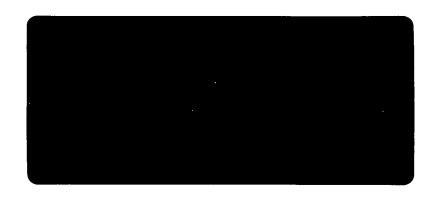
DEPARTMENT OF ENVIRONMENTAL REGULATION				
ROUTING AND	ACTION	NO		
TRANSMITTAL SLIP	ACTION	DUE DATE		
1. TO: (NAME, OFFICE, LOCATION)	l /	Initial Date		
2.		Initial Date		
3.	•	Initial		
EAUMINATED.		Date		
4. CHONEMAN LEE GUST	ENTRY	Date		
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BECKY DAVIS - FILE	 	pare Response		
DURY NAVIS	}	My Signature Your Signature		
	 	's Discuss		
	Set	Up Meeting		
\bigcap α	Inv	estigate & Report		
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JAN 09 1989

JAN 09 1989

WASTE MANAGEMENT

WACSID#39859 Permit #5009-111795

APPLICATION FOR CLOSURE

PERMIT FOR THE CITRUS

COUNTY CENTRAL LANDFILL

4009 C000 86 M JANUARY 1989

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JAN 0 9 1989

WASTE MANAGEMENT



BOARD OF COUNTY COMMISSIONERS CITRUS COUNTY

NEW CITRUS COUNTY COURTHOUSE 110 North Apopka Avenue Inverness, Florida 32650

(904) 726-8500

Reply To:

Dept. Technical Services Solid Waste Management Landfill Section P. O. Box 440 Lecanto, FL 32661-0440 (904) 746-2694

December 29, 1988

Mr. Kim Ford Environmental Specialist Solid Waste Section Dept. of Environmental Regulation 7601 Highway 301 North Tampa, FL 33637-9544

RE: CITRUS COUNTY CENTRAL LANDFILL, PERMIT #S009-111795, APPLICATION FOR CLOSURE PERMIT

Dear Mr. Ford:

As requested by your office, please find attached information necessary to complete an application to close the 60 acre site of the Citrus County Central Landfill. It should be noted that all of the additional information requested in your memo dated August 18, 1988 is included in this application package.

Should further assistance be required, do not hesitate to contact this office.

Sincerely,

James E. Barker, Jr., Dir. Div. Solid Waste Management

JEB:RM:cmh

cc: James W. Pinkerton, Dir. Dept. Technical Services Richard A. Berg, Dir. Div. of Engineering Larry M. Haag, County Attorney



BOARD OF COUNTY COMMISSIONERS CITRUS COUNTY

NEW CITRUS COURTHOUSE 110 North Apopka Avenue Inverness, Florida 32650-4290

(904) 726-8500

Reply To:

January 09, 1989

To Whom It May Concern:

This is to authorize James E. Barker, Jr., Director of Solid Waste Management Division, Department of Technical Services, to act as agent for the project known as Landfill Closure permit acquisition.

James W. Pinkerton, P.E., Director Department of Technical Services

Sworn before me to be a true and accurate document.

This 09th day of January 1989.

Notary Public, State of Florida at Large My Commission Expires March 29, 1991

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STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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



BOB GRAHAM GOVERNOR

VICTORIA J. TSCHINKEL SECRETARY

APPLICATION FOR PERMIT TO CLOSE A SOLID WASTE RESOURCE RECOVERY AND MANAGEMENT FACILITY

GENERAL REQUIREMENTS

Solid Waste Resource Recovery and Management Facilities must be permitted pursuant to Section 403.707, Florida Statutes. Separate permit applications for each type of facility, six copies each, should be submitted to the District office of the Department of Environmental Regulation. Complete appropriate sections of the application for the type of facility involved.

Applicant has the responsibility to provide copies of the application to appropriate city, county and/or regional pollution control agencies, established pursuant to Section 403.182, Florida Statutes. Applicant shall also submit the application through appropriate local planning agencies. Comments from any the these agencies shall be forwarded with the application to the Department.

The permit application shall include all information necessary to evaluate the proposed closure plan to insure the landfill will pose no significant threat to public health or the environment. All entries should be typed or printed in ink. If additional space is needed, separate, properly identified sheets of paper may be attached. All blanks shall be filled or marked as not applicable.

Facility Type:

Sanitary Landfill:	Volume Reduction:	Sludge Landapreading:
Class I, more than 50 cy or 20 tons waste/day	Composiing	Grade II
Class II, less than 50 cy or 20 tons waste/day	Transfer Station Shredder	
Class III:	Incinerator/Trench Burner	
itrash/yard trash	Resource Recovery: _Energy	Materials
FACILITY NAME: CITRUS COUNTY LANDFILL		· · · · · · · · · · · · · · · · · · ·
FACILITY LOCATION (main entrance): S.R. 44	ID number	·
sl,T19,R18/Latitude_ section township range Applicant Name (operating authority): CTTRI		°'" ASTE MANAGEMENT
Street Address (include P. O. Box): P. O.	BOX 440 LECANTO. CTT	RIS32661
Contact Person: JAMES E. BARKER, JR.		<u>746–2694 </u>
Name Authorized Agent/Consultant: JAMFS E. BAR	KER, JR. phone nu	746-2694
Mailing Address: P. O. BOX 440.	,	
	TRUS	32661
Contact Person:	county	zip
name Landowner (if different than applicant): S	TATE DIVISION OF FOREST	phone nubmer
Address of Landowner: street, P. J. Box	TATIAHASSEE FI.	zip

Protecting Florida and Your Quality of Life
DER FORM 17-7.130(10) Effective July 1, 1985
Page 1 of

REQUIRED ATTACHEMENTS FOR CLOSURE OF A RESOURCE RECOVERY AND MANAGEMENT FACILITY

LAN	OFILL:		- 070/01
	.C.): wic abbi	ications and supporting information shall include the following (17-	
ı.	A lette	er of transmittal to the Department; (17-7.030(3)(a), F.A.C.)	Completeness Check X
2.		of contents listing the main sections of the application: 130(3)(a), F.A.C.)	<u>x</u>
3.		mit fee specified in Florida Aministrative Code Rule 17-4.05 k or money order payable to the Department: (17-7.030(3)(c), F.A.C.)	N/A
4.		pies, at minimum, of the completed application form, all ing data, and reports; (17-7.030(2), F.A.C.)	X .
5.	Engine	er certification; (17-7.030(3)(g), and 17-7.073(8), F.A.C.)	XClosure Plan
6.		er's letter of appointment if applicable; 330(3)(e), F.A.C.	<u>NA</u>
7.	A capy monita monita	e plan as required in florids Administrative Code Rule 17-7.073. of a Department letter of approval of the landfill groundwater ring plan, or a copy of the letter of transmittal of the groundwater ring plan to the Department may be included in the closure plan u of the groundwater monitoring plan document.	<u>x</u> pages 5-8
8.	entry proper	f any lease agreement, transfer of property agreement with right of for long-term care, or any other agreement between operator and by owner by which the closing and long-term care of the facility affected; (17-7.030(3)(h) and 17-7.075(3)(4), F.A.C.)	<u>X</u> page 62
		ATTACHMENT ITEMS	·
·if	they ar	ing information items must be included in the application or an expla e not applicable. AN REQUIREMENTS (17-7.073), F.A.C.)	anation given
1.		l Landfill Information Report 073(1), Florida Administrative Code)	
	8.	Identification of the landfill(17-7.073(1)(a), F.A.C.)	X
	h.	Name, address, and phone number of primary contact person. (17-7.073(1)(b), F.A.C.)	-X -
	c.	Name of persons or consultants preparing closure plan (17-7.073(1)(c), F.A.C.)	<u>-x</u>
	d.	Name of landfill property owners and landfill operator (17-7.073(1)(d), F.A.C.)	<u>.x</u> .
	е.	Locations of main entrance or operators office of the landfill by: township, range, and section and latitude and longitude. (17-7.073(1)(e), F.A.C.)	X
	f.	Total acreage: of waste disposal area and landfill property (17-7.073(1)(f), F.A.C.)	<u>-x</u>
	g.	Legal Description of landfill property (17-7.073(1)(g), F.A.C.)	
	h.	History of landfill construction and operations (17-7.073(1)(h), F .	A.C.) <u>X</u>
	1.	Identity of types of waste disposal of in completed landfill (17-7.073(1)(i), F.A.C.)	<u>x</u>

2.	Area Information Report (17-7.073(2), F.A.C.)	
	a. Topogrpahy (17-7.073(2)(a), F.A.C.)	pleteness Check X
	5. Hydrology (17-7.073(2)(b), F.A.C.)	<u>X</u>
	c. Geology (17-7.073(2)(c), F.A.C.)	<u>x</u> .
	d. Hydrogeology (17-7.073(2)(d), F.A.C.)	<u>x</u>
	e. Ground and surface water quality (17-7.073(2)(e), F.A.C.)	<u>X</u>
	f. Land use information (17-7.073(2)(f), F.A.C.)	<u>X</u>
3.	Groundwater Monitoring Plan Containing Site Specific Information (17-7.073(3) and 17-4.245(6)(d), F.A.C.)	<u>X</u>
4.	Cas Migration Investigation (17-7.073(4), F.A.C.)	<u>x</u>
5.	Assessment of the Effectiveness of Existing Landfill Design and Operation (17-7.073(5), F.A.C.)	
	a. Effectiveness and results of groundwater investigation (17-7.073(5)(a), F.A.C.)	<u>x</u>
	b. Effects of surface water runoff, drainage patterns and existing sto water controls (17-7.073(5)(b), F.A.C.)	X X
	c. Extent and effects of methane gas migration(17-7.073(5)(c), F.A.C.)	X
	d. Type and condition of existing cover and effectiveness as leachate control mechanism. (17-7.073(5)(d), F.A.C.)	X
	 e. Nature and characteristics of wastes disposed of at the landfill. (17-7.073(5)(e), F.A.C.) 	x
6.	Closure Design Plan (17-7.073(6), F.A.C.)	
	a. Phasing of site closing. (17-7.073(6)(a), F.A.C)	<u>x</u> _
	b. Existing topography and proposed final grades. (17-7.073(6)(b), F.A	(.c.) <u>x</u>
	c. Final cover installation plans. (17-7.073(6)(c), F.A.C.)	<u>X</u>
	d. Proposed method of leachate control. (17-7.073(6)(c), F.A.C.)	<u>X</u>
	e. Compliance with groundwater protection requirements of 17-4.245 and 17-4.246, F.A.C. (17-7.073(6)(e), F.A.C.)	<u>x</u>
	f. Proposed method of gas and odor control. (17-7.073(6)(f), F.A.C.)	<u>X</u>
	g. Proposed method of stormweter control. (17-7.073(6)(g), F.A.C.)	<u>X</u> _
	h. Proposed method of access control. (17-7.073(6)(h), F.A.C.)	<u>x</u>
	 Proposed final use of landfill property. (17-7.073(6)(i), F.A.C.) 	X

