIL

PROPOSED SITE PLAN

JANUARY 2010

SHEET NO. 4

45TH STREET

TO S.W.A.

MATCH NEW ROAD SURFACE WITH EXISTING EOP

PROJECT BOUNDARY

PROJECT AREA = 8.95 AC
PERVIOUS AREA = 4.60 AC

10' ADDITIONAL ROW

S88°33'36"E 120.00'

S88°33'36"E 884.45'

MONITORING WELL

DELINEATED WETLAND LIMITS

25' WETLAND SETBACK

BASIN "B" 1.33 Ac.

CB-1

CB-2

RELOCATE EXISTING FENCE TO NEW LOCATION

RETENTION AREA RA-4
AREA @ EL 19.0 = 0.52 Ac.
AREA @ EL. 22.0 = 0.76 Ac.

2% SLOPE ACROSS

RELOCATE EXISTING FENCE TO NEW LOCATION

MATCH NEW ROAD SURFACE WITH EXISTING EOP

24' ASPHALT ROAD

RETENTION AREA RA-3
AREA @ EL 19.0 = 0.18 Ac.
AREA @ EL. 22.0 = 0.43 Ac.

BASIN "C" 1.63 Ac.

C-2

C-1

BASIN "A" 5.98 Ac.

EXISTING BIOSOLIDS PELLETIZER FACILITY

PROPOSED FERROUS PROCESSING FACILITY

FUTURE ROAD

BHP-1

C-3

N01°23'24"E

RETENTION AREA RA-2
AREA @ EL 19.0 = 0.58 Ac.
AREA @ EL. 22.0 = 0.72 Ac.

MONITORING WELL

RETENTION AREA RA-1
AREA @ EL 19.1 = 0.62 Ac.
AREA @ EL. 22.0 = 1.08 Ac.

BHP-2

D-1

OVERHEAD WIRE

40' FLORIDA POWER AND LIGHT TRANSMISSION CORRIDOR EASEMENT

PROPERTY LINE

N88°33'36"W 884.45'

TREE LINE

N 88°33'36" W 2262.96'

LEGEND

- DRAINAGE FLOW DIRECTION
- XXX TOE OF SLOPE ELEVATION
- XXX TOP OF BANK ELEVATION
- XXXX EDGE OF PAVEMENT ELEVATION

N.

20 0 20 40
SCALE: 1" = 40'

PERMIT DRAWINGS NOT FOR CONSTRUCTION

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
1/6/10	CCT	ERP PERMIT SUBMITTAL #1			

MALCOLM PIRNIE

PREPARED BY:
1-14-10
CHRISTOPHER C. TILMAN
FLORIDA P.E. No. 61903

SOLID WASTE AUTHORITY OF PALM BEACH COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

FERROUS PROCESSING FACILITY
ENVIRONMENTAL RESOURCE PERMIT

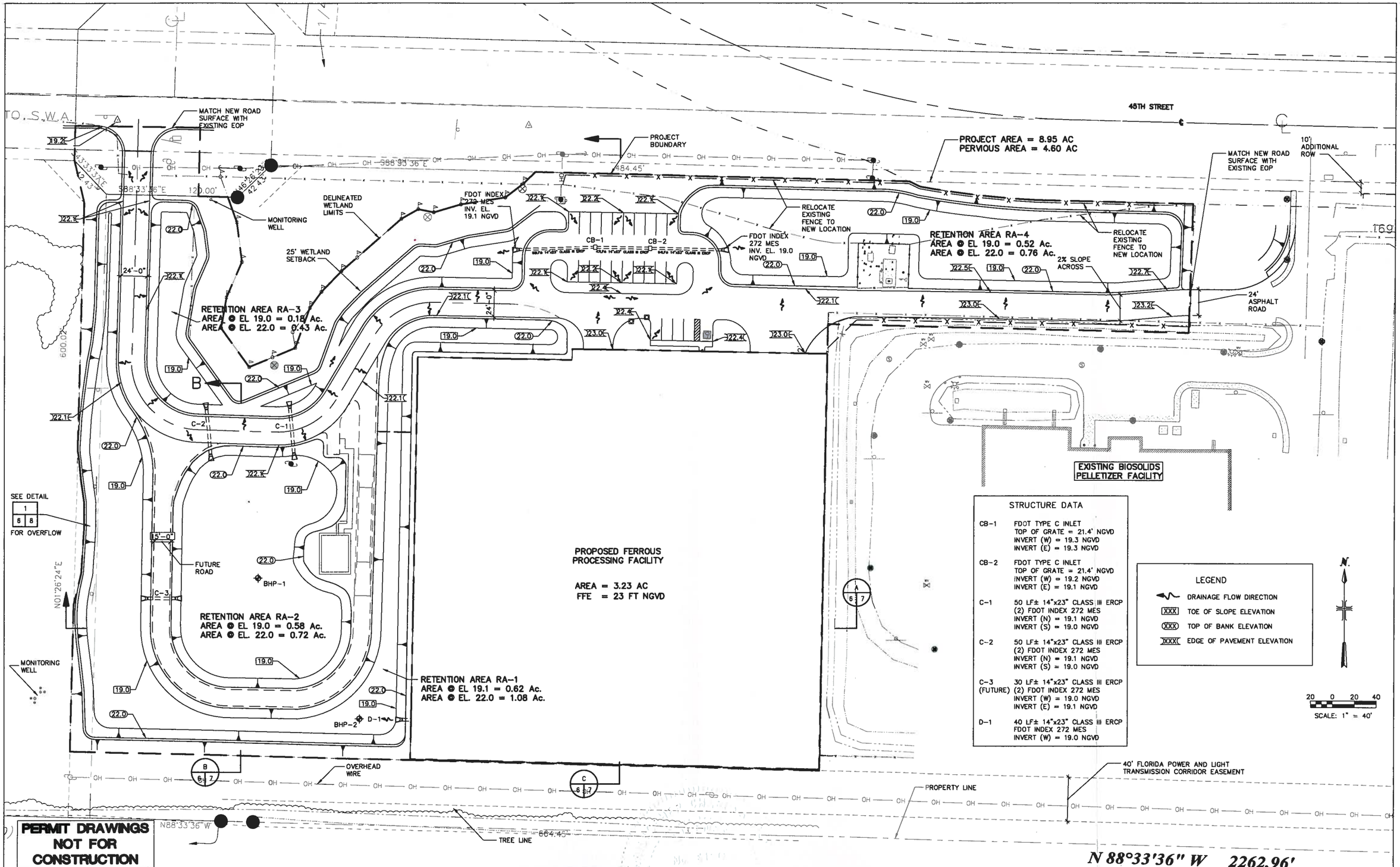
CIVIL

BASIN BOUNDARIES

JANUARY 2010

SHEET NO. 5

User:BENSON Spec:PIRNE STANDARD File:K:\ACAD\PROJ\3582081\ERP Drawings\PERMIT SHEET 5 - BASIN BOUNDARY MAP 091110.DWG Scale:1:1 Date:01/05/2010 Time:14:13 :oyout1 :oyout1



PERMIT DRAWINGS NOT FOR CONSTRUCTION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
1/6/10	CCT	ERP PERMIT SUBMITTAL #1			

MALCOLM PIRNIE

PREPARED BY: CHRISTOPHER C. TILMAN FLORIDA P.E. No. 61903 1-14-10

SOLID WASTE AUTHORITY OF PALM BEACH COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

FERROUS PROCESSING FACILITY
ENVIRONMENTAL RESOURCE PERMIT

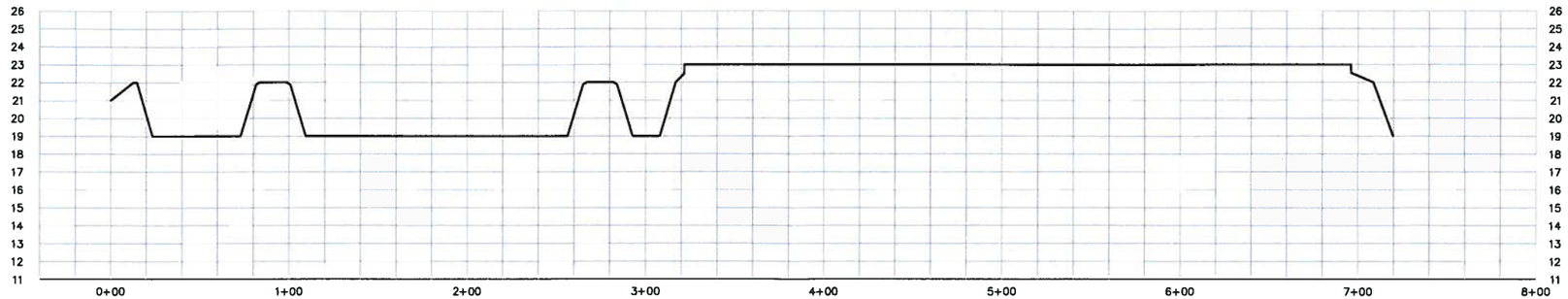
CIVIL

DRAINAGE AND GRADING PLAN

JANUARY 2010

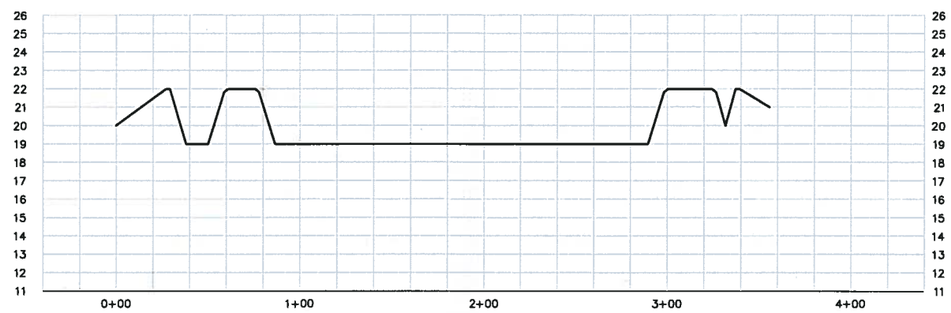
SHEET NO. 6

User:BENSON Spec:PIRNIE STANDARD File:K:\ACAD\PROJ\35820811\ERP Drawings\PERMIT SHEET 6 - DRAINAGE AND GRADING PLAN 091109.DWG Scale:1:1 Date:01/06/2010 Time:10:41 Layout:Layout1



SECTION A 6 7

SCALE: 1" = 40'



SECTION B 6 7

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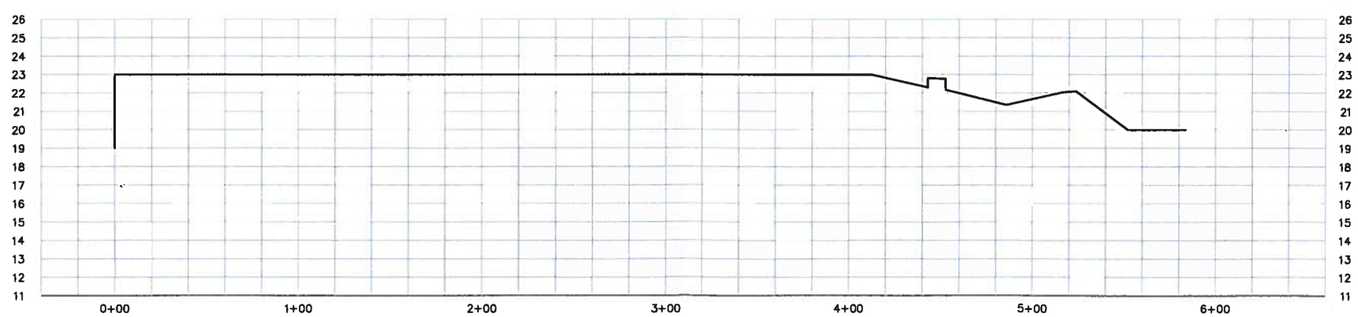


SECTION C 6 7

SCALE: 1" = 40'

20 0 20 40

SCALE: 1" = 40'

PERMIT DRAWINGS NOT FOR CONSTRUCTION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
1/6/10	CCT	ERP PERMIT SUBMITTAL #1			

MALCOLM PIRNIE

PREPARED BY:

1-14-10

CHRISTOPHER C. TILMAN
FLORIDA P.E. No. 61903

SOLID WASTE AUTHORITY OF PALM BEACH COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID

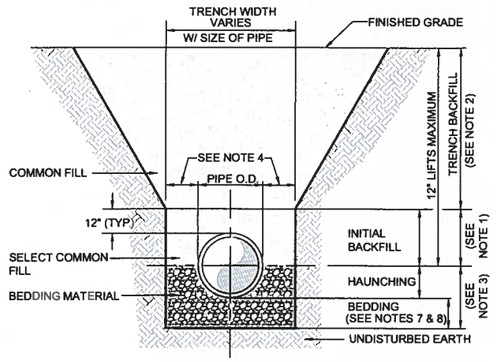
FERROUS PROCESSING FACILITY
ENVIRONMENTAL RESOURCE PERMIT

CIVIL
SITE CROSS-SECTIONS

JANUARY 2010

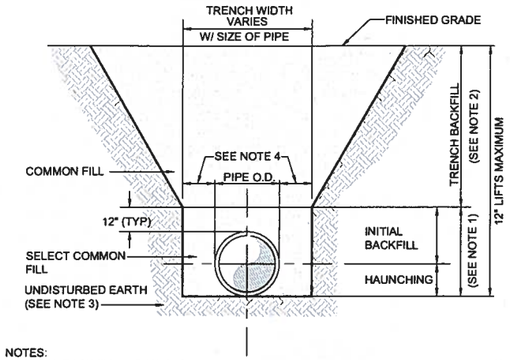
SHEET NO. 7

User: bensson Spec: PIRNIE STANDARD File: K:\ACAD\PROJ\,\587061\ERP Drawings\PERMIT SHEET 7 - SITE CROSS SECTIONS 091106.DWG Scale: 1:1 Date: 11/13/2009 Time: 09:16 Layout: Layout1



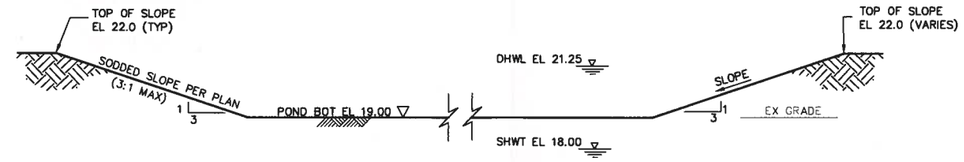
NOTES:
1. INITIAL BACKFILL: SELECT COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
3. TYPE A BEDDING MATERIAL SHALL CONFORM TO FDOT NO. 57 AGGREGATE.
4. 15" MAX. (12" MIN.) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. BEDDING DEPTH SHALL BE 4" MINIMUM FOR PIPE DIAMETER UP TO 12" AND 6" MINIMUM FOR PIPE DIAMETER 16" AND LARGER.
8. DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERN DEPTH OF BEDDING ROCK BELOW THE PIPE. UTILITIES SHALL DETERMINE IN THE FIELD REQUIRED REMOVAL OF UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION.
9. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN PALM BEACH COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF R/W UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.

BEDDING AND TRENCHING – TYPE A

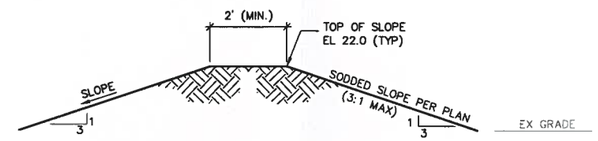


NOTES:
1. INITIAL BACKFILL AND HAUNCHING: SELECT COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
3. PIPE BEDDING UTILIZING SELECT COMMON FILL OR BEDDING ROCK IN ACCORDANCE WITH TYPE A BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY UTILITIES.
4. 15" MAX. (12" MIN.) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN ORANGE COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RIGHT-OF-WAY UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.

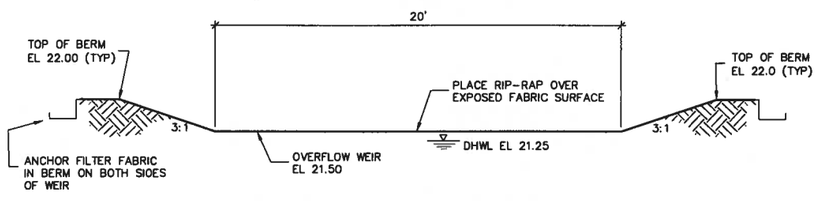
BEDDING AND TRENCHING – TYPE B



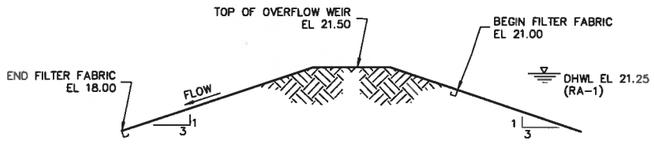
TYPICAL DRY RETENTION AREA SECTION (NTS)



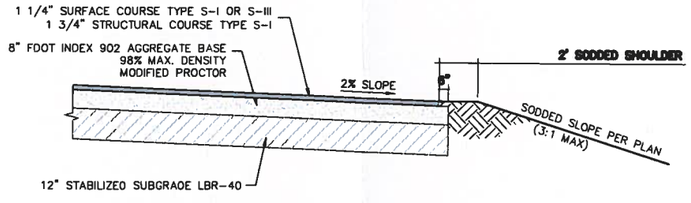
TYPICAL BERM SECTION (NTS)



DRY RETENTION AREA OVERFLOW DETAIL, FRONT VIEW (NTS)



DRY RETENTION AREA OVERFLOW, SIDE VIEW (NTS)



TYPICAL ASPHALTIC PAVEMENT SECTION (NTS)

PERMIT DRAWINGS NOT FOR CONSTRUCTION

DETAIL 1 / 6 8

NO SCALE

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
1/6/10	CCT	ERP PERMIT SUBMITTAL #1			

MALCOLM PIRNIE

PREPARED BY: 1-14-10
CHRISTOPHER C. TILMAN
FLORIDA P.E. No. 61903

SOLID WASTE AUTHORITY OF PALM BEACH COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

FERROUS PROCESSING FACILITY
ENVIRONMENTAL RESOURCE PERMIT

CIVIL
TYPICAL SECTIONS AND DETAILS

JANUARY 2010

SHEET NO. 8

User:BENSON Spec:PIRNIE STANDARD File:K:\ACAD\PROJ\358206\ERP Drawings\PERMIT SHEET 8 - TYPICAL SECTIONS AND DETAILS 091112.DWG Scale:1:1 Date:01/05/2010 Time:15:22 Layout:Layout 1

EROSION CONTROL NOTES

1. ALL CONSTRUCTION ACTIVITIES SHALL INCORPORATE BEST MANAGEMENT PRACTICES TO CONTROL EROSION, SEDIMENTATION, AND THE POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION. CONSTRUCTION PRACTICES INCLUDE:

   A. CONSTRUCT TEMPORARY SEDIMENTATION BASINS OR EARTHEN BERMS AT DOWNGRADIENT ENDS OF NEWLY GRADED AREAS TO PROVIDE FOR SEDIMENT AND TURBIDITY REMOVAL.

   B. LIMIT SITE CLEARING TO THOSE AREAS REQUIRED FOR A PARTICULAR PHASE OF CONSTRUCTION. EXISTING TREES AND VEGETATION TO REMAIN WHEREVER POSSIBLE.

   C. TURBIDITY BARRIERS, HAY BALES AND OTHER EROSION CONTROL MEASURERS SHALL REMAIN IN PLACE UNTIL CONSTRUCTION ACTIVITIES ARE COMPLETE AND THE POTENTIAL FOR EROSION IS ELIMINATED.

2. SOLID SOD DITCH AND SWALE BANKS AS SOON AS POSSIBLE AFTER CONSTRUCTION IN ORDER TO STABILIZE THE SLOPES AND MINIMIZE EROSION. IN AREAS DELINEATED AS "WETLANDS," REVEGETATE IN ACCORDANCE WITH PERMIT CONDITIONS.

3. DO NOT EMPLOY SILT FENCES IN A MANNER TO CAUSE THEM TO ACT AS A DAM ACROSS PERMANENTLY FLOWING WATERCOURSES. USE SILT FENCES AT UPLAND LOCATIONS, AND TURBIDITY BARRIERS IN PERMANENT WATER BODIES, REGARDLESS OF WATER DEPTH.

4. TURBIDITY BARRIERS FOR WATER BODIES MAY BE EITHER FLOATING OR STAKED TYPE, OR ANY COMBINATION OF TYPES THAT WILL SUIT SITE CONDITIONS, AND MEET EROSION CONTROL AND WATER QUALITY REQUIREMENTS. INSTALL POSTS IN STAKED TURBIDITY BARRIERS IN THE VERTICAL POSITION UNLESS OTHERWISE NOTED.

5. TURBIDITY IN ALL WATER BODIES TO BE CONTROLLED TO PREVENT VIOLATION OF WATER QUALITY PURSUANT TO RULE 62-302.510(5)(r), FLORIDA ADMINISTRATIVE CODE. TURBIDITY SHALL NOT EXCEED 29 NEPHELOMETRIC TURBIDITY UNITS ABOVE NATURAL BACKGROUND CONDITIONS.

6. FOR EROSION CONTROL DETAILS, REFER TO FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) "ROADWAY AND TRAFFIC DESIGN STANDARDS":

   A. TRASH RETAINER AND SEDIMENT BASIN -- INDEX NO. 101

   B. BAILED HAY OR STRAW BARRIERS AND SILT FENCES -- INDEX NO. 102 (ALSO SHOWN THIS SHEET).

   C. TURBIDITY BARRIERS -- INDEX NO. 103.

   ADDITIONALLY, COMPLY WITH FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," SECTION 104 - PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION.

7. MAINTENANCE

   A. INSPECT SILT BARRIERS IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST ONCE A DAY DURING PERIODS OF PROLONGED RAINFALL. MAKE NEEDED REPAIRS IMMEDIATELY.

   B. SHOULD THE FABRIC ON A SILT BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND IF THE BARRIER IS STILL NEEDED, REPLACE THE FABRIC IMMEDIATELY.

   C. REMOVE SEDIMENT DEPOSITS AFTER EACH STORM EVENT.

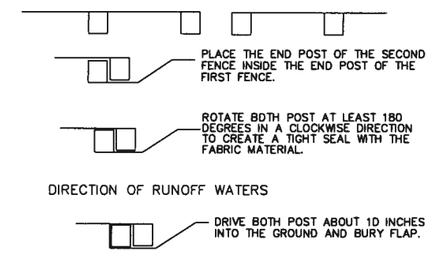
   D. ANY SEDIMENT DEPOSITS IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, AND PREPARED FOR SEEDING OR SODDING.

8. STORMWATER NOTES
   UNDER THE PROVISIONS OF THE CLEAN WATER ACT, AS AMENDED, FEDERAL LAW PROHIBITS DISCHARGES OF POLLUTANTS IN STORMWATER FROM CONSTRUCTION ACTIVITIES WITHOUT A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT (NPDES). THE CONTRACTOR SHALL COMPLETE AND SUBMIT AN FDEP NOI FORM 62-621.300(4)(b) TO THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES TO OBTAIN COVERAGE UNDER A CONSTRUCTION GENERAL PERMIT.

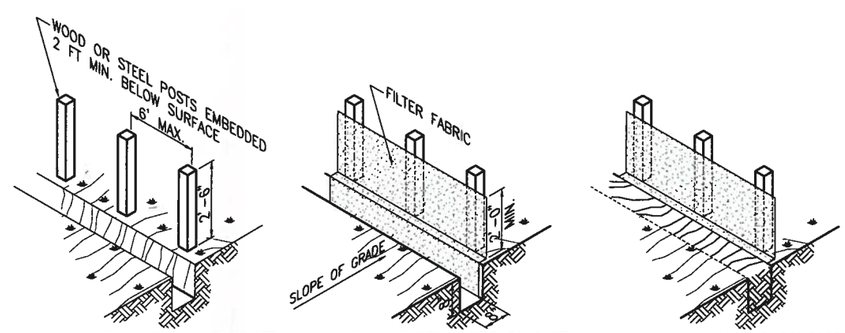
9. NO UNAUTHORIZED DISTURBANCE OF EXISTING WETLANDS WILL BE PERMITTED. TEMPORARILY INSTALL SILT FENCES, BARRIERS OR HAY BALES IMMEDIATELY ADJACENT TO AND UPLAND FROM ALL EXISTING WETLANDS PRIOR TO CONSTRUCTION ACTIVITIES WHICH MIGHT IMPACT THE WETLANDS. REMOVE ALL WETLAND PROTECTION MEASURES AFTER THE PROJECT HAS BEEN ACCEPTED BY THE OWNER. PERFORM THIS WORK AT NO EXPENSE TO THE OWNER AND COMPLY WITH FLORIDA DEPARTMENT OF TRANSPORTATION'S "ROADWAY AND TRAFFIC DESIGN STANDARDS", INDEX NO. 102, LATEST EDITION.

PERMIT DRAWINGS
NOT FOR
CONSTRUCTION

NOTES:
1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.



ATTACHING TWO SILT FENCES



SET POSTS AND EXCAVATE A TRENCH.

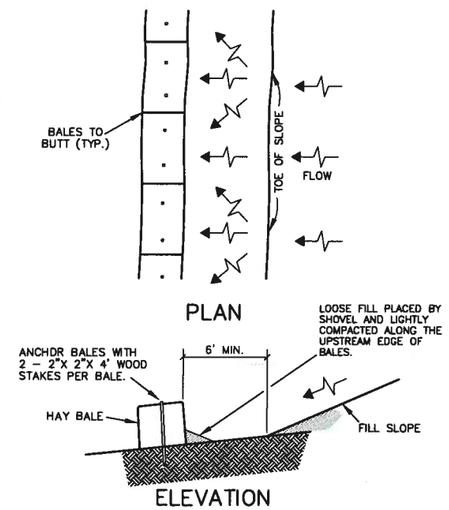
ATTACH FILTER FABRIC TO POSTS ALLOWING 1 FT EXTENSION INTO THE TRENCH AS SHOWN.

BACKFILL AND COMPACT EXCAVATED SOIL.

NOTE:

MATERIALS, CONSTRUCTION METHODS AND MAINTENANCE SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS & DESIGN STANDARDS, CURRENT EDITION.

SILT FENCE DETAIL



NOTE: TO BE USED AT SELECTED SITES WHERE THE NATURAL GROUND SLOPES AWAY FROM THE TOE OF SLOPE.

HAY BALE BARRIER DETAIL

(AT CONTRACTOR'S OPTION, HAY BALE BARRIERS MAY BE USED IN PLACE OF SILT FENCE.)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
1/6/10	CCT	ERP PERMIT SUBMITTAL #1			

MALCOLM PIRNIE

PREPARED BY:
1-12-10
CHRISTOPHER C. TILMAN
FLORIDA P.E. No. 61903

SOLID WASTE AUTHORITY OF PALM BEACH COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID

FERROUS PROCESSING FACILITY
ENVIRONMENTAL RESOURCE PERMIT
CIVIL
EROSION CONTROL DETAILS

JANUARY 2010

SHEET NO. 9

User:benson Spec:PIRNIE STANDARD File:K:\ACAD\PROJ\3582061\ERP Drawings\PERMIT SHEET 9 - EROSION CONTROL DETAILS 091109.DWG Scale:1:1 Date:11/13/2009 Time:09:21 Layout:Layout1

Solid Waste Authority of Palm Beach County
Environmental Resource Permit
Ferrous Processing Facility

Attachment D

Geotechnical Report and Borehole Permeability Tests Report

3582061 / FTL

REPORT OF
GEOTECHNICAL EXPLORATION

SOLID WASTE AUTHORITY
FERROUS PROCESSING FACILITY
SITE 7 CAMPUS, JOG ROAD AND 45TH STREET
WEST PALM BEACH, FLORIDA

FOR

MALCOLM PIRNIE, INC.
8201 PETERS ROAD
SUITE 3400
PLANTATION, FLORIDA 33324

PREPARED BY

NUTTING ENGINEERS OF FLORIDA, INC.
1310 NEPTUNE DRIVE
BOYNTON BEACH, FLORIDA 33426

ORDER NO: 13228.11

JANUARY 2009

Nutting Engineers
of Florida Inc. | Established 1967
Your Project is Our Commitment

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Engineering, Testing & Inspection
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Offices throughout the state of Florida

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Fax: 561-737-9975
Broward 954-941-8700
St. Lucie 772-408-1050
Miami-Dade 305-557-3083
www.nuttingengineers.com

Geotechnical and Construction Materials | Engineering, Testing and Inspections | Environmental Services

January 19, 2009

Ms. Nicole J. Lynch-Cruz
Malcolm Pirnie, Inc.
8201 Peters Road, Suite 3400
Plantation, Florida 33324
Phone: 954-761-3460 Fax: 954-761-7939

Re: Report of Geotechnical Exploration
Proposed Ferrous Processing Facility
Solid Waste Authority
Site 7 Campus, Jog Road and 45th Street
West Palm Beach, Florida

Dear Ms. Lynch-Cruz:

Nutting Engineers of Florida, Inc. (NE), has performed a Geotechnical Exploration for the proposed ferrous processing facility at the above referenced site in West Palm Beach, Florida. This exploration was performed in accordance with the written authorization to proceed provided by Malcolm Pirnie, Inc. dated January 9, 2009. This evaluation was performed to develop information regarding subsurface soil or rock conditions at specific test locations which along with proposed construction information provided was used to develop opinions regarding earthwork procedures and foundations for support of the proposed construction. This report presents our findings and recommendations based upon the information examined at the time of this evaluation.

PROJECT INFORMATION

We understand that plans for this project include constructing a new ferrous processing facility at the referenced site. Based on aerial overlays provided by your office the site will consist of an approximate 36,000 square foot concrete pad in which a large metal grinding machine and other metal processing materials will be located. It is our understanding that this pad area may or may not be enclosed in order to address potential noise concerns. At the time of our report the pad area was not planned to be enclosed.

OFFICES
Palm Beach
Miami-Dade
St. Lucie

We understand that in order to transport the materials to the machine, heavy rubber-tired equipment (i.e. front end loader) will work within the pad area. Because of this it is anticipated that the floor slab system will consist of a mat type foundation system or similar design to support the anticipated truck loads. Due to the size and nature of the metal grinder (heavy vibrations), it is anticipated that independent foundations will be constructed for support of this piece of equipment within the building. We were provided photographs of similar ferrous processing machinery in order to understand the nature of the equipment.

Along with the building various asphalt/gravel paved parking lots and roadways will be developed. We also understand that numerous grass covered retention areas along with ancillary concrete slab areas will also be constructed.

Our office was also provided a preliminary site plan indicating the approximate location of the pad area and the various ancillary features. Based on current site elevations, we estimate that one to three feet of fill will be required to bring the site up to construction grade; however, the final building pad elevation shall be determined by a professional architect, civil engineer, or other qualified party.

NE should be notified in writing by the client of any changes in the proposed construction along with a request to amend our foundation analysis and/or recommendations within this report as appropriate.

Property Information

Historically, we understand that the proposed facility location was a lake, and a portion of the lake still exists due east of the subject site. We understand that the western portion of the lake was filled recently for the construction of the new bio-solids facility that is located just east of our project site. Prior to our test borings it was not known the depth of the lake as well as possible material used for the backfilling process.

SUBSURFACE EXPLORATION/GENERAL SUBSURFACE CONDITIONS

Soil Survey Maps

As part of the geotechnical exploration, we have reviewed available Soil Conservation Service (SCS) survey maps for Palm Beach County. These SCS maps provide qualitative information about potential general shallow soil conditions in the project vicinity. This information was derived from approximately 6 ft. deep manual auger borings, aerial photo and surface feature interpretation at some point in the past (mid 1980's to early 1970's). The SCS data may or may not reflect actual current site conditions.

A review of the Soil Survey for Palm Beach County revealed that at the time the survey was conducted, the soils at the site were described as Arents-Urban land complex. This complex consists of nearly level, somewhat poorly drained, sandy soils and urban land. The soils formed in thick layers of sandy fill material that were placed over low, wet mineral soils to make the areas suitable for urban use. This complex is in the eastern part of the survey area and takes in golf courses, subdivisions, and condominium developments, roadways, business or industrial areas, reclaimed borrow pits, and other areas filled over but not yet developed. We note that the soil surveys were typically penetrated to a depth of approximately six feet.

Subsurface Exploration

NUTTING ENGINEERS OF FLORIDA, INC. was requested to perform two Standard Penetration Test (SPT) borings (ASTM D-1586) to depths of fifty feet below land surface. The test boring locations may have been varied by the geotechnical engineer through site access limitations, lithologic conditions and other considerations from that originally proposed. The locations of the test borings are indicated on the individual test boring reports presented in the Appendix of this report. The test boring locations were identified in the field using approximate methods; namely, a measuring wheel and available surface controls. As such the test boring locations should be considered to be approximate.

Test Boring Results

The test borings revealed two differing soil conditions within the upper twenty-seven feet of the soil profile. Test boring B-1 (performed approximately near the western edge of the historic lake) revealed medium dense tan sand in the upper eight feet underlain by medium dense gray clayey sand to a depth of nine feet. From nine to thirty-three feet medium dense tan sand and shell fragments to brown sand was encountered. Below thirty-three feet medium dense to loose gray and tan sand with some shell fragments was encountered to a depth of fifty feet, the maximum depth explored.

