

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

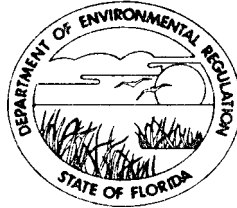
FACILITY FILE: VOLUSIA COUNTY

TOMOKA FARMS

27540

ST. JOHNS RIVER DISTRICT

3319 MAGUIRE BOULEVARD
SUITE 232
ORLANDO, FLORIDA 32803-3767



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

ALEX ALEXANDER
DISTRICT MANAGER

June 26, 1986

OSJ-SW-86-0167

Duke Woodson
Director of Resource
Management
St. John's River Water
Management District
P.O. Box 1429
Palatka, FL 32077

Volusia County - SW
Tomoka Farms Road Landfill - Class I
Application No. 121811

Dear Sir:

Please find enclosed a copy of Solid Waste Resource Recovery and Management Facility application submitted to our office on June 25, 1986. Please review the subject application and attached supporting documents and send us your comments as soon as possible.

Thank you for your cooperation.

Sincerely,

Juanitta Bader Clem
Juanitta Bader Clem
Solid Waste Section

JBC
JBC/sy

cme

cc: John Reese, DER
John Armstrong, DER
Heather Nixon

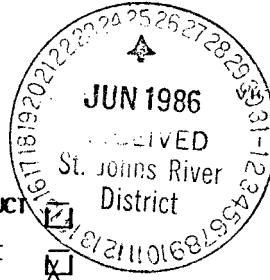
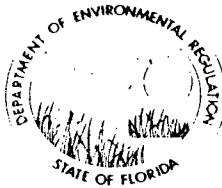
Enclosures

RECEIVED
JUL 1 1986

EA, SOLID WASTE

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 REARTHSTONE ROAD
TALLAHASSEE, FLORIDA 32301-0241



BOB GRAHAM
GOVERNOR

ROBERTA J. TSCHUNKI
SECRETARY

APPLICATION FOR PERMIT TO
CONSTRUCT
OPERATE

A SOLID WASTE RESOURCE RECOVERY AND MANAGEMENT FACILITY

GENERAL REQUIREMENTS

Solid Waste Resource Recovery and Management Facilities shall be permitted pursuant to Section 403.707, Florida Statutes, and in accordance with Florida Administrative Code Rule 17-7. A minimum of six copies of the application shall be submitted to the Department District Office having jurisdiction over the facility. Complete appropriate sections for the type of facility for which application is made. Entries should be typed or printed in ink. All blanks should be filled in or marked not applicable. The application shall include all information, drawings, and reports necessary to evaluate the facility. Information required to support the application is listed on the attached pages of this form.

Facility Type: Existing X Proposed

Sanitary Landfill:

- X Class I,
— Class II,
— Class III: Trash/yard Trash
— Class III: Yard Trash Composting

Volume Reduction:

- Composting
— Shredder
— Incinerator/Trench Burner
— Resource Recovery:
— Energy Materials

Sludge Landspreading:

- Grade I
— Grade II
— Grade III
— Septage/Food Service

FACILITY NAME: Tomoka Farms Road Landfill /
DER ID Number

FACILITY LOCATION (main entrance): Tomoka Farms Road
S 3,4,9,10 , T 16S , R 32E / Latitude 29 ° 08 ' 00 " Longitude 81 ° 05 ' 30 "
section township range

Applicant Name (operating authority): County of Volusia, Public Works Department

Street Address & P. O. Box: 136 North Florida Avenue, DeLand, Florida 32720
City County Zip

Contact Person: James L. Griffin (904) 257-6000
Name Phone Number

XXXXXXXXXX/Consultant: Briley, Wild & Associates, Inc. (904) 672-5660
Name Phone Number

Contact Person: Lee Powell 1042 N. U.S. Highway 1, P.O. Box 607 (904) 672-5660
Name Street P. O. Box Phone Number
Ormond Beach Volusia Florida 32074
City County State Zip

Landowner (if different than applicant): N/A

Address of Landowner: N/A
Street, P. O. Box City State Zip

Cities, Towns and Areas to be Served: Volusia County (eastern half)