•		O73(7), F.A.C.)	
			Completeness Check
	3.	Describe actions which will be taken to close the landfill. (17-7.073(7)(a), f.A.C.)	X_
	b.	Time schedule for completion of closure and long term care. (17-7.073(7)(b), F.A.C.)	X_
	c.	Proposed method of demonstrating financial responsibility for long term monitoring and maintenance. $(17-7.073(7)(d)$, and $17-7.077(2)(i)$, F.A.C.)	X
	đ.	Equipment and personnel needs to complete closure. (17-7.073(7)(e), F.A.C.)	<u>X</u> _
REQ	UIREMEN	ITS FOR LONG TERM CARE (17-7.075, F.A.C.)	
١.		ish Long Term Care Period From Date of Closing. 075(1) and 17-7.074(5), F.A.C.)	X_
2.		e Right of Access Agreement Between Operator and Property Owner	for Closing
		ng-ierm Care. 075(3) and 17~7.077(2)(h), F.A.C.)	X-
REQ	NUIREMEN	ITS FOR PROOF OF FINANCIAL RESPONSIBILITY (17-7.076, F.A.C)	
1.		e Cost Estimates 076(1), F.A.C.)	X

BEFORE THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of an Application for Permit by: DER File NO.: S009-111795

Mr. James W. Pinkerton, County Engineer Citrus County Board of County Commissioners 110 North Apopka Avenue Inverness, Florida 32650

INTENT TO ISSUE

The Division of Environmental Permitting hereby gives notice of its intent to issue a permit (copy attached) for the proposed project as detailed in the application specified above. The Division is issuing this Intent to Issue for the reasons stated below.

The applicant, James W. Pinkerton, County Engineer, Citrus County Board of County Commissioners, applied on October 30, 1985, to the Department of Environmental Regulation for a permit to operate a solid waste Class I sanitary landfill (approximately 50 acres), referred to as Citrus County Central Class I Sanitary Landfill, subject to the specific conditions attached, disposing of solid waste, near S.R. 44, 3 miles east of Lecanto, Citrus County, Florida.

The Department has permitting jurisdiction under Chapters 17-4.07, 17-7.030, and 17-7.070, Florida Administrative Code. The project is not exempt from permitting procedures. The Department has determined that a solid waste operation permit is required for the proposed work.

The Department intends to issue this permit based on its

PERMITTEE James W. Pinkerton PERMIT NO.: S009-111795 Citrus County Central Class I Sanitary Landfill

SPECIFIC CONDITIONS (cont'd)

- 14. At least 90 days prior to the date when wastes will no longer be accepted for active portions of the landfill, the landfill owner or operator shall submit a closure permit application to the Department. The final cover shall be placed over the entire surface of each completed portion of the filled areas within 180 days after final waste deposit date.
- The landfill owner or operator shall submit a closure permit application to the Department for inactive portions of the landfill not having final cover prior to July 1, 1985, and that will no longer receive waste. this closure permit application shall be submitted within 90 days following issuance of this permit.
- In accordance with Chapter 17-4, Florida Administrative Code (F.A.C.), the permittee has installed and placed into operation a Groundwater Monitoring System. The Groundwater Monitoring System is designed and constructed in accordance with the plans submitted on June 24, 1985 by Seaburn and Robertson, Inc. and the additional information submitted August 29, 1985.
- The groundwater monitoring wells are located as follows:

Well Number	Aquifer	Location
MW-A	Upper Floridan	Reference Permit Figure 1. Approximately in the center of the west property line.
MW-B	Upper Floridan (background)	Reference Permit Figure 1. Southeast corner
MW-C	Upper Floridan	Reference Permit Figure 1. Approximately 375 ft. north of the southwest corner.
MW-D	Upper Floridan (supply well)	Reference Permit Figure 1. Northwest corner of landfill.

If any monitoring well becomes damaged or inoperable, the permittee shall submit a written report to the Department within fourteen (14) days of discovery of the problem. Any well in which a water sample cannot be taken is considered inoperable. report shall detail what has occurred and shall include the corrective measures performed to restore the damaged well to its initial state. All monitor well design and replacement shall be approved by the Department prior to installation.

DER Form 17-1.201(5) PAGE 5 of 13.

PERMITTEE

James W. Pinkerton PERMIT NO.: S009-111795 Citrus County Central Class I Sanitary Landfill

SPECIFIC CONDITIONS (cont'd)

19. Sixty (60) days prior to the renewal of this permit, the permittee shall sample all groundwater monitor wells for the Primary and Secondary Drinking Water parameters included in Chapter 17-22. Florida Administrative Code. Public Drinking Water Systems. The specific parameters to be sampled and analyzed for are the Primary (17-22.104(1) and Secondary (17-22.104(2)) Drinking Water Standards listed in Part II. Quality Standards. Analytical Methods. Sampling.

20. All groundwater monitor wells shall be sampled Quarterly for the following parameters. However, additional sample(s), well(s) and parameter(s) may be required based upon the subsequent analysis.

PRIMARY STANDARDS

Nitrate (as Nitrogen) mg/L
Sodium mg/L
Turbidity NTU
8 Volatile Organic Compounds (VOC)* ug/L

SECONDARY STANDARDS

Chloride mg/L Color color units Copper mg/L Corrosivity Langelier Index Iron mq/L Manganese mg/L Odor mq/L рH std. units Sulfate mg/L TDS mg/L Zinc mg/L

OTHERS

Temperature °C
Total Organic Carbon (TOC) mg/L
Specific Conductance mhos
Water Levels N.G.V.D.
Fecal Coliform cts/100 ml
TKN mg/L

*One time only for MW-A

DER Form 17-1.201(5) Page 6 of 13.

PERMITTEE

James W. Pinkerton PERMIT NO.: S009-111795

Citrus County Central Class I Sanitary Landfill

SPECIFIC CONDITIONS (cont'd)

- 21. The field testing, sample collection and preservation and laboratory testing, including quality control procedures, shall be in accordance with methods approved by the Department in accordance with Chapter 17-4.246 and 17-3.401, F.A.C. Approved methods as published by the Department or as published in Standard Methods, A.S.T.M. or EPA methods shall be used. Approved methods for chemical analyses are summarized in the Federal Register. December 1, 1976 (41FR52780) except that turbidity shall be measured by the Nephelometric Method.
- 22. All groundwater monitoring analyses shall be reported on the Department Form 17-1.216(2), Quarterly Report on Groundwater Monitoring. The permittee shall submit to the Department the results of the groundwater monitoring well water quality analysis no later than the fifteenth (15) day of the month immediately following the end of the sampling period. The results shall be sent to the Department of Environmental Regulation, Southwest District Office, 7601 Highway 301 North, Tampa, Florida 33637-9544.
- 23. The permittee shall ensure that the water quality standards for Class G-II groundwaters will not be exceeded at the boundary of the zone of discharge according to Sections 17-3.402 and 17-3.404. F.A.C.
- 24. The permittee shall ensure that the minimum criteria for groundwater specified in Section 17-3.402, F.A.C. shall not be violated within the zone of discharge.

DER Form 17-1.201(5) Page 7 of 13.

GENERAL LANDFILL INFORMATION REPORT

A) IDENTIFICATION OF THE LANDFILL:

The landfill referenced in this permit application is identified as the Citrus County Central Landfill located in the center of Citrus County near Lecanto, Florida.

B) NAME, ADDRESS, AND PHONE NUMBER OF PRIMARY CONTACT PERSON:

The primary contact person for this operation is:

Mr. James E. Barker, Jr.,
Dir. Div. Solid Waste Management
P. O. Box 440
Lecanto, FL 32661-0440
(904) 746-2694

C) NAME OF PERSONS OR CONSULTANTS PREPARING CLOSURE PLAN:

The closure plan has been prepared by the Citrus County Division of Engineering under the direction of Mr. Richard A. Berg, P.E., Dir., Div. of Engineering.

D) NAME OF LANDFILL PROPERTY OWNERS AND LANDFILL OPERATOR:

The landfill property is owned by the Florida Department of Agriculture and Consumer Services, and is leased from the Division of Forestry by Citrus County Board of County Commissioners. Citrus County is the operator of the landfill site.

E) LOCATION OF MAIN ENTRANCE OR OPERATORS OFFICE OF THE LANDFILL BY: TOWNSHIP, RANGE, AND SECTION AND LATITUDE AND LONGITUDE:

The 60 acre site is legally described as being in the Southeast Quarter of Section 1, Township 19 South, Range 18 East at latitude 28 51' 08", longitude 82 26' 38".

F) TOTAL ACREAGE: OF WASTE DISPOSAL AREA AND LANDFILL PROPERTY:

The landfill is situated on a total 60 acre site, although the waste disposal areas actually take up approximately 45 acres of the total landfill site.