Test boring B-2 (performed within the area of the historic lake) revealed loose gray to tan sand in the upper three feet underlain by buried concrete debris to a depth of four feet. From four to eighteen feet medium dense dark brown to dark gray sand with varying proportions of limestone and concrete fragments was encountered, that was underlain by loose light tan sand to a depth of twenty-three feet. From twenty-three to twenty-seven feet very loose dark gray silty fine sand was encountered (estimated lake bottom). Below twenty-seven feet loose to medium dense gray and tan sand with some shell fragments was encountered to a depth of fifty feet, the maximum depth explored. Please see the enclosed soil classification sheet in the Appendix of this report for additional important information regarding these descriptions, the field evaluation and other related information.

Laboratory Testing and Analysis

A representative soil sample was collected during the fieldwork and returned to the laboratory for testing. Specifically, natural water content and fines content tests were performed on the dark gray silty fine sand material encountered in test boring B-2 from approximately twenty-three to twenty-seven feet. The natural water content was determined to be 41 percent. This indicates that the soils are slightly to moderately compressible. The fines content test (material passing the #200 sieve) revealed that approximately 20 percent of the soil is made up of silts or clays. This indicates that the soil would classify as a silty sand to sand-silt mixtures (SM) in the Unified Soil Classification System (USCS).

Groundwater

The immediate groundwater level was measured at the boring location at the time of drilling. The groundwater level was encountered depths ranging from approximately four to five feet below the existing ground surface. Please review the paragraphs presented below regarding water table information and accuracy.

The immediate depth to groundwater measurements presented in this report may not provide a reliable indication of stabilized or more long term depth to groundwater at this site. Water table elevations can vary dramatically with time through rainfall, droughts, storm events, flood control activities, nearby surface water bodies, tidal activity, pumping and many other factors. For these reasons, this immediate depth to water data **should not** be relied upon alone for project design considerations.

Further information regarding stabilized groundwater elevations at the site could be developed upon specific request. Additional evaluation might include monitoring of peizomenters, survey of the project area for evidence of current groundwater elevation influences such as wellfields, obvious construction dewatering, tidal activity, flood control canals and other surface water bodies.

ANALYSIS AND RECOMMENDATIONS

Typically in a historically backfilled lake area, two primary conditions need to be considered during site development. These include the methods and means to backfill the lake and the compressible silt layer. The borings performed for the project revealed that in general clean sand and limestone fragments were used with some construction debris (concrete fragments) for developing the land. The borings indicate that this material has been well placed and little voids appear to exist which could cause finer grained materials to migrate into void spaces resulting in subsidence. Based on these findings for the new construction at this site it appears that one primary condition must be considered for construction. This factor would be the compressible sand-silt soils.

The use of conventional shallow footings over the existing soil profile would result in excessive total and differential settlements without using any ground modification techniques. To reduce these settlements, special site preparation procedures are needed. The use of spread footings and ground supported floor slabs will necessitate that the silt soils be pre-compressed using a soil surcharge (preload). Another option to reduce the settlement to an acceptable limit is to use deep foundation system such as piles. It would be anticipated that the use of augercast piles for the site would not be very cost effective and not feasible for this type of construction.

The factor that needs to be considered for this site is the short and long-term settlement that will result due to consolidation of the underlying sand-silt layer. Based on our understanding that approximately two feet of fill will be needed to achieve final construction grades, the short-term settlement (and the long-term settlement to some degree) can be reduced by preloading the building pad areas with a surcharge fill. This will cause the sand-silt layer to undergo primary consolidation (2" to 4") within an estimated four to eight weeks for the thickest layer of silt encountered and less time for thinner layers of silt. In addition, long-term secondary consolidation of the sand-silt layer will also occur. This can be slightly altered by the height of surcharge fill.

After a preloading program has been performed, the foundation can be designed for an allowable soil bearing value of 3,000 pounds per square feet; however, no strip footing supporting a main bearing wall (if necessary) should be less than 2.5 feet in width and column footings no less than 4.0 feet square. Bottom of footings should be set at a minimum of 2.5 feet below lowest adjacent finish grade.

It is our opinion that the floor slab system may be constructed as a slab on grade. We recommend that a vapor barrier be placed between the soil and concrete. We also recommend that the reinforcing steel mesh be placed at the approximate center of the slab for tensile support.

Site Preparation – Prior to Preloading Program

All demolition debris, asphalt, basecourse material, grass, roots and other deleterious material should be stripped and removed within the building pad to a distance of five feet outside the building pad area. The stripped surface should be wetted and compacted with thirty overlapping passes with Dynapac CA-25 or equivalent compactor until a density equivalent of 98 percent of the modified Proctor maximum dry density (ASTM D-1557) is achieved to a depth of at least 12 inches below the compacted surface.

Structural fill needed to bring the site to construction grade may then be placed in lifts not exceeding 12 inches in loose thickness when using the vibratory compaction equipment described previously. Each lift should be thoroughly compacted until densities equivalent to at least 98 percent of the modified Proctor maximum dry density are uniformly obtained. Once the site has achieved construction grade the preloading program may then be performed as outlined below.

The fill should have ASTM designation (D-2487) of GP, GW, SP, or SW, with a maximum particle size of no more than 3 inches or as otherwise approved by the geotechnical engineer.

Preloading Program

Based on the test boring results, our laboratory tests, and settlement calculations we have determined that based on finish grades being two feet above existing grade, the entire building footprint to limits of five feet beyond the footprint limits needs to undergo the preloading program. We note that this recommendation is based on the finish floor being located two feet above current grades. If elevations are higher than this assumption, our office must be notified by responsible parties immediately in order to re-assess our recommendations.

In order to reduce primary settlement of the sand-silt layer, a surcharge fill should be applied to the building area to five feet outside building lines should be preloaded with a minimum **five** feet height of soil surcharge above finished floor elevation. The surcharge fill should be placed in lifts and tracked in with a dozer to the required height. Settlement plates should be established in the building at the level of the compacted existing surface and should be read (surveyed) at least one time per week until settlement discontinues (estimated 4 to 8 weeks depending on silt thickness).

The full height of surcharge fill should extend five feet outside building lines after which it can be sloped. It is our opinion that a minimum side slope of 2.5 horizontal to 1 vertical may be used for the surcharge fill. **The fill shall not be removed until directed by the Nutting Engineers Project Manager.**

After the preloads are completed we anticipate that some differential settlement will occur within the slab area after their construction. Based on test borings, and laboratory testing and analysis performed by Nutting Engineers of Florida, Inc.; we estimate that the buildings may settle approximately one to one and a quarter inches with approximately 40% occurring during construction and 60% over 20 years. It is recommended that sufficient expansion joints for the building be considered by the structural engineer to reduce the effect of the differential settlement. It is also recommended that additional reinforcement steel bars be provided for the floor slabs to reduce the potential for cracks.

The fill material on this site is uncontrolled fill containing a variety of constituents. A ground modification technique such as surface compaction and preloading for deep sand-silt layers has been recommended to reduce the settlement after the completion of the project as much as possible. However, it should be noted that due to the heterogeneous nature of the fill material and silt soils, the estimated soil settlement may be different from the actual settlements.

Site Preparation - After Preload Operation

When the preloading has been completed and the preload soils have been removed, the surface should be wetted and compacted with thirty overlapping passes with Dynapac CA-25 or equivalent compactor until a density equivalent of 98 percent of the modified Proctor maximum dry density (ASTM D-1557) is achieved to a depth of at least 12 inches below the compacted surface.

Structural fill needed to bring the site to construction grade may then be placed in lifts not exceeding 12 inches in loose thickness when using the vibratory compaction equipment described previously. Each lift should be thoroughly compacted until densities equivalent to at least 98 percent of the modified Proctor maximum dry density are uniformly obtained. In case of using staging surcharge following site and building pad construction, the surcharge can be placed over the other prepared building pad.

The fill should have ASTM designation (D-2487) of GP, GW, SP, or SW, with a maximum particle size of no more than 3 inches or as otherwise approved by the geotechnical engineer.

Following site and building pad construction as discussed above, the foundation area should be excavated and the footings formed.

The bottom of foundation excavations should be compacted after excavation to develop a minimum density requirement of 98 percent of the maximum modified Proctor dry density, for a minimum depth of one (1) foot below the bottom of the footing depth, as determined by field density compaction tests. The floor slab area should also be compacted in the same manner.

Special Note: The driller indicated that significant concrete debris was encountered at a depth of three to four feet below the ground surface at test boring B-2. During development of the building foundations if construction debris is encountered, our office should be notified in order to evaluate the site condition and provide appropriate modifications to recommendations. We note that this may require some additional over excavation and backfilling with clean structural fill material. The contractor should be notified of this condition and potential related costs.

Ferrous Machine Foundation

Given the size and height of the ferrous processing machine (as seen in photographs provided to our office) some additional recommendations may be warranted due to tension and shear forces that occur. These recommendations may include the installation of a deep foundation system in order to resist these forces. At the time of our report structural information regarding the machine was not provided. Because of this the project structural engineer of record should determine if additional recommendations are warranted due to the demands of the machine. Nutting Engineers should be notified in writing in order to review the new information and provide appropriate machine foundation specific recommendations.

Utilities

Any debris encountered during utility installation should be observed by a NE representative. We anticipate that some overexcavation will be needed, possibly 12 inches below the pipe and appropriate bedding. Special connections should be used where utilities enter buildings. The civil engineer should review the site conditions in order to provide final recommendations.

Gravel/Pavement Areas

Some increased frequency of maintenance should be anticipated for gravel/pavement areas due to long term compression of sand-silt soils. If additional fill is to be placed in these areas, some differential movement will occur leading to "bird bathing" and possibly differential settlement at sidewalk joints. In order to minimize pavement distress, these areas could be preloaded to compress the underlying silt soils and improve pavement performance, but not necessarily needed if the client accepts the potential for increased frequency of maintenance. A high strength geogrid below the base course may help to reduce differential settlements and can be discussed further if desired.

A stabilized subgrade having a minimum LBR of 40 should be placed to a depth of at least 12 inches below the base course. The base course will range from 6 inches within parking stall areas to 8 inches within drive areas, and should have a minimum LBR of 100. The 12 inches of stabilized subgrade and limerock base course should be compacted to a density of 98 percent. The entire pavement area should have a minimum of 1.5 inches of flexible asphaltic concrete over the base materials.

Retention Areas

As noted within test boring B-2 significant concrete construction debris was encountered at depths of three to four feet below the ground surface. This material may potentially cause drainage concerns within proposed retention areas. We recommend that prior to construction of the retention areas some backhoe excavated test pits be performed along with site appropriate drainage tests to determine if retention concerns could exist. Based on the findings additional site preparation activities may be warranted.

General

Our client for this geotechnical evaluation was:

Ms. Nicole J. Lynch-Cruz
Malcolm Pirnie, Inc.
8201 Peters Road, Suite 3400
Plantation, Florida 33324

The contents of this report are for the exclusive use of the client, the client's design and construction team and governmental authorities for this specific project exclusively. Information conveyed in this report shall not be used or relied upon by other parties or for other projects without the expressed written consent of Nutting Engineers of Florida, Inc. This report discussed geotechnical considerations for this site based upon observed conditions and our understanding of proposed construction for foundation support. This report does not address environmental issues including, but not limited to, soil and/or groundwater contamination which may be associated with unknown backfill and past land use and which are beyond our scope of service for this project.

Nutting Engineers of Florida, Inc. shall bear no liability for the implementation of recommended inspection and testing services as described in this report if implemented by others. Nutting has no ability to verify the completeness, accuracy or proper technique of such procedures if performed by others.

If conditions are encountered which are not consistent with the findings presented in this report, or if proposed construction is moved from the location studied, this office shall be notified immediately so that the condition or change can be evaluated and appropriate action taken.

Prior to initiating compaction operations, we recommend that representative samples of the natural ground material and the structural fill material to be used be collected and tested to determine their compaction and classification characteristics. The maximum dry density, optimum moisture content, gradation and plasticity characteristics should be determined. These tests are needed for compaction quality control of the structural fill and natural ground soils, and to determine if the fill material is acceptable. The site preparation work should be inspected and tested by Nutting Engineers. A representative number of in-place field density tests should be performed in the compacted existing soils and in the structural fill or backfill to confirm that the required degree of compaction is obtained.

Excavations of five feet or more in depth shall be sloped or shored in accordance with OSHA and State of Florida requirements.

The Geotechnical Engineer warrants that the findings, recommendations, specifications, or professional advice contained herein, have been presented after being prepared in accordance with general accepted professional practice in the field of foundation engineering, soil mechanics and engineering geology. No other warranties are implied or expressed.

We appreciate this opportunity to provide these geotechnical engineering services for you and look forward to working with you during the construction phase. Note that we have the equipment and experienced personnel to provide geotechnical monitoring/testing, concrete and other testing and threshold inspection services. If we can be of any further assistance, or if you need additional information, please feel free to contact the undersigned.

Sincerely,
NUTTING ENGINEERS OF FLORIDA, INC.

Christopher E. Gworek, E.I.
Project Engineer

Richard C. Wohlfarth, P.E. #50858
Director of Engineering

Attachments: Test Boring Location Plan
Test Boring Reports
Soil Classification Criteria
Limitations of Liability

REP MALCOLM PIRNIE SWA FERROUS PLANT CEG

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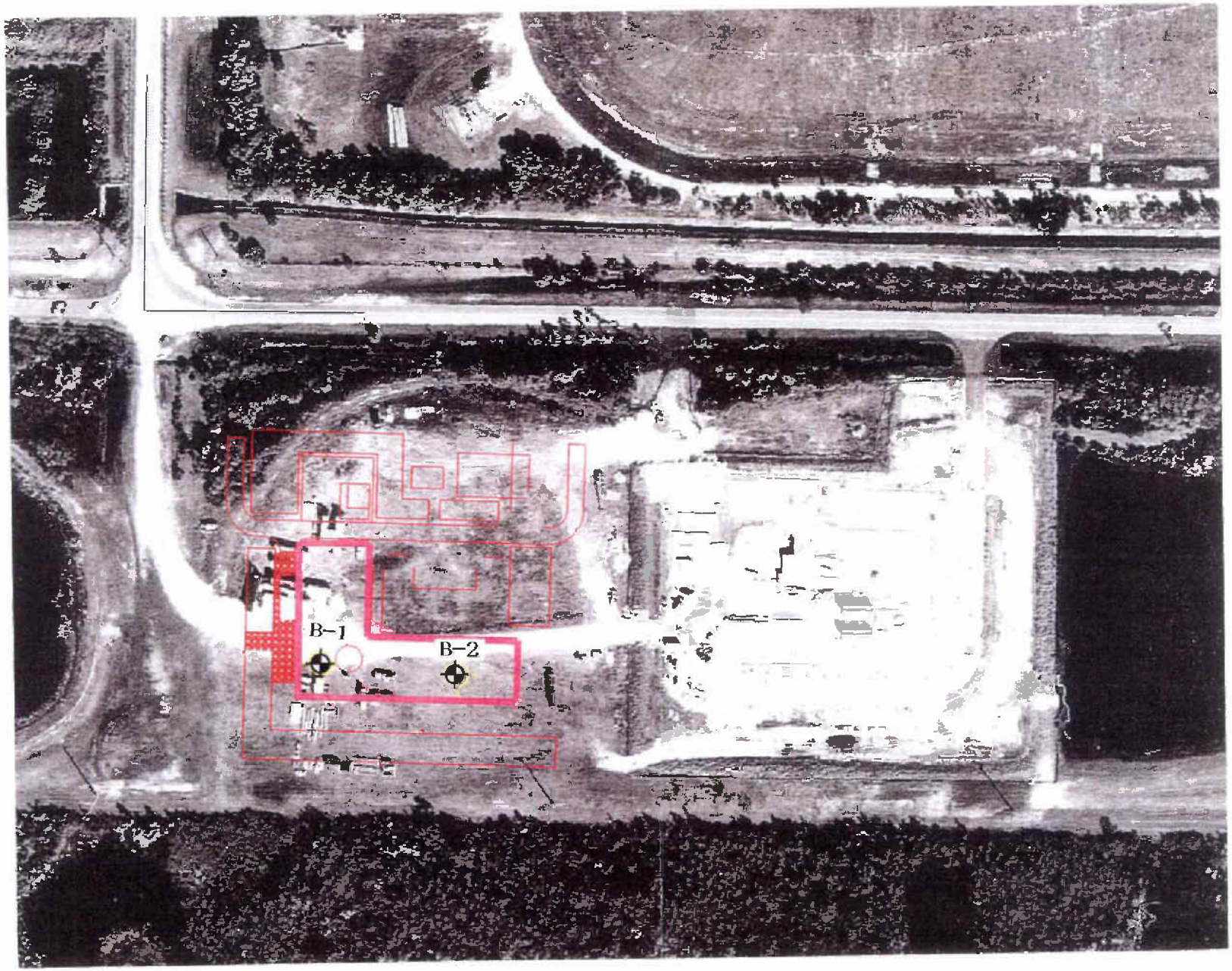

NUTTING ENGINEERS OF FLORIDA, INC.
ESTABLISHED 1967

MALCOLM PIRNIE, INC.
SOLID WASTE AUTHORITY
FERROUS PROCESSING FACILITY
JOG RD. & 45TH ST., WEST PALM BEACH, FL
PROJECT NO. 13228.11

GEOTECHNICAL EXPLORATION

NOT TO SCALE

FIG. 1

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Your Project is Our Commitment

1310 Neptune Drive
Boynton Beach
Telephone: (561) 736-4900
Fax: (561) 737-9975

BORING NUMBER B-1

PROJECT NUMBER 13228.11

CLIENT Malcolm Pirnie, Inc.

PROJECT NAME SWA Relocat - Ferrous Processing Facility

PROJECT LOCATION Site 7 Campus, Jog Road and 45th St., West Palm Beach, FL

DATE STARTED 1/14/09 COMPLETED 1/14/09

SURFACE ELEVATION REFERENCE N/A

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY D. Tyson CHECKED BY C. Gworek

∇ AT TIME OF DRILLING 5.0 ft

APPROXIMATE LOCATION OF BORING **as located on site plan**

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value
0		Gray quartz fine SAND			
		Dk. tan quartz fine SAND	SS 1	3-4-6-8	10
			SS 2	5-8-9-10	17
5		∇	SS 3	5-6-9-16	15
			SS 4	10-8-5-9	13
		Gray quartz fine clayey SAND, trace of root fibers			
		Lt. tan quartz fine SAND and SHELL fragments	SS 5	12-13-12-12	25
10			SS 6	4-8-10-16	18
			SS 7	4-3-2	7
15					
		Dk. brown quarz fine SAND			
			SS 8	2-3-4	5
20					
		Brown quartz fine SAND			
			SS 9	9-8-9	17
25					
			SS 10	5-6-7	11
30					
		Gray quartz fine SAND, some shell			
35			SS 11	9-12-12	21

▲ SPT N VALUE ▲
10 20 30 40
PL MC LL
20 40 60 80
☐ FINES CONTENT (%) ☐
20 40 60 80

TEST NUTTING BOREHOLE 13228 11 MALCOLM PIRNIE, INC. SWA RELOCATE FERROUS PROCESSING FACILITY.GPJ GINT LS GDT 1/16/09

(Continued Next Page)

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Boynton Beach
Telephone: (561) 736-4900
Fax: (561) 737-9975

BORING NUMBER B-1

PROJECT NUMBER 13228.11

CLIENT Malcolm Pirnie, Inc.

PROJECT NAME SWA Relocat - Ferrous Processing Facility

PROJECT LOCATION Site 7 Campus, Jog Road and 45th St., West Palm Beach, FL

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲ 10 20 30 40 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
35		Gray quartz fine SAND, some shell *(continued)*				
		Tan quartz fine SAND	SS 12	3-4-3	7	▲
40						
		Gray quartz fine SAND and SHELL fragments	SS 13	5-5-5	10	▲
45						
			SS 14	3-4-5	7	▲
50		Bottom of hole at 50.0 feet.				

TEST NUTTING BOREHOLE 13228 11 MALCOLM PIRNIE, INC -SWA RELOCATE FERROUS PROCESSING FACILITY GPJ GINT US.GDT 1/16/09

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Fax: (561) 737-9975

BORING NUMBER B-2

PROJECT NUMBER 13228.11

CLIENT Malcolm Pirnie, Inc.

PROJECT NAME SWA Relocat - Ferrous Processing Facility

PROJECT LOCATION Site 7 Campus, Jog Road and 45th St., West Palm Beach, FL

DATE STARTED 1/13/09 COMPLETED 1/13/09

SURFACE ELEVATION REFERENCE N/A

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY D. Tyson CHECKED BY C. Gworek

▽ AT TIME OF DRILLING 4.0 ft

APPROXIMATE LOCATION OF BORING **as located on site plan**

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value
0		Gray quartz fine SAND	SS 1	3-3-4-7	7
		Tan quartz fine SAND	SS 2	9-15-48-14	63
		BURIED CONCRETE DEBRIS			
5		Dk brown quartz fine SAND and BURIED CONCRETE DEBRIS	SS 3	6-9-8-8	17
			SS 4	7-8-17-17	25
		Dk gray quartz fine SAND, some limestone and concrete fragments	SS 5	7-9-12-10	21
10			SS 6	12-10-10-15	20
15			SS 7	10-17-31	27
		Lt. tan quartz fine SAND	SS 8	3-3-6	6
20					
		Dk. gray SILT, trace of sand (W.O.R.)	SS 9	0-1-0	1
25					
		Gray quartz fine SAND	SS 10	4-6-9	10
30					
		Gray quartz fine SAND and SHELL fragments	SS 11	10-20-22	30
35					

▲ SPT N VALUE ▲
10 20 30 40
PL MC LL
20 40 60 80
☐ FINES CONTENT (%) ☐
20 40 60 80

(Continued Next Page)

TEST NUTTING BOREHOLE 13228 11 MALCOLM PIRNIE, INC -SWA RELOCATE FERROUS PROCESSING FACILITY GPJ GINT US GDT 1/16/09

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BORING NUMBER B-2

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DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲ 10 20 30 40 / PL MC LL 20 40 60 80 / □ FINES CONTENT (%) □ 20 40 60 80
35		Gray quartz fine SAND and SHELL fragments *(continued)*				
40		Tan greenish tint quartz fine SAND	SS 12	5-6-6	11	▲
		Gray quartz fine SAND and SHELL fragments				
45			SS 13	4-5-6	9	▲
50			SS 14	4-4-4	8	▲
		Bottom of hole at 50.0 feet.				

TEST NUTTING BOREHOLE 13228 11 MALCOLM PIRNIE, INC -SWA RELOCATE FERROUS PROCESSING FACILITY GPJ GINT US.GDT 1/16/09

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LIMITATIONS OF LIABLILITY

WARRANTY

We warranty that the services performed by Nutting Engineers of Florida, Inc. are conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. ***No other warranties, expressed or implied, are made.*** While the services of Nutting Engineers of Florida, Inc. are a valuable and integral part of the design and construction teams, we do not warrant, guarantee or insure the quality, completeness, or satisfactory performance of construction plans and specifications which we have not prepared, nor the ultimate performance of building site materials.

SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings; test pits are sometimes employed. The method of determining the boring location and the surface elevation at the boring is noted in the report. This information is represented on a drawing or on the boring log. The location and elevation of the borings should be considered accurate only to the degree inherent with the method used.

The soil boring log includes sampling information, description of the materials recovered, approximate depths of boundaries between soil and rock strata and groundwater data. The log represents conditions specifically at the location where the boring was made. The boundaries between different soil strata are indicated at specific depths; however, these depths are in fact approximate and dependent upon the frequency of sampling. The transition between soil strata is often gradual. Water level readings are made at the time and under conditions stated on the boring logs. Water levels change with time, precipitation, canal level, local well drawdown and other factors.

LABORATORY AND FIELD TESTS

Tests are performed in accordance with specific ASTM Standards unless otherwise indicated. All criteria included in a given ASTM Standard are not always required and performed. Each test report indicates the measurement and determination actually made.

ANALYSIS AND RECOMMENDATIONS

The geotechnical report is prepared primarily to aid in the design of site work and structural foundations. Although the information in the report is expected to be sufficient for these purposes, it is not intended to determine the cost of construction or to stand alone as a construction specification.

Report recommendations are based primarily on data from test borings made at the locations shown on the test boring reports. Soil variations may exist between borings and may not become evident until construction. If variations are then noted, the geotechnical engineer should be contacted so that field conditions can be examined and recommendations revised if necessary.

The geotechnical report states our understanding as to the location, dimensions and structural features proposed for the site. ***Any significant changes in the nature, design, or location of the site improvements must be communicated to the geotechnical engineer*** so that the geotechnical analysis, conclusions, and recommendations can be appropriately adjusted.

CONSTRUCTION OBSERVATION

Construction observation and testing is an important element of geotechnical services. The geotechnical engineer's field representative (G.E.F.R.) is the "owner's representative" observing the work of the contractor, performing tests and reporting data from such tests and observations. ***The geotechnical engineer's field representative does not direct the contractor's construction means, methods, operations or personnel.*** The G.E.F.R. does not interfere with the relationship between the owner and the contractor and, except as an observer, does not become a substitute owner on site. The G.E.F.R. is responsible for his/her safety, but has no responsibility for the safety of other personnel at the site. The G.E.F.R. is an important member of a team whose responsibility is to observe and test the work being done and report to the owner whether that work is being carried out in general conformance with the plans and specifications.

SOIL CLASSIFICATION CRITERIA

RELATIVE DENSITY SAND

SPT N-VALUE (blows/ft.)	RELATIVE DENSITY
0 - 4	Very Loose
5 - 10	Loose
11 - 29	Medium
30 - 49	Dense
>50	Very Dense
100/6"	Refusal

SHEAR STRENGTH CLAY

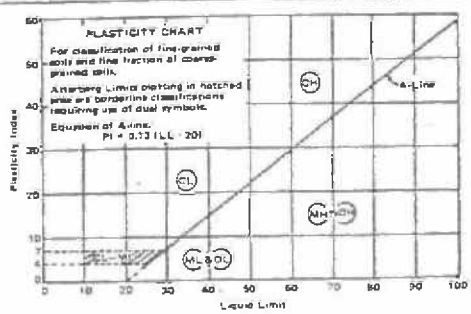
SPT N-Value (blows/ft.)	UNCONFINED COMP. STRENGTH (tons/ft.2)	CONSISTENCY
<2	<0.25	Very soft
2 - 4	0.25-0.50	Soft
5 - 8	0.50-1.00	Medium
9 - 15	1.00-2.00	Stiff
16 - 30	2.00-4.00	Very Stiff
>30	>4.00	Hard

PARTICLE SIZE

Boulder	>12 in.
Cobble	3 to 12 in.
Gravel	4.76mm to 3 in.
Sand	0.074mm to 4.76mm
Silt	0.005mm to 0.074mm
Clay	<0.005mm

DESCRIPTION MODIFIERS

0 - 5%	Slight trace
6 - 10%	Trace
11 - 20%	Little
21 - 35%	Some
>35%	And

Major Divisions			Group Symbols	Typical Names	Classification Criteria		
Coarse-Grained Soils More than 50% retained on No. 200 sieve*	Gravels 50% or more of coarse fraction retained on No. 4 sieve	Clean Gravels	GW	Well-graded gravels and gravel-sand mixtures, little or no fines	Classification on basis of percentage of fines: Less than 5% pass No. 200 sieve GW, GP, SW, SP; More than 12% pass No. 200 sieve GM, GC, SM, SC; 5% to 12% pass No. 200 sieve Borderline classification requiring use of dual symbols	$C_u = D_{60}/D_{10}$ Greater than 4; $C_z = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3	
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines		Not meeting both criteria for GW	
		Gravels with Fines	GM	Silty gravels, gravel-sand-silt mixtures		Atterberg limits plot below "A" line or plasticity index less than 4	Atterberg limits plotting in hatched area are borderline classifications requiring use of dual symbols
			GC	Clayey gravels, gravel-sand-clay mixtures		Atterberg limits plot above "A" line and plasticity index greater than 7	
	Sands More than 50% of coarse fraction passes No. 4 sieve	Clean Sands	SW	Well-graded sands and gravelly sands, little or no fines		$C_u = D_{60}/D_{10}$ Greater than 6; $C_z = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3	
			SP	Poorly graded sands and gravelly sands, little or no fines		Not meeting both criteria for SW	
		Sands with Fines	SM	Silty sands, sand-silt mixtures		Atterberg limits plot below "A" line or plasticity index less than 4	Atterberg limits plotting in hatched area are borderline classifications requiring use of dual symbols
			SC	Clayey sands, sand-clay mixtures		Atterberg limits plot above "A" line and plasticity index greater than 7	
Fine-Grained Soils 50% or more passed No. 200 sieve*	Silts and Clays Liquid limit 50% or less		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands			
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays			
			OL	Organic silts and organic silty clays of low plasticity			
	Silts and Clays Liquid limit greater than 50%		MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts			
			CH	Inorganic clays of high plasticity, fat clays			
			OH	Organic clays of medium to high plasticity			
Highly Organic Soils			PT	Peat, muck, and other highly organic soils	Visual-Manual Identification, see ASTM Designation D 2488.		

*Based on the material passing the 3-in. (75-mm.) sieve.

Nutting Engineers of Florida

TIERRA SOUTH FLORIDA

Geotechnical Engineering - Material Testing - Inspection Services

GEOTECHNICAL ENGINEERING SERVICES REPORT

Borehole Permeability Tests
Ferrous Process Relocation Project – Solid Waste Authority
Palm Beach County, Florida

TSF File No. 7111-09-123

PREPARED FOR

Malcolm Pirnie, Inc.
8201 Peters Road, Suite 3400
Plantation, Florida 33324

July 27, 2009

TIERRA SOUTH FLORIDA
Geotechnical Engineering - Material Testing - Inspection Services

July 27, 2009

Malcolm Pirnie, Inc.
8201 Peters Road, Suite 3400
Plantation, FL 33324

Attention: **Ms. Leah Richter, P.E.**

SUBJECT: Borehole Permeability Tests
Ferrous Process Relocation Project-Soild Waste Authority
Palm Beach County, Florida
TSF Project No. 7111-09-123

Dear Leah:

As requested, TIERRA SOUTH FLORIDA, Inc. (TSF) has completed two (2) Borehole Permeability (BHP) test at the above-referenced project.

The BHP tests were performed using the usual open-hole, constant head methodology. The holes were tested at 10 feet deep at each location, and were drilled with a 6-inch diameter solid stem auger so that soil samples could be retrieved for visual classification by an engineer. The borings were completed as open well with gravel pack (6-20 silica sand). The well screen slot widths were 0.020 inches. Water from the drill rig tank was then pumped into the open well, and the amount of water required maintaining constant head was recorded.

Results of our field permeability tests are attached.

We trust that the information presented herein is clear and understandable. Should you have any questions, please call.

Very truly yours,

TIERRA SOUTH FLORIDA, INC.