Current and Projected Population to Served: 205335 (1986) 367379 (1992)

Acres within Waste Site Boundary: 112 Acres within Property Boundary: 846

Protecting Florida and Your Quality of Life

Volume of Solid Waste to be received: 2564 cu. yds/day ~~tons/day gallons/day~~
Date Site Ready to Received Solid Waste: Existing Estimated Life of Facility 6 years
Estimated Cost of Construction, Total: \$ Existing Estimated cost of Closing: \$ 1,870,000
Anticipated Construction Starting and Completion Dates
From: N/A To: N/A

SOLID WASTE DISPOSAL FACILITY DATA FORM

Date Form Completed: May 1986

Permit No.: _____ Issue Date: _____ Expires: _____

DER ACTION: ☐ Add ☐ Delete ☐ Change ☐ Deactivate Site

| | | | |
|--|--|--|--|
| 1. DER IDENTIFICATION NUMBER | | 2. SITE NAME Tomoka Farms Road Landfill | |
| 3. COUNTY Volusia | | 4. FACILITY ADDRESS (Road, cross road, street) Tomoka Farms Road | |
| 4a. Facility Phone Number: (904) 255-4824 | | 4b. Facility Site Supervisor Wayne Cribbs | |
| 5a. <u>29</u> ° <u>08</u> ' <u>00</u> " <u>81</u> ° <u>05</u> ' <u>30</u> " Latitude Longitude | | 5b. <u>16S</u> <u>32E</u> <u>3, 4, 9, 10</u> Township Range Section | |
| 6. Operating Authority Name County of Volusia | | 8. Operating Authority Address 136 North Florida Avenue DeLand, Florida 32720 | |
| 7. Phone Number (904) 257-6000 | | | |
| 9. Owner of Site Property (if different from operator) Same as above | | 11. Address of Owner Same as above | |
| 10. Phone Number of Owner Same as above | | | |
| 12. Facility Type <input checked="" type="checkbox"/> Class I, Sanitary Landfill <input type="checkbox"/> Class II, Sanitary Landfill <input type="checkbox"/> Class III, Trash/Yard Trash <input type="checkbox"/> Class III Yard trash comp. | | | |
| Sludge Landspreading: <input type="checkbox"/> Grade I <input type="checkbox"/> Grade II <input type="checkbox"/> Grade III <input type="checkbox"/> Septage Type <input type="checkbox"/> Other Facility | | | |
| 13. Month Year Begun 1970 | 14. Disposal Area 112 Acres | 15. Population Served 205,335 | |
| 16. Expected Useful Lifetime 28 Years | 17. Weighing Scales <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 18. Security to Prevent Unauthorized Used <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 19. Depth of Water Table 7 Ft. (NGVD) | 20. Quantity of Waste/Day tons or 2564 Yd ³ | 21. Charge \$ 10 <input checked="" type="checkbox"/> Yd/ton | |
| 22. Surrounding Land Use Zoning <input type="checkbox"/> Residential <input type="checkbox"/> None <input checked="" type="checkbox"/> Agricultural <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Other | | | |
| 23. Types of Waste Received <input checked="" type="checkbox"/> Residential <input checked="" type="checkbox"/> Agricultural <input checked="" type="checkbox"/> Yard Trash/Trash <input type="checkbox"/> Other: _____ <input checked="" type="checkbox"/> Commercial <input checked="" type="checkbox"/> Septic Tank <input checked="" type="checkbox"/> Sewage Sludge <input type="checkbox"/> Incinerator Residue <input type="checkbox"/> Industrial <input type="checkbox"/> Industrial Sludge <input type="checkbox"/> Pathological/Infectious <input checked="" type="checkbox"/> Water/Air Treat Sludge <input type="checkbox"/> Hospital | | | |
| 24. Number of Monitoring Wells 13 | | 25. Number of Surface Monitoring Points 3 | |
| 26. Gas Control / Recovery <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No / <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | 27. Salvaging Permitted <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| 28. Attendant <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |

| | | |
|---|---------------------------------------|----------------------------------|
| 29. Leachate Control Method - Liner Type: <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Emplaced Clay <input checked="" type="checkbox"/> Synthetic <input type="checkbox"/> None <input type="checkbox"/> Other _____ | | |
| Collection Method: <input type="checkbox"/> Well Point <input checked="" type="checkbox"/> Perimeter Ditch <input type="checkbox"/> None <input type="checkbox"/> Under Site Drains <input type="checkbox"/> Other _____ | | |
| Treatment Method: <input type="checkbox"/> Oxidation <input type="checkbox"/> Recirculated <input type="checkbox"/> Chemical <input type="checkbox"/> Advanced <input checked="" type="checkbox"/> None <input type="checkbox"/> Other _____ | | |
| 30. Leachate Discharge <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | Class of Receiving Water III |
| 31. Site Located in <input type="checkbox"/> Floodplain <input type="checkbox"/> Wetlands <input checked="" type="checkbox"/> Other: Flatwoods | | |
| 32. Surface Runoff Collected <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Type of Runoff Treatment Detention | Class of Receiving Waters III |
| 33. Property Recorded as a Solid waste Disposal Site in County Land Records <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 34. Days of Operation 7 | Days of Cover 7 | Hours of Operation see below |
| 35. Name, Title and Phone Number of Person Completing Form Lee A. Powell, P.E. (904) 672-5660 | | |

NOTE: All blanks must be filled or marked as not applicable.

Hours of Operation:

Monday - Friday 7:00 a.m. - 5:00 p.m.

Saturday, Sunday 8:00 a.m. - 2:00 p.m.

SOLID WASTE VOLUME REDUCTION AND RESOURCE RECOVERY FACILITY DATA FORM

Permit No.: _____ Issue Date: _____ Expires: _____

Facility No. (DER Identification): _____

DER ACTION: ☐ Add ☐ Delete ☐ Change ☐ Deactivate Site ☐ Other

| | | | |
|---|--|--|--|
| 1. County | | 2. Site Name | |
| 3. Date Form Completed | | 4. Facility Address | |
| 4a. Facility Phone No. | | 4b. Facility Site Supervisor | |
| 5a. ° ' " ° ' " | | 5b. _____ | |
| Latitude Longitude | | Township Range Section | |
| 6. Operating Authority Name | | 8. Operating Authority Address | |
| 7. Phone Number | | | |
| 9. Owner of Site Property (if different from Operator) | | 11. Address of Owner | |
| 10. Phone Number of Owner | | | |
| 12. Facility Type (check one or more) | | | |
| <input type="checkbox"/> Incinerator Only <input type="checkbox"/> Biomass Gas Production <input type="checkbox"/> Pyrolysis <input type="checkbox"/> Other: <input type="checkbox"/> Sludge Concentration <input type="checkbox"/> Baler (compactor) <input type="checkbox"/> Composting Plant <input type="checkbox"/> Transfer Station <input type="checkbox"/> Waterwall Incinerator <input type="checkbox"/> Shredder (pulverizer) | | | |
| 13. Month/Year Begun | | 14. Disposal Area Acres | |
| 15. Population Served | | | |
| 16. Expected Useful Lifetime Years | | 17. Weighing Scales <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 18. Waste Processed Per Operational Day tons/gal/yd | | | |
| 19. Charge/_____ | | 20. Days Operated S M T W T F S | |
| 21. Hours/Day Operated | | | |
| 22. Maximum Processing Rate tons/day | | | |
| 23. Material Recovered, Tons/Week | | | |
| _____ Paper _____ Glass Other: _____ Ferrous Metals _____ Non-Ferrous Metals _____ Aluminum _____ Plastics | | | |
| 24. Energy Recovery, in units shown | | | |
| _____ High Pressure Steam-lb/hr _____ Chilled Water-gal/hr _____ Gas-ft ³ /hr _____ Low Pressure Steam-lb/hr _____ Oil-gal/hr _____ Gas-BTU/hr _____ Electricity-kw/hr _____ Oil-BTU/hr Other: | | | |
| 25. Process Water Recycled <input type="checkbox"/> Yes <input type="checkbox"/> No Treatment Method Used | | | |
| Discharged to: Class Receiving Water | | | |
| <input type="checkbox"/> Surface Waters <input type="checkbox"/> Underground | | | |
| 26. Final Residue is % of waste intake Residue is disposed of at (Site Name) | | | |
| 27. Supplementary Fuel Used | | | |
| Type Quantity Used/Hour | | | |
| 28. Estimated Operating Costs Material – Energy Revenue \$ Total Cost/Ton \$ Net Cost/Ton \$ | | | |
| 29. Number of Staff 30. State Pollution Control Bond 31. Estimated Amount of Tax Exemptions Financing Amount \$ that will be Requested \$ | | | |
| 32. Name and Title of Person Completing Form | | | |