G) LEGAL DESCRIPTION OF LANDFILL PROPERTY:

A portion of Section 1, Township 19 South, Range 18 East being more particularly described as follows: Commence at the Southwest Corner of Lot 9, Block A, New Mayfield Acres as recorded in Plat Book 2, Page 42, Public Records of Citrus County, Florida, thence N 89° 13′ 46″ E on an Easterly projection of the South line of said Lot 9, Block A, a distance of 640.22 feet, thence S 0° 46′ 14″ E a distance of 76.67 feet to a point that is 150 feet from, measured at a right angle to, the Centerline of State Road No. 44, said point also being the Point of Beginning, thence continue S 0° 46′ 14″ E a distance of 2151.70 feet, thence S 89° 13′ 46″ W a distance of 1320 feet, thence N 0° 46′ 14″ W a distance of 1808.78 feet to a point that is 150 feet from, measured at a right angle to, the Centerline of said State Road No. 44, thence N 74° 40′ 03″ E, parallel to and 150 feet from the Centerline of State Road No. 44 a distance of 1363.81 feet to the Point of Beginning:

TOGETHER WITH an Easement for ingress and egress over the following described lands: Commence at the Southwest Corner of Lot 9, Block A, New Mayfield Acres, as recorded in Plat Book 2, Page 42, Public Records of Citrus County, Florida, thence N 89° 13′ 46″ E on an Easterly projection of the South line of said Lot 9, Block A, a distance of 640.22 feet, thence S 0° 46′ 14″ E a distance of 76.67 feet to a point that is 150 feet from, measured at a right angle to, the Centerline of State Road No. 44, said point also being the Point of Beginning, thence S 74° 40′ 03″ W, parallel to and 150 feet from the Centerline of State Road No. 44, a distance of 1363.81 feet, thence N 0° 46′ 14″ W a distance of 101.33 feet to the Southerly right-of-way line of State Road No. 44, thence N 74° 40′ 03″ E along said right-of-way line a distance of 1265.77 feet, thence N 89° 13′ 46″ E a distance of 94.90 feet, thence S 0° 46′ 14″ E a distance of 76.67 feet to the Point of Beginning.

H) HISTORY OF LANDFILL CONSTRUCTION AND OPERATIONS

The Citrus County Central Landfill received its original operation permit from the State of Florida Department of Environmental Regulation (FDER Permit No. S009-0027) on November 12, 1975. The landfill has been filled with various approved types of waste; including brush, construction debris, white goods, tires, septic and animal debris, asbestos, and household garbage. The original trenches began at the Southwest corner of the property and new trenches were constructed North of and adjacent to existing trenches as they reached maximum capacity. Once the West side of the property was filled to approximately 600 feet from U.S. Highway 44, new trenches were constructed on the Eastern half of the property. A Class III trench and

three consecutive Class I trenches were constructed on this side of the property, along with two septic disposal pits (SEE ATTACHMENT I FOR GRAPHIC DESCRIPTION OF TRENCHES).

I) IDENTITY OF TYPES OF WASTE DISPOSED OF IN COMPLETED LANDFILL:

The Citrus County Central Landfill is properly permitted to accept brush, construction debris, white goods, tires, septic sludge, animal debris, asbestos, and household garbage.

AREA INFORMATION REPORT

A) TOPOGRAPHY:

Attachment (II) is a copy of U.S. Geologic Survey Lecanto quadrangle showing the topography of the area in question.

B) HYDROLOGY:

Attachment (III) is a copy of the above with surface water drainage patterns shown. There are no hydrologic features within this area due to higher altitude and a high percolation rate.

C) GEOLOGY:

Attachment (IV) is a copy of soil bores taken on the present 60 acre site. The soil conditions encountered at the boring sites consisted of a dappled mixture of sands, clayey sands and silty sands varying in depth and density. The conditions at this site should be representative of the typical soil condition within a one mile radius of the landfill. The area in question should not contain unconsolidated deposits, major confining units or sinkholes.

D) HYDROGEOLOGY:

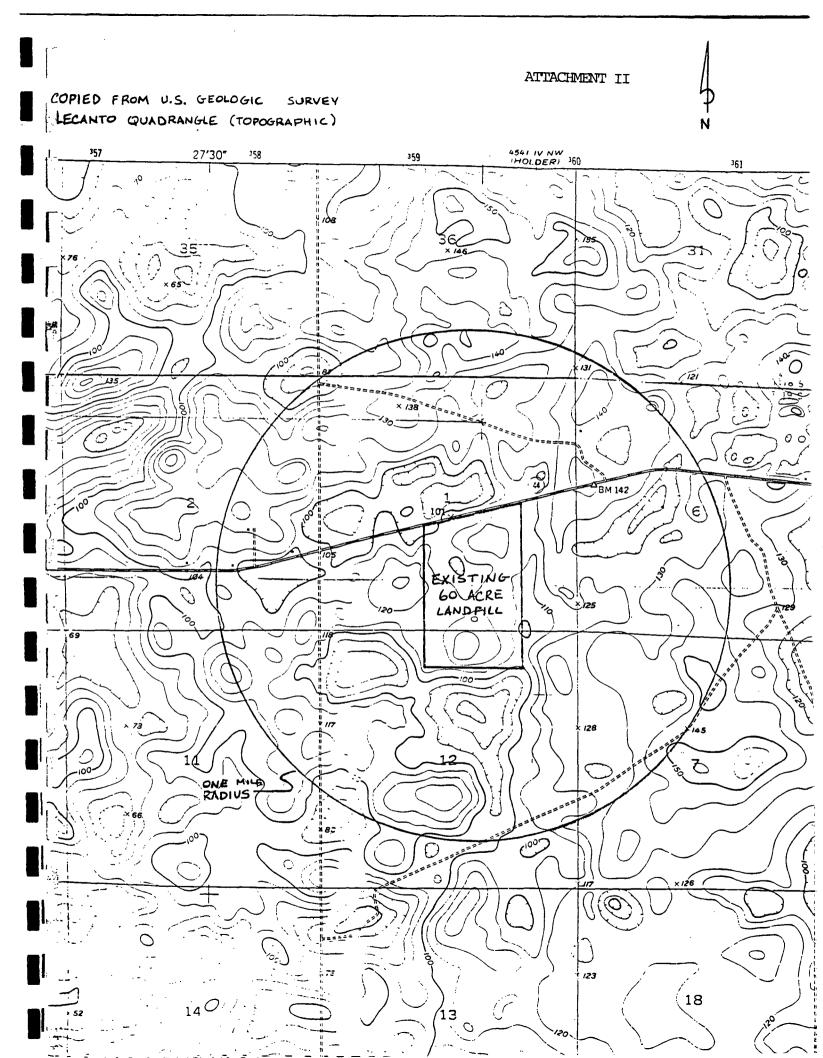
Attachment (V) is hydrogeologic information copied from the Groundwater Resource Availability Inventory for Citrus County supplied by the Southwest Florida Water Management District. The area in question is highlighted on each of the four copies. Included are thickness of the upper confining unit, depth to top of the Floridan aquifer, potable water zone thickness, and flow direction of the Floridan aquifer.

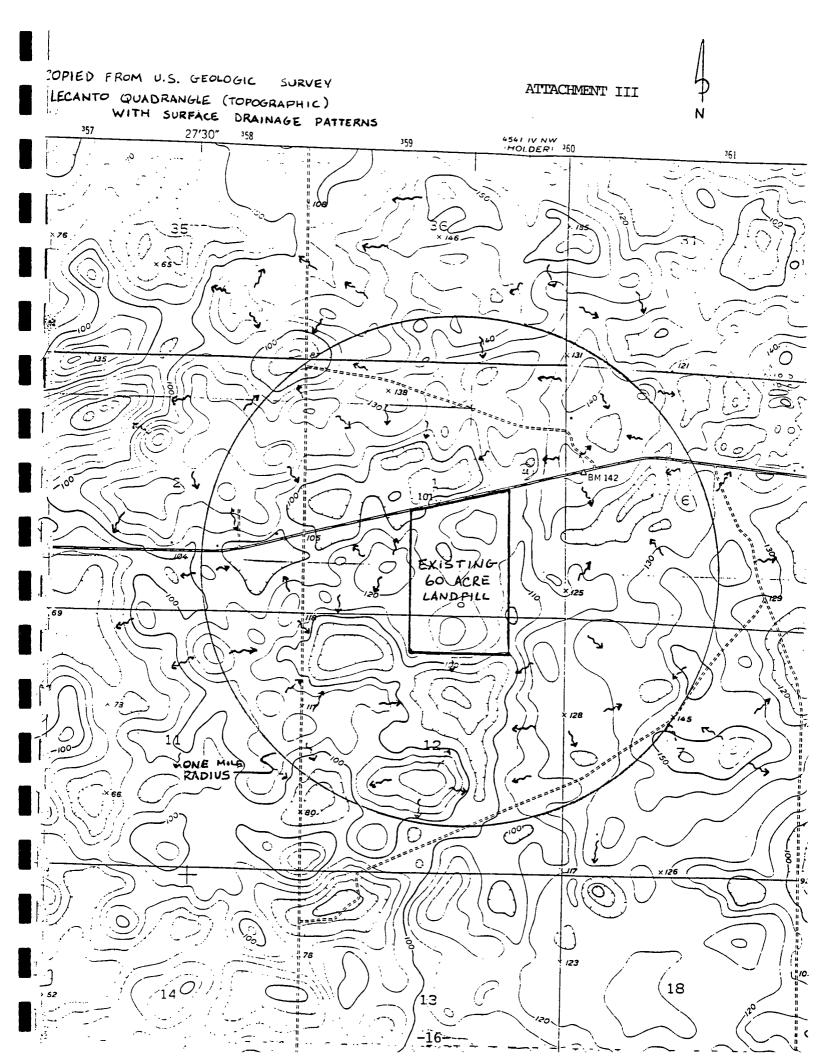
The groundwater table has been recorded at approximately 120 feet below ground elevation at the landfill site. This is representative of the area with topographic variations resulting in some changes. The groundwater typically flows from east to west. There is no recharge/discharge areas within one mile of the landfill site. There are numerous private wells north of the landfill and no public wells within the one mile radius.

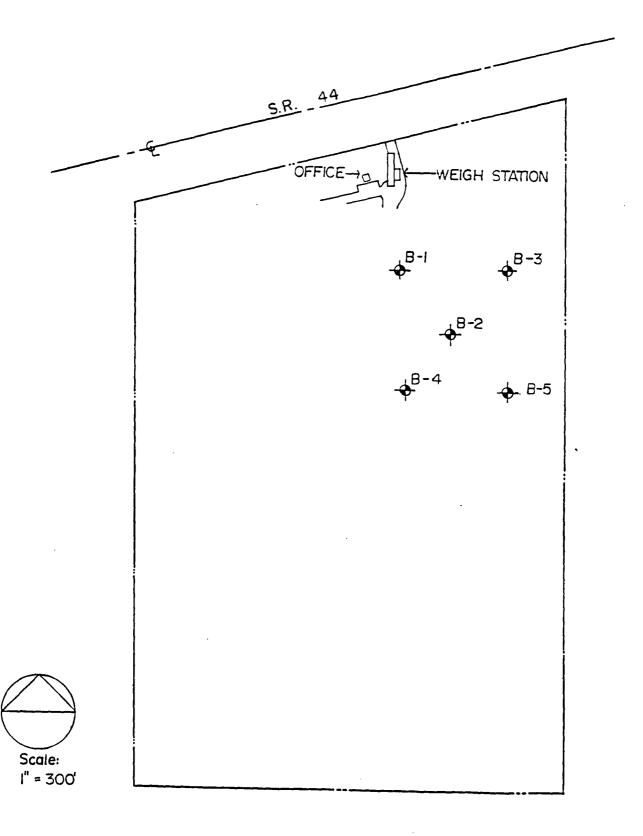
E) GROUND AND SURFACE WATER QUALITY:

Groundwater quality is addressed following Tab 6, Section A EFFECTIVENESS AND RESULTS OF GROUNDWATER INVESTIGATION.