7/27/09

Raj Krishnasamy, P.E.
Principal Geotechnical Engineer/President
FL. Reg. No. 53567

RK:
Attachments: BHP Tests Result and Location Plan

2765 VISTA PARKWAY, SUITE 10 · WEST PALM BEACH, FLORIDA 33411
(561) 687-8539 · FAX (561) 687-8570
State of Florida Professional Engineers License #28073

TIERRA SOUTH FLORIDA

Geotechnical Engineering - Material Testing - Inspection Services

USUAL OPEN - HOLE TEST EVALUATION
SOUTH FLORIDA WATER MANAGEMENT METHOD

Client:	Malcolm Pirnie, Inc.	Test No.:	BHP-1	Date:	07/27/09
Project:	Ferrous Process Relocation-SWA	Well Depth:	10.0 Feet	Analyst:	RK
Job No.:	7111-09-123	Location:	West Palm Beach		

Elapsed Time (min)	Meter Reading	Flow Rate (gpm)
0	988.00	0.00
1	988.15	1.50
2	988.28	1.30
3	988.42	1.40
4	988.55	1.30
5	988.63	0.80
6	988.74	1.10
7	988.88	1.40
8	989.03	1.50
9	989.17	1.40
10	989.32	1.50
Constant Flow Rate (gpm)		1.29

1

Equation for K Value: $\frac{4Q}{pi*d(2H2^2 + 4H2Ds + H2d)}$

Soil profile:

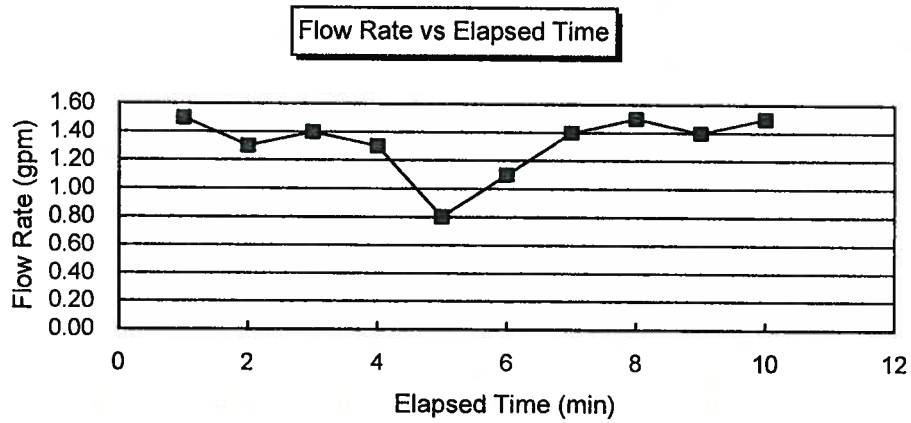
0-8' Brown Sand (SP)

8'-10' Brown Sand with shell fragments (SP)

Where: k = 2.10E-04 cfs/ft^2 Hydraulic conductivity

H2 = 3.00 ft Depth to water table

k= 2.10E-04 cfs/ft^2



TIERRA SOUTH FLORIDA

Geotechnical Engineering - Material Testing - Inspection Services

USUAL OPEN - HOLE TEST EVALUATION
SOUTH FLORIDA WATER MANAGEMENT METHOD

Client:	Malcolm Pirnie, Inc.	Test No.:	BHP-2	Date:	07/27/09
Project:	Ferrous Process Relocation-SWA	Well Depth:	10.0 Feet	Analyst:	RK
Job No.:	7111-09-123	Location:	West Palm Beach		

Elapsed Time (min)	Meter Reading	Flow Rate (gpm)
0	992.25	0.00
1	992.52	2.70
2	992.77	2.50
3	993.02	2.50
4	993.28	2.60
5	993.53	2.50
6	993.77	2.40
7	994.02	2.50
8	994.28	2.60
9	994.53	2.50
10	994.78	2.50
Constant Flow Rate (gpm)		2.51

1

Equation for K Value: $\frac{4Q}{pi*d(2H2^2 + 4H2Ds + H2d)}$

Soil profile:

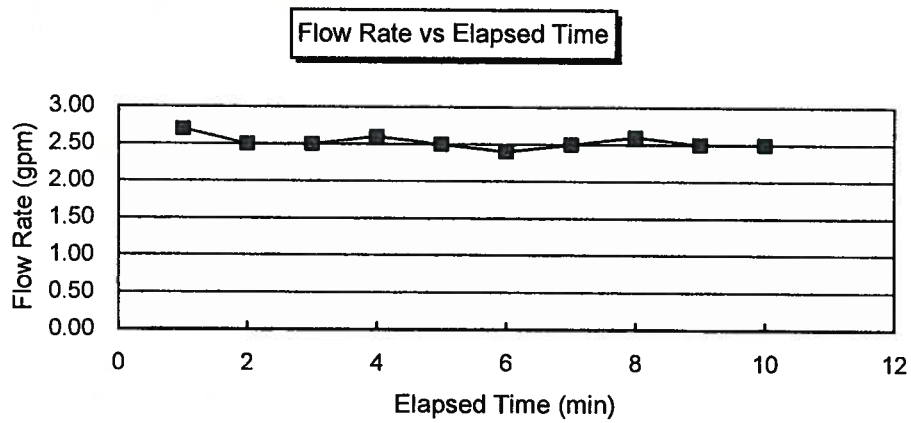
0-9' Brown Sand (SP)

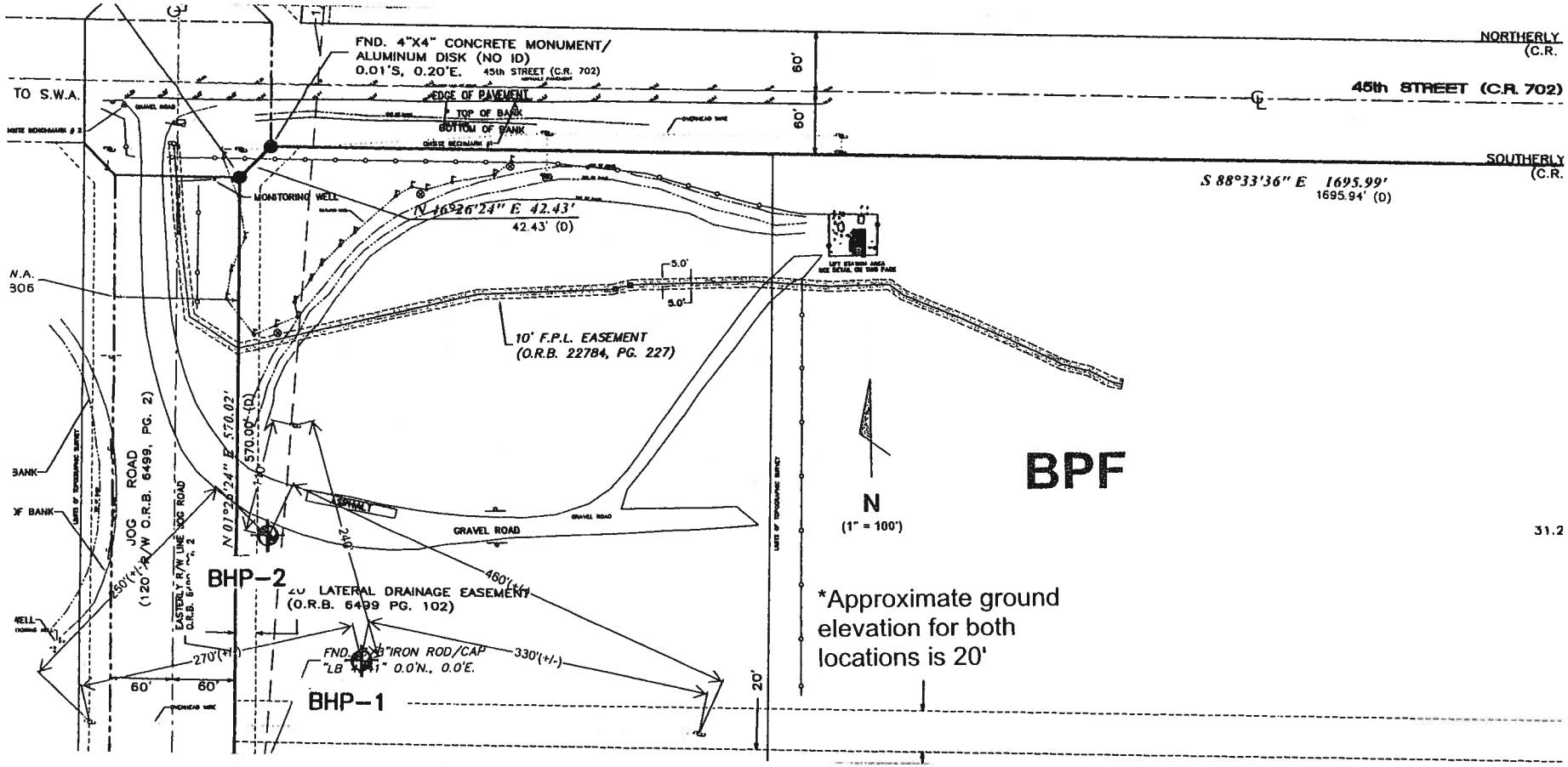
9'-10' Brown Sand with shell fragments (SP)

Where: k = 3.62E-04 cfs/ft^2 Hydraulic conductivity

H2 = 3.50 ft Depth to water table

k= 3.62E-04 cfs/ft^2





BOREHOLE PERMEABILITY TEST APPROXIMATE LOCATIONS

TEST LOCATION PLAN

DRAWN BY: MM CHECKED BY: RK	APPROVED BY: RK DATE: 07/27/09	ENGINEER OF RECORD: RAJ KRISHNASAMY, P.E. FLORIDA LICENSE NO.: 53567	TIERRA SOUTH FLORIDA 2765 Vista Parkway Suite 9 West Palm Beach, Florida 33411 Phone: 561-687-8536 Fax: 561-687-8570 FL Cert. No.: 28073	SCALE: NOTED	PROJECT NUMBER: 7111-09-123	GEOTECHNICAL ENGINEERING SERVICES SWA-FERROUS PROJECT PALM BEACH, FLORIDA	SHEET 1

Solid Waste Authority of Palm Beach County
Environmental Resource Permit
Ferrous Processing Facility

Attachment E

Boundary Survey and Topographical Map

3582061 / FTL

BOUNDARY AND TOPOGRAPHIC SURVEY

SOLID WASTE AUTHORITY, NORTH COUNTY LANDFILL
FERROUS PROCESSING FACILITY

N

100 50 0 100 200

GRAPHIC SCALE
1"=100'

LEGEND:

- ELECTRIC BOX
- BOLLARD
- POWER POLE CONCRETE
- CONCRETE
- 6'CHAIN LINK FENCE
- SIGN
- SPOT ELEVATION
- WETLAND FLAG
- GOPHER TURTLE HOLE
- PULL BOX
- POWER POLE WOOD
- GUY ANCHOR
- MAIL BOX
- AIR RELEASE VALVE (WATER)
- (D) LEGAL DESCRIPTION (DEED)
- (M) AS MEASURED GRID DISTANCE
- TREE
- MANHOLE SANITARY
- WATER VALVE
- BACK FLOW PREVENTER
- ELECTRIC OUTLET
- WATER METER
- PRESSURE VACUUM BREAKER
- LAMP
- CENTER LINE

C.R.	COUNTY ROAD
Δ	CENTRAL ANGLE OF CURVE
FND.	FOUND
ID	IDENTIFICATION
L	ARC LENGTH OF CURVE
O.R.B.	OFFICIAL RECORD BOOK
P.B.C.	PALM BEACH COUNTY
PG.	PAGE
R	RADIUS OF CURVE
R/W	RIGHT OF WAY
S.W.A.	SOLID WASTE AUTHORITY

See Sheet 2 of 2 for Topographic Survey

LEGAL DESCRIPTION:

A PARCEL OF LAND LYING IN A PORTION OF THE NORTH ONE-HALF (N1/2) OF SECTION 3, TOWNSHIP 43 SOUTH, RANGE 42 EAST, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF THE NORTH ONE-HALF (N1/2) OF SECTION 3, TOWNSHIP 43 SOUTH, RANGE 42 EAST AND RUN ON AN ASSUMED BEARING OF S88°33'36"E ALONG THE SOUTH LINE OF THE NORTH ONE-HALF (N1/2) OF SAID SECTION 3 FOR A DISTANCE OF 2639.82 FEET TO A POINT ON THE EAST RIGHT- OF-WAY LINE OF JOG ROAD BEING 120 FEET OF RIGHT-OF-WAY PER THAT DOCUMENT RECORDED IN OFFICIAL RECORDS BOOK 6499 AT PAGE 2 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA, SAID POINT ALSO BEING THE POINT OF BEGINNING OF THE FOLLOWING DESCRIBED PARCEL OF LAND; THENCE RUN N01°26'24"E ALONG SAID EAST RIGHT OF WAY LINE OF JOG ROAD FOR A DISTANCE OF 570.00 FEET; THENCE RUN N46°26'24"E FOR 42.43 FEET TO A POINT ON THE SOUTH RIGHT-OF-WAY LINE OF 45th STREET (S.R. 702) BEING 120 FEET OF RIGHT-OF-WAY PER THAT WARRANTY DEED RECORDED IN OFFICIAL RECORDS BOOK 6499 AT PAGE 47 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA; THENCE RUN S88°33'36"E ALONG THE SAID SOUTH RIGHT-OF-WAY LINE OF 45th STREET (S.R. 702) FOR A DISTANCE OF 1695.94 FEET; THENCE CONTINUE ALONG SAID RIGHT-OF-WAY S87°36'18"E FOR 300.04 FEET; THENCE CONTINUE ALONG SAID RIGHT-OF-WAY S88°33'36"E FOR 252.67 FEET TO A POINT ON THE WEST RIGHT-OF-WAY LINE OF FLORIDA'S TURNPIKE (SUNSHINE STATE PARKWAY) ; THENCE RUN S03°14'28"W ALONG SAID WEST RIGHT-OF OF-WAY LINE OF FLORIDA'S TURNPIKE (SUNSHINE STATE PARKWAY) FOR A DISTANCE OF 89.67 FEET TO A POINT OF CURVATURE; THENCE RUN SOUTHERLY ALONG THE ARC OF A CIRCULAR CURVE TO THE LEFT HAVING A RADIUS OF 42759.74 FEET THROUGH A CENTRAL ANGLE OF 00°40'39" FOR AN ARC DISTANCE OF 505.55 FEET TO A POINT OF NON-TANGENCY, SAID POINT BEING ON THE SOUTH LINE OF THE NORTH ONE-HALF (N1/2) OF SAID SECTION 3; THENCE RUN N88°33'36"W ALONG SAID SOUTH LINE OF THE NORTH ONE-HALF (N1/2) OF SAID SECTION 3 FOR A DISTANCE OF 2262.89 FEET TO THE POINT OF BEGINNING.

CONTAINING 31.213 ACRES MORE OR LESS.

SURVEYOR'S REPORT:

REPORT OF BOUNDARY SURVEY:
THE SURVEY SHOWN HEREON IS A BOUNDARY SURVEY OF PARCEL 4 AND A TOPOGRAPHIC SURVEY LIMITED TO A PORTION OF PARCEL 4, AS DENOTED BY PIETER CORRADIE OF MALCOLM PIRNIE IN AN EMAIL SENT TO JOHN ADLER ON 4/07/2009. PARCEL 4 IS LOCATED IN SECTION 3, TOWNSHIP 43 SOUTH, RANGE 42 EAST, PALM BEACH COUNTY, FL. ALL DISTANCES AND LINE WORK SHOWN HEREON IN THIS SURVEY ARE GRID DISTANCES UNLESS OTHERWISE NOTED. ALL GROUND DISTANCES WERE MULTIPLIED BY A SCALE FACTOR OF 1.000033 WITH THE BASE POINT BEING AT THE SOUTHWEST CORNER OF THE NORTH ONE-HALF(N 1/2) OF SECTION 3 ALSO BEING POINT OF BEGINNING OF PARCEL 4. THE SURVEY WAS PERFORMED ON MARCH, THROUGH A JUNE, 2009 UNDER THE DIRECTION OF THUY TRUONG, PROFESSIONAL SURVEYOR AND MAPPERS (PSM). THIS REPORT AND SURVEY ARE VALID ONLY WHEN THE SIGNATURE AND RAISED EMBOSSED SEAL ARE FOUND AT THE END OF THIS REPORT.

ACCURACY:
THE FIELD SURVEY WAS PERFORMED IN ACCORDANCE WITH CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE PURSUANT TO SECTION 472.027 FLORIDA STATE STATUTES FOR TOPOGRAPHIC SURVEYS. HORIZONTAL CONTROL VALUES FOR G0100 THROUGH G0104 WERE OBTAINED BY MEASUREMENTS WITH REAL TIME KINEMATICS (RTK), GLOBAL POSITIONING SYSTEM (GPS) BASED ON HOLDING GPS 1031 AND GPS 1041. SOLID WASTE AUTHORITY CONTROL POINTS ELEVATIONS WERE ESTABLISHED BY RUNNING A CLOSED BENCH LOOP UTILIZING THE A AFOREMENTIONED CONTROL POINTS. THE VERTICAL ACCURACY REQUIREMENT OF THE FLORIDA MINIMUM TECHNICAL STANDARDS (MTS) STATES THAT THE CLOSURE IN FEET MUST BE ACCURATE TO A STANDARD OF PLUS OR MINUS 0.05 FEET TIMES THE SQUARE ROOT OF THE DISTANCE IN MILES. ACCURACY OBTAINED BY MEASUREMENTS WITH A DIGITAL LEVEL WAS FOUND TO EXCEED THIS REQUIREMENT. HORIZONTAL VALUES ARE BASED ON SOLID WASTE AUTHORITY LOCAL NORTH AMERICAN DATUM 1927. VERTICAL VALUES ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD29). UNITS SHOWN HEREON ARE IN U.S. SURVEY FEET.

DATA SOURCE:
SOLID WASTE AUTHORITY CONTROL POINT GPS 1041. THE CONTROL IS LOCATED ALONG PERIMETER ROAD-NW, BEING EAST OF JOG ROAD AND SOUTH OF THE LANDFILL ENTRANCE ROAD. IT IS SITUATED NORTH OF AN EXISTING GUARDRAIL AT A BEND OF THE PERIMETER ROAD.
COORDINATES: NORTHING = 886870.921, EASTING = 780780.668, LOCAL SOLID WASTE AUTHORITY COORDINATE SYSTEM NGVD29, ELEVATION = 22.515.

SOLID WASTE AUTHORITY CONTROL POINT GPS 1031. THE CONTROL POINT IS LOCATED NEAR THE INTERSECTION OF THE LANDFILL ENTRANCE ROAD AND PERIMETER ROAD-SE; BEING 2.0' WEST OF THE EAST EDGE OF PAVEMENT.
COORDINATES: NORTHING = 887735.705, EASTING = 782573.845, LOCAL SOLID WASTE AUTHORITY COORDINATE SYSTEM NGVD29, ELEVATION = 21.782.

THE 10 FOOT WIDE FLORIDA POWER AND LIGHT EASEMENT PER (O.R.B. 22784, PG. 227) WAS PROVIDED BY MALCOLM PIRNIE.

MEASUREMENT METHODS:
THIS SURVEY WAS PERFORMED UTILIZING REAL-TIME KINEMATICS (RTK) GPS PROCEDURES WITH A BASE UNIT SET AT CONTROL POINT 1041 ACCORDING TO A GPS CONTROL SURVEY PREPARED BY MOCK-ROOS FOR THE SOLID WASTE AUTHORITY DRAWING No. 42-42-27-08 DATED FEBRUARY 1997. EQUIPMENT UTILIZED FOR THIS SURVEY WAS A TRIMBLE DUAL FREQUENCY 5800 REAL-TIME KINEMATICS (RTK) BASE RECEIVER WITH A PACIFIC CREST RADIO TRANSMITTER AND TWO 5800 RECEIVERS FOR A ROVER WERE USED TO OBTAIN BOUNDARY INFORMATION. THE TREE SURVEY WAS COMPLETED USING A TOTAL STATION AND SHOOTING TO A PRISM ROD. THE TREES ARE PLOTTED WITHIN 1 TO 2 FEET OF ACTUAL LOCATION.

PREPARED FOR:
SOLID WASTE AUTHORITY
7501 NORTH JOG ROAD
WEST PALM BEACH, FLORIDA 33412

CERTIFIED TO:
SOLID WASTE AUTHORITY
MALCOLM PIRNIE

JULY 2, 2009
Date of Signature

THUY TRUONG, P.S.M.
Professional Surveyor and Mapper
Florida License Number 5868

SURVEYOR'S NOTES

REVISIONS:	DATE:

ENGINEERS • ARCHITECTS • PLANNERS • SCIENTISTS • SURVEYORS • PHOTOGRAMMETRISTS

GREENHORNE & O'MARA, INC.
3223 COMMERCE PLACE, SUITE 100
WEST PALM BEACH, FL 33407
(561) 686-7707

ANNAPOLIS, MD • FAIRFAX, VA • FREDERICKSBURG, VA • LAUREL, MD
MECHANICSBURG, PA. • RALEIGH, NC • ROCKVILLE, MD • ST. PETERSBURG, FL • WALDORF, MD

BOUNDARY & TOPOGRAPHIC SURVEY FOR:
SOLID WASTE AUTHORITY
NORTH COUNTY LANDFILL
FERROUS PROCESSING FACILITY
PALM BEACH COUNTY FLORIDA

DESIGN	1"=100' SCALE
EJ DRAWN	1 OF 2
TT/JA CHECKED	
07/02/09 DATE	180500.FER.6250.000 DRAWING NO.

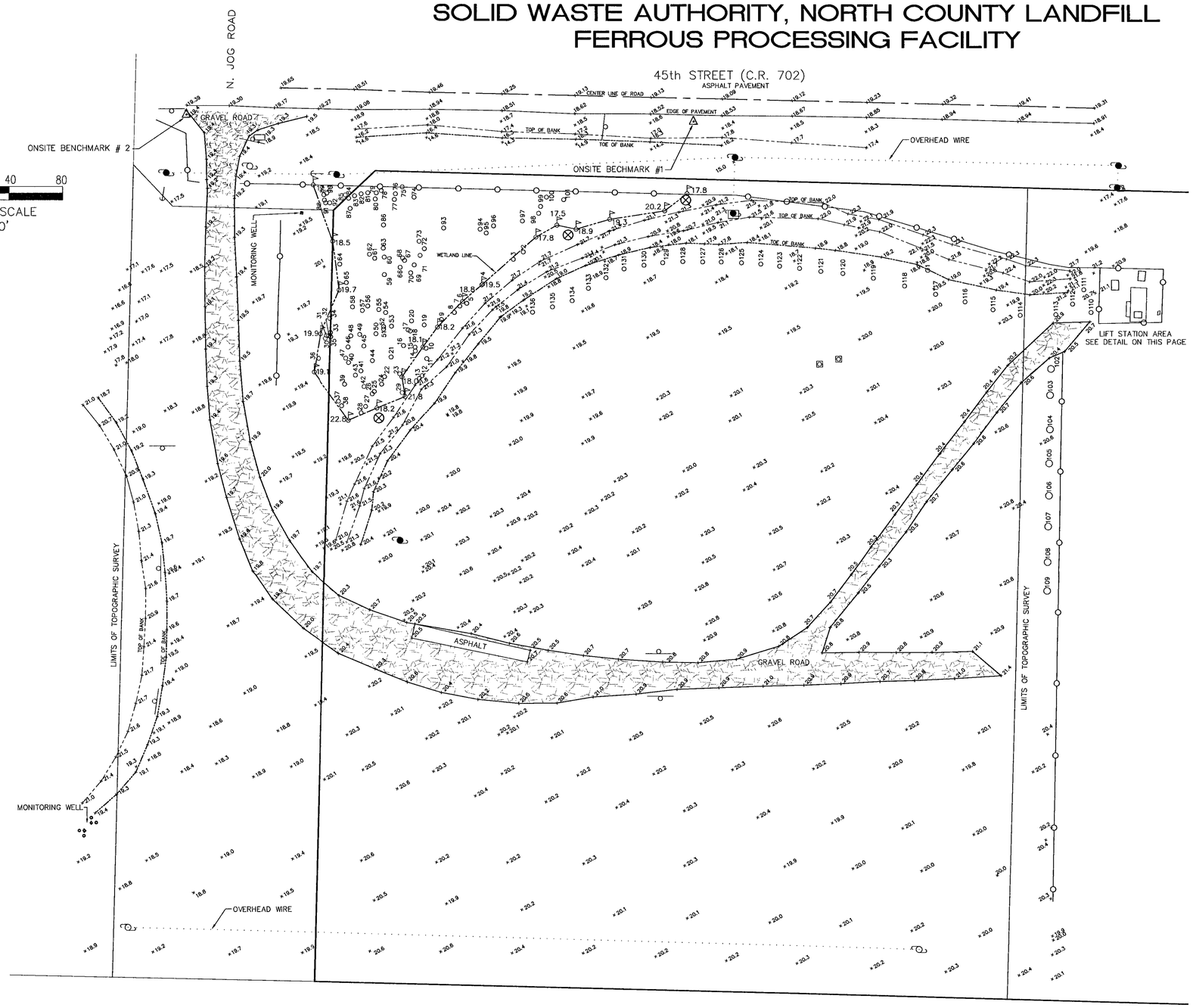
BOUNDARY AND TOPOGRAPHIC SURVEY

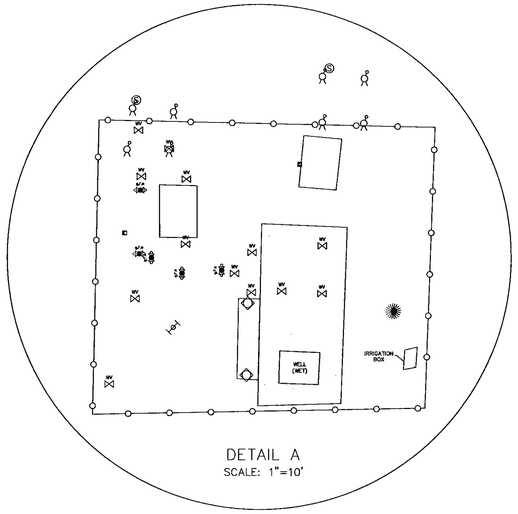
SOLID WASTE AUTHORITY, NORTH COUNTY LANDFILL
FERROUS PROCESSING FACILITY

N

40 20 0 40 80

GRAPHIC SCALE
1"=40'





DETAIL A
SCALE: 1"=10'

ONSITE BENCHMARK # 1
SET 5/8" IRON ROD/CAP
"G & O, LB 3935"
N = 882977.488
E = 780377.358
Z = 18.875'

ONSITE BENCHMARK # 2
SET 5/8" IRON ROD/CAP
"G & O, LB 3935"
N = 882982.381
E = 780000.878
Z = 19.500'

LEGEND:

C.R.	COUNTY ROAD
Δ	CENTRAL ANGLE OF CURVE
FND.	FOUND
ID	IDENTIFICATION
L	ARC LENGTH OF CURVE
O.R.B.	OFFICIAL RECORDS BOOK
P.B.C.	PALM BEACH COUNTY
PG.	PAGE
R	RADIUS OF CURVE
R/W	RIGHT OF WAY
S.W.A.	SOLID WASTE AUTHORITY
	ELECTRIC BOX
	BOLLARD
	POWER POLE CONCRETE
	CONCRETE
	6' CHAIN LINK FENCE
	SIGN
X 18.98	SPOT ELEVATION
	WETLAND FLAG
	GOPHER TURTLE HOLE
	PULL BOX
	POWER POLE WOOD
	GUY ANCHOR
	MAIL BOX
	AIR RELEASE VALVE (WATER)
(D)	LEGAL DESCRIPTION
(M)	AS MEASURED GRID DISTANCE
8"OAK	TREE
S	MANHOLE SANITARY
WV	WATER VALVE
8"BFP	BACK FLOW PREVENTER
	ELECTRIC OUTLET
	WATER METER
	PRESSURE VACUUM BREAKER
	LAMP
	CENTER LINE

POINT TABLE (TREE)

POINT NUMBER	DESCRIPTION
1	21"PALM
2	4"PINE
3	7"PINE
4	10"PINE
5	4"PINE
6	4"PINE
7	4"PINE
8	7"PINE
9	9"PINE
10	4"UNKNOWN
11	15"PALM
12	11"PALM
13	14"PALM
14	17"PALM
15	7"PINE
16	19"PALM
17	14"PALM
18	14"PINE
19	5"PINE
20	6"CYPRESS
21	15"PALM
22	13"CBMT/PALM
23	4"UNKNOWN
24	7"UNKNOWN
25	5"CYPRESS
26	10"CYPRESS
27	7"CYPRESS
28	8"CYPRESS
29	8"CYPRESS
30	15"PALM
31	15"PALM
32	16"PALM
33	4"UNKNOWN
34	9"PINE
35	13"PALM
36	15"PINE
37	5"DALTOON HOLLY
38	8"DALTOON HOLLY
39	11"CYPRESS
40	16"PINE
41	15"PALM
42	11"PALM
43	15"PALM
44	9"PINE
45	10"PINE
46	11"PINE
47	5"UNKNOWN
48	9"PINE
49	17"PALM
50	9"PINE
51	5"DALTOON HOLLY
52	16"PALM
53	16"PALM
54	7"CYPRESS
55	6"CYPRESS
56	7"CYPRESS
57	7"CYPRESS
58	8"CYPRESS
59	4"CYPRESS
60	4"CYPRESS
61	6"CYPRESS
62	5"CYPRESS
63	4"CYPRESS
64	8"PINE
65	10"PINE
66	4"CYPRESS
67	4"CYPRESS
68	4"CYPRESS

POINT TABLE (TREE)

POINT NUMBER	DESCRIPTION
69	5"CYPRESS
70	6"CYPRESS
71	4"CYPRESS
72	4"CYPRESS
73	5"CYPRESS
74	4"CYPRESS
75	6"CYPRESS
76	4"CYPRESS
77	4"CYPRESS
78	4"CYPRESS
79	4"CYPRESS
80	5"CYPRESS
81	5"CYPRESS
82	5"CYPRESS
83	4"CYPRESS
84	4"CYPRESS
85	4"CYPRESS
86	4"CYPRESS
87	5"CYPRESS
88	6"CYPRESS
89	5"CYPRESS
90	4"CYPRESS
91	4"CYPRESS
92	4"CYPRESS
93	11"PINE
94	7"PINE
95	6"PINE
96	6"PINE
97	13"PALM
98	8"PINE
99	6"CYPRESS
100	6"CYPRESS
101	7"PINE
102	2"OAK
103	2"OAK
104	2"OAK
105	2"OAK
106	2"OAK
107	2"OAK
108	2"OAK
109	2"OAK
110	3"MAPLE
111	2"MAPLE
112	3"MAPLE
113	2"MAPLE
114	3"MAPLE
115	3"MAPLE
116	3"MAPLE
117	3"MAPLE
118	3"MAPLE
119	3"MAPLE
120	3"MAPLE
121	3"MAPLE
122	3"MAPLE
123	3"MAPLE
124	2"MAPLE
125	2"MAPLE
126	2"MAPLE
127	2"MAPLE
128	2"MAPLE
129	2"MAPLE
130	2"MAPLE
131	2"MAPLE
132	2"MAPLE
133	2"MAPLE
134	3"MAPLE
135	2"MAPLE
136	2"MAPLE

See Sheet 1 of 2 for Boundary Survey

SURVEYOR'S NOTES

1. THE TOPOGRAPHIC SURVEY AS SHOWN HEREON COMPRISES ONLY A PORTION OF THE PARCEL PER CLIENTS REQUEST

2. TREE DIAMETER SIZES AS SHOWN ON THE TABLE WERE MEASURED AT BREAST HEIGHT.

REVISIONS:	DATE:

ENGINEERS * ARCHITECTS * PLANNERS * SCIENTISTS * SURVEYORS * PHOTOGRAMMETRISTS
GREENHORNE & O'MARA, INC.
3223 COMMERCE PLACE, SUITE 100
WEST PALM BEACH, FL 33407
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MECHANICSBURG, PA. * RALEIGH, NC * ROCKVILLE, MD * ST. PETERSBURG, FL * WALDORF, MD

BOUNDARY & TOPOGRAPHIC SURVEY FOR:
SOLID WASTE AUTHORITY
NORTH COUNTY LANDFILL
FERROUS PROCESSING FACILITY
PALM BEACH COUNTY FLORIDA

DESIGN	SCALE 1"=40'
DRAWN EJ	2 OF 2
CHECKED TT/JA	
DATE 07/02/09	DRAWING NO. 180500.FER.6250.000

Solid Waste Authority of Palm Beach County
Environmental Resource Permit
Ferrous Processing Facility

Attachment F

Stormwater Management Report

3582061 / FTL

ENGINEER'S CERTIFICATION

This report was prepared by a Professional Engineer registered in the State of Florida and is being filed for public record. In accordance with Florida Statutes Chapter 471.025 and Florida Administrative Code Chapter 61G15-23.002(1), this report shall be signed by the licensee, dated, and sealed as evidence of the authenticity of the report.

1-14-10

Christopher C. Tilman, P.E.
Florida Reg. No. 61903

Solid Waste Authority of Palm Beach County

7501 North Jog Road • West Palm Beach, FL 33412

Ferrous Processing Facility Stormwater Management Report

January 2010

Report Prepared By:

Malcolm Pirnie, Inc.

Malcolm Pirnie - Fort Myers
4315 Metro Parkway, Suite 520
Fort Myers, FL 33916
(239) 332-1300

3582061

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1. Basin Summary for the 25-year, 72-hour Storm Event
2. Dry Detention Area Summary for the 25-year, 72-hour Storm Event

Attachments

1. Rainfall Maps
2. Model Basin Calculations
3. Infiltration Rating Curve Calculations

1. Introduction

The Solid Waste Authority of Palm Beach County (Authority) currently operates a Ferrous Processing Facility (FPF) inside the North County Landfill area of the Palm Beach Renewable Energy Park (Park). The FPF receives ferrous metals removed from the solid waste delivered to the Palm Beach Renewable Energy Facility No. 1 and the North County Landfill.

Metals arriving at the site are separated by type (i.e. cans, steel beams, etc.), then loaded into trucks for shipment to metals recyclers. Shredders and manual torches are used to reduce metals to acceptable sizes for shipping. No water or solvent-based cleaning is performed on the processed metals, and all solvents on site used for degreasing tools and other equipment are in self-contained sinks to prevent spillage.

Due to the build-out of the existing North County Landfill, the Authority needs to relocate the FPF outside the landfill footprint. The new site selected for the FPF is approximately a 9-acre area at the southern end of the Park, just west of the existing Biosolids Processing Facility.

The sections that follow describe the physical conditions at the new FPF site, the stormwater system design, calculations, and expected performance.

2. Design Requirements

The FPF site is located within the Palm Beach Renewable Energy Park, which is permitted by the FDEP under Power Plant Site Certification (PPSC) PA-84-20K. As such, authorization of the project will be accomplished through an amendment to the PPSC rather than through issuance of an Environmental Resource Permit (ERP).

The design requirements for the stormwater control system for the FPF are set by state and local agencies. The FPF stormwater management system will be designed and constructed in a manner consistent with the following:

- Section 62-40.432, Florida Administrative Code (F.A.C.) and other applicable stormwater or environmental resource permitting regulations of the Florida Department of Environmental Protection (FDEP).
- South Florida Water Management District (SFWMD) design criteria contained in the Environmental Resource Permit Information Manual Vol. IV (2007).
- Applicable standards of Palm Beach County.
- Applicable standards of The City of West Palm Beach.