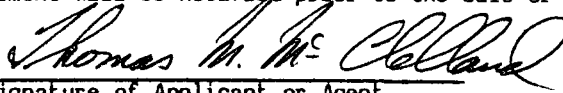
Note: All blanks must be filled or marked as not applicable.

CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

A. Applicant

The undersigned applicant or authorized representative of County of Volusia is aware that statements made in this form and attached information are an application for a

Permit from the Florida Department of Environmental Regulation and certifies that the information in this application is true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department. It is understood that the Permit is not transferable, and, the Department will be notified prior to the sale or legal transfer of the permitted facility.



Signature of Applicant or Agent

Thomas M. McClelland, Director of Public Works

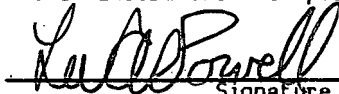
Name and title

Date: June 23, 1986

Attach letter of authorization if agent is not a governmental official, owner, or corporate officer.

B. Professional Engineer Registered in Florida or Public Officer as Required in Section 403.707 and 403.7075, Florida Statutes

This is to certify that the engineering features of this resource recovery and management facility have been designed/examined by me and found to conform to engineering principals applicable to such facilities. In my professional judgement, this facility, when properly maintained and operated, will comply with all applicable statutes of the State of Florida and rules of the Department. It is agreed that the undersigned will provide the applicant with a set of instructions of proper maintenance and operation of the facility.



Signature

Lee A. Powell

Name and title (please type)

35992

Florida Registration Number
(please affix seal)

P.O. Box 607

Mailing Address

Ormond Beach, FL 32074

City, State, Zip Code

(904) 672-5660

Telephone Number

Date: 13 Jun 86

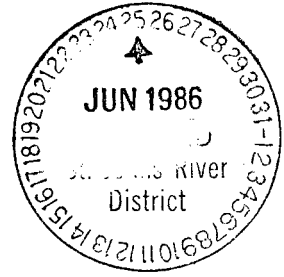
Construction Cost Estimate: _____

Permit Number: _____

Issue Date: _____

Review Date: _____

Expiration Date: _____



Operating Permit Renewal Application

for

Tomoka Farms Road Landfill

VOLUSIA COUNTY

FLORIDA

JUNE 1986

Briley, Wild & Associates, Inc.

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APPENDICES

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Introduction

Volusia County was issued a permit from the Florida Department of Environmental Regulation to operate the Tomoka Farms Road Landfill on August 5, 1981. This permit was issued based on a permit application, including a design report, a hydrogeological investigation, and a set of drawings. The landfill has been constructed and operated in accordance with that permit. It is the intention of the County to continue operating the landfill within the present active area until the final topography is achieved. The information submitted remains valid except as noted. Additional information is included in this report to reflect changes at the site and changes in the State regulations.

Service Area

The Tomoka Farms Road Landfill serves the eastern portion of Volusia County. The western portion of the County is presently served by the Plymouth Avenue Landfill in DeLand. The Plymouth Avenue Landfill permit expires in 1988. For the purposes of this report it was assumed that after that time all Class I landfill material will be taken to the Tomoka Farms Road Facility. It is expected that the Plymouth Avenue facility will be maintained as a Class III landfill

The Volusia Council of Governments has prepared population projections for Volusia County based on the U.S. Census and the University of Florida projections. These projections were prepared for the years 1990, 1995, 2000, 2010, and 2020. Using these projections and best fit interpolation between values the projected service area population is shown in Table 1.