There are no surface water bodies within a one mile radius of the landfill, hence there is no surface water quality report.







\$

TEST BORING LOCATION

CITRUS COUNTY LANDFILL



KEY TO CLASSIFICATIONS AND SYMBOLS

CORRELATION OF PENETRATION RESISTANCE WITH RELATIVE DENSITY AND CONSISTENCY

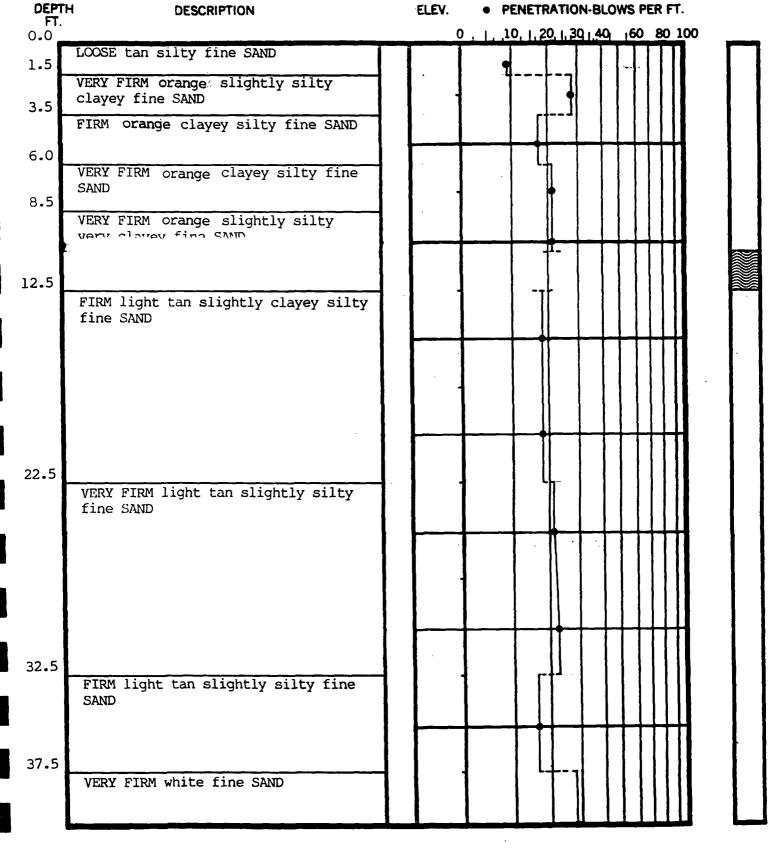
	NO. OF	BLOWS, N	RELATIVE DENSITY
	. 0	- 4	VERY LOOSE
	5	- 10	LOOSE
	11	- 20	FIRM
SAND	21	- 30	VERY FIRM
	31	- 50	DENSE
		OVER 50	VERY DENSE
			CONSISTENCY
	0	- 1	VERY SOFT
	2	- 4	SOFT
	5	- 8	FIRM
SILTS AND CLAYS	9	- 15	STIFF
	16	- 30	VERY STIFF
-	31	- 50	HARD
,		OVER 50	VERY HARD

SYMBOLS

TV

·		
		Undisturbed Sample (UD) Recovered
100/2"	-	Number of Blows (100) to Drive the Spoon a Number of Inches (2)
AX, BX, NX	-	Core Barrel Sizes Which Obtain Cores 1-1/8, 1-5/8 and 2-1/8 Inches in Diameter Respectively
65%	-	Percentage (65) of Rock Core Recovered
RQD	_	Rock Quality Designation - % of Core Segments 4 or More Inches Long
Y	_	Water Table At Least 24 Hours After Drilling
立	_	Water Table One Hour or Less After Drilling
◄	-	Loss of Drilling Water
PP	-	Pocket Penetrometer Reading in TSF (kg/cm ²)

Torvane Reading in TSF (kg/cm²)



BORING AND SAMPLING MEETS ASTM D—1586 CORE DRILLING MEETS ASTM D—2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE

C/O ROCK CORE RECOVERY

WATER TABLE, 24 HR.

BED SAMPLE

WATER TABLE, TOB

LOSS OF DRILLING WATER

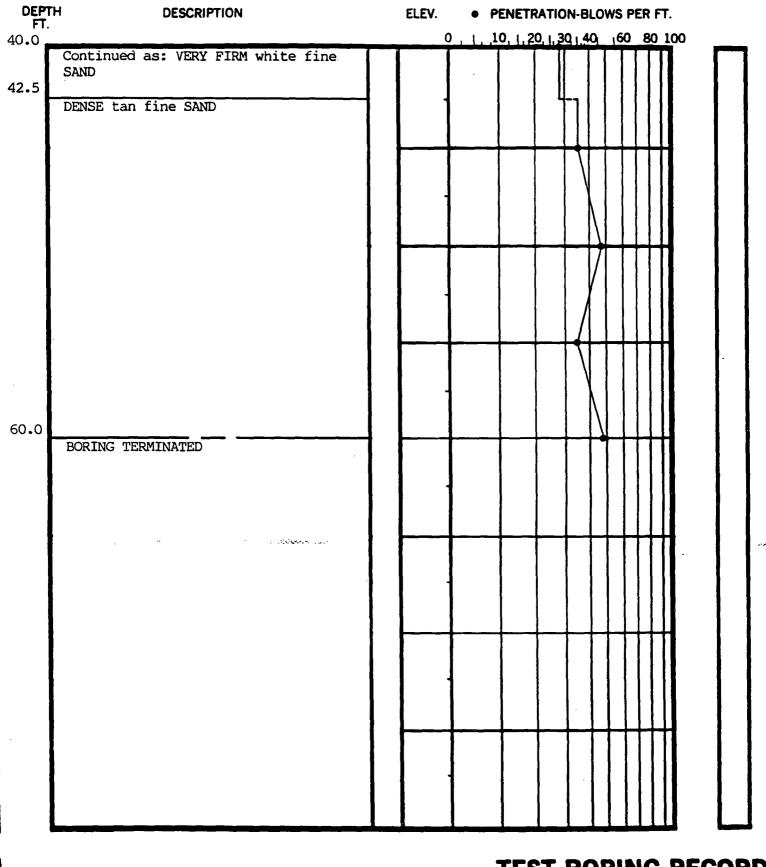
BORING NO. B-1

DATE DRILLED 12-10-86

JOB NO. T-5077

SHT. 1 OF 2

LAW ENGINEERING TESTING CO.



BORING AND SAMPLING MEETS ASTM D-1586 CORE DRILLING MEETS ASTM 0-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

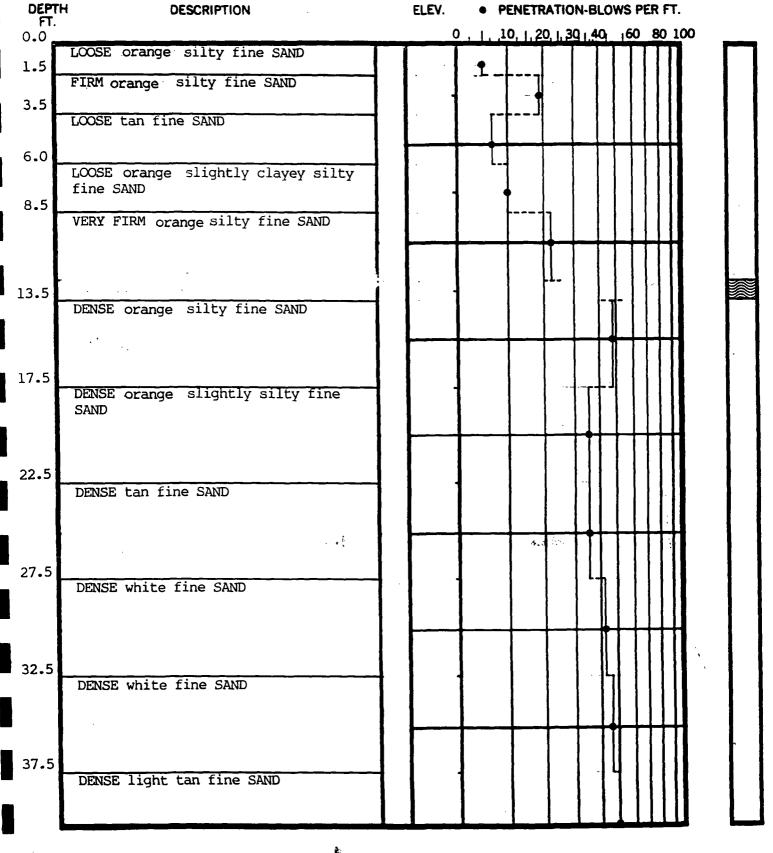
WATER TABLE, 24 HR.