3. Site Data

The stormwater management design for the site is based on data from onsite testing, research, or engineering calculations. The following sections summarize the data used in the design and the methodologies employed during the data collection and analysis.

3.1. Existing Site Description and Basin Boundaries

The FPF site is 8.95 acres in size, located just south of 45th Street and directly west of the existing Biosolids Pelletizer Facility (See ERP Attachment C). The existing site is undeveloped, with only a rock access road and perimeter berms along the north and east sides, and partial berms along the west side. The soil is primarily sand, with intermittent grass cover. Average existing site grade is approximately 19.0 feet NGVD, and decreases slightly from northeast to southwest.

The basin boundaries for the stormwater system follow the existing berms along the north, east, and west sides, and along the northern edge of the Florida Power & Light (FP&L) easement on the south side. The wetlands on the northern portion of the site are not included, as they are isolated by berms from the FPF site. Total basin acreage is 8.95 ac, with 4.32 ac. pervious and 4.63 ac. impervious (existing rock road).

3.2. Seasonal High Water Table (SHWT)

The SHWT was determined from the results of the geotechnical report provided by Nutting Engineers of Florida, Inc. and Borehole Permeability Tests report provided by Tierra South Florida (See ERP Attachment D), on-site observations, and reviewing the Authority's previous application documents for the adjacent Biosolids Pelletizer Facility. Based on this information, we have estimated the SHWT to be at elevation 18.0 feet as referenced in the National Geodetic Vertical Datum (NGVD) 1929.

3.3. Rainfall Amount

The rainfall amount used for the design was determined through the design aids included in Volume IV of the SFWMD Environmental Resource Permit Information Manual Vol. IV (2007). The rainfall total for the 25-year, 72-hour storm was estimated at 13.2 inches, and the 100-year, 72-hour storm was estimated at 15.8 inches. See Attachment 1 of this report for rainfall maps and ERP Attachment G for stormwater calculations.

4. Proposed Design

4.1. Proposed FPF Stormwater Management System

The proposed FPF stormwater management system (system) has been designed as a dry retention system with storage volume sufficient to retain the runoff produced by the 25-year, 72-hour storm (Design Storm) within the 8.95 acre project area for the fully developed condition.

4.1.1. Structure Elevations

The FPF site is above the FEMA 100-year floodplain elevation, so all elevations of structures on site have been set based on the 100-year, 72-hour zero-discharge stage elevation calculations. In addition, all roadways and parking areas have been set based on the 25-year, 72-hour zero-discharge stage elevation calculations to ensure that the FPF facility will be operable during design storm events.

4.1.2. Design Description

Stormwater generated on site will be routed to four dry retention basin areas (RA-1, 2, 3, and 4) on the southwest and northern portions of the site. The system has been designed to distribute the retained stormwater volume through the retention basin areas via culverts. The retained stormwater will be removed by percolation into the soil, and the system is designed to recover at least half the retained volume within 24 hours as required by SFWMD criteria, and fully recover within 72 hours following the design storm event in accordance with FDEP criteria. The bottom elevation of the dry retention areas has been set at elevation 19.0 NGVD, one foot above the SHWT, in accordance with SFWMD design criteria. All slopes within retention areas have been designed with minimum 3:1 (H:V) side slopes.

Stormwater volume resulting from a storm event greater than the 25-year, 72-hour storm will be discharged to the Southwest Borrow Lake via an overflow spillway with a control elevation of 21.5 feet NGVD. See Sheet 8 of the Permit Drawings for dry retention area overflow detail.

The permit drawings for the project provide the details of the system design.

5. Calculations and Modeling

A combination of standard SFWMD calculations and models were used in the development of the FPF stormwater management system design. The following sections summarize the calculations and modeling for the project.

5.1. Calculations

For this design, detailed calculations following standard SFWMD stormwater calculation methods described in the Environmental Resource Permit Information Manual Vol. IV (2007) were completed and are included in ERP Attachment G.

5.2. Modeling

The Advanced Interconnected Channel and Pond Routing (ADICPR) software program was used to generate the detailed hydraulic routing for the system. The runoff method selected for the model was the Soil Conservation Service (SCS) Unit Hydrograph Method with a peaking factor of 256. Pre-development and post development models were created for the project.

The rainfall distribution was set to use the SFWMD 3-day hyetograph with a rainfall depth of 15.8 inches, corresponding to the design storm event. The time span for the model simulation was set to 150 hours to verify peak stages and proper recovery of the detention volume after a design storm event. Time step was set to 10.0 minutes to produce a high level of precision in the level pool calculations.

5.2.1. Model Basins

The 8.95 acre project area was divided into three model basins along hydraulic break lines in the proposed site layout. Basin A (5.98 ac.) includes the proposed Ferrous Processing Facility area and the southwestern site area, Basin B (1.33 ac.) includes the northwestern site areas, and Basin C (1.63 ac.) includes the northeastern site areas. The project area boundary and basin boundaries are shown in Sheet 5 of the permit drawings.

The available storage in the model basins was calculated by measuring the area at the proposed bottom and top elevations using AutoCAD. This data was input into ADICPR, which automatically calculated a stage-storage relationship for each basin.

5.2.2. Time of Concentration

Time of Concentration (Tc) is the elapsed time for runoff in a particular basin to travel from the hydraulically farthest point to the basin outlet. Runoff is typically characterized into three types of flows: overland (sheet) flow, shallow concentrated flow, and channel

flow. The time of concentration is the sum of the travel times for these three types of flow. For basins where the calculated T_c was less than the recommended minimum T_c of 6 minutes by the Soil Conservation Service (SCS) TR-55 methodology, a minimum T_c of 10 minutes was used.

5.2.3. Runoff Curve Numbers

The runoff curve numbers for pervious areas in the model were determined using the soil storage methodology included in the SFWMD Environmental Resource Permit Information Manual Vol. IV (2007). The curve number (CN) for pervious areas within each model basin was calculated using the following equation:

CN = 1000/(10 + S), where S is soil storage (in.).

A curve number of 98 was used for all impervious areas within each model basin, including pavements, roof areas, and concrete surfaces.

A composite CN was calculated for each model basin according to the Soil Conservation Service (SCS) TR-55 methodology. Complete model basin data and calculations, including pervious/impervious areas, soil storage, CN values, and time of concentration are shown in Attachment 2.

5.2.4. Infiltration Rating Curve

The stage-discharge calculations for the proposed dry retention basin areas were performed using Darcy's Equation, $Q = kiA$, where:

Q = discharge (ft^3/sec)
K = hydraulic conductivity (cfs/ft^2)
A = surface area (ft^2)
h = head (ft)
L = drainage distance (ft)
i = hydraulic gradient (dimensionless) = $i = h/L$

The data for hydraulic conductivity was obtained from two standard open hole, constant-head borehole permeability (BHP) tests conducted at the site by Tierra South Florida, Inc. on July 27, 2009. To be conservative, the lower value of the two test results, hydraulic conductivity value of $2.10E^{-04}$ cfs/ft^2, was used as the infiltration rate for all dry retention basin areas.

An example calculation for obtaining the rating curve is as follows:

Hydraulic conductivity (K) = $2.10E^{-04}$ cfs/ft^2

SHWT elevation = 18.0 feet, NGVD

Average thickness of sand layer (L) = 50 feet

For the flood stage at elevation 22.0 feet NGVD, the available head (*h*) is

$h = 22.0 – 18.0 = 4$ feet

The surface area of the dry retention basin area RA-1 at elevation 22.0 feet NGVD is 1.08 acres, as obtained by AutoCAD calculations.

Therefore, the hydraulic gradient (i) can be calculated as:

$i = h/L = 4ft/50\ ft = 0.08$

The discharge (Q) is then calculated using the Darcy Equation:

$Q = kiA = (2.10E^{-04}\ cfs/ft^2) \times (0.08) \times (1.08\ acres \times 43{,}560\ ft^2/acre) = 0.79\ cfs$

Based on the calculation above, the discharge from RA-1 through infiltration is 0.79 cubic feet per second (cfs) when the flood stage is at elevation 22.0 feet NGVD. A spreadsheet was created to calculate the discharges at various stage elevations to obtain a stage-discharge curve (rating curve) for each dry retention basin. The calculations and the rating curve data used in the hydraulic model are included in Attachment 3.

5.2.5. Recovery Time

Recovery times for the dry retention basins were estimated using the ADICPR modeling program. The recovery time is calculated as the difference between the time noted on the graph and the time the storm ceases (i.e. 72 hours).

6. Summary of Results

6.1. Calculations Summary

Detailed calculations following standard SFWMD stormwater calculation methods described in the Environmental Resource Permit Information Manual Vol. IV (2007) were completed and are included in ERP Attachment G. A summary of the results are as follows:

Control Elevation = 19.0 feet, NGVD
SHWT = 18.0 feet, NGVD
Calculated 100-year, 72-hour zero discharge stage = 22.43 feet, NGVD
Proposed FPF finished floor elevation (FFE) = 23.0 feet, NGVD
Proposed minimum perimeter berm top elevation = 22.0 feet, NGVD
Proposed minimum edge of pavement (EOP) elevation = 22.0 feet, NGVD

6.2. Model Summary

The complete ADICPR input and output reports are included in ERP Attachment H. The following sections summarize the modeling results for each basin and the performance of the system as a whole.

6.2.1. Basins

As shown on Sheet 5 of the Permit Drawings, the project area was divided into three separate basins (Basin A, B and C). Table 1 below provides a summary of the peak flow and the total runoff volume for each of the three basin areas for the 25-year, 72-hour storm event.

Table 1
Basin Summary for the 25-year, 72-hour Storm Event

Basin	Area (ac.)	Runoff Peak Flow (cfs)	Runoff Volume (ac-ft)
A	5.976	19.19	6.226
B	1.337	4.072	1.223
C	1.632	4.521	1.275
Site Total	8.945		8.724

6.2.2. Performance

Based on the modeling output reports, the system functioned as designed and recovered the entire storage volume 63 hours after the design storm event. The maximum stage elevation in the proposed dry retention areas is shown in Table 2. The minimum proposed berm elevation is 22.0 ft. NGVD, so the system will detain the entire runoff volume from the 25-year, 72-hour storm event.

Table 2
Dry Retention Area Summary for the 25-year, 72-hour Storm Event

Detention Area ID	Peak Stage (ft. NGVD)	Peak Storage (ac-ft)	Recovery Time (Hrs)
RA-1	21.256	1.43	135
RA-2	21.254	1.321	135
RA-3	21.254	0.428	135
RA-4	21.253	1.197	135
Site Total		4.376	

7. Conclusions

Based on the results of the calculations, ADICPR modeling, and the design plans, the proposed FPF stormwater management system meets the design requirements. The model showed the following:

- The runoff volume from the routed 25-year, 72-hour storm event will be retained onsite, with the maximum stage elevation below the invert of the perimeter berm overflow weir without discharge.
- The entire retention volume will recover to dry conditions within 63 hours following the design storm event.
- The FPF facility and roadways will remain usable during the design storm event.

Solid Waste Authority of Palm Beach County
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Attachment 1

Rainfall Maps

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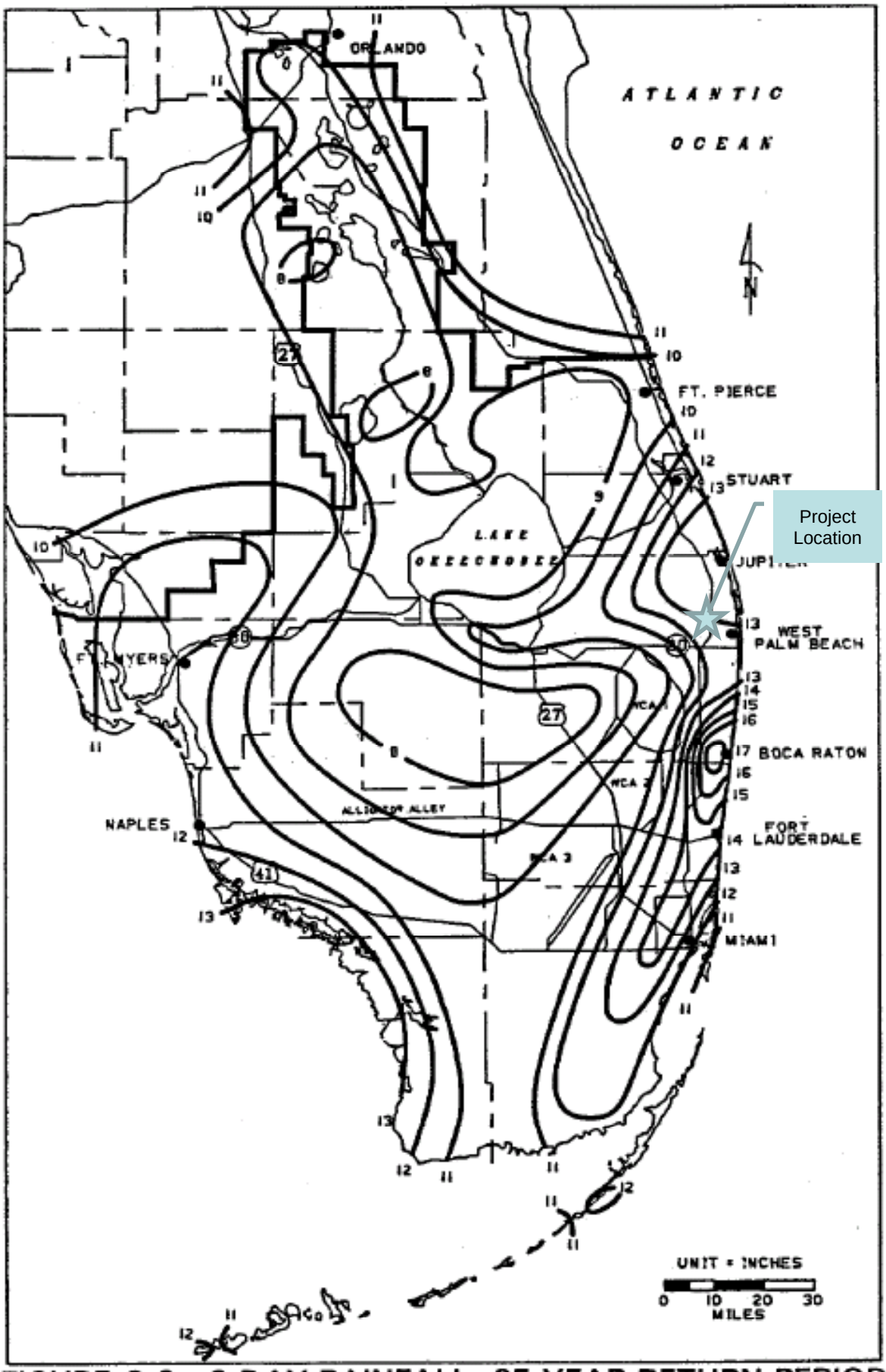

FIGURE C-8. 3-DAY RAINFALL: 25-YEAR RETURN PERIOD

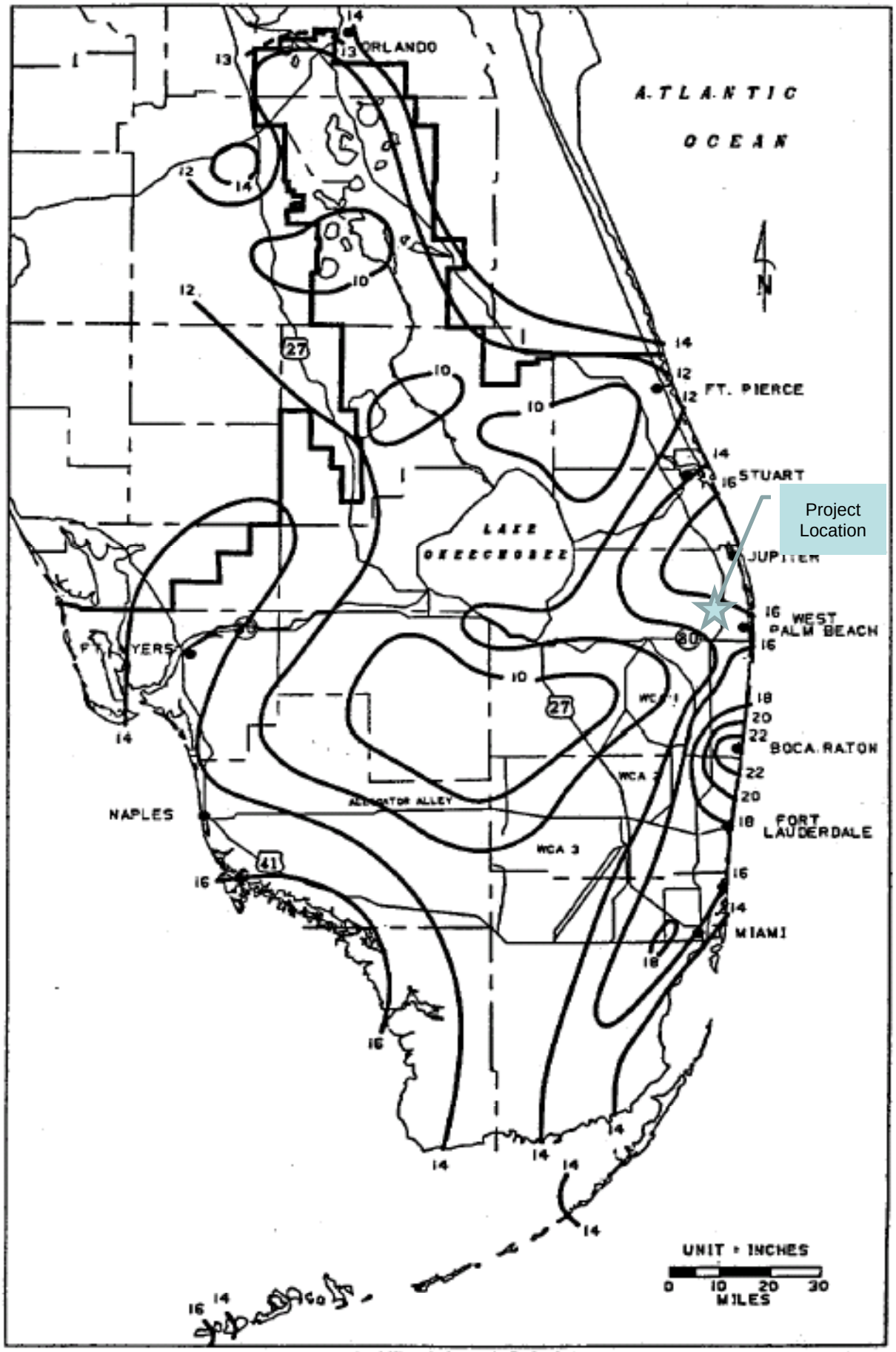

FIGURE C-9. 3-DAY RAINFALL: 100-YEAR RETURN PERIOD

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Attachment 2

Model Basin Calculations

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MODEL BASIN CALCULATIONS

MODEL BASIN A

COVER DESCRIPTION			*% OF BASIN*	*STAGE ELEVATIONS FROM*	*TO*	SCS CN
Structures	3.230	Ac.	54.0%	23.00	up	98
Pavement	0.444	Ac.	7.4%	22.00	22.50	98
Dry Det Area	1.200	Ac.	20.1%	19.00	22.00	69
Dry Det Bank	0.600	Ac.	10.0%	19.00	22.00	69
Dry Det Sump	0.000	Ac.	0.0%	18.00	19.00	69
Grass	0.502	Ac.	8.4%	19.00	22.00	69
Grass Vert	0.000	Ac.	0.0%			69
TOTAL AREA:	5.976	Ac.	100.0%			

Total Impervious: 3.67
61.48%

Total Pervious: 2.30
38.52%

SHWT Elevation: 18.00 ft. NGVD
Average Site Grade: 21.50 ft. NGVD
Antecedent Moisture Cond: Type II

Determine soil storage for the developed site

a. Avg. Depth to Water Table = Avg. Proposed Grade - SHWT

Avg. Grade:	SHWT:	D=(ft.):
21.50	18.00	3.50

b. Soil Storage (S) = Available Soil Storage x Pervious Area/Total Area
(See Fig. E-1, SFWMD ERP Information Manual, Vol IV (2007))

Compacted Soil Storage: 1.17 in. Interpolated for D=1.5 ft.

Av. Soil St.	Pervious:	Total (Ac.):	S = (in.):
1.17	2.30	5.98	0.45

Composite Curve Number: 86.83

Time of Concentration (Tc):

Overland Flow:

Length of Flow Segment (Lo) =	50	ft.	
n value =	0.10		
Slope (So) =	0.02000	ft./ft.	
To = ((0.67(n)(Lo)/(So^0.5))^0.467 =	4.38	min.	Kerby/Hathaway Eq.

Channelized Flow:

Length of Reach (L) =	600	ft.	
Slope (Sch) =	0.01000	ft./ft.	
Tch (min) = .0078(L^0.77)(S^-0.385) =	6.33	min.	Kirpich Eq.
Tc = To + Tch =	10.71	min.	

MODEL BASIN B

COVER DESCRIPTION			*% OF BASIN*	*STAGE ELEVATIONS FROM*	*TO*	SCS CN
Structures	0.000	Ac.	0.0%	22.00	up	98
Pavement	0.362	Ac.	27.1%	21.00	21.50	98
Dry Det Area	0.180	Ac.	13.5%	19.00	22.00	69
Dry Det Bank	0.250	Ac.	18.7%	19.00	22.00	69
Dry Det Sump	0.000	Ac.	0.0%	18.00	19.00	69
Grass	0.545	Ac.	40.8%	19.00	22.00	69
Grass Vert	0.000	Ac.	0.0%			69
TOTAL AREA:	1.337	Ac.	100.0%			

Total Impervious: 0.36
27.08%

Total Pervious: 0.98
72.92%

SHWT Elevation: 18.00 ft. NGVD
Average Site Grade: 19.50 ft. NGVD
Antecedent Moisture Cond: Type II

Determine soil storage for the developed site

a. Avg. Depth to Water Table = Avg. Proposed Grade - SHWT

Avg. Grade:	SHWT:	D=(ft.):
19.50	18.00	1.50

b. Soil Storage (S) = Available Soil Storage x Pervious Area/Total Area
(See Fig. E-1, SFWMD ERP Information Manual, Vol IV (2007))

Compacted Soil Storage: 1.17 in. Interpolated for D=1.5 ft.

Av. Soil St.	Pervious:	Total (Ac.):	S = (in.):
1.17	0.98	1.34	0.85

Composite Curve Number: 76.85

Time of Concentration (Tc):

Overland Flow:

Length of Flow Segment (Lo) = 50 ft.
n value = 0.10
Slope (So) = 0.02000 ft./ft.
To = ((0.67(n)(Lo)/(So^0.5))^0.467 = 4.38 min. Kerby/Hathaway Eq.

Channelized Flow:

Length of Reach (L) = 70 ft.
Slope (Sch) = 0.01000 ft./ft.
Tch (min) = .0078(L^0.77)(S^-0.385) = 1.21 min. Kirpich Eq.

Tc = To + Tch = 5.59 min.

MODEL BASIN C

COVER DESCRIPTION			*% OF BASIN*	*STAGE ELEVATIONS*		SCS
				FROM	*TO*	CN
Structures	0.042	Ac.	2.6%	22.00	up	98
Pavement	0.290	Ac.	17.8%	21.00	21.50	98
Dry Det Area	0.520	Ac.	31.9%	19.00	22.00	69
Dry Det Bank	0.240	Ac.	14.7%	19.00	22.00	69
Dry Det Sump	0.000	Ac.	0.0%	18.00	19.00	69
Grass	0.540	Ac.	33.1%	19.00	22.00	69
Grass Vert	0.000	Ac.	0.0%			69
TOTAL AREA:	1.632	Ac.	100.0%			

Total Impervious: 0.33
20.36%

Total Pervious: 1.30
79.64%

SHWT Elevation: 18.00 ft. NGVD
Average Site Grade: 19.50 ft. NGVD
Antecedent Moisture Cond: Type II

Determine soil storage for the developed site

a. Avg. Depth to Water Table = Avg. Proposed Grade - SHWT

Avg. Grade:	SHWT:	D=(ft.):
19.50	18.00	1.50

b. Soil Storage (S) = Available Soil Storage x Pervious Area/Total Area
(See Fig. E-1, SFWMD ERP Information Manual, Vol IV (2007))

Compacted Soil Storage: 1.17 in. Interpolated for D=1.5 ft.

Av. Soil St.	Pervious:	Total (Ac.):	S = (in.):
1.17	1.30	1.63	0.93

Composite Curve Number: 74.90

Time of Concentration (Tc):

Overland Flow:

Length of Flow Segment (Lo) =	50	ft.	
n value =	0.10		
Slope (So) =	0.02000	ft./ft.	
To = ((0.67(n)(Lo)/(So^0.5))^0.467 =	4.38	min.	Kerby/Hathaway Eq.

Channelized Flow:

Length of Reach (L) =	70	ft.	
Slope (Sch) =	0.01000	ft./ft.	
Tch (min) = .0078(L^0.77)(S^-0.385) =	1.21	min.	Kirpich Eq.
Tc = To + Tch =	5.59	min.	

Solid Waste Authority of Palm Beach County
Environmental Resource Permit
Ferrous Processing Facility

Attachment 3

Infiltration Rating Curve Calculations

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Palm Beach County, Florida

INFILTRATION RATING CURVE CALCULATIONS

SHWT Elevation = 18.00 ft. NGVD
Hydraulic Conductivity (K) = 0.000210 cfs/ft2
Avg. Depth of Sand Layer (L) = 50.00 feet

Retention Area RA-1	Elevation (ft, NGVD)	Surface Area (Ac)	Head (ft)	Hydraulic Gradient (i)	Discharge Q (cfs)
	19.00	0.62	1.00	0.02	0.11
	20.00	0.76	2.00	0.04	0.28
	20.50	0.85	2.50	0.05	0.39
	21.00	0.93	3.00	0.06	0.51
	22.00	1.08	4.00	0.08	0.79

Retention Area RA-2	Elevation (ft, NGVD)	Surface Area (Ac)	Head (ft)	Hydraulic Gradient (i)	Discharge Q (cfs)
	19.00	0.58	1.00	0.02	0.11
	20.00	0.63	2.00	0.04	0.23
	20.50	0.65	2.50	0.05	0.30
	21.00	0.67	3.00	0.06	0.37
	22.00	0.72	4.00	0.08	0.53

Retention Area RA-3	Elevation (ft, NGVD)	Surface Area (Ac)	Head (ft)	Hydraulic Gradient (i)	Discharge Q (cfs)
	19.00	0.18	1.00	0.02	0.03
	20.00	0.25	2.00	0.04	0.09
	20.50	0.29	2.50	0.05	0.13
	21.00	0.34	3.00	0.06	0.18
	22.00	0.43	4.00	0.08	0.31

Retention Area RA-4	Elevation (ft, NGVD)	Surface Area (Ac)	Head (ft)	Hydraulic Gradient (i)	Discharge Q (cfs)
	19.00	0.52	1.00	0.02	0.10
	20.00	0.60	2.00	0.04	0.22
	20.50	0.63	2.50	0.05	0.29
	21.00	0.67	3.00	0.06	0.37
	22.00	0.76	4.00	0.08	0.56

Solid Waste Authority of Palm Beach County
Environmental Resource Permit
Ferrous Processing Facility

Attachment G

Drainage Calculations

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ENGINEER'S CERTIFICATION

These calculations were prepared by a Professional Engineer registered in the State of Florida and is being filed for public record. In accordance with Florida Statutes Chapter 471.025 and Florida Administrative Code Chapter 61G15-23.002(1), these calculations shall be signed by the licensee, dated, and sealed as evidence of the authenticity of the report.

1-14-10

Christopher C. Tilman, P.E.
Florida Reg. No. 61903

SWA Ferrous Processing Facility (FPF) Relocation

Palm Beach County, Florida

STORMWATER CALCULATIONS

1.0 DESIGN DESCRIPTION

Palm Beach Co. SWA FPF Relocation
Total project acreage = 8.95 ac.

2.0 DESIGN STORM RAINFALL AMOUNTS

Storm Frequency	24-hr rainfall (P24)		72-hr rainfall (P72)	
10 Year	7.50	in.	10.20	in.
25 Year	10.10	in.	13.20	in.
100 Year	14.10	in.	15.80	in.

Notes: Rainfall values taken from Figs C-4 to C-9 of SFWMD ERP Information Manual, Vol IV (2007).

3.0 PRE-DEVELOPMENT SITE CONDITIONS

3.1. LAND COVERAGE TABLE

COVER DESCRIPTION			*% OF SITE*	*STAGE ELEVATIONS FROM*	*TO*	RATIONAL C
Structures	0.042	Ac.	0.5%	22.00	up	0.95
Pavement	0.700	Ac.	7.8%	18.80	19.20	0.95
Lake	0.000	Ac.	0.0%			
Det Bank (L)	0.000	Ac.	0.0%			
Retention	0.000	Ac.	0.0%			
Grass (L)	0.000	Ac.	0.0%			0.30
Grass (V)	8.208	Ac.	91.7%	18.20	19.20	0.30
TOTAL AREA:	8.950	Ac.	100.0%			

Total Impervious: 0.74 ac.
8.29%

Total Lake: 0.00 ac.

Total Pervious: 8.21 ac.
91.71%

SHWT Elevation: 18.00 ft. NGVD
Average Site Grade: 19.00 ft. NGVD
Antecedent Moisture Cond: Type II

Determine soil storage for the developed site

a. Avg. Depth to Water Table = Avg. Proposed Grade - Water Level

Avg. Grade:	Water Level:	D=(ft.):
19.00	18.00	1.00

b. Soil Storage (S) = Available Soil Storage x Pervious Area/Total Area
(See Fig. E-1, SFWMD ERP Information Manual, Vol IV (2007))

Cumulative Soil Storage: 0.6 in.

Av. Soil St.	Lake (%)	Pervious (%)	S = (in.):
0.60	0.00%	91.71%	0.55

Time of Concentration (Tc):

Overland Flow:

Length of Flow Segment (Lo) =	50	ft.	
n value =	0.41		bermuda grass cover
Slope (So) =	0.00215	ft./ft.	
To = ((0.67(n)(Lo)/(So^0.5))^0.467 =	14.26	min.	Kerby/Hathaway Eq.

Shallow Concentrated Flow:

Length of Flow Segment (Lo) =	150	ft.	
Slope =	0.00215	ft./ft.	
V = 16.1345(S)^0.5 =	0.75	ft./sec	SCS TR-55
Tsc = (Lsc /(3600*V)) =	3.34	min.	

Channelized Flow:

Length of Reach (L) =	0	ft.	
Slope (Sch) =	0.00083	ft./ft.	
Tch (min) = .0078(L^0.77)(S^-0.385) =	0.00	min.	Kirpich Eq.
Tc = To + Tch =	17.61	min.	