TABLE 1

SERVICE AREA POPULATION PROJECTION

| <u>Year</u> | <u>Population</u> |
|-------------|-------------------|
| 1986 | 205,335 |
| 1987 | 207,840 |
| 1988 | 210,168 |
| 1989 | 342,547 |
| 1990 | 351,300 |
| 1991 | 359,265 |
| 1992 | 367,379 |
| 1993 | 375,337 |
| 1994 | 383,143 |
| 1995 | 390,100 |
| 1996 | 398,314 |
| 1997 | 405,687 |
| 1998 | 412,923 |
| 1999 | 420,027 |
| 2000 | 427,200 |
| 2001 | 433,846 |
| 2002 | 440,569 |
| 2003 | 447,170 |
| 2004 | 453,652 |
| 2005 | 460,018 |
| 2006 | 466,271 |
| 2007 | 472,412 |
| 2008 | 478,444 |
| 2009 | 484,369 |
| 2010 | 491,100 |
| 2011 | 495,906 |
| 2012 | 501,522 |
| 2013 | 507,038 |
| 2014 | 512,456 |
| 2015 | 517,778 |
| 2016 | 523,006 |
| 2017 | 528,140 |
| 2018 | 533,183 |
| 2019 | 538,136 |
| 2020 | 542,800 |

Wasteload Projection

In February of 1980 the site was flown to provide topographic mapping. In February of 1986 similar aerial mapping was performed. The difference in volume between the two topographic maps represents the landfill capacity consumed in the intervening six years, including compacted refuse and cover material. This number was found to be 2,368,672 cu. yd.

To determine the annual per capita landfill capacity consumed it was necessary to determine the service area population during the six year period. At the start of the period, Port Orange and Ormond Beach had waste disposal facilities serving all or portions of those communities and Holly Hill. By the end of the period both of these facilities had closed. The changing service area population was estimated on a monthly basis as shown in Table 2. The total population loading on the landfill for the six year period was found to be 929,777 capita-years.

Dividing the total volume consumed by the population loading produces a total in-place landfill loading of 2.55 cu. yd/capita/year.

The 1980 Design Report estimated the in-place solid waste loading to be 2.22 cu. yd./capita/year, with an additional 20% allowance for cover material the total loading was estimated to be 2.66. This estimate was very close to the actual measured loading of 2.55.

Multiplying 2.55 cu/c/yr times the projected service population produces the waste generation projections shown in Table 3.

TABLE 2

SERVICE AREA POPULATION

| <u>Year</u> | <u>Month</u> | <u>Service Area Population</u> | <u>Capita- Months</u> |
|-------------|--------------|------------------------------------|-----------------------|
| 1980 | 11 | 136,287 | 1,499,157 |
| 1981 | 12 | 138,901 | 1,666,812 |
| 1982 | 12 | 140,164 | 1,681,968 |
| 1983 | 10 | 141,250 | 1,412,500 |
| 1983 | 2 | 151,868 | 303,736 |
| 1984 | 9 | 153,597 | 1,382,373 |
| 1984 | 1 | 178,696 | 178,696 |
| 1984 | 2 | 197,488 | 394,976 |
| 1985 | 12 | 202,648 | 2,431,776 |
| 1986 | 1 | 205,335 | 205,335 |
| Total | 72 | | 11,157,329 |