UNDISTURBED SAMPLE C/O ROCK CORE RECOVERY

WATER TABLE, TOB LOSS OF DRILLING WATER

-20-

BORING NO. B-1 DATE DRILLED 12-10-86 SHT. 2 OF 2 I AW FNGINFFRING TESTING CO



BORING NO. _

BORING AND SAMPLING MEETS ASTM D—1586 CORE DRILLING MEETS ASTM D—2113

C/O ROCK CORE RECOVERY

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE ______

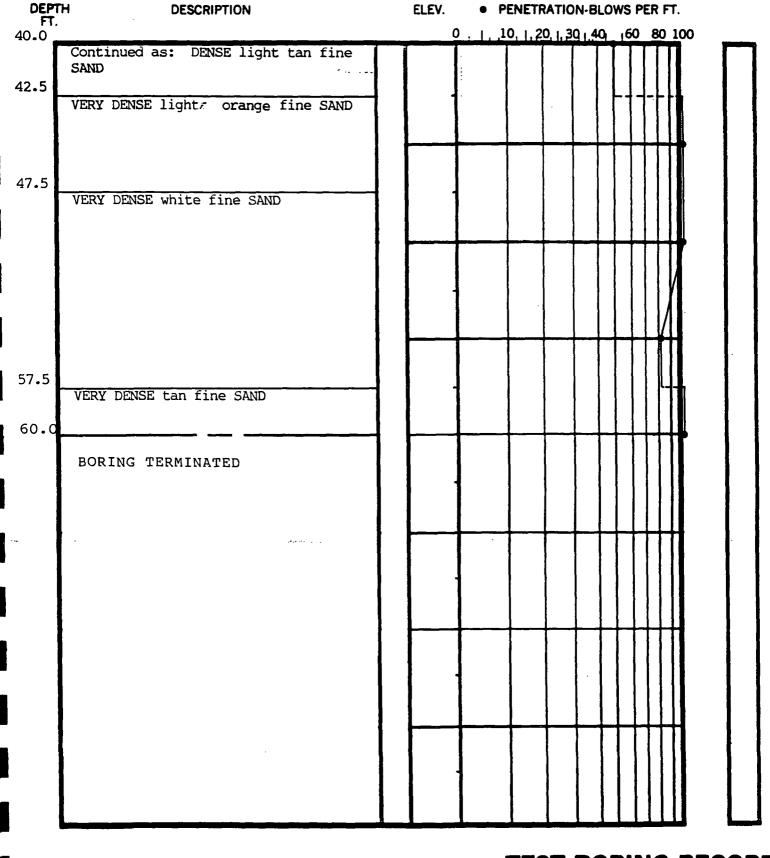
WATER TABLE, 24 HR.

WATER TABLE, TOB

JOB NO. T-5040
SHT. 1 OF 2
LAW ENGINEERING TESTING CO

B-2

LOSS OF DRILLING WATER __21_



BORING AND SAMPLING MEETS ASTM D-1586 CORE DRILLING MEETS ASTM D-2113

UNDISTURBED SAMPLE

C/O ROCK CORE RECOVERY

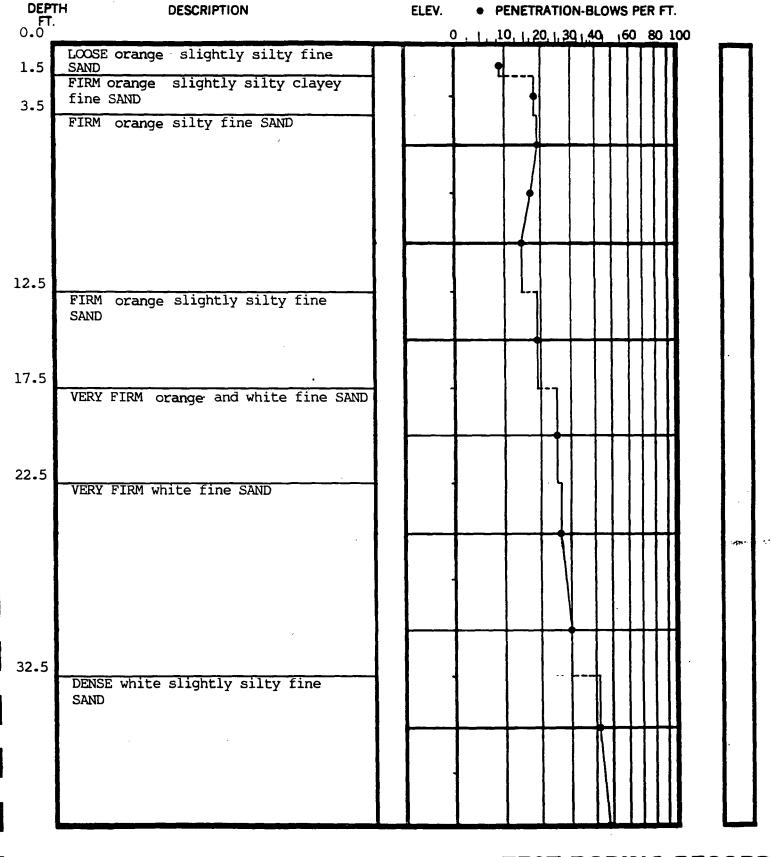
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

WATER TABLE, 24 HR.

WATER TABLE, TOB

◀ LOSS OF DRILLING WATER -22-

DATE DRILLED 12-11-86
JOB NO. T-5040
SHT. 2 OF 2
LAW ENGINEERING TESTING CO



BORING NO. ___

BORING AND SAMPLING MEETS ASTM D—1586 CORE DRILLING MEETS ASTM D—2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

WATER TABLE, 24 HR.

WATER TABLE, TOB

LOSS OF DRILLING WATER

-23-

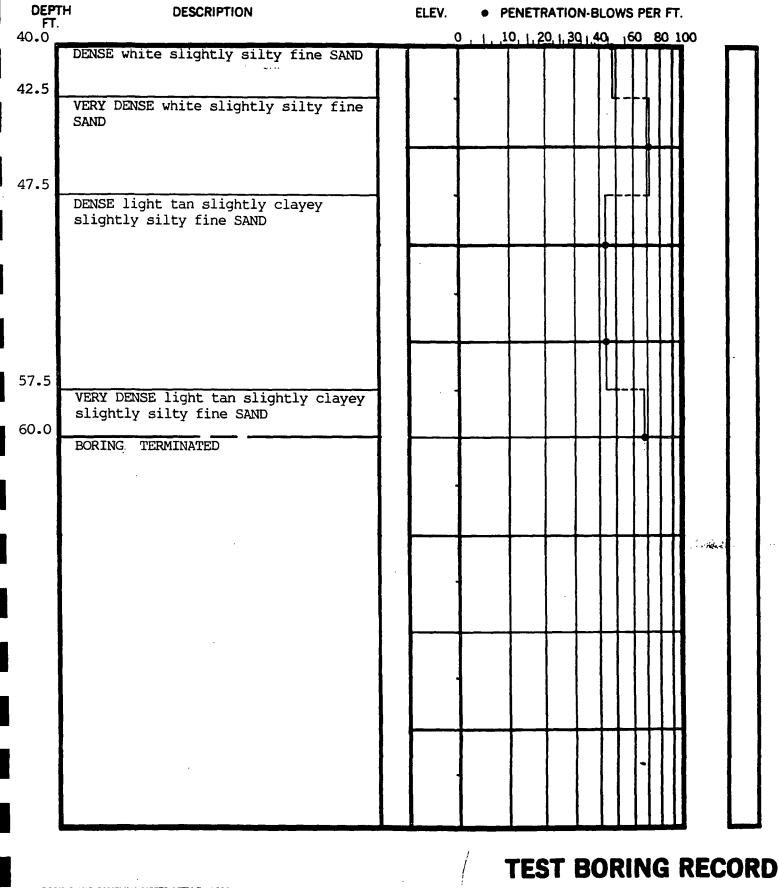
DATE DRILLED 12-12-86

JOB NO. T-5077

SHT. 1 OF 2

B-3

LAW ENGINEERING TESTING CO



BORING AND SAMPLING MEETS ASTM D-1586 CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE

C/O ROCK CORE RECOVERY

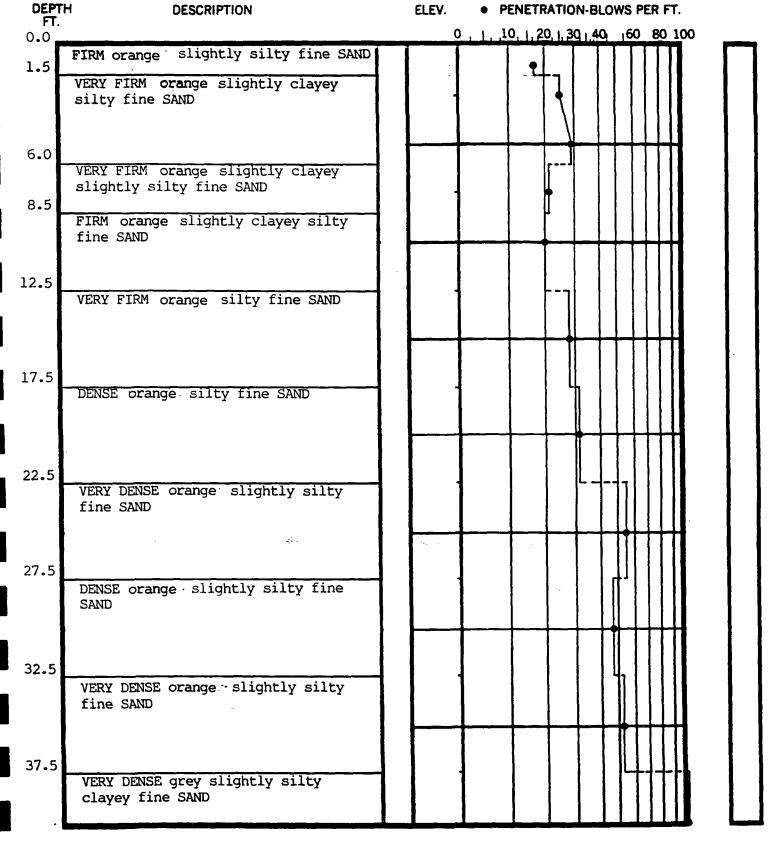
WATER TABLE, 24 HR. WATER TABLE, TOB

LOSS OF DRILLING WATER

-24-

B-3 BORING NO. _ 12-12-86 DATE DRILLED __ T-5077 JOB NO. . SHT. 2 OF 2

LAW ENGINEERING TESTING CO



BORING NO. _

BORING AND SAMPLING MEETS ASTM D-1586 CORE DRILLING MEETS ASTM 0-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE

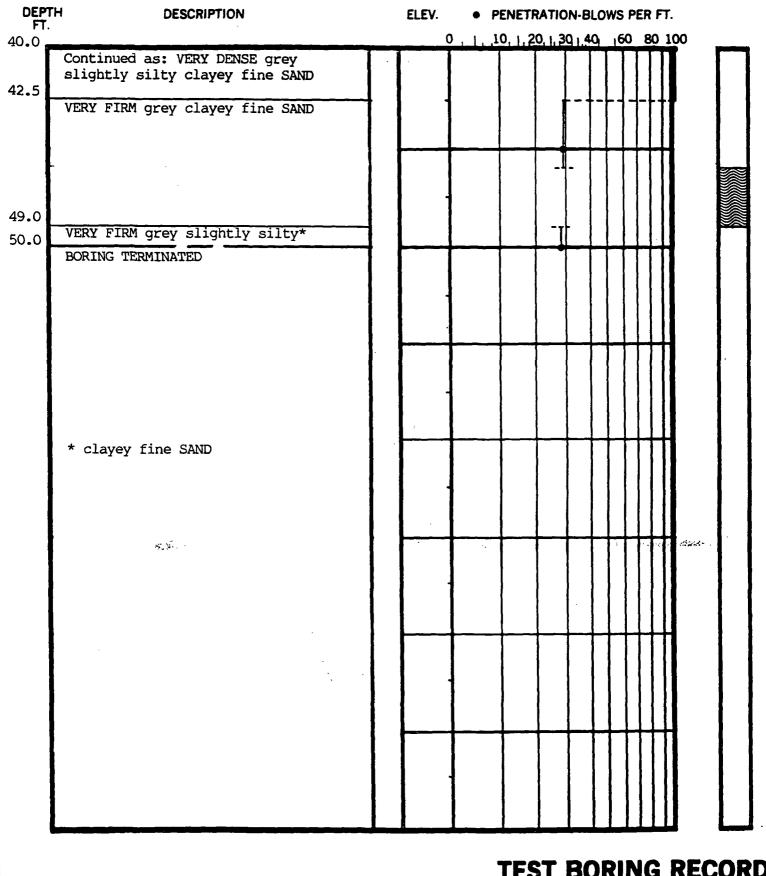
WATER TABLE, 24 HR.

C/O ROCK CORE RECOVERY LOSS OF DRILLING WATER _25_

WATER TABLE, TOB

DATE DRILLED 12-15-86 T-5077 JOB NO. _ SHT. 1 OF 2 LAW ENGINFERING TESTING CO

B-4



BORING AND SAMPLING MEETS ASTM D-1586 CORE DRILLING MEETS ASTM 0-2113

UNDISTURBED SAMPLE

C/O ROCK CORE RECOVERY

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB, HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

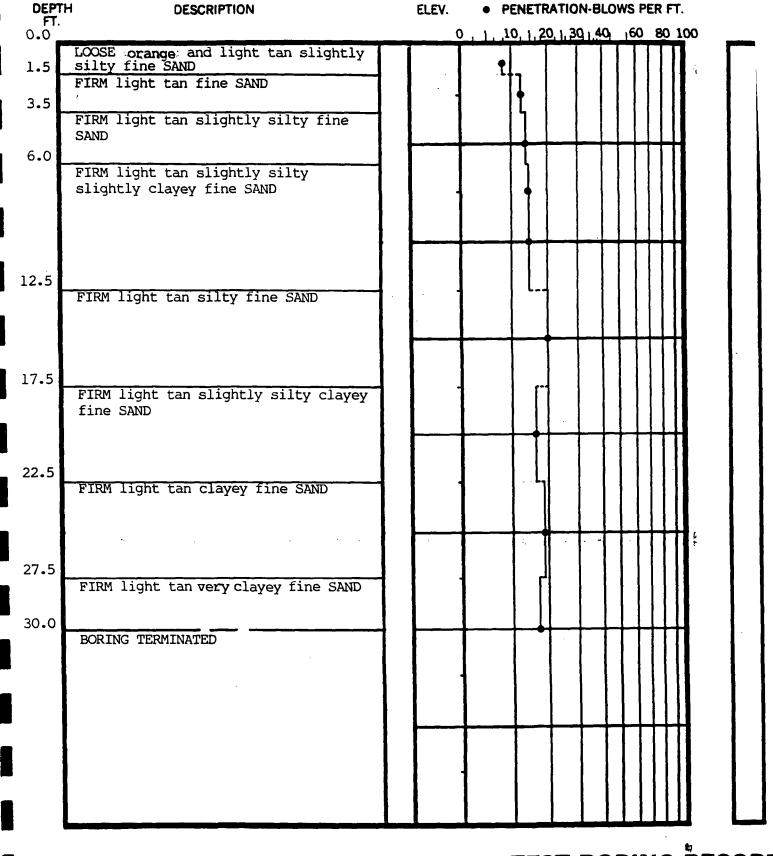
WATER TABLE, 24 HR.

WATER TABLE, TOB

LOSS OF DRILLING WATER

26

B-4 BORING NO. ___ DATE DRILLED 12-15-86 T-5077 JOB NO. _ SHT.20F2 LAW ENGINEERING TESTING CO



BORING AND SAMPLING MEETS ASTM D-1586 CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

WATER TABLE, 24 HR.

WATER TABLE, TOB

LOSS OF DRILLING WATER

B-5 BORING NO. _ DATE DRILLED 12-15-86 T-5077 JOB NO. _

C/O ROCK CORE RECOVERY

UNDISTURBED SAMPLE

I AW FNGINFEDING TESTING CO

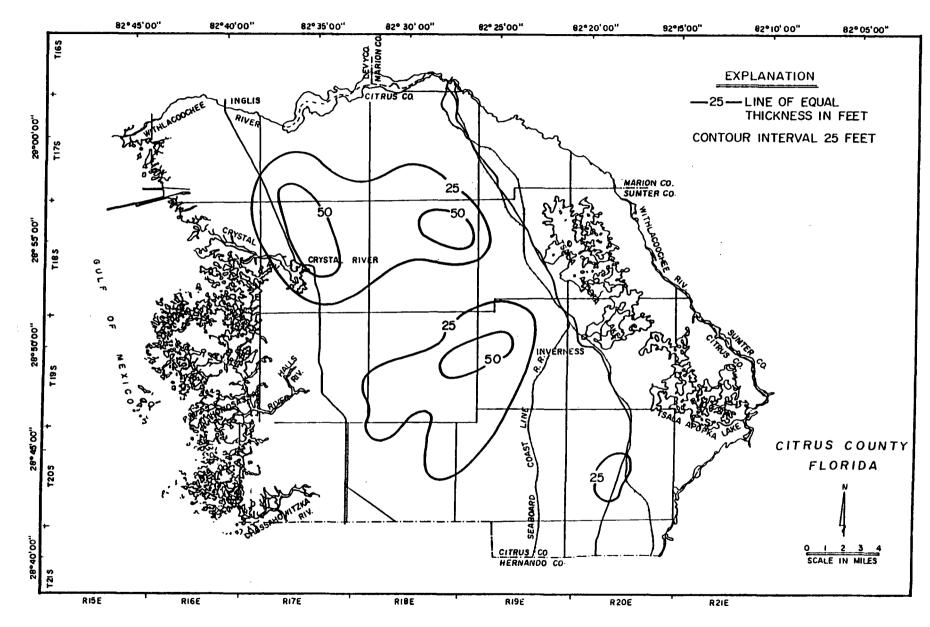


Figure 38. Thickness of the upper Confining Unit in Citrus County (from Buono and others, 1970).

Figure 39. Structure Contour Map of the Top of the Floridan Aquifer Above/Below NGVD.

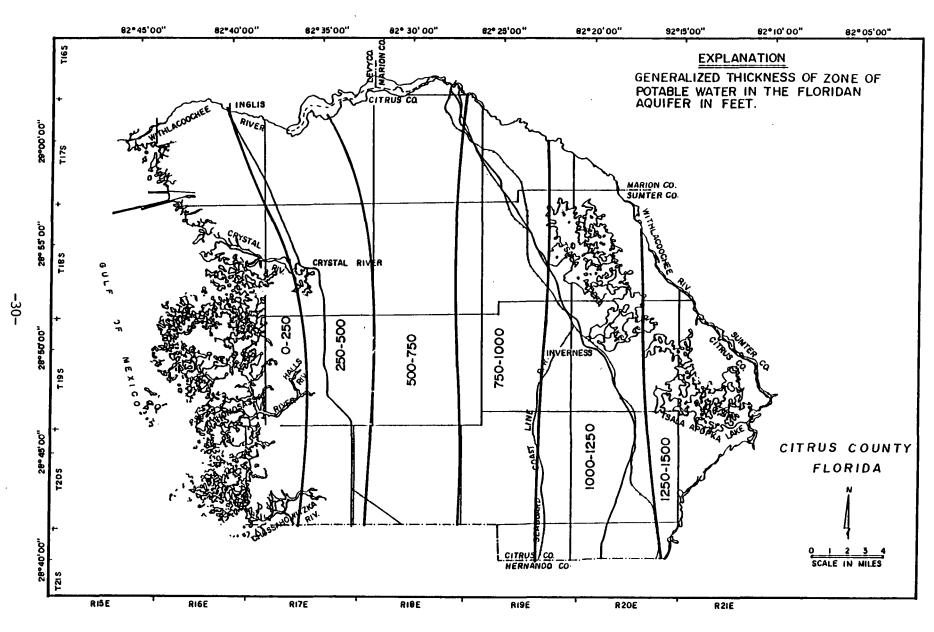


Figure 40. Thickness of the Zone of Potable Water in the Upper Floridan Aquifer (from Causey and Leve, 1976).

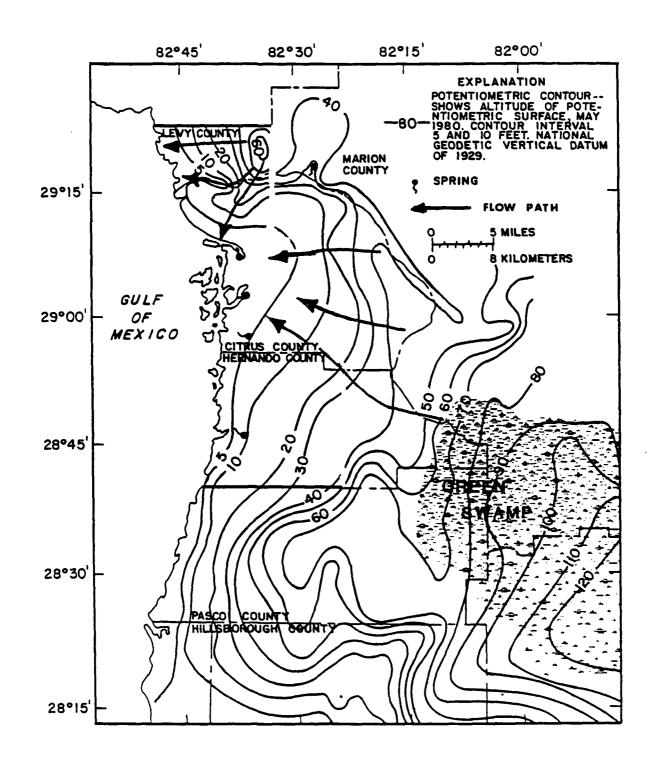


Figure 42. Potentiometric Surface of the Upper Floridan Aquifer Near Citrus County Showing Flow Paths, May 1980 (modified from Yobbi and others, 1980).