SWA Ferrous Processing Facility (FPF) Relocation
Palm Beach County, Florida

STORMWATER CALCULATIONS

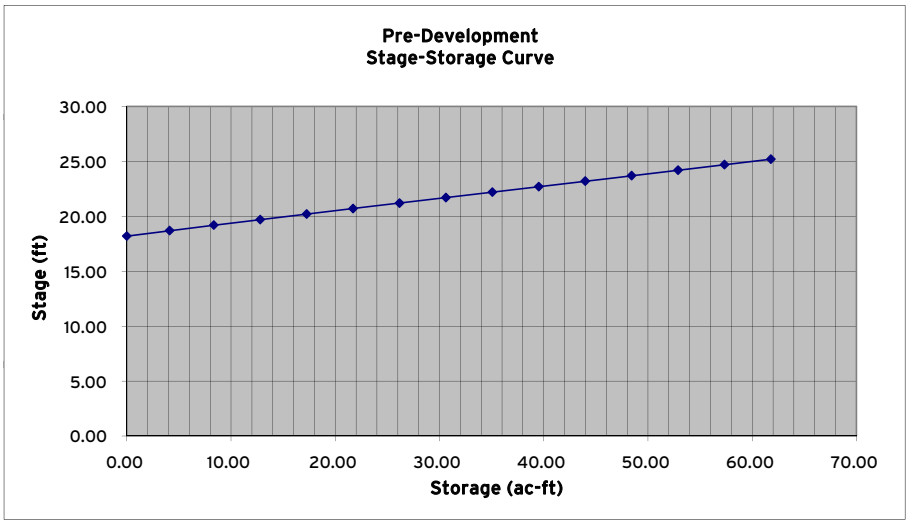
3.2 PRE-DEVELOPMENT SURFACE STORAGE

1. Assumptions:

a.The Grass storage is vertical starting at elevation 18.20 ft. NGVD

2. Develop pre-development stage-storage curve

Stage:	Pavement	Lake	Det Bank (L)	Retention	Grass (L)	Grass (V)	Total
18.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18.70	0.00	0.00	0.00	0.00	0.00	4.10	4.10
19.20	0.14	0.00	0.00	0.00	0.00	8.21	8.35
19.70	0.49	0.00	0.00	0.00	0.00	12.31	12.80
20.20	0.84	0.00	0.00	0.00	0.00	16.42	17.26
20.70	1.19	0.00	0.00	0.00	0.00	20.52	21.71
21.20	1.54	0.00	0.00	0.00	0.00	24.62	26.16
21.70	1.89	0.00	0.00	0.00	0.00	28.73	30.62
22.20	2.24	0.00	0.00	0.00	0.00	32.83	35.07
22.70	2.59	0.00	0.00	0.00	0.00	36.94	39.53
23.20	2.94	0.00	0.00	0.00	0.00	41.04	43.98
23.70	3.29	0.00	0.00	0.00	0.00	45.14	48.43
24.20	3.64	0.00	0.00	0.00	0.00	49.25	52.89
24.70	3.99	0.00	0.00	0.00	0.00	53.35	57.34
25.20	4.34	0.00	0.00	0.00	0.00	57.46	61.80



3.3 CALCULATE THE 100-YEAR, 72-HOUR RUNOFF VOLUME AND ZERO DISCHARGE STAGE

1. Compute 100-year, 72-hour zero discharge runoff volume

a. Rainfall - 100 year, 72-hour (P72):
P72 = 15.80 in.

b. Runoff, Q (in.)
Q = {(P - 0.2 x S)^2}/(P + 0.8 x S)

P72 (in.):	S = (in.):	Q (in.):
15.80	0.55	15.16

c. Total Runoff Volume, V (ac-ft.)
V = Q x Total Area

Q (in.):	Total (Ac.):	V=(ac-ft):
15.16	8.95	11.31

d. From the Stage - Storage Curve, the zero discharge elevation is:

Interpolate Stage between...	19.20	19.70
Interpolate Storage between...	8.35	12.80

Zero Discharge Stage 19.53 ft. NGVD Set as preliminary finished floor elevation

SWA Ferrous Processing Facility (FPF) Relocation

Palm Beach County, Florida

STORMWATER CALCULATIONS

3.4 CALCULATE THE 25-YEAR, 72-HOUR RUNOFF VOLUME, PEAK FLOW AND ZERO DISCHARGE STAGE

1. Compute 25-year, 72-hour zero discharge runoff volume

a. Rainfall - 25-year, 72-hour (P72):

P72 = 13.20 in.

b. Runoff, Q (in.)

Q = {(P - 0.2 x S)^2}/(P + 0.8 x S)

P72 (in.):	S = (in.):	Q (in.):
13.20	0.55	12.56

c. Total Runoff Volume, V (ac-ft.)

V = Q x Total Area x 1 ft. /12 in.

Q (in.):	Total (Ac.):	V = (ac-ft):
12.56	8.95	9.37

d. Calculate Peak 25-year, 72-hour Flow (Qp):

Composite C =	0.35	
25-yr Correction Factor =	1.10	
Corrected Composite C =	0.39	
Tc=	17.61	min
Intensity (i)=	4.90	in/hour (from FDOT Zone 8 25-yr IDF curves)
Area (A)=	8.95	ac.
Qp =	15.52	cfs

e. From the Stage - Storage Curve, the zero discharge elevation is:

Interpolate Stage between...	19.20	19.70
Interpolate Storage between...	8.35	12.80

Zero Discharge Stage 19.31 ft. NGVD

3.5 CALCULATE THE 10-YEAR, 24-HOUR RUNOFF VOLUME AND ZERO DISCHARGE STAGE

2. Compute 10-year, 24-hour zero discharge runoff volume

a. Rainfall - 10-year, 24-hour (P24):

P24 = 7.50 in.

b. Runoff, Q (in.)

Q = {(P - 0.2 x S)^2}/(P + 0.8 x S)

P72 (in.):	S = (in.):	Q (in.):
7.50	0.55	6.88

c. Total Runoff Volume, V (ac-ft.)

V = Q x Total Area x 1 ft. /12 in.

Q (in.):	Total (Ac.):	V = (ac-ft):
6.88	8.95	5.13

d. From the Stage - Storage Curve, the zero discharge elevation is:

Interpolate Stage between...	18.70	19.20
Interpolate Storage between...	4.10	8.35

Zero Discharge Stage 18.82 ft. NGVD Set as preliminary road crown elevation

SWA Ferrous Processing Facility (FPF) Relocation

Palm Beach County, Florida

STORMWATER CALCULATIONS

4.0 PROPOSED POST-DEVELOPMENT SITE CONDITIONS

4.1. LAND COVERAGE TABLE

COVER DESCRIPTION			*% OF SITE*	*STAGE ELEVATIONS FROM*	*TO*	RATIONAL C
Structures	3.272	Ac.	36.6%	23.00	up	0.95
Pavement (H)	1.360	Ac.	15.2%	22.00	22.30	0.95
Dry Det Area	1.900	Ac.	21.2%	19.00	22.00	0.30
Dry Det Bank	1.090	Ac.	12.2%	19.00	22.00	0.30
RESERVED	0.000	Ac.	0.0%			0.30
Grass	1.328	Ac.	14.8%	19.00	23.00	0.30
RESERVED	0.000	Ac.	0.0%			0.30
TOTAL AREA:	8.950	Ac.	100.0%			

Total Impervious: 4.63
51.75%

Total Pervious: 4.32
48.25%

SHWT Elevation: 18.00 ft. NGVD
Average Site Grade: 19.99 ft. NGVD
Antecedent Moisture Cond: Type II

Determine soil storage for the developed site

a. Avg. Depth to Water Table = Avg. Proposed Grade - SHWT

Avg. Grade:	SHWT:	D=(ft.):
19.99	18.00	1.99

b. Soil Storage (S) = Available Soil Storage x Pervious Area/Total Area
(See Fig. E-1, SFWMD ERP Information Manual, Vol IV (2007))

Compacted Soil Storage: 1.86 in. Interpolated for D=1.99 ft.

Av. Soil St.	Pervious Ac.:	Total Ac.:	S = (in.):
1.86	4.32	8.95	0.90

Time of Concentration (Tc):

Overland Flow:

Length of Flow Segment (Lo) = 40 ft.
n value = 0.01
Slope (So) = 0.02000 ft./ft.
To = ((0.67(n)(Lo)/(So^0.5))^0.467 = 1.41 min. Kerby/Hathaway Eq.

Shallow Concentrated Flow:

Length of Flow Segment (Lsc) = 50 ft.
Slope = 0.00083 ft./ft.
V = 16.1345(S)^0.5 = 0.47 ft./sec SCS TR-55
Tsc = (Lsc /(3600*V)) = 1.79 min.

Channelized Flow:

Length of Reach (L) = 560 ft.
Slope (Sch) = 0.00400 ft./ft.
Tch (min) = .0078(L^0.77)(S^-0.385) = 8.54 min. Kirpich Eq.

Tc = To + Tsc + Tch = 11.74 min.

SWA Ferrous Processing Facility (FPF) Relocation
Palm Beach County, Florida

STORMWATER CALCULATIONS

5.0 DESIGN CRITERIA

5.1 SFWMD QUALITY STANDARDS

IF A WET DETENTION SYSTEM, then the greater of:
a) the first inch of runoff from the entire site
b) the amount of 2.5 times the percentage of imperviousness

IF A DRY DETENTION SYSTEM, then 75% of the wet detention volume.

IF A RETENTION SYSTEM, then 50% of the wet detention volume.

IF INDUSTRIAL ZONING, then minimum 0.5 inch of dry detention or retention volume is required.

Any detention system shall be designed to discharge no more than 0.5 inch of the detained volume per day.

5.2 DESIGN INFORMATION

The existing basin does not have any detention or retention areas.

Preliminary design elevations:

Building finished floor:	19.53	ft. NGVD
Roads		
Centerline no lower thar	18.82	ft. NGVD
Roads shall be at least	2.00	ft. above the control elevation
Control elevation	16.82	ft. NGVD
Receiving Water Elevation:	18.00	ft. NGVD

6.0 COMPUTATIONS

6.1. QUALITY

1. Compute the first inch of runoff from the developed project

V = 1 in. x Total Area x (1/12)

Total Area (Ac	V (ac-in)	V (ac-ft)
8.95	8.95	0.75

2. Compute 2.5 inches times the percentage of imperviousness

a. Site Area = Total Area - (Lake Area + Bldg. Area)

Total (Ac.):	Lake:	Bldg.:	Site (Ac.):
8.95	0.00	3.27	5.68

b. Impervious Area = Site Area - Pervious Area

Site (Ac.):	Pervious:	Imperv.:
5.68	4.32	1.36

c. % Impervious for water quality = Imperv. /Site Area x 100% = 23.95 %

d. 2.5 in. x % Imperv. = 0.60 in.

e. Compute volume required for quality detention

V= inches to be treated x (total site - lake 0.45 ac-ft

3. Required wet detention volume 0.75 ac-ft
Volume reduction factor for retention system: 0.50

4. Compute 0.5 inch of pretreatment

Vp = 0.5 in. x (total site - lake) x (1/12) = 0.37 ac-ft
Detention provides pretreatment volume YES

5. Compute required detention volume

Vr = Total required detention volume = 0.37 ac-ft

6.2 PROJECT SURFACE STORAGE

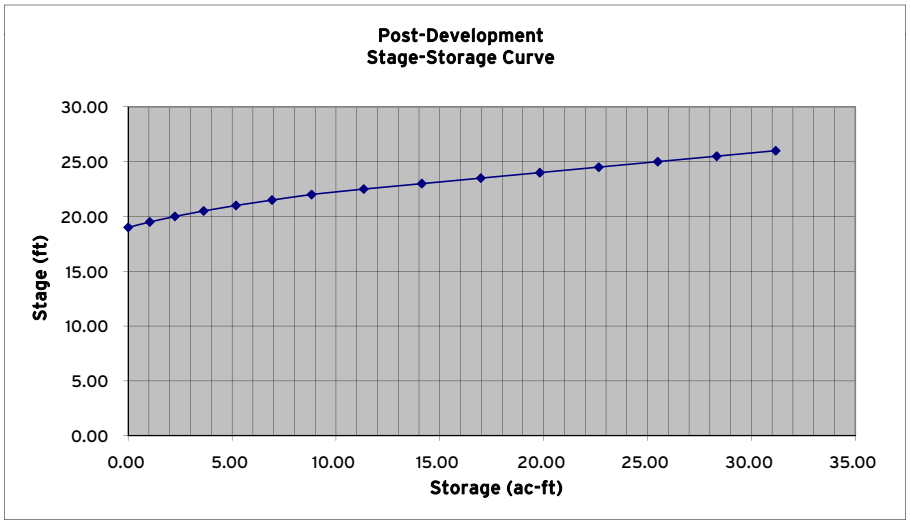
1. Assumptions:

a. Retention pond storage is vertical starting at elevation 19.00 ft. NGVD
b. Retention bank storage is linear starting at el. 19.0 ft. NGVD and vertical starting at el. 22.0 ft. NGVD

2. Develop project stage-storage curve

Stage:	Pavement (H)	Dry Det Area	Dry Det Bank	RESERVED	Grass	RESERVED	Total

19.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19.50	0.00	0.95	0.05	0.00	0.04	0.00	1.04
20.00	0.00	1.90	0.18	0.00	0.17	0.00	2.25
20.50	0.00	2.85	0.41	0.00	0.37	0.00	3.63
21.00	0.00	3.80	0.73	0.00	0.66	0.00	5.19
21.50	0.00	4.75	1.14	0.00	1.04	0.00	6.92
22.00	0.00	5.70	1.64	0.00	1.49	0.00	8.83
22.50	0.48	6.65	2.18	0.00	2.03	0.00	11.34
23.00	1.16	7.60	2.73	0.00	2.66	0.00	14.14
23.50	1.84	8.55	3.27	0.00	3.32	0.00	16.98
24.00	2.52	9.50	3.82	0.00	3.98	0.00	19.82
24.50	3.20	10.45	4.36	0.00	4.65	0.00	22.65
25.00	3.88	11.40	4.91	0.00	5.31	0.00	25.49
25.50	4.56	12.35	5.45	0.00	5.98	0.00	28.33
26.00	5.24	13.30	6.00	0.00	6.64	0.00	31.17



6.3 CHECK THE MINIMUM BUILDING FLOOR ELEVATION

1. Preliminary Finished Floor Elevation: 19.53 ft. NGVD

2. Compute 100-year, 72-hour zero discharge runoff volume

a. Rainfall - 1 Day Duration (P72):
P72 = 15.80 in.

b. Runoff, Q (in.)
Q = {(P - 0.2 x S)^2}/(P + 0.8 x S)

P72 (in.):	S = (in.):	Q (in.):
15.80	0.90	14.77

c. Total Runoff Volume, V (ac-ft.)
V = Q x Total Area

Q (in.):	Total (Ac.):	V=(ac-ft):
14.77	8.95	11.02

d. From the Stage - Storage Curve, the zero discharge elevation is:

Interpolate Stage between...	22.00	22.50
Interpolate Storage between...	8.83	11.34

Zero Discharge Stage 22.44 ft. NGVD Revise Proposed FFE

3. Proposed Finished Floor Elevation: 23.00 ft. NGVD 1' above top of west berm elevation on Biosolids facility

SWA Ferrous Processing Facility (FPF) Relocation

Palm Beach County, Florida

STORMWATER CALCULATIONS

6.4 CHECK THE 25-YEAR, 72-HOUR PEAK FLOW AND ZERO DISCHARGE STAGE

1. Pre-development 25-year, 72-hour zero discharge stage: 19.31 ft. NGVD

2. Compute 25-year, 72-hour zero discharge runoff volume

a. Rainfall - 25-year, 72-hour (P72):
P72 = 13.20 in.

b. Runoff, Q (in.)
Q = {(P - 0.2 x S)^2}/(P + 0.8 x S)

P72 (in.):	S = (in.):	Q (in.):
13.20	0.90	12.18

c. Total Runoff Volume, V (ac-ft.)
V = Q x Total Area x 1 ft. /12 in.

Q (in.):	Total (Ac.):	V = (ac-ft):
12.18	8.95	9.09

d. Calculate 25-year, 24-hour Peak Flow (Qp):

Composite C =	0.64	
25-yr Correction Factor =	1.10	
Corrected Composite C =	0.70	
Tc=	11.74	min
Intensity (i)=	5.80	in/hour (from FDOT Zone 8 25-yr IDF curves)
Area (A)=	8.95	ac.
Qp =	33.04	cfs

e. From the Stage - Storage Curve, the zero discharge elevation is:

Interpolate Stage between...	22.00	22.50
Interpolate Storage between...	8.83	11.34

Zero Discharge Stage 22.05 ft. NGVD CHECK

6.5 CHECK THE MINIMUM ROAD CENTERLINE ELEVATION

1. Preliminary road crown elevation: 18.82 ft. NGVD

2. Compute 10-year, 24-hour zero discharge runoff volume

a. Rainfall - 1 Day Duration (P24):
P24 = 7.50 in.

b. Runoff, Q (in.)
Q = {(P - 0.2 x S)^2}/(P + 0.8 x S)

P72 (in.):	S = (in.):	Q (in.):
7.50	0.90	6.52

c. Total Runoff Volume, V (ac-ft.)
V = Q x Total Area x 1 ft. /12 in.

Q (in.):	Total (Ac.):	V = (ac-ft):
6.52	8.95	4.86

d. From the Stage - Storage Curve, the zero discharge elevation is:

Interpolate Stage between...	20.50	21.00
Interpolate Storage between...	3.63	5.19

Zero Discharge Stage 20.90 ft. NGVD Revise Road Crown Elevation

4. Proposed Minimum Road Centerline Elevation: 22.25 ft. NGVD Road must be passable in 25-year, 72-hour storm.

6.6 CHECK RETENTION BASIN RECOVERY TIME

The system must recover 50% of the retention volume from the design (25-year, 72-hour) storm within 24 hours after the storm per SFWMD design criteria and the entire retention volume within 72 hours after the design storm event per Chapter 62-25.025(4), FAC.

1. Calculated 25-year, 72-hour storm zero discharge stage:	22.05	ft. NGVD	
2. Retention basin bottom elevation:	19.00	ft. NGVD	
3. SHWT elevation:	18.00	ft. NGVD	
4. 50% of retention volume above elevation:	20.50	ft. NGVD	Isosceles Trapezoid calc.
5. Average soil infiltration head (h):	3.28	feet	

6. Calculate average soil infiltration rate (Q) and 50% recovery time:

Hydraulic Conductivity (k) =	0.000210	cfs/ft2	Tierra perc tests
Avg. Depth of Sand Layer (L) =	50.00	feet	Biosolids geo report
Surface Area (A) at elevation 20.50 ft. NGVD =	2.42	ac.	CAD measurement
Hydraulic gradient (i) = h/L =	0.066		
Average infiltration rate (Q) = kiA =	1.45	cfs	
50% of 25-year, 72-hour storm runoff volume =	197871.4	cubic feet	
50% recovery time based on average infiltration rate =	37.90	hours	OK - Check w/ADICPR

7. Check routed 100% recovery time with ADICPR.

6.7 CHECK OVERFLOW WEIR DESIGN

1. Size the peak discharge (overflow) weir

a. Size peak discharge weir

Allowable (pre-dev) peak discharge (Q) =	15.52	cfs	
100-year, 72-hour zero discharge stage =	22.44	ft. NGVD	
Weir crest elevation =	21.50	ft. NGVD	
Maximum design head (H) =	0.40	ft.	
Calc. weir length L = Q/(3.13 x (H)^1.5) =	19.60	ft.	Use 20 foot weir length

7.0 FINAL DESIGN SUMMARY

The system is designed as a dry retention basin capable of retaining the 25-year, 72-hour storm.

SHWT Elevation =	18.00	ft. NGVD	
Control elevation =	19.00	ft. NGVD	
100-Year, 72-Hour Storm Zero Discharge Stage =	22.44	ft. NGVD	
100-Year, 72-Hour Total Runoff Volume =	11.02	ac-ft	
25-Year, 72-Hour Zero Discharge Stage =	22.05	ft. NGVD	
25-Year, 72-Hour Total Runoff Volume =	9.09	ac-ft	

Final design elevations:

Proposed Building finished floor elevation =	23.00	ft. NGVD	OK
Proposed Perimeter berm top elevation =	22.00	ft. NGVD	Check ICPR results for peak routed stage
Roads			
Min EOP 2.00 ft. above control elevation	21.00	ft. NGVD	
Proposed Minimum EOP elevation =	22.00	ft. NGVD	OK
Proposed Berm Emergency Overflow elevation =	21.50	ft. NGVD	OK

Drawings

See Attachment C for ERP drawings

PRINTED:	PREPARED BY:	REVISED BY:	DATE:
11-Jan-10	CCT	CCT	Jan. 8, 2010

Solid Waste Authority of Palm Beach County
Environmental Resource Permit
Ferrous Processing Facility

Attachment H

ICPR Report

3582061 / FTL

ENGINEER'S CERTIFICATION

This report was prepared by a Professional Engineer registered in the State of Florida and is being filed for public record. In accordance with Florida Statutes Chapter 471.025 and Florida Administrative Code Chapter 61G15-23.002(1), this report shall be signed by the licensee, dated, and sealed as evidence of the authenticity of the report.

1-14-10

Christopher C. Tilman, P.E.
Florida Reg. No. 61903

==== Basins ====

```
Name: Basin A                    Node: RA-1                    Status: Onsite
Group: BASE                      Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256                   Peaking Factor: 256.0
Rainfall File: Flmod               Storm Duration(hrs): 72.00
Rainfall Amount(in): 13.200          Time of Conc(min): 11.00
Area(ac): 5.976                        Time Shift(hrs): 0.00
Curve Number: 87.00                Max Allowable Q(cfs): 999999.000
DCIA(%): 61.40
```

```
Name: Basin B                    Node: RA-3                    Status: Onsite
Group: BASE                      Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256                   Peaking Factor: 256.0
Rainfall File: Flmod               Storm Duration(hrs): 72.00
Rainfall Amount(in): 13.200          Time of Conc(min): 10.00
Area(ac): 1.337                        Time Shift(hrs): 0.00
Curve Number: 77.00                Max Allowable Q(cfs): 999999.000
DCIA(%): 27.10
```

```
Name: Basin C                    Node: RA-4                    Status: Onsite
Group: BASE                      Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256                   Peaking Factor: 256.0
Rainfall File: Flmod               Storm Duration(hrs): 72.00
Rainfall Amount(in): 13.200          Time of Conc(min): 10.00
Area(ac): 1.632                        Time Shift(hrs): 0.00
Curve Number: 70.00                Max Allowable Q(cfs): 999999.000
DCIA(%): 5.60
```

==== Nodes ====

```
Name: Discharge RA-1      Base Flow(cfs): 0.000      Init Stage(ft): 19.000
Group: BASE                                          Warn Stage(ft): 22.000
Type: Time/Stage
```

Time(hrs)	Stage(ft)
0.00	19.000
336.00	19.000

```
Name: Discharge RA-2      Base Flow(cfs): 0.000      Init Stage(ft): 19.000
Group: BASE                                          Warn Stage(ft): 22.000
Type: Time/Stage
```

Time(hrs)	Stage(ft)
0.00	19.000
336.00	19.000

```
Name: Discharge RA-3      Base Flow(cfs): 0.000      Init Stage(ft): 19.000
Group: BASE                                          Warn Stage(ft): 22.000
Type: Time/Stage
```

Time(hrs)	Stage(ft)
0.00	19.000
336.00	19.000

```
Name: Discharge RA-4      Base Flow(cfs): 0.000      Init Stage(ft): 19.000
Group: BASE                                          Warn Stage(ft): 22.000
Type: Time/Stage
```

Time(hrs)	Stage(ft)
0.00	19.000
336.00	19.000

Name: RA-1 Base Flow(cfs): 0.000 Init Stage(ft): 19.000
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)
19.000	0.6200
20.000	0.7647
20.500	0.8500
21.000	0.9300
22.000	1.0800

Name: RA-2 Base Flow(cfs): 0.000 Init Stage(ft): 19.000
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)
19.000	0.5800
20.000	0.6256
20.500	0.6500
21.000	0.6732
22.000	0.7200

Name: RA-3 Base Flow(cfs): 0.000 Init Stage(ft): 19.000
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)
19.000	0.1800
20.000	0.2542
20.500	0.2938
21.000	0.3370
22.000	0.4300

Name: RA-4 Base Flow(cfs): 0.000 Init Stage(ft): 19.000
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)
19.000	0.5200
20.000	0.5986
20.500	0.6340
21.000	0.6705
22.000	0.7600

==========
==== Cross Sections ==========
==========

==========
==== Operating Tables ==========
==========

Name: Perc 1 Group: BASE
Type: Rating Curve
Function: US Stage vs. Discharge

US Stage(ft)	Discharge(cfs)
19.000	0.11

20.000	0.28
20.500	0.39
21.000	0.51
22.000	0.79

Name: Perc 2 Group: BASE
Type: Rating Curve
Function: US Stage vs. Discharge

US Stage(ft)	Discharge(cfs)
19.000	0.11
20.000	0.23
20.500	0.30
21.000	0.37
22.000	0.53

Name: Perc 3 Group: BASE
Type: Rating Curve
Function: US Stage vs. Discharge

US Stage(ft)	Discharge(cfs)
19.000	0.03
20.000	0.09
20.500	0.13
21.000	0.18
22.000	0.31

Name: Perc 4 Group: BASE
Type: Rating Curve
Function: US Stage vs. Discharge

US Stage(ft)	Discharge(cfs)
19.000	0.10
20.000	0.22
20.500	0.29
21.000	0.37
22.000	0.56

==========
==== Pipes ==========
==========

Name: C-1 From Node: RA-3 Length(ft): 50.00
Group: BASE To Node: RA-2 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Horz Ellipse	Horz Ellipse
Span(in):	23.00	23.00
Rise(in):	14.00	14.00
Invert(ft):	19.100	19.000
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Elliptical Inlet Face: Tapered inlet-square edges

Downstream FHWA Inlet Edge Description:
Elliptical Inlet Face: Tapered inlet-square edges

Name: C-2 From Node: RA-3 Length(ft): 50.00
Group: BASE To Node: RA-2 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw

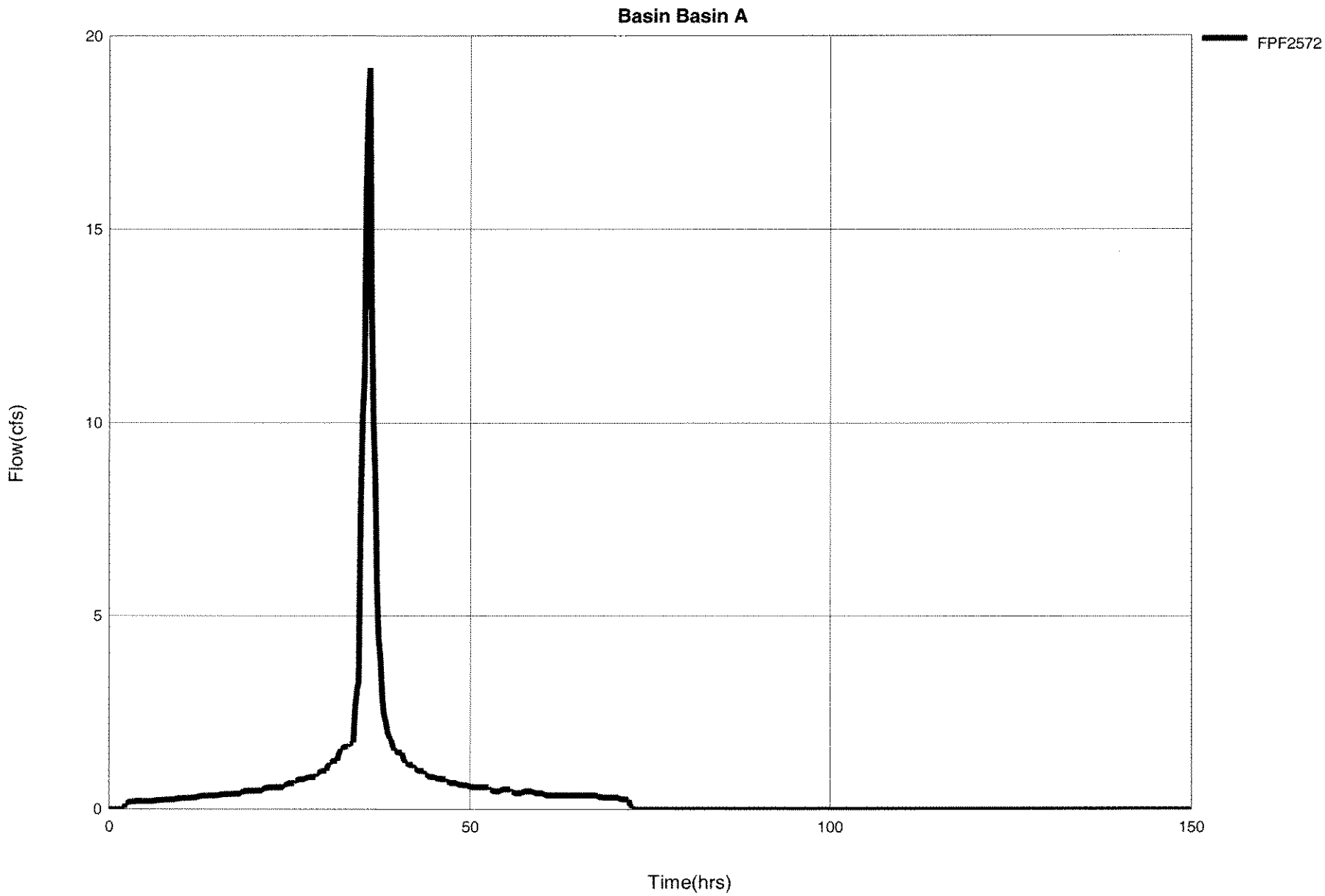
	UPSTREAM	DOWNSTREAM
Geometry:	Horz Ellipse	Horz Ellipse
Span(in):	23.00	23.00
Rise(in):	14.00	14.00
Invert(ft):	19.100	19.000
Manning's N:	0.013000	0.013000

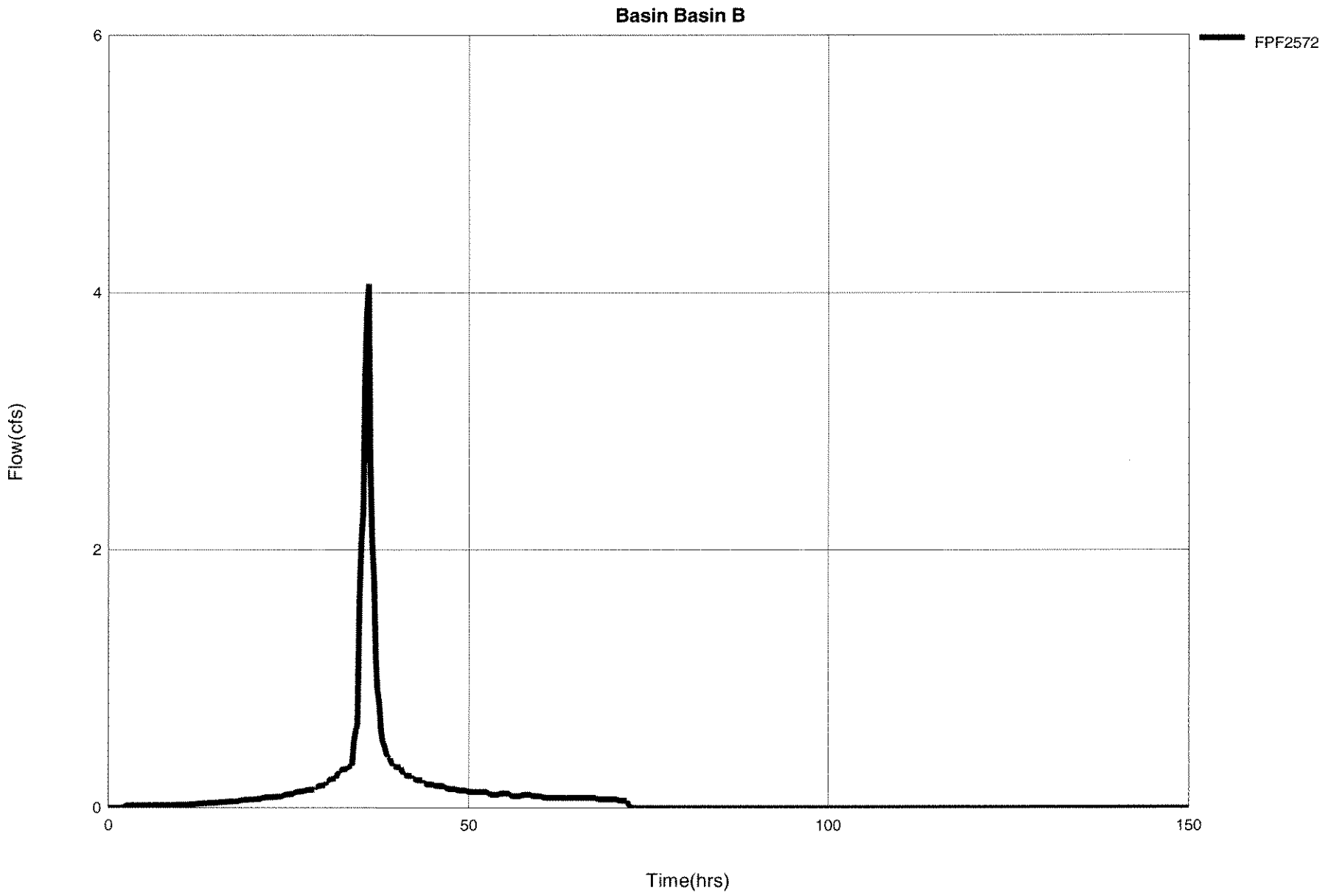
```
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dn
 Bot Clip(in): 0.000          0.000                      Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Elliptical Inlet Face: Tapered inlet-square edges

Downstream FHWA Inlet Edge Description:
Elliptical Inlet Face: Tapered inlet-square edges


-----------------------------------------------------------------------------------------------------
         Name: C-3                 From Node: RA-2                Length(ft): 30.00
        Group: BASE                  To Node: RA-1                     Count: 1
                                                             Friction Equation: Average Conveyance
              UPSTREAM       DOWNSTREAM                     Solution Algorithm: Automatic
     Geometry: Horz Ellipse   Horz Ellipse                              Flow: Both
     Span(in): 23.00          23.00                         Entrance Loss Coef: 0.00
     Rise(in): 14.00          14.00                             Exit Loss Coef: 0.00
   Invert(ft): 19.100         19.000                            Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                        Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                             Inlet Ctrl Spec: Use dn
 Bot Clip(in): 0.000          0.000                           Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Elliptical Inlet Face: Tapered inlet-square edges

Downstream FHWA Inlet Edge Description:
Elliptical Inlet Face: Tapered inlet-square edges


-----------------------------------------------------------------------------------------------------
         Name: CB-12               From Node: RA-4                Length(ft): 178.00
        Group: BASE                  To Node: RA-3                     Count: 1
                                                             Friction Equation: Average Conveyance
              UPSTREAM       DOWNSTREAM                     Solution Algorithm: Automatic
     Geometry: Horz Ellipse   Horz Ellipse                              Flow: Both
     Span(in): 23.00          23.00                         Entrance Loss Coef: 0.00
     Rise(in): 14.00          14.00                             Exit Loss Coef: 0.00
   Invert(ft): 19.100         19.000                            Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                        Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                             Inlet Ctrl Spec: Use dn
 Bot Clip(in): 0.000          0.000                           Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall


=================================================================================================
==== Channels ===================================================================================
=================================================================================================


=================================================================================================
==== Drop Strcutures ============================================================================
=================================================================================================


=================================================================================================
==== Weirs ======================================================================================
=================================================================================================


=================================================================================================
==== Bridges ====================================================================================
=================================================================================================


=================================================================================================
==== Breaches ===================================================================================
=================================================================================================


=================================================================================================
==== Rating Curves ==============================================================================
```