= 927,777 capita - years

TABLE 3

TOMOKA FARMS RD LANDFILL WASTE LOADING

| YEAR | POP | WASTE LOAD CU YD/YR(1) | CUM WASTE CU YD | ELEV. (2) |
|------|---------|---------------------------|--------------------|--------------|
| 1986 | 205,335 | 523,111 | 523,111 | 53.0 |
| 1987 | 207,840 | 529,493 | 1,052,605 | 57.0 |
| 1988 | 210,168 | 535,424 | 1,588,029 | 61.0 |
| 1989 | 342,547 | 872,672 | 2,460,701 | 68.0 |
| 1990 | 351,300 | 894,972 | 3,355,673 | 77.0 |
| 1991 | 359,265 | 915,263 | 4,270,936 | 86.0 |
| 1992 | 367,379 | 935,936 | 5,206,872 | 97.0 |
| 1993 | 375,337 | 956,209 | 6,163,080 | 111.0 |
| 1994 | 383,143 | 976,094 | 7,139,174 | 128.0 |
| 1995 | 390,100 | 993,819 | 8,132,993 | 155.0 |
| 1996 | 398,314 | 1,014,743 | 9,147,737 | 0.0 |
| 1997 | 405,687 | 1,033,528 | 10,181,264 | 0.0 |
| 1998 | 412,923 | 1,051,963 | 11,233,227 | 0.0 |
| 1999 | 420,027 | 1,070,060 | 12,303,287 | 0.0 |
| 2000 | 427,200 | 1,088,335 | 13,391,622 | 0.0 |
| 2001 | 433,846 | 1,105,267 | 14,496,889 | 0.0 |
| 2002 | 440,569 | 1,122,392 | 15,619,281 | 0.0 |
| 2003 | 447,170 | 1,139,209 | 16,758,491 | 0.0 |
| 2004 | 453,652 | 1,155,724 | 17,914,214 | 0.0 |
| 2005 | 460,018 | 1,171,943 | 19,086,157 | 0.0 |
| 2006 | 466,271 | 1,187,872 | 20,274,029 | 0.0 |
| 2007 | 472,412 | 1,203,517 | 21,477,546 | 0.0 |
| 2008 | 478,444 | 1,218,885 | 22,696,431 | 0.0 |
| 2009 | 484,369 | 1,233,979 | 23,930,410 | 0.0 |
| 2010 | 491,100 | 1,251,126 | 25,181,536 | 0.0 |
| 2011 | 495,906 | 1,263,370 | 26,444,907 | 0.0 |
| 2012 | 501,522 | 1,277,677 | 27,722,584 | 0.0 |
| 2013 | 507,038 | 1,291,730 | 29,014,313 | 0.0 |
| 2014 | 512,456 | 1,305,533 | 30,319,846 | 0.0 |
| 2015 | 517,778 | 1,319,092 | 31,638,938 | 0.0 |
| 2016 | 523,006 | 1,332,410 | 32,971,348 | 0.0 |
| 2017 | 528,140 | 1,345,491 | 34,316,839 | 0.0 |
| 2018 | 533,183 | 1,358,338 | 35,675,177 | 0.0 |
| 2019 | 538,136 | 1,370,956 | 37,046,132 | 0.0 |
| 2020 | 542,800 | 1,382,837 | 38,428,970 | 0.0 |

(1) Includes cover material

(2) Existing developed site can not be filled above elev. 182 with existing boundaries and proposed side slopes.

Anticipated Life of Site

Portions of the site have been filled to elevation 75.0. Using the waste generation projections previously discussed the site could be filled to elevation 75.0 with four on one side slopes by the year 1990. By continuing to fill to elevation 100, the site may be kept in service to 1992.

Cover Material

Cover material has been taken from a borrow pit located on site immediately north of the landfill. The material in the borrow pit is a silty sand with low permeability. This pit will continue to provide cover material for the remainder of the planning period.

Leachate Control

The existing soils, as reported in the Design Report, have a low permeability with no apparent hydraulic connection to the Floridan aquifer. Plastic liners previously installed also serve to restrict the downward movement of leachate. Leachate formed by rainwater penetrating the fill is allowed to percolate into a system of internal drainage ditches. The water collected in these ditches, including leachate and on-site runoff, is pumped to a series of four ponds on the southern side of the fill. The effluent from the last pond flows to a vegetated holding area. Water from the holding area is taken to the external ditch where it is allowed to evaporate. During extreme rainfall events the external ditch may be pumped under an existing EPA discharge permit. The landfill also has a permit (IO 64-39230) from the FDER to discharge effluent from the landfill runoff and surface dewatering system.