F) LAND USE INFORMATION:

Land use information is as follows:

Attachment (VI) shows highlighted adjacent properties with ownerships being:

Lot 13000, Garland Pottersfield Estate Union Building Charleston, VA 25301

Lot 12350, Henry Johansky & Florence Pitt 280 Malcolm Ave.
Garfield, NJ 07026

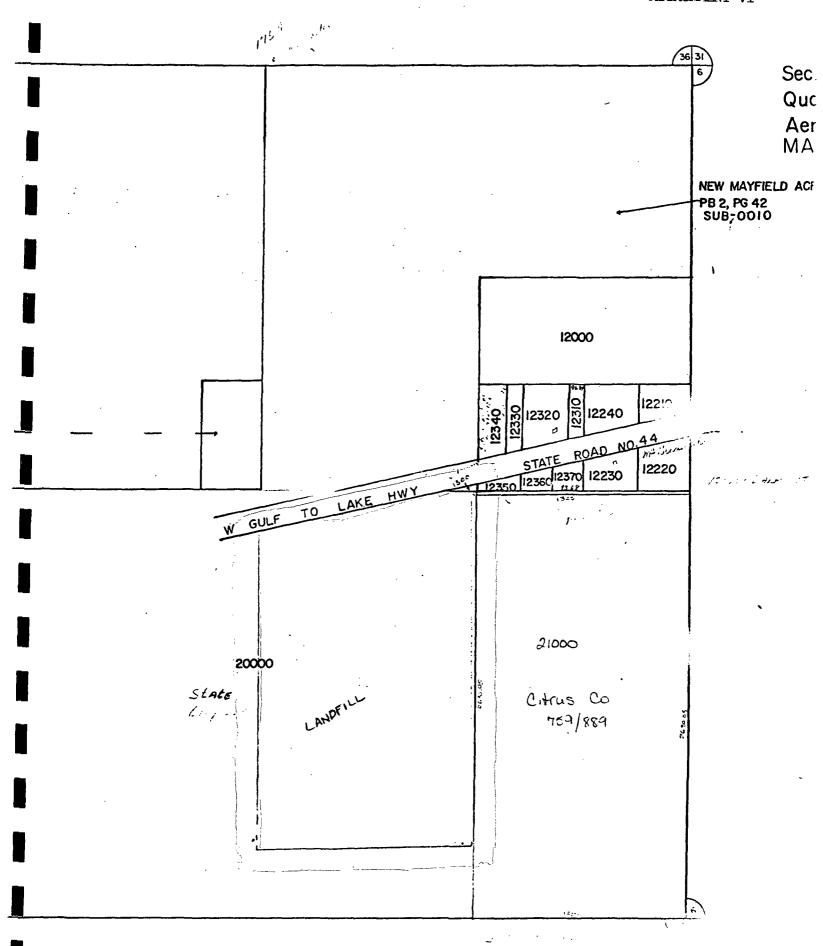
80 acres of land along the eastern border is owned by Citrus County.

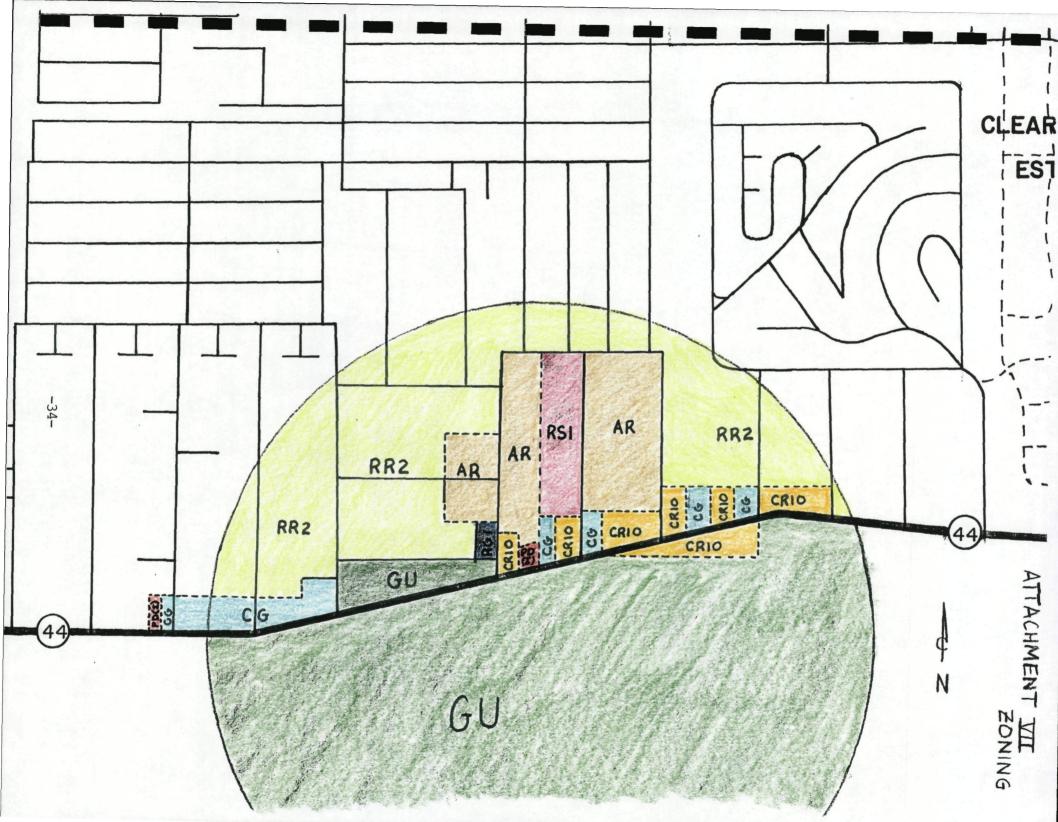
Land along south and west perimeters is property of U.S. Department of Agriculture and Consumer Services.

Florida Department of Transportation owns land immediately adjacent to landfill on north side.

Attachment (VII) indicates present zoning classifications of lands within a one mile radius of the landfill. The adjacent lands are used for light industrial, single family residential, and government (forestry) purposes.

Attachment (VIII) shows all roads and highways within the prescribed area.





ATTACHMENT VIII

The Real Florida. CITRUS HILLS

36 HOLES OF GOLF • HOMES • HOMESITES • CONDOS

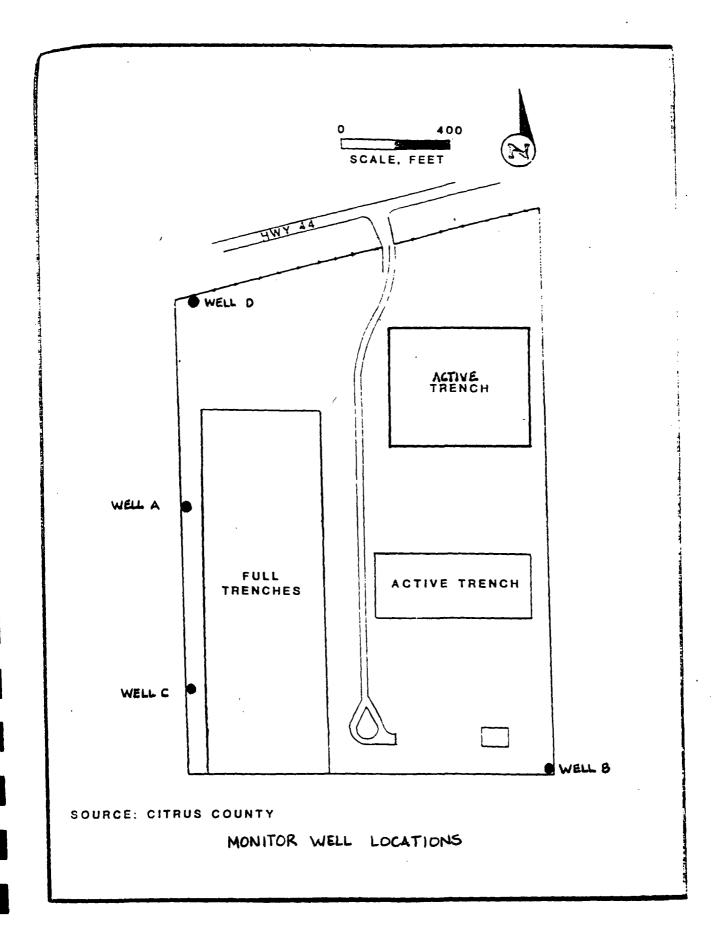
(904) 746

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	AV.	N WINDING IN WINDING I	BE CT. ZEE W. CHA CAVE CT. W. KELLER W. LIBERTY W. MASSACHUSET W. NATIONAL N. DLYMPIA	N	E. RELANCE	E. FALCONRY CT. RO E. GILCHRIST CT. ARTTORD ST. DO SEL 30 ST. W JENKINS ST. KELLER ST. LIBERTY ST. W CHILL ST. STER ST. PL. RATTORD RD. RATTOR RD.	N. EDMONSON P. N. MOODBECKEE	I LN.	N. C. S.	SAMBRIDGE L E. NEW	N NEW JONDON ER.	N. BROOKHAVEN TER N. SIGNIEY PT TO THE TER N. SIGNIEY PT TO THE TER N. LOUINDES
N OREGON	MONKC WINKC	RALIFR AV. KINGLET	W. INDIGO	NIEV PA TEN CO N. HIGHVIEW TO SEE THE CONTROL OF TH	FOSTER D	N. B. KENSING		GULF		NADONII 6	5	WANTINGS S. IDOS.
		3 11	12	2	4	TRAIL ONE MILE RADIUS TRAIL	50	16	IRAIL	9 4	IRAIL	2 15

GROUNDWATER MONITORING PLAN CONTAINING SITE SPECIFIC INFORMATION

The landfill presently has four monitoring wells in place (Attachment IX) for frequent sampling of groundwater. Groundwater samples are collected and analyzed for the parameters in Attachment X as required in our Groundwater Monitoring Plan as approved by F.D.E.R. in June 1975 (Permit No. SO-09-30672).