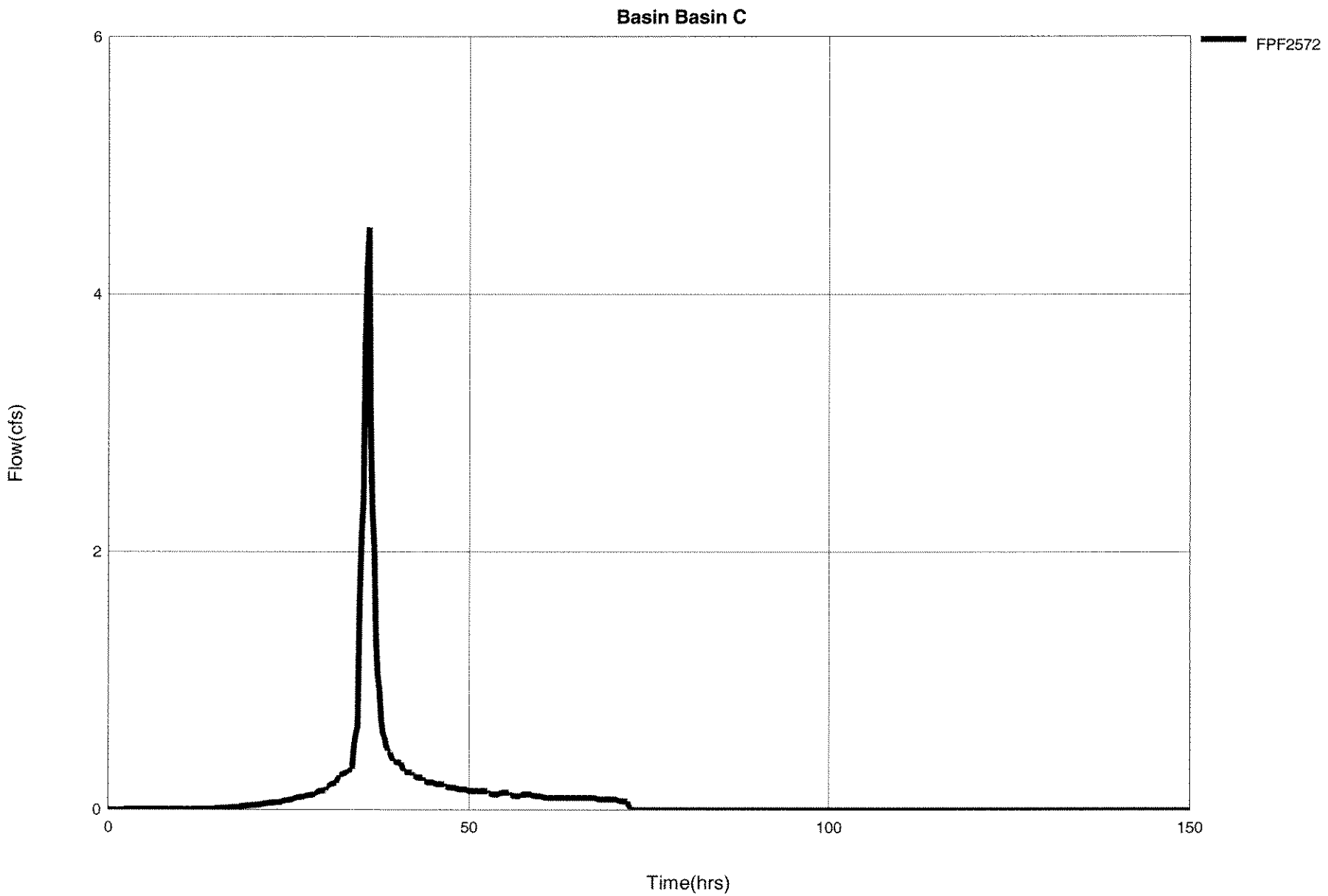
```
==========================================================================================

         Name: R1                  From Node: RA-1                    Count: 1
        Group: BASE                  To Node: Discharge RA-1           Flow: Positive

               TABLE           ELEV ON(ft)     ELEV OFF(ft)
           #1: Perc 1          19.100          19.000
           #2:                 0.000           0.000
           #3:                 0.000           0.000
           #4:                 0.000           0.000


------------------------------------------------------------------------------------------
         Name: R2                  From Node: RA-2                    Count: 1
        Group: BASE                  To Node: Discharge RA-2           Flow: Positive

               TABLE           ELEV ON(ft)     ELEV OFF(ft)
           #1: Perc 2          19.100          19.000
           #2:                 0.000           0.000
           #3:                 0.000           0.000
           #4:                 0.000           0.000


------------------------------------------------------------------------------------------
         Name: R3                  From Node: RA-3                    Count: 1
        Group: BASE                  To Node: Discharge RA-3           Flow: Positive

               TABLE           ELEV ON(ft)     ELEV OFF(ft)
           #1: Perc 3          19.100          19.000
           #2:                 0.000           0.000
           #3:                 0.000           0.000
           #4:                 0.000           0.000


------------------------------------------------------------------------------------------
         Name: R4                  From Node: RA-4                    Count: 1
        Group: BASE                  To Node: Discharge RA-4           Flow: Positive

               TABLE           ELEV ON(ft)     ELEV OFF(ft)
           #1: Perc 4          19.100          19.000
           #2:                 0.000           0.000
           #3:                 0.000           0.000
           #4:                 0.000           0.000


==========================================================================================
==== Hydrology Simulations ===============================================================
==========================================================================================

         Name: FPF2572
     Filename: P:\Palm Beach County\3582061 FPF Facility Relocation\ICPR\FPF2572.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: Flmod
    Rainfall Amount(in): 13.20

Time(hrs)       Print Inc(min)
--------------- ---------------
150.000         15.00

==========================================================================================
==== Routing Simulations =================================================================
==========================================================================================

         Name: FPF2572             Hydrology Sim: FPF2572
     Filename: P:\Palm Beach County\3582061 FPF Facility Relocation\ICPR\FPF2572.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 150.00
     Min Calc Time(sec): 0.5000                Max Calc Time(sec): 20.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
150.000         15.000
```

Group	Run
BASE	Yes

```
            Basin Name: Basin A
            Group Name: BASE
            Simulation: FPF2572
             Node Name: RA-1
            Basin Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh256
         Peaking Fator: 256.0
   Spec Time Inc (min): 1.47
   Comp Time Inc (min): 1.47
         Rainfall File: Flmod
  Rainfall Amount (in): 13.200
  Storm Duration (hrs): 72.00
                Status: Onsite
    Time of Conc (min): 11.00
      Time Shift (hrs): 0.00
             Area (ac): 5.976
  Vol of Unit Hyd (in): 1.000
          Curve Number: 87.000
              DCIA (%): 61.400

        Time Max (hrs): 36.01
        Flow Max (cfs): 19.191
    Runoff Volume (in): 12.502
   Runoff Volume (ft3): 271196.413

-------------------------------------------------------------------------------

            Basin Name: Basin B
            Group Name: BASE
            Simulation: FPF2572
             Node Name: RA-3
            Basin Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh256
         Peaking Fator: 256.0
   Spec Time Inc (min): 1.33
   Comp Time Inc (min): 1.33
         Rainfall File: Flmod
  Rainfall Amount (in): 13.200
  Storm Duration (hrs): 72.00
                Status: Onsite
    Time of Conc (min): 10.00
      Time Shift (hrs): 0.00
             Area (ac): 1.337
  Vol of Unit Hyd (in): 1.000
          Curve Number: 77.000
              DCIA (%): 27.100

        Time Max (hrs): 36.00
        Flow Max (cfs): 4.072
    Runoff Volume (in): 10.973
   Runoff Volume (ft3): 53257.198

-------------------------------------------------------------------------------

            Basin Name: Basin C
            Group Name: BASE
            Simulation: FPF2572
             Node Name: RA-4
            Basin Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh256
         Peaking Fator: 256.0
   Spec Time Inc (min): 1.33
   Comp Time Inc (min): 1.33
         Rainfall File: Flmod
  Rainfall Amount (in): 13.200
  Storm Duration (hrs): 72.00
                Status: Onsite
    Time of Conc (min): 10.00
      Time Shift (hrs): 0.00
             Area (ac): 1.632
  Vol of Unit Hyd (in): 1.000
          Curve Number: 70.000
              DCIA (%): 5.600

        Time Max (hrs): 36.00
        Flow Max (cfs): 4.521
    Runoff Volume (in): 9.379
   Runoff Volume (ft3): 55563.152
```

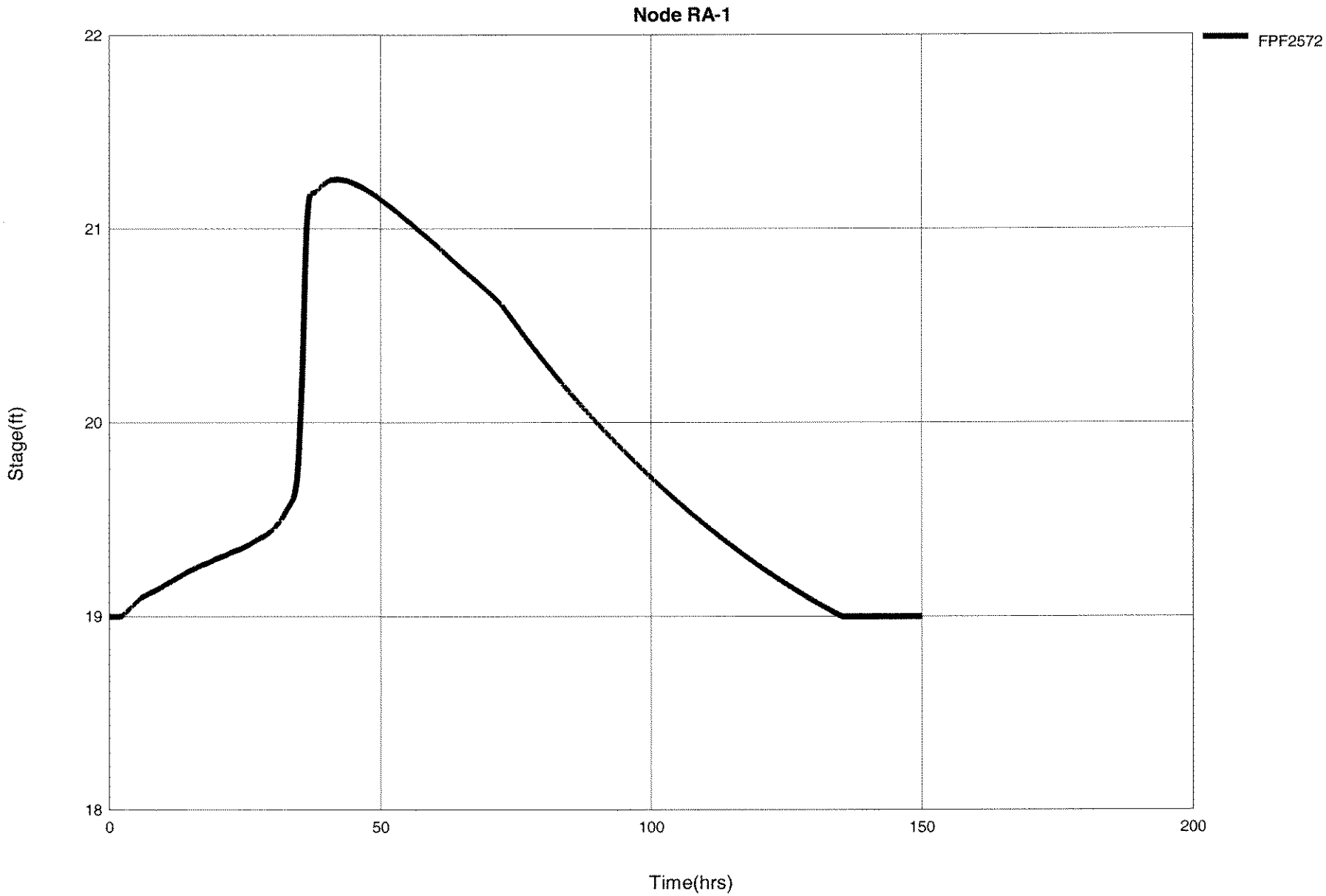

Basin Basin A
FPF2572
Flow(cfs)
20
15
10
5
0
0
50
100
150
Time(hrs)

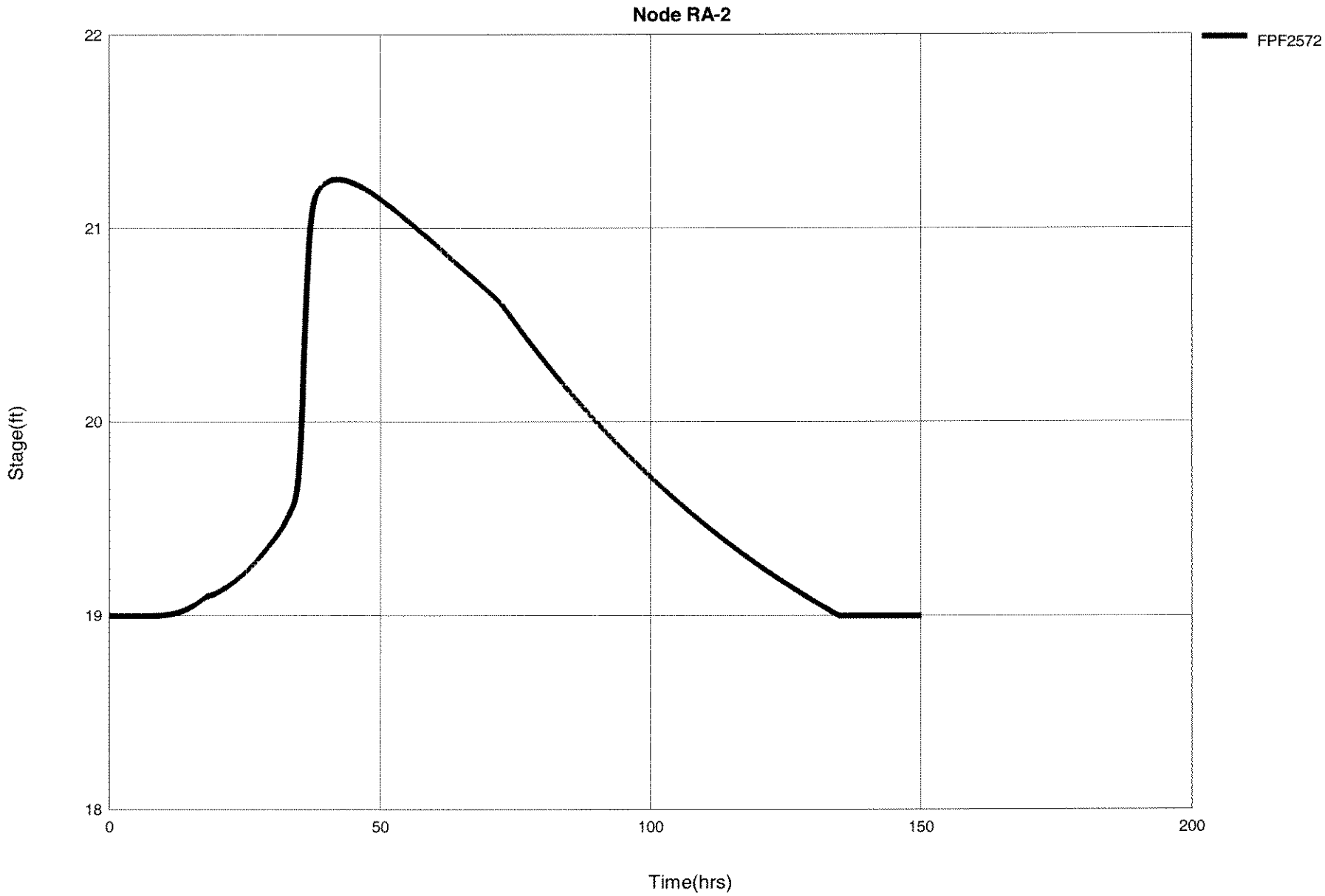

Basin Basin B
FPF2572
Flow(cfs)
Time(hrs)
0
2
4
6
0
50
100
150

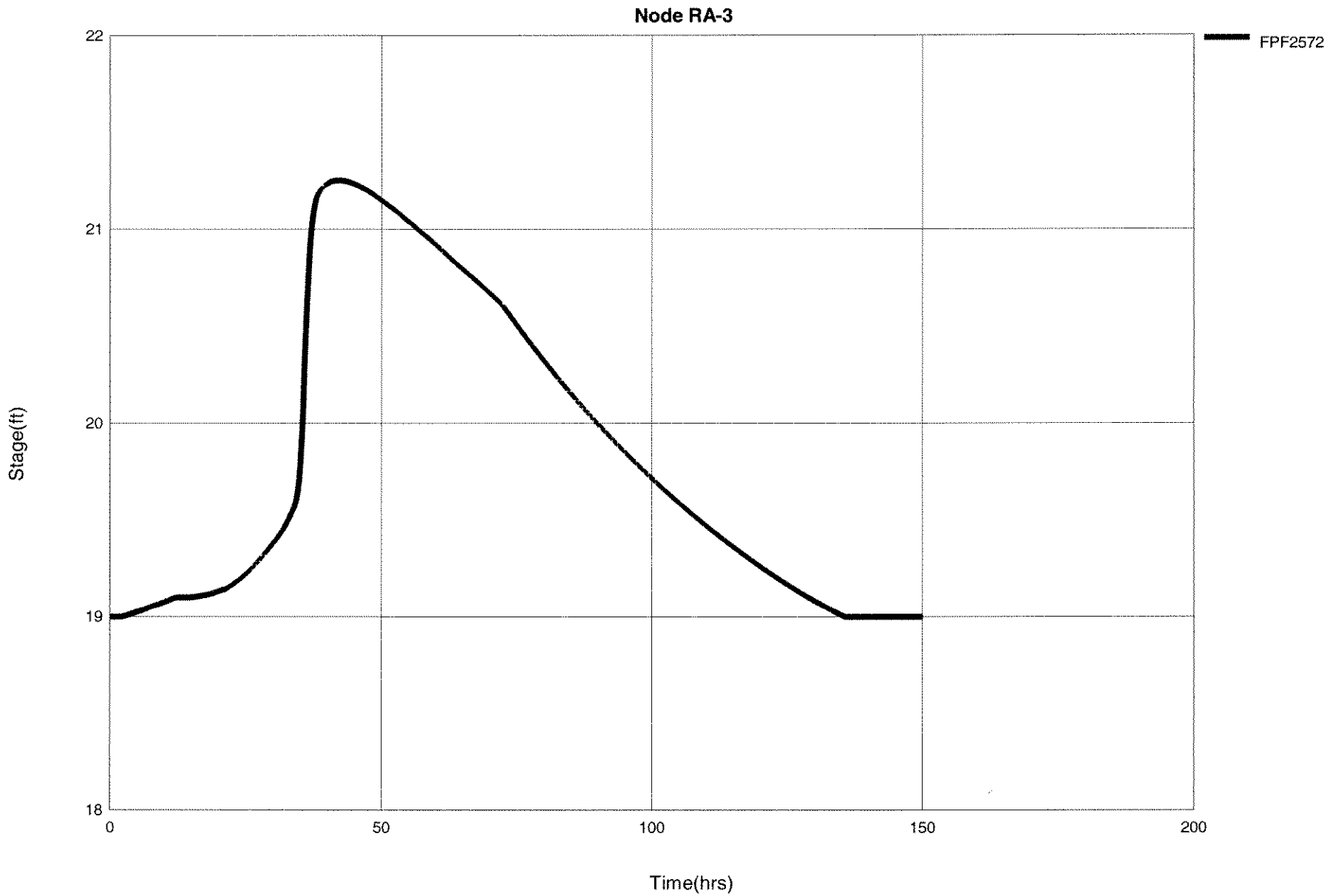

Basin Basin C
FPF2572
Flow(cfs)
Time(hrs)
0
2
4
6
0
50
100
150

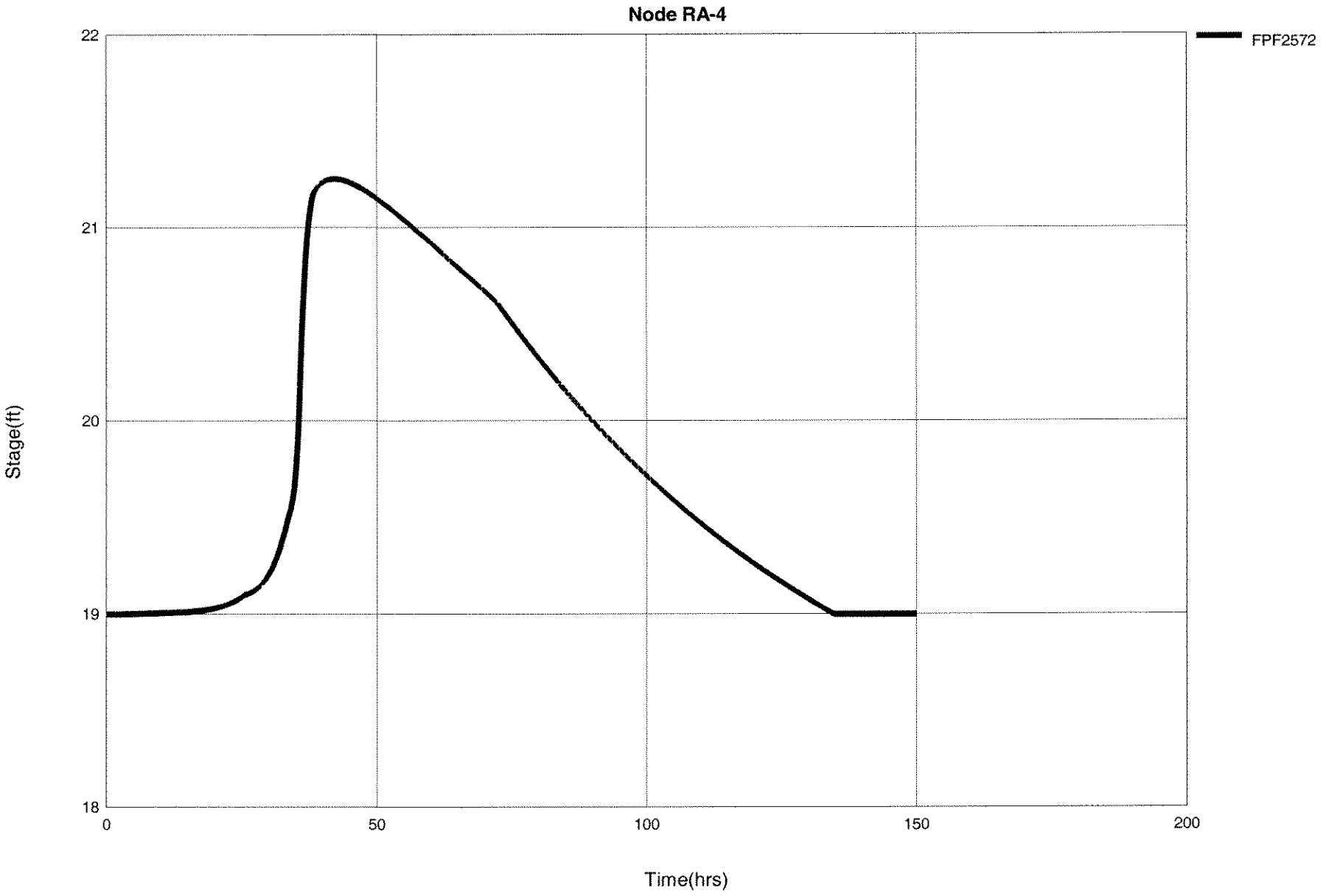
Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
RA-1	BASE	FPF2572	42.10	21.256	22.000	0.0050	42183	35.87	12.844	42.10	0.582
RA-2	BASE	FPF2572	42.17	21.254	22.000	0.0049	29848	86.25	0.820	73.02	0.204
RA-3	BASE	FPF2572	42.17	21.254	22.000	0.0049	15720	36.00	2.476	86.18	0.920
RA-4	BASE	FPF2572	42.18	21.253	22.000	0.0045	30202	36.00	4.517	47.30	0.300

Name	Group	Simulation	Min Time Stage hrs	Min Stage ft	Warning Stage ft	Min Delta Stage ft	Min Surf Area ft2	Min Time Inflow hrs	Min Inflow cfs	Min Time Outflow hrs	Min Outflow cfs
RA-1	BASE	FPF2572	0.00	19.000	22.000	0.0000	27009	86.19	-0.333	0.00	0.000
RA-2	BASE	FPF2572	0.00	19.000	22.000	0.0000	25271	37.01	-1.987	35.67	-8.356
RA-3	BASE	FPF2572	0.00	19.000	22.000	0.0000	7854	37.25	-0.658	37.00	-1.808
RA-4	BASE	FPF2572	0.00	19.000	22.000	0.0000	22660	0.00	0.000	35.72	-1.977


Node RA-1
FPF2572
Stage(ft)
22
21
20
19
18
0
50
100
150
200
Time(hrs)


Node RA-2
FPF2572
Stage(ft)
22
21
20
19
18
0
50
100
150
200
Time(hrs)


Node RA-3
FPF2572
Stage(ft)
22
21
20
19
18
0
50
100
150
200
Time(hrs)


Node RA-4
FPF2572
Stage(ft)
22
21
20
19
18
0
50
100
150
200
Time(hrs)

Solid Waste Authority of Palm Beach County
Environmental Resource Permit
Ferrous Processing Facility

Attachment I

Legal Description

3582061 / FTL

LEGAL DESCRIPTION

OWNERSHIP NO. 1

JOHN E. CORBALLY, JAMES M. FURMAN AND JAMES M MURDOCH TRUSTEES UNDER THE MACARTHUR LIQUIDATING TRUST AGREEMENT DATED DECEMBER 28, 1983.

DESCRIPTION

PARCEL A:

A tract of land lying in Sections 22 and 27, Township 42 South, Range 42 East, Palm Beach County, Florida, and more particularly described as follows:

All that part of Section 22, lying South of the Southerly right-of-way line of the Seaboard Coastline Railroad, and the North one-half of Section 27, Township 42 South, Range 42 East, lying East of a line running North and South which line commences at a point located in the North section line of Section 22, 2,000 feet West of the point at which said North section line is intersected by the Westerly right-of-way of the Sunshine State Parkway, as recorded in Deed Book 1110, Page 583, in the Public Records of Palm Beach County, Florida, and which line terminates at a point situated on the East/West half section of section line of Section 27, 2,000 feet West of a point at which the West right-of-way line of the Sunshine State Parkway intersects said half section line, LESS that part described in Official Record Book 2399, Page 713, in the Public Records of Palm Beach County, Florida, and LESS the right-of-way of said Sunshine State Parkway as conveyed in Deed Book 1110, Page 583, in the Public Records of Palm Beach County, Florida, and as laid out and in use. Also described as: The Easternmost 2,000 feet of Section 22, lying South of the right-of-way of the Seaboard Coastline Railroad, and of the North one-half of Section 27, lying immediately West of the West right-of-way of Sunshine State Parkway, LESS that part described in Official Record Book 2399, Page 713, in the Public Records of Palm Beach County, Florida, and LESS the right-of-way of said Sunshine State Parkway as conveyed in Deed Book 1110, Page 583, in the Public Records of Palm Beach County, Florida, and as laid out and in use.

PARCEL B:

The South half of Section 27 and all of Section 34, Township 42 South, Range 42 East, Palm Beach County, Florida; LESS right-of-way of Sunshine State Parkway as vested in the Florida State Turnpike Authority by Final Judgment in MCC Book 74, Page 662, Public Records of Palm Beach County, Florida, and as laid out and in use.

PARCEL C:

The West 2,632 feet of the North half of Section 3, lying North of State Road 702, LESS the Northwest Quarter of the Northwest Quarter of the Northwest Quarter of said Section 3, all in Township 43 South, Range 42 East, Palm Beach County, Florida.

PARCEL D:

The North one-half of the Northeast quarter of the Northwest quarter of the Northeast quarter of Section 27, Township 42 South, Range 42 East, Palm Beach County, Florida.

OWNERSHIP NO. 2

ARTHUR GLADSTONE, TRUSTEE

DESCRIPTION

PARCEL A:

The North Half of Section 3, Township 43 South, Range 42 East, Palm Beach County, Florida, lying North of the North Right-of-way line of 45th Street (State Road 702) and West of the West right-of-way line of the Sunshine State Parkway, LESS therefrom the West 2,779.41 feet; measured at right angles thereto.

PARCEL B:

The North Half of Section 3, Township 43 South, Range 42 East, Palm Beach County, Florida, lying South of the South right-of-way of 45th Street (State Road 702) and West of the West right-of-way line of the Sunshine State Parkway.

PARCEL C:

That portion of the north half of Section 2, Township 43 South, Range 42 East, Palm Beach County, Florida, lying south of 45th Street and west of Haverhill Road, said parcel containing 73.40 acres, net, and being more particularly described as follows:

Beginning at the quarter section corner in the east line of said Section 2, which is on the centerline of Haverhill Road, as now laid out and in use; thence, run westerly on the south line of said north half of Section 2, angling 93°28'05" from said centerline, from north to west, a distance of 5,296.30 feet to the quarter section corner in the west line of said Section 2, which point is on the easterly right-of-way line of the sunshine state parkway (now known as the Florida Turnpike); thence, run northerly, along said right-of-way line, which is also the west line of said Section 2, angling 87°00'25" from east to north, a distance of 659.85 feet to a point on the centerline of 45th Street, as now laid out and in use; thence, run easterly on said centerline, parallel to the said south line of the north half of Section 2, a distance of 5,301.79 feet to a point on said east line of Section 2, the said centerline of Haverhill Road; thence, run southerly on said centerline, angling 86°31'55" from west to south, a distance of 660.16 feet to the point of beginning; less the north 50 feet thereof and the east 50 feet thereof for road rights-of-way.

SUBJECT TO: Easement to Florida Power & Light Company dated and filed and record on April 20, 1971, recorded in official record book 1891, page 1098, Palm Beach County, Florida records; right-of-way to county of Palm Beach, dated April 15, 1964, recorded in official record book, 1018, page 365, Palm Beach County, Florida records.

SUBJECT TO: Rights-of-way, easements and other matters of record.

Solid Waste Authority of Palm Beach County
Environmental Resource Permit
Ferrous Processing Facility

Attachment J

Easements

3582061 / FTL

Department of Engineering and Public Works
P.O. Box 21229
West Palm Beach, FL 33416-1229
(561) 684-4000
www.pbcgov.com

Palm Beach County Board of County Commissioners

Karen T. Marcus, Chair
Tony Masilotti, Vice Chairman
Jeff Koons
Warren H. Newell
Mary McCarty
Burt Aaronson
Addie L. Greene

County Administrator

Robert Weisman

"An Equal Opportunity Affirmative Action Employer"

printed on recycled paper

November 18, 2004

BRENT A. HEADBERG, PSM
PROJECT MANAGER
SOLID WASTE AUTHORITY
OF PALM BEACH COUNTY
7501 NORTH JOG ROAD
WEST PALM BEACH, FLORIDA 33412

RE: 45TH STREET AND JOG ROAD
PALM BEACH COUNTY PROJECT NO.: 1998506
COUNTY DEED
RELEASE OF DRAINAGE EASEMENT RIGHTS

Dear Mr. Headberg:

Enclosed you will find copies of the fully executed and recorded documents as referenced above. I trust this is satisfactory.

If you have any comments or questions, you may reach me at 478-5795.

Sincerely,

Kat Chopin, Specialist
Right-of-Way Acquisition
Roadway Production Division

Enclosures:
Deed – 8 pages
Release – 3 pages

N/M

Will Call #1066

CFN 20040609445
OR BK 17686 PG 1814
RECORDED 10/26/2004 14:31:49
Palm Beach County, Florida
Dorothy H Wilken, Clerk of Court
Pgs 1814 - 1816; (3pgs)

Prepared by: Paul King, Esq.
Assistant County Attorney
Return to: Right-of-Way Acquisition Section
Post Office Box 21229
West Palm Beach, Florida 33416
Attention: Kat Chopin
Account No.: 1010

#1998506
45th #J06

R2004 1850 SEP 14 2004

RELEASE OF DRAINAGE EASEMENT RIGHTS

BOARD OF COUNTY COMMISSIONERS
DATE 9-14-04

Whereas, on March 21, 1990, a Drainage Easement was recorded in Official Record Book 6499, Pages 102 to 107, inclusive, Public Records of Palm Beach County, Florida; and,

Whereas, said easement was granted at no cost to Palm Beach County; and,

Whereas, a portion of said easement has never been used, and is not needed currently or in the future by Palm Beach County; and,

Whereas, the property owner has made a request for the release of the unused portion of the easement; and,

Whereas, Staff has reviewed the request and finds it is appropriate to release that portion of said drainage easement rights, as described in Exhibit "A", attached hereto and made a part hereof.