Experience has indicated that discharge from the ditch is a rare event. A water balance was performed on the site to assist in estimating the quantity of leachate that could be expected. The balance, shown in Appendix A, confirms that potential evapotranspiration is very high and that external discharges would be required only during extended rainy seasons. It is anticipated that the new holding ponds will make it possible to further reduce the incidence of discharge.

Surface Water Management

The landfill is isolated from the surrounding land by a ditch system. The landfill is also at a higher elevation than surrounding areas, therefore surface waters from off the site do not flow onto the waste filled areas. The site has complied with all permit requirements of the St. Johns River Water Management District.

Surface water runoff from within the landfill site is collected in the internal drainage ditches and is treated along with the leachate in the ponds.

Ground Water Monitoring

The County has been monitoring ground water quality under the existing permit. The results have been submitted to FDER for review. There does not appear to be a problem of leachate contamination of surrounding ground waters.

A hydrogeologic investigation of the soils in the borrow pit and the area west of the landfill is presently in progress. Included in that investigation is a survey of the results and effectiveness of the present groundwater monitoring program. When that investigation is completed recommendations will be made to either retain the present monitoring system or modify it. At the present time no change in groundwater monitoring is proposed.

Site Operation

The landfill is operated as described in the Design Report. The operating staff is as follows:

- 1 Foremen
- 15 Equipment Operators
- 2 Mechanics
- 4 Clerical
- 3 Maintenance
- 26 Total

Equipment available at the site includes:

- 1 3 CY Hydraulic Excavator
- 1 2-1/2 CY Dragline
- 2 Compactors
- 1 Loader
- 1 23 CY Pan
- 3 Dozers
- 1 Service Truck
- 2 Mechanical Trucks
- 2 Pickup Trucks
- 2 17 CY Four Wheeled End Dump Trucks

Closure

In accordance with the requirements of Chapter 17-7, a closure schedule will be submitted to the DER one year prior to cessation of waste acceptance. The proposed final configuration of the landfill is shown on the plans accompanying this application. Minimum side slopes are 4:1 with 12-foot wide terraces located after every 12-feet of rise. Final cover shall include 18 inches of compacted material taken from the borrow pit and 6 inches of topsoil to provide a root zone for the final vegetative cover. Much of this cover will be placed prior to the time of closure as individual portions of the landfill are completed.

APPENDIX

A

APPENDIX A

1. Normal average monthly temperature at Daytona Beach, from National Oceanic and Atmospheric Administration (NOAA) 1984 Annual Summary of Climatological Data.
2. Heat Index from TABLE 1, Thornthwaite & Mather.
3. Unadjusted Daily Potential Evapotranspiration in inches from TABLE 3 and 5, Thornthwaite & Mather.
4. Mean Possible Monthly Duration of Sunlight in Units of 12 hours from TABLE 6, Thornthwaite & Mather.
5. Adjusted Potential Evapotranspiration in inches, calculated by multiplying Line 3 by Line 4.
6. Normal average monthly precipitation in inches at Daytona Beach, from NOAA 1984 Annual Summary of Climatological Data.
7. Runoff in inches, calculated by multiplying Line 6 by 0.075.
8. Infiltration in inches, calculated by subtracting Line 7 from Line 6.
9. Infiltration less the Potential Evapotranspiration in inches, calculated by subtracting Line 5 from Line 8.
10. Accumulated Potential Water Loss in inches, calculated by accumulating the negative values on Line 9.

11. Moisture retained in the soil after a given amount of accumulated potential water loss has occurred, in inches, from TABLE 16, Thornthwaite & Mather.
12. Change in soil moisture in inches, calculated by comparing the values in Line 11.
13. Actual Evapotranspiration in inches, calculated by adding Line 8 and the negative values on Line 12 and using that sum or the value on Line 5, whichever is less.
14. Percolation (leachate) in inches, calculated by subtracting Line 13 from Line 8 and subtracting any positive value on Line 12.

WATER BALANCE TOMOKA FARMS ROAD LANDFILL

[illegible]