NOW, THEREFORE, the County does hereby release the Drainage Easement Rights as described in attached Exhibit "A".

IN WITNESS WHEREOF, the County has caused this Release of Drainage Easement Rights to be executed on this _____ day of SEP 14 2004, 2004.

ATTEST:

DOROTHY WILKEN, Clerk

BOARD OF COUNTY COMMISSIONERS PALM BEACH COUNTY FLORIDA

By: Linda C. Hickman
Deputy Clerk

PALM BEACH COUNTY, a political subdivision of the State of Florida

BY ITS BOARD OF COUNTY COMMISSIONERS

By: _____
Karen T. Marcus, Chair

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

By: _____
County Attorney

Exhibit "A" to Release
1 of 2

LEGAL DESCRIPTION

RELEASE OF
JOG ROAD 20' LATERAL DRAINAGE EASEMENT

All that portion of the Jog Road 20' Lateral Drainage Easement situated in the North One-Half (N 1/2) of Section 3, Township 43 South, Range 42 East, Palm Beach County, Florida, as recorded in Official Record Book 6499, Page 102 of the Palm Beach County Public Records, lying south of the Southerly Right of Way Line of 45th Street, as recorded in Official Record Book 6499, Page 47, of the Palm Beach County, Public Records.

LEGEND

&	AND
ADDL.	ADDITIONAL
℄	CENTERLINE
D.B.	DEED BOOK
ESM'T	EASEMENT
FP&L	FLORIDA POWER AND LIGHT COMPANY
O.R.B.	OFFICIAL RECORD BOOK
PG.	PAGE
R	RANGE
R/W	RIGHT OF WAY
SEC.	SECTION
T	TOWNSHIP

DATE OF ORIGINAL SIGNATURE:
JULY 16, 2003

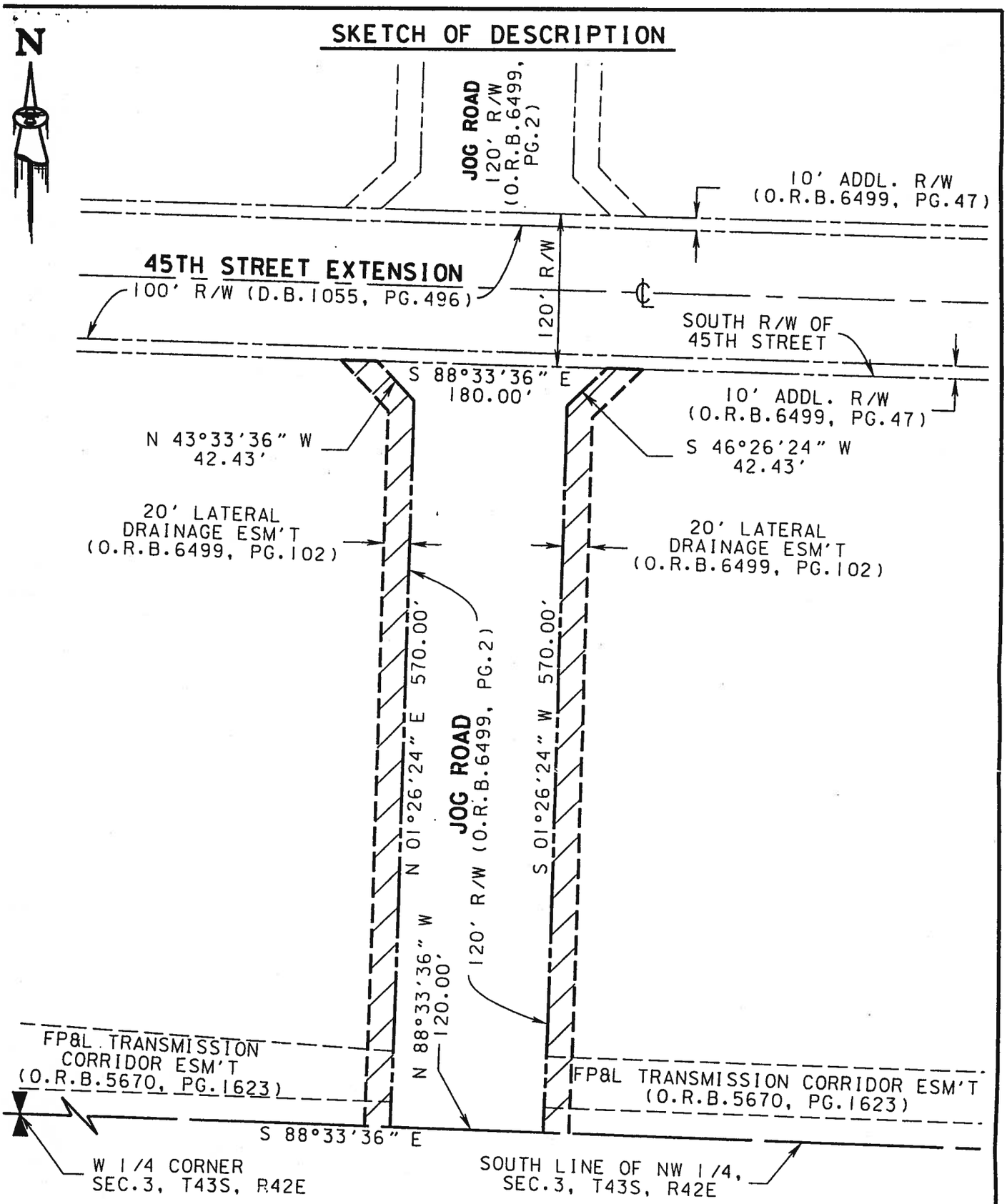
JOHN H. ADLER III
PROFESSIONAL LAND SURVEYOR
CERTIFICATE NO. 4693

OT VALID UNLESS ACCOMPANIED BY SKETCH OF DESCRIPTION (SHEET 2 OF 2) © LATEST DATE SHOWN HEREON

LE: N/A	GREENHORNE & O'MARA, INC. 3223 COMMERCE PLACE, SUITE 100 WEST PALM BEACH, FL. 33407 (561) 686-7707 LB NO. 3935	LEGAL DESCRIPTION AND SKETCH FOR:	JULY 2003 DATE:
IGNED BY: NARANJO		JOG ROAD 20' LATERAL DITCH	9008-ABD-699 DRAWING NO.:
WN BY: WASHKO CKED BY:		SOLID WASTE AUTHORITY	1 OF 2 SHEET:

Exhibit "A" to Release
2 of 2

SKETCH OF DESCRIPTION



OT VALID UNLESS ACCOMPANIED BY LEGAL DESCRIPTION (SHEET 1 OF 2) © LATEST DATE SHOWN HEREON

ALE 1"=100'	GREENHORNE & O'MARA, INC. 3223 COMMERCE PLACE, SUITE 100 WEST PALM BEACH, FL. 33407 (561) 686-7707 LB NO. 3935	LEGAL DESCRIPTION AND SKETCH FOR:	JULY 2003 DATE:
DRAWN BY: ARANJO		JOG ROAD 20' LATERAL DITCH	9008-ABD-699 DRAWING NO.:
CHECKED BY: NASHKO		SOLID WASTE AUTHORITY	2 OF 2 SHEET:

N|M

CFN 20040609444
OR BK 17686 PG 1806
RECORDED 10/26/2004 14:31:49
Palm Beach County, Florida
Dorothy H Wilken, Clerk of Court
Pgs 1806 - 1813; (8pgs)

RETURN TO:
NAME: PALM BEACH COUNTY
R/W ACQUISITION SECTION
POST OFFICE BOX 21229
ADDRESS: WEST PALM BEACH, FLORIDA 33416
ATTN: Kat Chopin
ACCT. NO.: 1010 W/C BOX 1066

#1998506
45th & J06

ACCEPTED BY
BOARD OF COUNTY COMMISSIONERS
DATE 9-14-04

R2004 1851

COUNTY DEED

THIS DEED, made this_____ day of SEP 14 2004 200__ by PALM BEACH COUNTY, a political subdivision of the State of Florida, party of the first part, and the SOLID WASTE AUTHORITY, party of the second part.

WITNESSETH: That the said party of the first part, for and in consideration of the sum of Ten ($10.00) Dollars to it in hand paid by the parties of the second part, receipt whereof is hereby acknowledged, has granted, bargained and sold to the parties of the second part, their heirs and assigns forever, the following described land lying and being in Palm Beach County, Florida:

Property more particularly described on Exhibit "A", attached hereto and made a part hereof.

IN WITNESS WHEREOF the said party of the first part has caused these presents to be executed in its name by its Board of County Commissioners acting by the Chair of said Board, the day and year aforesaid.

ATTEST:
DOROTHY H. WILKEN, Clerk

BY: Linda C. Heck
Clerk (or Deputy Clerk)

BOARD OF COUNTY COMMISSIONERS PALM BEACH COUNTY FLORIDA

PALM BEACH COUNTY, FLORIDA , BY
ITS BOARD OF COUNTY COMMISSIONERS

BY:_____
Karen T. Marcus, Chair

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY

BY: Marlene P. Bell
County Attorney

This instrument prepared by:
Paul King, Assistant County Attorney
Palm Beach County
P.O. Box 21229
West Palm Beach, FL 33416

STATE OF FLORIDA
COUNTY OF PALM BEACH

The foregoing instrument was acknowledged before me this _____day of SEP 14 2004, 200_ by Karen T. Marcus Chair, Board of County Commissioners, who is personally known to me or who has produced_____ as identification and who did not take an oath.

Gloria Madison
Typed name of Acknowledger
Deputy Clerk

Gloria Madison
Commission #DD251037
Expires: Oct 19, 2007
Bonded Thru
Atlantic Bonding Co., Inc.

271-LGL
Rev. 11/21/02

Exhibit "A" to County Deed
1 of 7

LEGAL DESCRIPTION

RELEASE OF
45TH STREET EXTENSION RIGHT OF WAY

All that portion of 45th Street Extension, situated in the North One-Half (N 1/2) of Section 3, Township 43 South, Range 42 East, Palm Beach County, Florida, as recorded in Deed Book 1055, Page 496 of the Palm Beach County Public Records, lying west of that certain point referred to as "POINT A" of Jog Road, as recorded in Official Record Book 6499, Page 2 of the Palm Beach County Public Records, and being more particularly described as follows:

COMMENCING at the West Quarter Corner (W 1/4) of said Section 3, Township 43 South, Range 42 East; THENCE North 05°59'43" East along the West Line of the Northwest Quarter (NW 1/4) of said Section 3, a distance of 611.93 feet to a point on the South Right of Way Line of said 45th Street Extension, and also being the **POINT OF BEGINNING**; THENCE continuing North 05°59'43" East along said West Line, a distance of 100.32 feet to a point on the North Right of Way Line of said 45th Street Extension; THENCE South 88°33'36" East along said North Right of Way Line, a distance of 2433.25 feet; THENCE South 01°26'24" West, at right angle to the last described course, a distance of 100.00 feet to a point on the South Right of Way Line of said 45th Street Extension, with that certain point referred to as "POINT A" of said Jog Road, lying a distance of 10.00 feet on an extension of the last described course; THENCE North 88°33'36" West along said South Right of Way Line of 45th Street Extension, a distance of 2441.22 feet to the **POINT OF BEGINNING.**

LEGEND

&	AND
ADDL.	ADDITIONAL
℄	CENTERLINE
D.B.	DEED BOOK
ESM'T	EASEMENT
FP&L	FLORIDA POWER AND LIGHT COMPANY
O.R.B.	OFFICIAL RECORD BOOK
PG.	PAGE
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
R	RANGE
R/W	RIGHT OF WAY
SEC.	SECTION
T	TOWNSHIP

DATE OF ORIGINAL SIGNATURE:
JULY 16, 2003

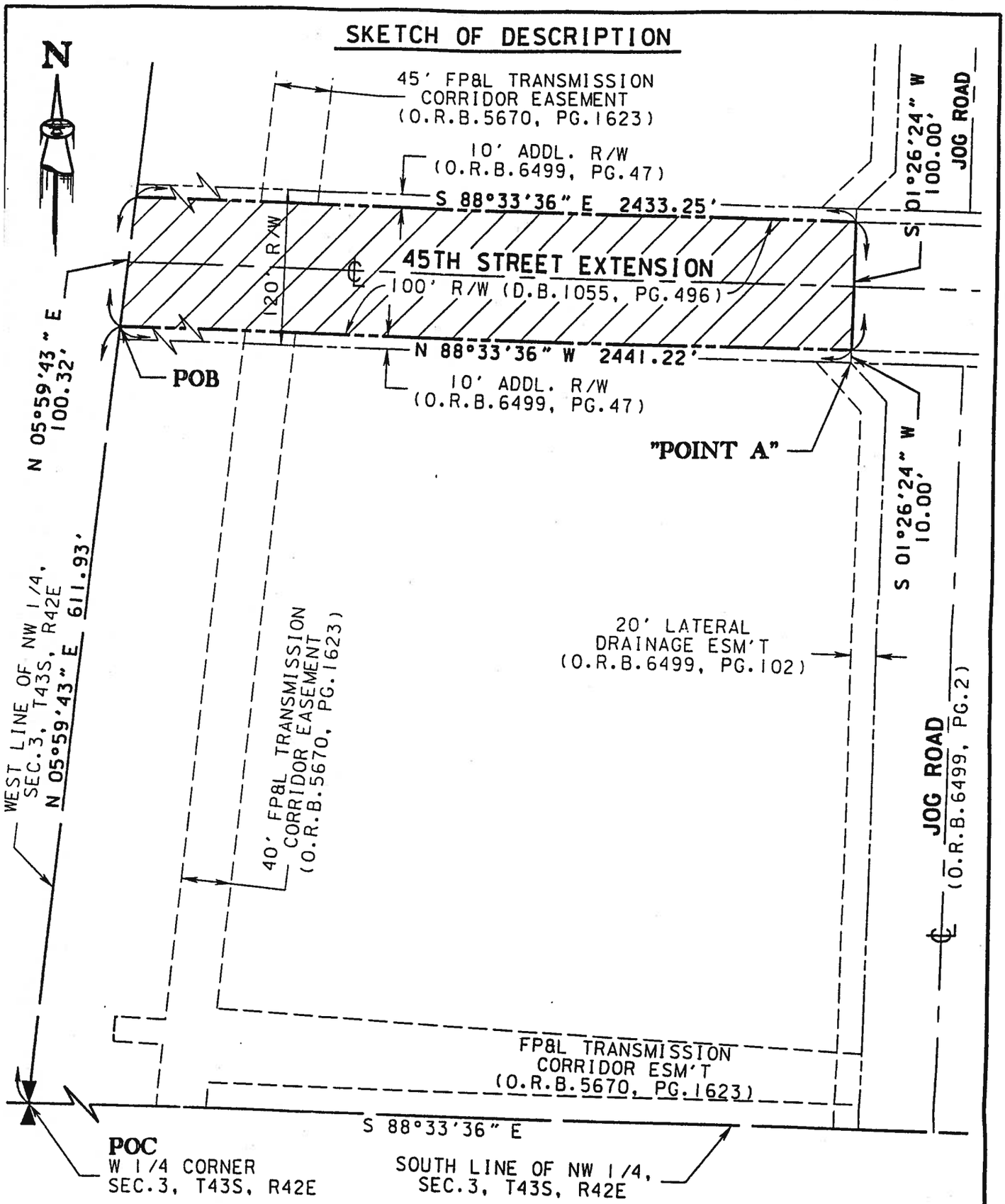
JOHN H. ADLER III
PROFESSIONAL LAND SURVEYOR
CERTIFICATE NO. 4693

NOT VALID UNLESS ACCOMPANIED BY SKETCH OF DESCRIPTION (SHEET 2 OF 2) © LATEST DATE SHOWN HEREON

SCALE: N/A	GREENHORNE & O'MARA, INC. 3223 COMMERCE PLACE, SUITE 100 WEST PALM BEACH, FL. 33407 (561) 686-7707 LB NO. 3935	LEGAL DESCRIPTION AND SKETCH FOR:	DATE: JULY 2003
SIGNED BY: NARANJO		RELEASE OF 45TH STREET ROW	DRAWING NO.: 9008-ABD-699
DWN BY: WASHKO		SOLID WASTE AUTHORITY	SHEET: 1 OF 2
CKED BY:			

Exhibit "A" to County Deed
2 of 7

SKETCH OF DESCRIPTION



NOT VALID UNLESS ACCOMPANIED BY LEGAL DESCRIPTION (SHEET 1 OF 2) © LATEST DATE SHOWN HEREON

ALE: "=100'	GREENHORNE & O'MARA, INC. 3223 COMMERCE PLACE, SUITE 100 WEST PALM BEACH, FL. 33407 (561) 686-7707 LB NO. 3935	LEGAL DESCRIPTION AND SKETCH FOR:	JULY 2003 DATE:
SIGNED BY: NARANJO		RELEASE OF 45TH STREET ROW	9008-ABD-699 DRAWING NO.:
AWN BY: WASHKO		SOLID WASTE AUTHORITY	2 OF 2 SHEET:
ECKED BY:			

Exhibit "A" to County Deed

3 of 7

LEGAL DESCRIPTION

RELEASE OF (SOUTH)
10' ADDITIONAL RIGHT OF WAY for 45TH STREET

All that portion of the additional 10.00 foot Right of Way for 45th Street, situated in the North One-Half (N 1/2) of Section 3, Township 43 South, Range 42 East, Palm Beach County, Florida, as recorded in Official Record Book 6499, Page 47 of the Palm Beach County Public Records, lying west of the Westerly Right of Way Line of Jog Road "POINT A", as recorded in Official Record Book 6499, Page 2 of the Palm Beach County Public Records, and being more particularly described as follows:

COMMENCING at the West Quarter Corner (W 1/4) of said Section 3, Township 43 South, Range 42 East; THENCE North 05°59'43" East along the West Line of the Northwest Quarter (NW 1/4) of said Section 3, a distance of 601.90 feet to a point on the South Line of the additional 10.00 foot Right of Way for 45th Street as recorded in Official Record Book 6499, Page 47 of the Palm Beach County Public Records, said point also being the **POINT OF BEGINNING;** THENCE continuing North 05°59'43" East along said West Line, a distance of 10.03 feet to a point on the South Right of Way Line of 45th Street Extension, as recorded in Deed Book 1055, Page 496 of the Palm Beach County Public Records; THENCE South 88°33'36" East along said South Right of Way Line, a distance of 2441.22 feet; THENCE South 01°26'24" West, at right angle to the last described course, a distance of 10.00 feet to that certain point being referred to as "POINT A" of said Jog Road, and also being on a line 10.00 feet south of and parallel with the South Right of Way line of said 45th Street Extension; THENCE North 88°33'36" West, along said parallel line, a distance of 2442.02 feet to the **POINT OF BEGINNING.**

AND

LEGEND

&	AND
ADDL.	ADDITIONAL
℄	CENTERLINE
D.B.	DEED BOOK
ESM'T	EASEMENT
FP&L	FLORIDA POWER AND LIGHT COMPANY
O.R.B.	OFFICIAL RECORD BOOK
PG.	PAGE
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
R	RANGE
R/W	RIGHT OF WAY
SEC.	SECTION
T	TOWNSHIP

DATE OF ORIGINAL SIGNATURE:
JULY 16, 2003

JOHN H. ADLER III
PROFESSIONAL LAND SURVEYOR
CERTIFICATE NO. 4693

OT VALID UNLESS ACCOMPANIED BY SKETCH OF DESCRIPTION (SHEET 3 OF 3) © LATEST DATE SHOWN HEREON

ALE: N/A SIGNED BY: NARANJO WN BY: WASHKO CKED BY:	GREENHORNE & O'MARA, INC. 3223 COMMERCE PLACE, SUITE 100 WEST PALM BEACH, FL. 33407 (561) 686-7707 LB NO. 3935	LEGAL DESCRIPTION AND SKETCH FOR: RELEASE OF ADDL.45TH STREET ROW SOLID WASTE AUTHORITY	JULY 2003 DATE: 9008-ABD-699 DRAWING NO.: 1 OF 3 SHEET:

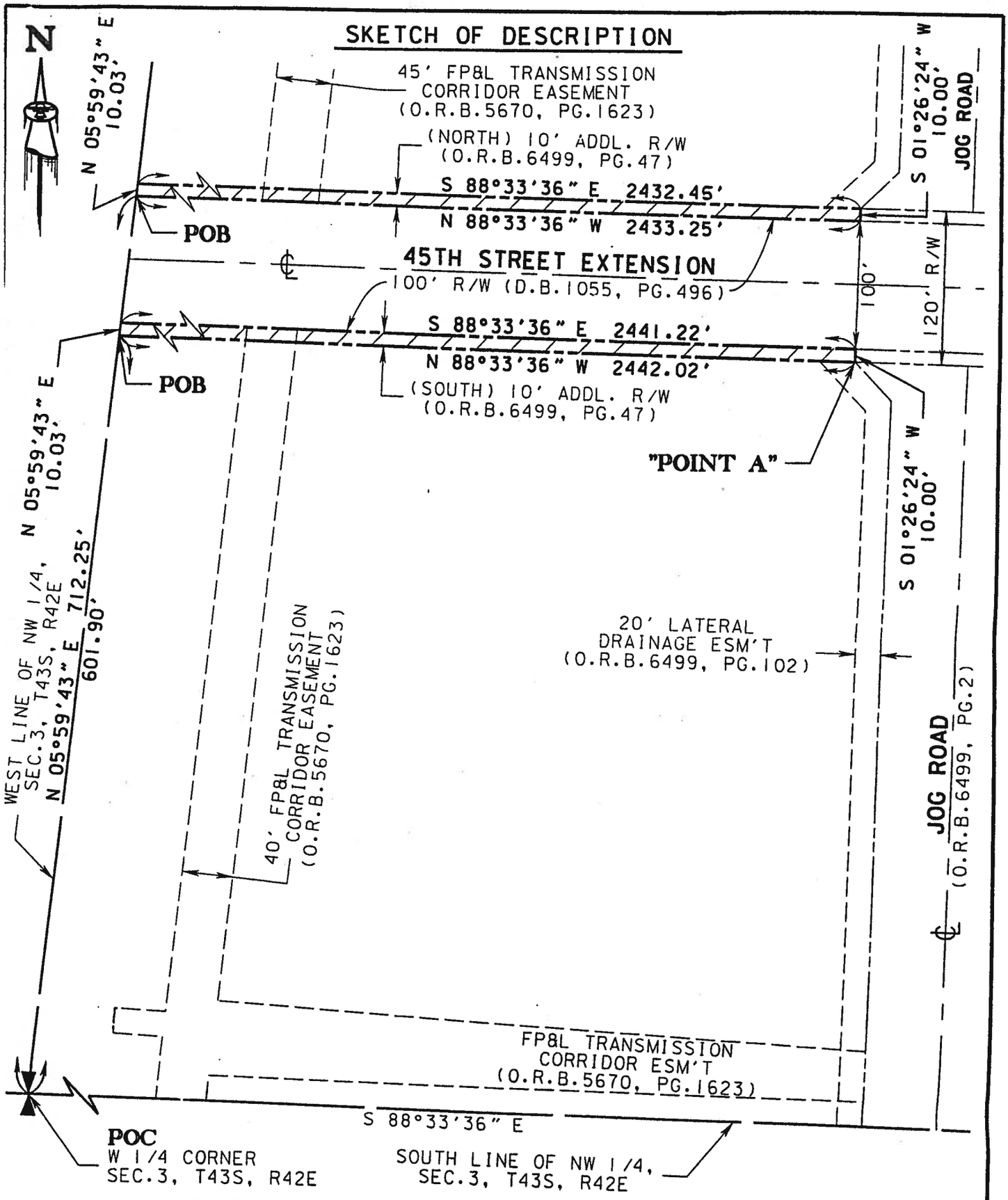
Exhibit "A" to County Deed
4 of 7

LEGAL DESCRIPTION

RELEASE OF (NORTH)
10' ADDITIONAL RIGHT OF WAY for 45TH STREET
(CONTINUED)

COMMENCING at the West Quarter Corner (W 1/4) of said Section 3, Township 43 South, Range 42 East; THENCE North 05°59'43" East along the West Line of the Northwest Quarter (NW 1/4) of said Section 3, a distance of 712.25 feet to a point on the North Right of Way line of 45th Street Extension, as recorded in Deed Book 1055, Page 496 of the Palm Beach County Public Records, said point also being the **POINT OF BEGINNING;** THENCE continuing North 05°59'43" East along said West Line, a distance of 10.03 feet to a point on the North Line of the additional 10.00 foot Right of Way for 45th Street, as recorded in Official Record Book 6499, Page 47 of the Palm Beach County Public Records, said line also being 10.00 feet north of and parallel with the North Right of Way line of said 45th Street Extension,; THENCE South 88°33'36" East along said parallel line, a distance of 2432.45 feet; THENCE South 01°26'24" West, at right angle to the last described course, a distance of 10.00 feet to a point on the North Right of Way Line of said 45th Street Extension, with that certain point referred to as "POINT A" of said Jog Road, lying a distance of 110.00 feet on an extension of the last described course; THENCE North 88°33'36" West, along said North Right of Way Line of 45th Street Extension, a distance of 2433.25 feet to the **POINT OF BEGINNING.**

Exhibit "A" to County Deed
5 of 7



NOT VALID UNLESS ACCOMPANIED BY LEGAL DESCRIPTION (SHEETS 1 & 2 OF 3) © LATEST DATE SHOWN HEREON

SCALE "=100'	GREENHORNE & O'MARA, INC. 3223 COMMERCE PLACE, SUITE 100 WEST PALM BEACH, FL. 33407 (561) 686-7707 LB NO. 3935	LEGAL DESCRIPTION AND SKETCH FOR:	DATE: JULY 2003
DESIGNED BY: NARANJO		RELEASE OF ADDL.45TH STREET ROW	DRAWING NO.: 9008-ABD-699
DRAWN BY: WASHKO		SOLID WASTE AUTHORITY	SHEET: 3 OF 3
CHECKED BY:			

Exhibit "A" to County Deed
6 of 7

LEGAL DESCRIPTION

RELEASE OF
JOG ROAD RIGHT OF WAY

All that portion of Jog Road situated in the North One-Half (N 1/2) of Section 3, Township 43 South, Range 42 East, Palm Beach County, Florida, as recorded in Official Record Book 6499, Page 2 of the Palm Beach County Public Records, lying south of the Southerly Right of Way Line of 45th Street, as recorded in Official Record Book 6499, Page 47 of the Palm Beach County Public Records, and being more particularly described as follows:

COMMENCING at the West One-Quarter (W 1/4) Corner of Section 3, Township 43 South, Range 42 East, Palm Beach County, Florida; THENCE South 88°33'36" East along the South Line of the Northwest One-Quarter (NW 1/4) of said Section 3, a distance of 2519.82 feet to the **POINT OF BEGINNING**; THENCE North 01°26'24" East, a distance of 570.00 feet; THENCE North 43°33'36" West, a distance of 42.43 feet to a point on the South Right of Way Line of 45th Street as recorded in Official Record Book 6499, Page 47 of the Palm Beach County Public Records and also known as POINT "A"; THENCE South 88°33'36" East along said South Right of Way, a distance of 180.00 feet; THENCE South 46°26'24" West, a distance of 42.43 feet; THENCE South 01°26'24" West, a distance of 570.00 feet; THENCE North 88°33'36" West along said South Line of the Northwest One-Quarter (NW 1/4), a distance of 120.00 feet to the **POINT OF BEGINNING.**

LEGEND

&	AND
ADDL.	ADDITIONAL
℄	CENTERLINE
D.B.	DEED BOOK
ESM'T	EASEMENT
FP&L	FLORIDA POWER AND LIGHT COMPANY
O.R.B.	OFFICIAL RECORD BOOK
PG.	PAGE
POB	POINT OF BEGINNING
POC	PONT OF COMMENCEMENT
R	RANGE
R/W	RIGHT OF WAY
SEC.	SECTION
T	TOWNSHIP

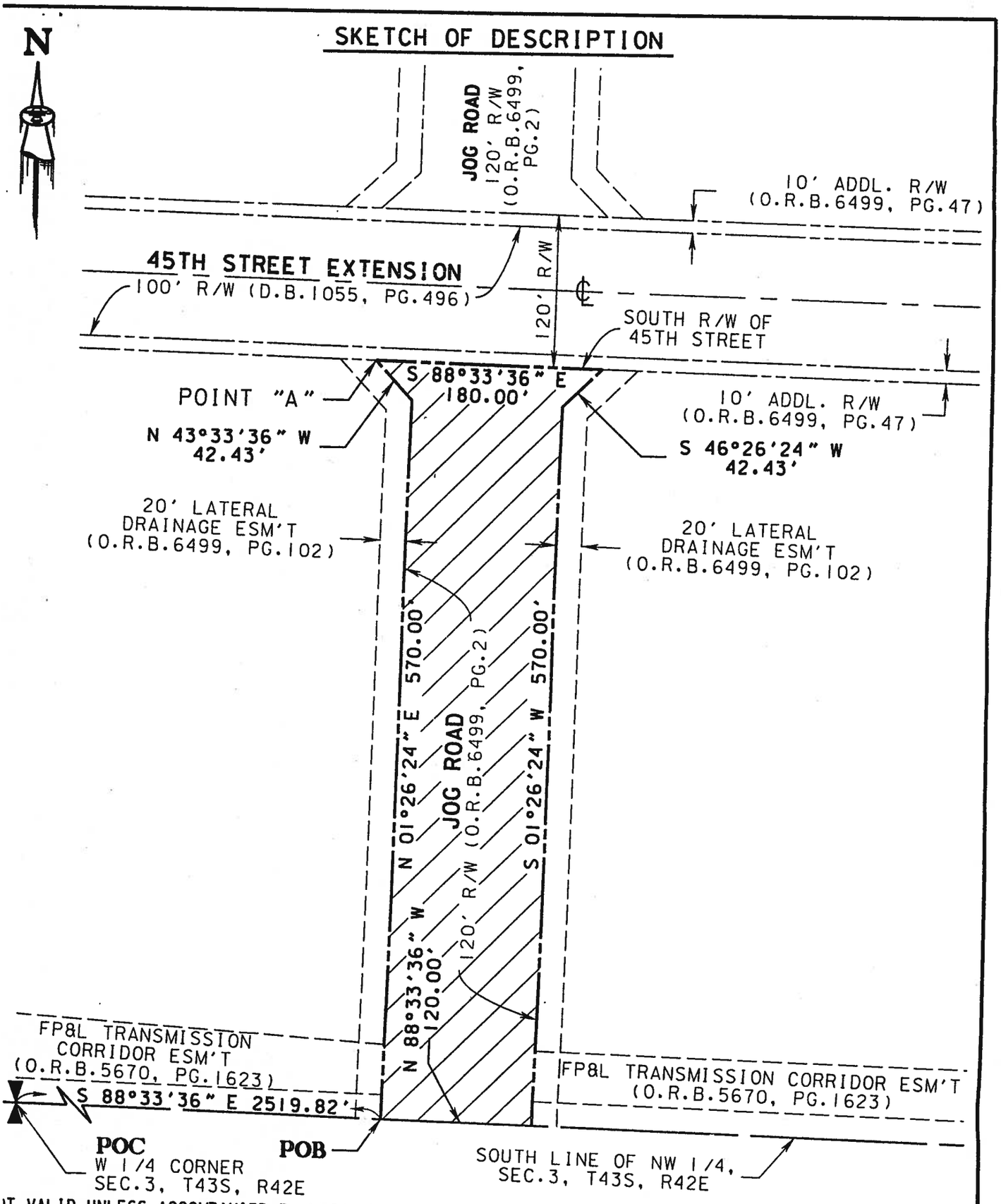
DATE OF ORIGINAL SIGNATURE:
JULY 16, 2003

JOHN H. ADLER III
PROFESSIONAL LAND SURVEYOR
CERTIFICATE NO. 4693

NOT VALID UNLESS ACCOMPANIED BY SKETCH OF DESCRIPTION (SHEET 2 OF 2) © LATEST DATE SHOWN HEREON

SCALE: N/A DESIGNED BY: NARANJO DRAWN BY: WASHKO CHECKED BY:	GREENHORNE & O'MARA, INC. 3223 COMMERCE PLACE, SUITE 100 WEST PALM BEACH, FL. 33407 (561) 686-7707 LB NO. 3935	LEGAL DESCRIPTION AND SKETCH FOR: JOG ROAD 120' RIGHT OF WAY SOLID WASTE AUTHORITY	DATE: JULY 2003 DRAWING NO.: 9008-ABD-699 SHEET: 1 OF 2

Exhibit "A" to County Deed
7 of 7



T VALID UNLESS ACCOMPANIED BY LEGAL DESCRIPTION (SHEET 1 OF 2) © LATEST DATE SHOWN HEREON

J "=100'	GREENHORNE & O'MARA, INC. 3223 COMMERCE PLACE, SUITE 100 WEST PALM BEACH, FL. 33407 (561) 686-7707 LB NO. 3935	LEGAL DESCRIPTION AND SKETCH FOR:	JULY 2003 DATE:
NED BY: ARANJO BY: ASHKO ED BY:		JOG ROAD 120' RIGHT OF WAY	9008-ABD-699 DRAWING NO.:
		SOLID WASTE AUTHORITY	2 OF 2 SHEET:

Solid Waste Authority of Palm Beach County
Petition for Modification of Conditions of Certification (PA 84-20)

Appendix F
Code of Ordinances and Unified Land Development Code

3582061 / FTL

MALCOLM PIRNIE

CODE OF ORDINANCES
City of West Palm Beach, Flordia

Codified through
Ord. No. 4211-09, adopted May 4, 2009.
(Supplement No. 21)

Chapter 34
ARTICLE II. NOISE CONTROL REGULATIONS*

_____
***Editor's note:** Ord. No. 4136-08, § 1, adopted April 21, 2008, amended Art. II in its entirety to read as herein set out. Former Art. II, §§ 34-31--34-44, pertained to similar subject matter and derived from Ord. No. 4105-08, § 1, adopted Mar. 10, 2008.

_____

Sec. 34-31. Purpose.

This article is enacted to protect, preserve, and promote the health, safety, welfare, peace and quiet of the inhabitants and visitors of the City of West Palm Beach through the reduction, control, and prevention of loud and raucous noise, or any noise which unreasonably disturbs, injures, or endangers the comfort, repose, health, peace, or safety of the city's inhabitants and visitors.
(Ord. No. 4136-08, § 1, 4-21-2008)

Sec. 34-32. Findings.

(a) Loud and raucous noise degrades the environment of the city to a degree that:
(1) Is harmful to the health, welfare, and safety of its inhabitants and visitors;
(2) Interferes with the comfortable enjoyment of life and property;
(3) Interferes with the well being, tranquility, and privacy of the home; and
(4) Both causes and aggravates health problems.
(b) Both the effective control and the elimination of loud and raucous noise are essential to the health and welfare of the city's inhabitants and visitors, and to the conduct of the normal pursuits of life, including recreation, work, and communication.
(c) The city has a substantial interest in protecting citizens from unwelcome noise.
(d) The use of sound amplification equipment creates loud and raucous noise that may, in a particular manner and at a particular time and place, substantially and unreasonably invade the privacy, peace, and freedom of inhabitants of, and visitors to, the city.
(e) The city has a substantial interest in protecting its merchants from unwelcome noise that has the effect of preventing the transaction of business due to excessive noise.
(Ord. No. 4136-08, § 1, 4-21-2008)

Sec. 34-33. Scope.

This article applies to the control of all sound originating within the jurisdictional limits of the city.
(Ord. No. 4136-08, § 1, 4-21-2008)

Sec. 34-34. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Amplified sound means a sound augmented by any electronic or other means that increases the sound level or volume.

Code enforcement officer means an authorized employee or agent of the city whose duty it is to ensure code compliance, including but not limited to inspectors or the city's code enforcement department and police officers.

Emergency work means any work performed for the purpose of remedying conditions that create an imminent peril to life, health or property.

Plainly audible means the sound can be clearly heard by a person of normal sensibilities using only unaided auditory senses.

Property line means an imaginary line along the ground surface, and its vertical extension, which separates the real property owned by a person from that owned by another person, but not including intrabuilding real property divisions.

Receiving property means any residence or place of business or other property into which sound, not originating therefrom, is traveling.

Residence means any occupied room or rooms connected together containing sleeping facilities, including single- and multiple-family homes, townhomes, apartments, condominium units, and hotel and motel rooms.

Sound source means the place from which sound emanates, including without limitation a speaker, loudspeaker, or other sound-producing instrument, motor vehicle, person, animal or bird.

Special master means a hearing officer appointed pursuant to chapter 26 of this Code.

Uninvited noise means noise not originating on the receiving property.

(Ord. No. 4136-08, § 1, 4-21-2008)

Sec. 34-35. Noises; unnecessary and excessive prohibited.

It shall be unlawful for any person to make, continue, or cause to be made or continued any unreasonably loud, excessive, unnecessary or unusual noise. The following acts, among others, are declared to be unreasonably loud, excessive, unnecessary or unusual noises in violation of this section, but this enumeration shall not be deemed to be exclusive, namely:

(1) *Horns, signaling devices, etc.* The sounding of any horn or signaling device on any automobile, motorcycle, bus or other vehicle on any street or public place of the city, except as a danger warning; the creation by means of any such signaling device of any unreasonably loud or harsh sound; and the sounding of any such device for any unnecessary and unreasonable period of time.

(2) *Radios, televisions, phonographs, etc.* The using, operating, or permitting to be played, used or operated any radio receiving set, television set, musical instrument, phonograph, or other machine or device for the producing or reproducing of sound in such manner as to disturb the peace, quiet and comfort of the neighboring inhabitants, or at any time with louder volume than is necessary for convenient hearing for the person or persons who are in the room, vehicle or chamber in which such machine or device is operated and who are voluntary listeners thereto. The operation of any such set, instrument, phonograph, machine or device between the hours of 11:00 p.m. and 7:00 a.m. in such manner as to be plainly audible at a distance of 100 feet from the building, structure or vehicle in which it is located shall be prima facie evidence of a violation of this section.

(3) *Animals, birds, etc.* The owning, harboring, possessing or keeping of any dog, animal or bird which causes frequent, habitual or long continued noise which is plainly audible inside of a receiving property across a property line or in such manner as to disturb the peace, quiet and comfort of the neighboring inhabitants.

(4) *Whistles.* The blowing of any locomotive whistle or whistle attached to any stationary boiler except to give notice of the time to begin or stop work or as a warning of fire or danger or upon request of the proper municipal or county authorities.
(5) *Exhausts.* The discharge into the open air of the exhaust of any steam engine, stationary internal combustion engine, or motor vehicle except through a muffler or other device which will effectively prevent unreasonably loud or explosive noises therefrom.
(6) *Defect in vehicle or load.* The use of any automobile, motorcycle, jet ski, water bike, recreational vehicle, dirt bike or motor vehicle so out of repair, so loaded or in such manner as to create unreasonably loud or unnecessary grating, grinding, rattling or other noise within a residential area.
(7) *Schools, courts, houses of worship.* The creation of any excessive or unreasonably loud noise on any street adjacent to any school, institution of learning, house of worship or court while the same are in use, which unreasonably interferes with the workings of such institutions, or which disturbs or unduly annoys the inhabitants of such facilities, provided conspicuous signs are displayed in such streets indicating that it is a school, house of worship or court street.
(8) *Hawkers, peddlers.* The shouting and crying of peddlers, hawkers, and vendors which disturbs the peace and quiet of the neighborhood.
(9) *Noises to attract attention.* The use of any drum, loudspeaker or other instrument or device for the purpose of attracting attention by creation of any unreasonably loud or unnecessary noise to any performance, show, sale, display or advertisement of merchandise.
(10) *Loudspeakers, etc.* The use or operation on or upon the public streets, alleys and thoroughfares anywhere in this city for any purpose of any device known as a sound truck, loud speaker or sound amplifier or radio or any other instrument of any kind or character which emits therefrom loud and raucous noises and is attached to and upon any vehicle operated or standing upon such streets or public places aforementioned.
(11) *Power tools and landscaping equipment.* The operation of noise-producing lawn mowers, lawn edgers, weed trimmers, blowers, chippers, chain saws, power tools and other noise-producing tools which are used to maintain or at a residence out-of-doors between 8:00 p.m. and 7:00 a.m.
(12) *Shouting.* Any unreasonably loud, boisterous or raucous shouting in any residential area.
(Ord. No. 4136-08, § 1, 4-21-2008)

Sec. 34-36. Responsibility for compliance.

For purposes of this article, any person owning or having responsibility for management of a premises, however temporarily, any performer or disc jockey producing sound upon any premises, any person playing music, any person having control or volume knobs or levels, and the business as named on the occupational license, if applicable, shall be jointly and severally liable for compliance with this article and shall be responsible for any violations of this article.
(Ord. No. 4136-08, § 1, 4-21-2008)

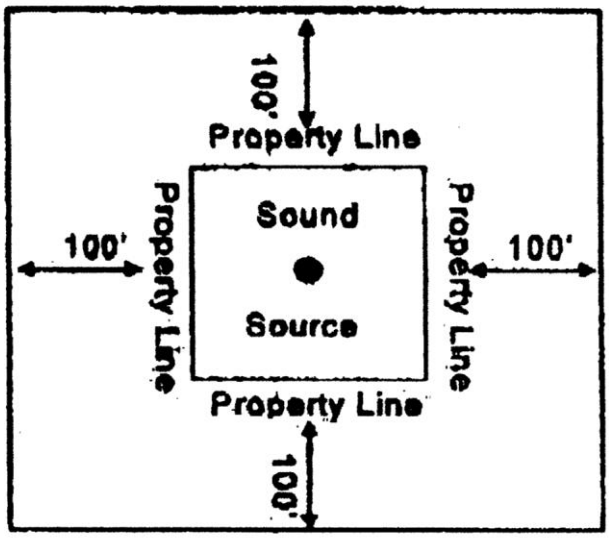
Sec. 34-37. Noise level in specific area.

(a) *Purpose.* The purpose of these regulations is to allow for areas of the city where the ambience contributes to the enjoyment by residents and visitors of uses that feature the serving of food and beverages accompanied by outdoor live and pre-recorded musical entertainment.
(b) *Boundaries.* The area for which this section applies shall be located as follows: the southern right of way line of Banyan Boulevard from Tamarind Avenue to North Flagler Drive shall be the northern boundary line; the northern right of way line of Okeechobee Boulevard from Tamarind Avenue to North Flagler Drive shall be the southern boundary line; the eastern right of way line of North Flagler Drive shall be the eastern boundary line; and the western

building line of Tamarind Avenue shall be the western boundary line. This area shall be referred to as the downtown area.

(c) *Limitation on noise volume.*

(1) For purposes of enforcement of this article, the following definition of "unreasonably loud" shall apply for all noises originating within the area as described in subsection (b) of this section: Uninvited noise shall be deemed unreasonably loud if it is plainly audible at a distance greater than 100 feet away from the property line of the sound source. The 100 feet distance from a sound source shall be measured in a straight line from any point on the property line of the sound source as shown in the accompanying illustration.



(2) All procedures for enforcement of violations of the noise limitations in subsection (c)(1) of this section and for appeals of notices of violations issued by code enforcement officers shall be as set forth in this article.

(d) *No variances granted.* No variances shall be granted from the permissible volume limitations set forth in subsection (c) of this section.

(e) *Applicability of zoning provisions.* The regulations set forth in this section shall be supplementary to all other provisions, and the zoning regulations set forth in chapter 94 shall continue to apply within the area.

(Ord. No. 4136-08, § 1, 4-21-2008)

Sec. 34-38. Sound limitations for health care facilities.

(a) No person shall produce, cause to be produced, or allow to be produced, by any means, any amplified sound, operate or play any radio, phonograph, stereo set, tape or CD player, television, sound amplifier, or other electronic audio device that produces or reproduces amplified sound on any public street or sidewalk or from private property within 100 feet of any portion of a building housing a health care facility or any other institution reserved for the sick or infirmed, provided that the public streets or sidewalks adjacent to such facilities shall be clearly marked by conspicuous signs identifying those areas. "Health care facility" as used in this subsection, includes, but is not limited to, hospitals, physicians' offices, walk-in medical centers, medical diagnostic centers, surgical centers, and facilities which arc licensed, certified or otherwise authorized to perform medical procedures in this state and to provide health services. "Health care facility" shall not include residential homes, convalescent homes or other facilities that provide long term residency. Any health care facility that identifies the facility as being located in a quiet zone in accordance with subsection (b) below shall be subject to the same

limitations on amplified sound described in this section within 100 feet of any portion of the building housing such health care facility.
(b) It shall be the duty of each health care facility or owner of such establishment to erect and maintain lampposts or signs in some conspicuous place on every street, avenue or alley in the vicinity of every health care facility, public or private, indicating that the same is a "Quiet Zone." The signs which must meet and conform with the city's sign code shall be placed on such streets, avenues or alleys upon which a health care facility is situated and shall read in a manner similar to, but not restricted to, the following: "Hospital -- Quiet Zone."
(Ord. No. 4136-08, § 1, 4-21-2008)

Sec. 34-39. Temporary permits.

(a) The mayor is authorized to issue a temporary permit to allow noise when produced by a temporary use or activity as provided in this section. The mayor may prescribe any reasonable conditions necessary to minimize any adverse effect upon the community. A permit granted under this article shall contain all conditions upon which the permit has been granted, including the period of time for which the permit has been granted. Such relief may be granted in the following situations:
(1) *Code compliance in progress.* When an applicant is utilizing best efforts to comply with the noise restrictions in this article, but additional time is required for the applicant to modify his activity to comply and no reasonable alternative is available to the applicant. Such permits may be granted for a period of time not to exceed ten days.
(2) *Construction.* When construction activities pursuant to a valid building permit cannot be carried out in a manner which would comply with sections 34-35 and 34-38; provided that all equipment shall be operated in accordance with manufacturers specifications, shall be in good repair and shall utilize all noise baffling methods as specified by the manufacturer, and further provided that such activities shall occur only as follows:
a. Between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday; between the hours of 8:00 a.m. and 8:00 p.m., Saturday and Sunday.
b. Notwithstanding the provisions set forth in subsection (a)(2)a. of this section, the building official may authorize any construction activity at a particular site earlier than 7:00 a.m. and/or later than 8:00 p.m. The work authorized by the building official pursuant to this subsection (a)(2)b. may be conditioned upon notice to surrounding property owners and tenants.
(3) *Special events.* When the applicant seeks to hold an activity or special event for which a permit is required by chapter 78, article VI, of this Code relating to special events and has met all of the city's requirements for obtaining such permit, and the activity or special event cannot be performed or held in a manner that would comply with sections 34-35 and 34-38. This section shall also apply to private entities holding leases for use of city owned property within the city.
(b) Failure to comply with any condition of a temporary permit issued pursuant to this section shall constitute a violation and shall result in enforcement procedures and penalties as set forth in sections 34-41 and 34-42.
(Ord. No. 4136-08, § 1, 4-21-2008)

Sec. 34-40. Exemptions.

The following uses and activities shall be exempt from the requirements of sections 34-35 and 34-38 and from the enforcement procedures in this article:
(1) Cries for emergency assistance and warning calls, including any animal or bird giving a sound of danger or warning under particular circumstances reasonably requiring the need for warning.

(2) Radios, sirens, horns and bells and other sounds created by police, fire and other emergency response vehicles.
(3) Parades, fireworks displays, special events and other activities for which a permit has been obtained from the city, pursuant to section 34-39, within such hours and in accordance with such restrictions as may be imposed as conditions for the issuance of the permit.
(4) Activities on or in municipal and school athletic facilities and on or in publicly owned property and facilities, including public plazas within community development districts ("CDD plazas"), when such activities have been authorized by the public authority owning the properties or facilities or their agents; except where such publicly owned properties other than CDD plazas are under private operation pursuant to a lease or concession agreement.
(5) Fire alarms and burglar alarms, bells and chimes of churches or other religious institutions; however false burglary alarms shall be subject to enforcement procedures and penalties as set forth in chapter 46, article II, of this Code.
(6) Locomotives and other railroad equipment and aircraft, to the extent that city regulation is preempted by federal law.
(7) Noises resulting from emergency work.
(8) Any noise resulting from activities of a temporary duration permitted pursuant to section 34-39.
(9) Noise generated by motor vehicles as defined in F.S. § 320.01 when operated and equipped in accordance with requirements set forth in the Florida Statutes.
(10) Noise resulting from the operation of vessels when operated in compliance with the decibel limitations in F.S. § 327.65. However, noise exceeding the limitations set forth in F.S. § 327.65 shall be subject to enforcement and penalties as set forth in F.S. Ch. 327.
(Ord. No. 4136-08, § 1, 4-21-2008)

Sec. 34-41. Enforcement by code enforcement officers; notice of violation.

(a) If a code enforcement officer receives a complaint from a complainant regarding a violation of this article, he shall investigate the complaint and determine whether the violation exists. If the code enforcement officer observes a violation of this article, the inspector shall inform the violator that he must immediately cease the violation and will be subject to additional penalties if the violation continues and issue a notice of violation to the violator as provided in chapter 26 of this Code. The notice shall inform the violator of the:
(1) Name of the violator.
(2) Date and time of violation.
(3) Nature of the violation.
(4) Amount of fine for which the violator may be liable pursuant to section 34-42 of this Code or as otherwise provided by law.
(5) Instructions and due date for paying the fine.
(6) Notice that the violation may be appealed by requesting an administrative hearing within ten days after service of the notice of violation, that failure to do so shall constitute an admission of the violation and waiver of the right to a hearing, and that unpaid fines will result in the imposition of liens which may be foreclosed by the city.
(b) The notice shall also inform the violator that repeat violations of this article will result in the imposition of larger fines and may also result in revocation of occupational license and/or certificate of use and/or injunctive proceedings as provided by law.
(Ord. No. 4136-08, § 1, 4-21-2008)

Sec. 34-42. Fines and penalties for violation; appeals; alternate means of enforcement.

(a) The following civil fines shall be imposed for violations of this chapter:

(1) First offense, $250.00 fine.
(2) Second offense (within one year of the first offense) and each offense thereafter, $1,000.00 fine.

For purposes of this section, "offense" shall mean a notice of violation that has not been contested timely or a finding of violation by a special master. A person may receive a separate notice of violation once every hour if a violation has occurred at any time within that period. Each notice of violation shall constitute a separate offense for which a separate fine may be imposed.

(b) A violator who has been served with a notice of violation shall elect either to:
(1) Pay the civil fine in the manner indicated on the notice; or
(2) Request an administrative hearing before a special master to appeal the decision of the code inspector that has resulted in the issuance of the notice of violation.
(c) The named violator shall request an administrative hearing before the special master by filing a written request for hearing with the special master's office within ten days of the date of the notice of violation. A courtesy notice shall be provided to the complainant of any hearing regarding the notice of violation, and the complainant may testify at such hearings. Failure to give such notice shall not be a cause for continuance or cancellation of any scheduled hearing of the matter.
(d) If the named violator after notice fails to pay the civil fine or fails to timely request an administrative hearing before a special master, the special master shall be informed of such failure by report from the code enforcement officer. Failure of the named violator to appeal the notice of violation within the prescribed time period shall constitute a waiver of the violator's right to administrative hearing before the special master. A waiver of the right to an administrative hearing shall be treated as an admission of the violation and penalties may be assessed accordingly.
(e) Any party aggrieved by the decision of a special master may appeal that decision to a court of competent jurisdiction as provided in F.S. § 162.11.
(f) The city may institute proceedings in a court of competent jurisdiction to compel payment of civil fines. A certified copy of an order imposing a civil fine may be recorded in the public records and thereafter shall constitute a lien upon any other real or personal property owned by the violator and it may be enforced in the same manner as a court judgment by the sheriffs of this state, including levy against the personal property, but shall not be deemed to be a court judgment except for enforcement purposes. After three months from the filing of any such lien that remains unpaid, the city may foreclose or otherwise execute on the lien.
(g) As an alternative or additional means of enforcement, the city may institute proceedings to revoke or suspend an occupational license and/or certificate of use or seek injunctive relief. In cases of recurring violations, the code enforcement officer may issue a citation for prosecution before the special master as provided in this chapter wherein, upon a finding of violation by the special master, a per diem fine may be imposed. A violation shall be considered recurring when a person or entity has received three notices of violation within a period of one month.
(h) As a further alternative or additional means of enforcement, the city may employ the alternative code enforcement procedures for a civil infraction described in chapter 26, article III of this Code.
(Ord. No. 4136-08, § 1, 4-21-2008)

Sec. 34-43. Motor vehicle alarms.

(a) *Definition.* The following term shall have the following meaning for purpose of this section:
Alarm system means a motor vehicle siren or home alarm system contained in or appurtenant to a motor vehicle, designed to activate and sound in the event of a break-in or attempted break-in of the vehicle.

(b) *Violation generally.* It shall be unlawful for any motor vehicle equipped with an alarm system to activate and emit a siren or home noise, audible at a distance of 100 feet intermittently or continuously within a period in excess of 30 minutes. Any person who has custody of any such offending motor vehicle shall be deemed in violation of this section.
(c) *Violation deemed public nuisance.* A violation of this section on the public streets or areas within the city is hereby declared public nuisance which may be abated by the removal of such vehicle upon authorization of a law enforcement officer. Prior to removing such vehicle, the law enforcement officer shall afford the owner or custodian of such vehicle the opportunity to disconnect or deactivate the alarm system at the scene. Otherwise, the vehicle shall be removed to an authorized facility. The law enforcement agency shall ascertain the name and address of the registered owner of such vehicle and provide written notice by certified mail, return receipt requested, within 24 hours of such removal, the reason(s) for the removal, and the place where such vehicle has been removed. The fees assessed for the removal of the vehicle may be appealed by filing a complaint in the county court and posting with the court a cash or surety bond or security equal to the amount for the removal and/or storage of the vehicle to ensure the payment of such in the event the owner or custodian of the vehicle does not prevail.
(d) *Penalty.* A violation of this section on private property shall cause the person who owns or has custody of the offending vehicle to be fined $50.00. Any duly designated law enforcement officer and/or code enforcement officer is authorized and empowered to enter without force upon private property in order to detect and issue a citation or notice of violation to and upon the owner or custodian of the offending motor vehicle. The citation or notice of violation may be appealed in accordance with the procedures set forth in chapter 26 of this Code.
(e) *Exception.* It shall not be a violation of this section if it is determined by the law enforcement officer and/or code enforcement officer that the siren or horn noise has been triggered by the unauthorized opening of the hood, truck or door(s) of the vehicle, by the breaking or attempted breaking of a window or by lightning, thunderstorms, or severe weather conditions.
(Ord. No. 4136-08, § 1, 4-21-2008)

Sec. 34-44. Nuisance.

Any violation of this article shall constitute a nuisance. The city attorney may bring suit on behalf of the city or any affected citizen may bring suit in his name, against the person or persons causing or maintaining the violation, and against the owner/agent of the building or property on which the violation exists. Relief may be granted according to the terms and conditions of F.S. Ch. 60, relating to abatement of nuisances, or pursuant to section 34-42. In any such action, the city or affected citizen, if the prevailing party, shall be awarded costs, including reasonable attorneys fees.
(Ord. No. 4136-08, § 1, 4-21-2008)
Cross references: Abatement of nuisances, § 26-101 et seq.
Secs. 34-45--34-70. Reserved.

UNIFIED LAND DEVELOPMENT CODE
Palm Beach County, Florida

Ordinance 2003-067
Article 5
Section 4 Nuisances

B. Industrial Designations

Individual lots designated as Industrial on the FLUA which have a zoning designation of IL, IG, MUPD, PIPD, or SWPD are limited to industrial uses, are located 300 hundred feet or more away from connecting to legal positive outfall, and which provide either:

1. Adequate on-site lake area to store the 100 year, three day rainfall event within the limits of the lake; or
2. Store a 100 year, three day rainfall event on this site in a combination of lake and surface storage conditioned upon providing a hydrological study showing that inundation of the parking lot areas and driveways does not persist for more than 72 hours following cessation of the 100 year, three day rainfall event.

C. Security Trailers or Caretakers' Quarters Allowed In Conjunction with an Exempted Use

Any parcel meeting the above listed exemptions from the provisions of legal positive outfall shall connect to a central sewer system and shall not utilize a septic tank system.

D. Lands with Paola or St. Lucie Soil Types

Projects that are planned on lands located approximately along the I-95 corridor that consist of Paola or St. Lucie soil types which are excessively drained and have a depth to water table in excess of 8 feet, as measured from the average natural elevation of the property. In lieu of providing legal positive outfall for projects meeting the above criteria, projects shall be developed utilizing a water management system that contains the 100 year three-day storm event entirely within a designated retention area, after accounting for soil storage. Calculations showing total on-site retention shall be provided utilizing the rainfall distribution as detailed in SFWMD's Vol. IV Manual, latest edition. **[Ord. 2005 – 002]**

Section 4 Nuisances

A. General

1. Purpose and Intent

The purpose and intent of this Chapter is to regulate possible nuisances, such as excessive noise, vibration, odors, and outdoor lighting which could interfere with the peaceful enjoyment of land.

2. Applicability

This Chapter shall apply to all land in the unincorporated area of PBC, unless exempt pursuant to Article 5.E.1.E, Upgrade Agreement.

3. Conflicts

Any conflict between this Chapter and any other provision in this Code or any other Ordinance adopted by the BCC, or provision, regulation, standard, or law adopted by Statute, the more stringent shall apply.

4. Definitions

(See Art. 1.I, Definitions and Acronyms)

5. Exemptions

The following are exempt from this Chapter:

a. Transportation

Sound generated from motor vehicles legally operating on any public R-O-W regulated by F.S. Chapter 316 (Uniform Traffic Control Law). Sound generated by interstate rail carriers operating on any railroad R-O-W. Sound generated by an airport, including all airport related operations. All other uses of land preempted by applicable State of Florida or Federal laws or regulations.

b. Sanctioned Activities

Sound generated by a government sanctioned activity conducted on public land or in a public R-O-W (e.g. parades).

c. Crowd Noise

Non-amplified sound generated by a crowd noises at sporting events.

d. Research and Technology Overlay (RTO)

Sound generated from a source located within the RTO.

e. Farm Operation

Bona fide agricultural operations conforming to generally accepted agricultural and best management practices.

f. AGR District

Noise, vibration, smoke, emissions, particulate matter, and odors by farm operations conforming to generally accepted agricultural and management practices in the AGR district. **[Ord. 2005-041]**

g. Temporary, Portable Power Generators

Sound generated by temporary, portable power generators used only during periods of electrical power outages in utility distribution systems maintained by the utility service provider. **[Ord. 2005-041]**

B. Noise Limitations and Prohibitions

In addition to the maximum sound levels set forth in Table 5.E.4.B-14, Maximum Sound Levels, the following activities shall be limited or prohibited as follows:

1. Prohibitions

a. Horns

Sounding a horn or other audible signal device, except as required by law or as a warning of imminent danger. The sounding of any device for an unnecessary reason or unreasonable period of time is prohibited.

b. Parks

Operating or playing any radio, television, phonograph, musical instrument, or similar device on public land or in a public R-O-W at a distance of 100 feet from the source which generates excessive noise.

c. Amplified Sound

Operating, playing or using any loud speaker, loud speaker system, sound amplifier, radio, television, phonograph, musical instrument, or similar device which generates excessive noise at the property line of inhabited residential land. This provision shall not apply to special events but shall apply to lounges, restaurants, or nightclubs.

d. Advertising

Operating, playing, or using any device which generates excessive noise at the property line that is cast or emitted upon the public streets and sidewalks for the purpose of commercial advertising or for attracting the attention of the public.

e. Machinery and Construction Work

The operation of any machinery, demolition equipment, construction equipment, excavating equipment, power tool, equipment of semi-mechanical device, or undertaking construction work which generates excessive noise at the property line of inhabited residential land between the hours of 10:00 PM and 7:00 AM. Construction work other than minor repairs by a homeowner and work permitted to an owner builder shall be prohibited on Sunday. This restriction shall not prohibit the use of pumps or machinery which, because of their nature and purpose, are required to be in operation 24 hours a day.

f. Lawn Equipment

The operation of lawn or garden maintenance equipment or machinery which generates Excessive Noise at the property line of inhabited residential land between the hours of 10:00 PM and 7:00 AM.

2. Maximum Sound Levels

a. No person shall operate or cause to be operated any source of sound from any location in such a manner as to create a sound level which exceeds the limits set forth in Table 5.E.4.B-14, Maximum Sound Levels, for more than ten percent of any measurement period, which period shall not be less than ten minutes. Sound Level Measurement Compliance shall be determined with a Type 2 or equivalent sound level meter using the A Weighting Scale in accordance with the standards of the American National Standards Institute (ANSI). All measurements shall be made with a sound meter at or within the boundary of the complaining landowner within the property lines of the receiving land.

Table 5.E.4.B-14, Maximum Sound Levels

Receiving Land Use Type	Sound Source	Time of Day	Maximum Sound Level	
			USA	RSA
Residential	Fixed mechanical equipment	Any time	60 dB	60 dB
Residential	Permanent Generator	See Art. 5.B.1.A.18	75 dB	75 dB
Residential	All other sources	7 AM to 8 PM	60 dB	55 dB
		8 PM to 10 PM	55 dB	50 dB
		10 PM to 7 AM	50 dB	50 dB
Commercial Nonresidential	All sources	Any time	70 dB	70 dB
Non-Residential	Permanent Generator	See Art. 5.B.1.A.18	75 dB	75 dB
Ord. 2006-004				

3. Public Nuisance

a. Injunctive Relief

Any emission of noise the generation of sound from any source in excess of the limitations established in, or pursuant to, this Chapter shall be deemed and is hereby declared to be a public nuisance. Upon receipt of written complaint of violation of this Chapter, the Code Enforcement Officer may investigate and request the County Attorney to file injunctive proceedings to abate the nuisance. Such proceedings shall be cumulative and in addition to the penalties provided herein.

b. Civil Action

The generation of sound from any source not limited by this Code shall be considered a civil issue and addressed accordingly by law.

C. Vibration

1. Non-Industrial Districts

In all districts, except with an Industrial (IND) FLU designation, no use shall operate so as to produce ground vibration noticeable by a person of reasonable sensitivity at the property line.

D. Smoke, Emissions and Particulate Matter

1. General Requirements

No use or activity shall be operated except in full compliance with the standards controlling air pollution as provided in the laws of the State of Florida and the ordinances. **[Ord. 2006-004]**

2. Smoke

In all districts, unless otherwise covered by a specific visible emission limiting standard by a FDEP Rule or County Ordinance, every use shall be operated so as to prevent the emission of smoke from any source whatever, the density of which is equal to or greater than that designated as Number 1 on the Ringlemann Chart, or the opacity of which is equal to or greater than twenty percent. For the purpose of grading the density of smoke, the Ringlemann Chart, as published and used by the United States Bureau of Mines, or Method 9, as published in Rule 62-296 F.A.C., is incorporated herein by reference. All measurements shall be at the point of emission. **[Ord. 2006-004]**

3. Dust and Particulate

Every use shall be operated to prevent the emission into the air of dust or other solid particulate matter which may cause danger to land and the health of persons or animals at or beyond the lot line of the premises on which the use is located, in accordance with Rule 62-296 F.A.C. **[Ord. 2006-004]**

4. Objectionable Odors

No person shall cause, suffer, allow or commit the discharge of air pollutants which contribute to an objectionable odor in accordance with Rule 62-296 .320 (2) F.A.C. **[Ord. 2006-004]**

5. Toxic or Noxious Matter

No use shall for any period of time, discharge across the boundaries of a lot on which it is located, toxic or noxious matter in such concentrations as to be detrimental to or endanger the public health, safety, comfort, or general welfare, or cause injury or damage to persons, land, or the use of land, or render unclean the waters of the state to the extent of being harmful or inimical to the public health, or to animal or aquatic life, or to the use of such waters for domestic water supply, industrial purposes, recreation, or other legitimate and necessary uses. **[Ord. 2006-004]**

E. Outdoor Lighting

1. Purpose and Intent

Solid Waste Authority of Palm Beach County
Petition for Modification of Conditions of Certification (PA 84-20)

Appendix G
Title V Air Operating Permit
(Appendix I-1)

3582061 / FTL

MALCOLM PIRNIE

Appendix I-1. List of Insignificant Emissions Units and/or Activities.

The facilities, emissions units, or pollutant-emitting activities listed in Rule 62-210.300(3)(a), F.A.C., Categorical Exemptions, are exempt from the permitting requirements of Chapters 62-210 and 62-4, F.A.C.; provided, however, that exempt emissions units shall be subject to any applicable emission limiting standards and the emissions from exempt emissions units or activities shall be considered in determining the potential emissions of the facility containing such emissions units. Emissions units and pollutant-emitting activities exempt from permitting under Rule 62-210.300(3)(a), F.A.C., shall not be exempt from the permitting requirements of Chapter 62-213, F.A.C., if they are contained within a Title V source; however, such emissions units and activities shall be considered insignificant for Title V purposes provided they also meet the criteria of Rule 62-213.430(6)(b), F.A.C. No emissions unit shall be entitled to an exemption from permitting under Rule 62.210.300(3)(a), F.A.C., if its emissions, in combination with the emissions of other units and activities at the facility, would cause the facility to emit or have the potential to emit any pollutant in such amount as to make the facility a Title V source.

The below listed emissions units and/or activities are considered insignificant pursuant to Rule 62-213.430(6), F.A.C.

Description
Fly Ash Storage Silos
Lime Storage Silos
Ash Treatment Chemical Storage Silo
Composting Facility
Ferrous processing facility
Materials recycling facility
Woody waste recycling facility
Auto spray booth

The below activities are listed by location.

Location	Activity
Resource Recovery Facility	Emergency Diesel Generator
	Diesel Fire Water Pump
Utilities Facility	Emergency Diesel Generator
Household Hazardous Waste	Laboratory Hood
Trash Processing, Wood Waste	Grinder, Fugitive Dust From
Mulch Processing, Yard Waste	Grinder, Fugitive Dust From
Tire Cutting Operations	Diesel Generator For Segmentizer