Please find attached additional information regarding well locations, well construction, sampling procedure, frequency and analyses, water quality, as well as a copy of our most recent analyses and sampling information.



CITRUS COUNTY CENTRAL LANDFILL WATER QUALITY SAMPLING DATA REPORT

INTRODUCTION

Citrus County continues to sample, analyze and report groundwater quality at all monitor wells at the Citrus County Central Landfill (see Figure 1) on a quarterly basis. This quarterly program is in compliance with specific conditions 5 and 6 of Florida Department of Environmental Regulation Permit Number MP09-112294. These specific conditions state that the permittee shall sample all groundwater monitoring wells annually for the Primary and Secondary Drinking Water Parameters included in Chapter 17-22, F.A.C. and sample quarterly for all Secondary Drinking Water Parameters with the addition of Nitrate, Sodium, Turbidity, Total Organic Carbon, Total Coliform, Temperature, Water Level (NGVD), Total Kjeldahl Nitrogen and Specific Conductance.

FIELD METHODS

The latest samples of groundwater were taken at each of the four monitor wells (see Figure 2) located at the county landfill near Lecanto on September 30, 1988. Prior to collection of water samples, groundwater levels were measured by Flowers Chemical Laboratories personnel. The volume of water in the well casing was calculated. Each well was pumped to remove stagnant water Approximately 3.5 to 4.5 casing volumes were in the casing. removed using permanently installed submersible pumps. submersible pumps at Wells A, B and C were powered by a portable generator. The pump at Well D is permanently connected to power Samples at Wells A, B and C were collected at the lines. discharge valves located at the top of the wells (see Figure 3). Samples at Well D were collected at a discharge valve on the outside of the well pumphouse. Field pH, temperature and specific conductance were measured in the sample retained for Appropriate preservatives were placed in sample bottles prior to sampling by the laboratory as part of sample kit preparation, and all samples were chilled during transportation The samples were promptly delivered to the to the laboratory. water quality laboratory.

WATER QUALITY

Results of the chemical analysis of the groundwater by Flowers Chemical Laboratories, Inc., were received on November 4, 1988. The Appendix (8 pages) lists the results of analyses on the four samples for the list of parameters designated by the FDER in Permit Number MP09-112294 for annual monitoring.

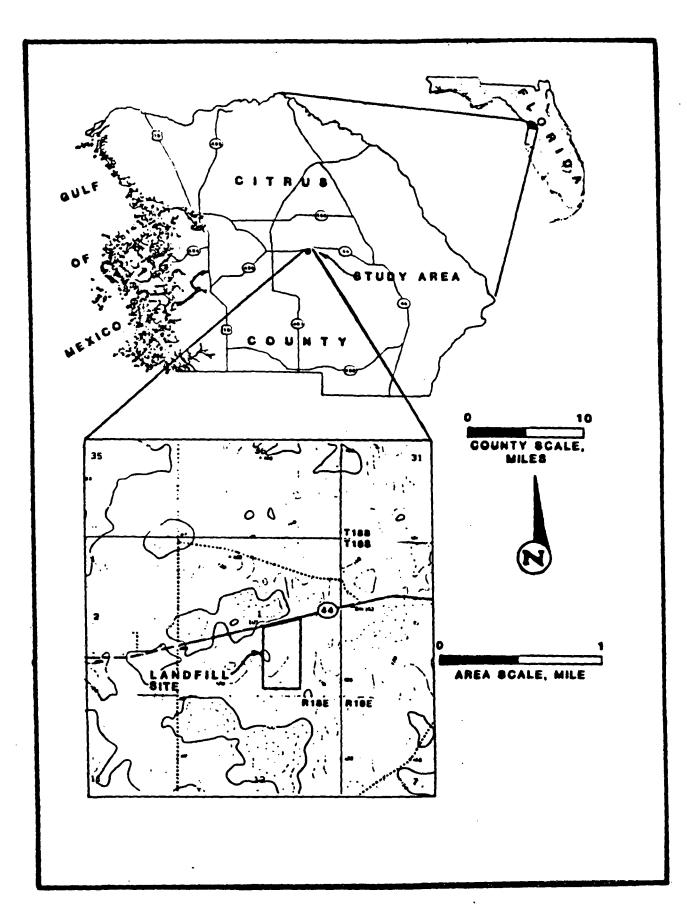


FIGURE 1.- LOCATION OF CITRUS COUNTY LANDFILL.

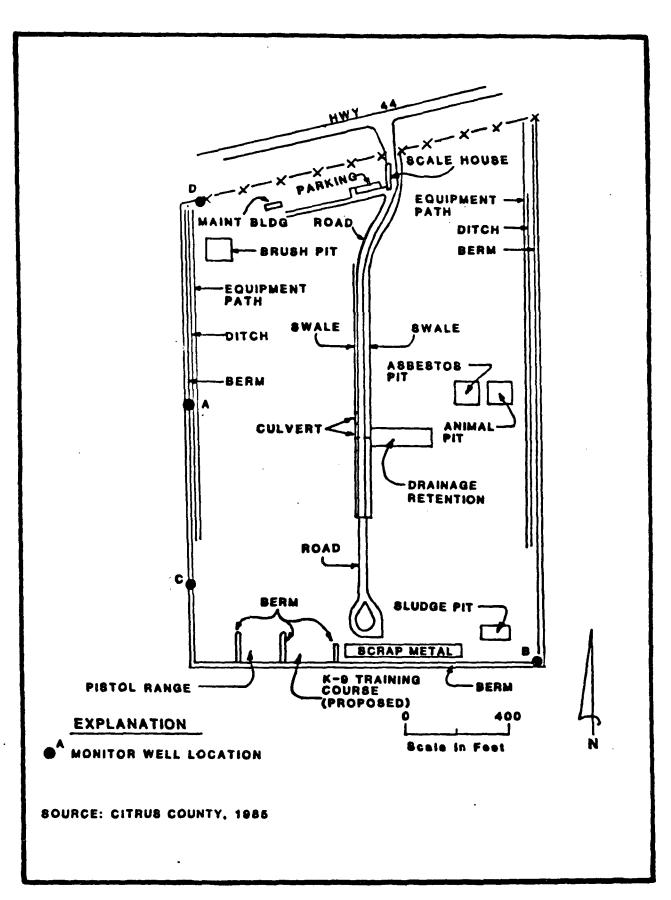


FIGURE 2.- LANDFILL LAYOUT AND LOCATION OF MONITOR WELLS IN OR NEAR CITRUS COUNTY LANDFILL.

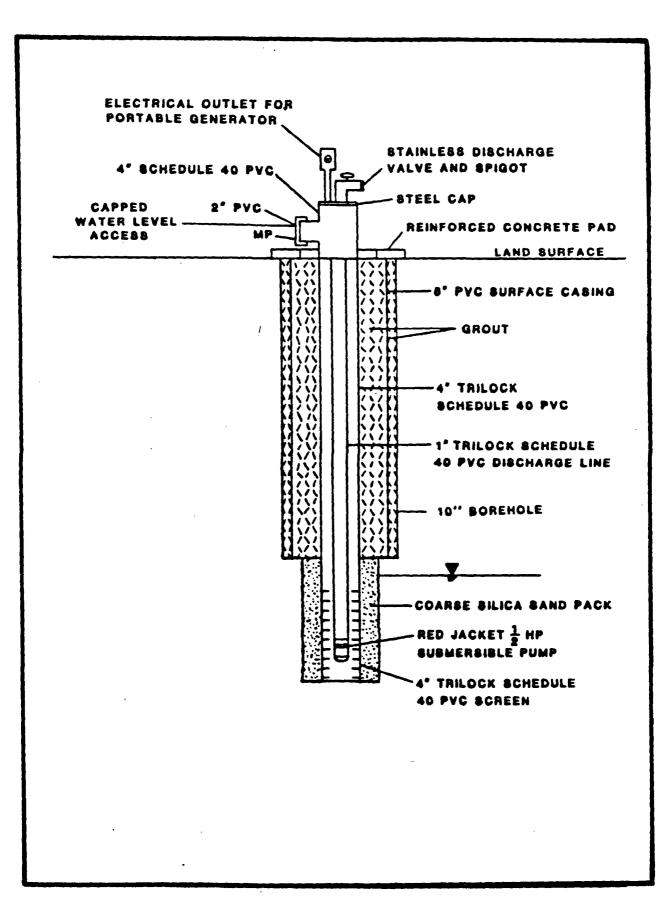


FIGURE 3.- TYPICAL MONITOR WELL CONSTRUCTION DETAILS.

WATER QUALITY (CON'T)

The only parameters which exceeded FDER drinking water standards in all four monitor wells were higher than standard iron concentrations and corrosivity. Based on the Langlier Index, acceptable limits between -0.2 and 0.2, samples taken at Monitor Wells A, C and D were somewhat alkaline while the sample taken at Monitor Well B was acidic. Well B also tested to have a pH value below minimum FDER standards. Manganese exceeded drinking water standards at Monitor Wells A and D. The specific conductance of the samples taken from Monitor Wells A and D exceeded FDER standards.

There was no trace of Vinyl Chloride in the samples taken from Monitor Wells A and D in our most recent groundwater analysis. This Volatile Organic Compound (VOC) has appeared in each groundwater sample from Well A since February of 1987, and first appeared in Well D in June of 1988. Benzene, another VOC, was initially detected in Monitor Well D during this recent analysis.

Abnormalities have been noted in the analysis of samples taken from Monitor Well D. Although the landfill does not have any wastes disposed upgradient to this well, high levels of certain drinking water parameters and the presence of Volatile Organic Compounds (VOC's) have been detected in these samples. Citrus County will continue to monitor the groundwater from wells A and D for volatiles on a quarterly basis in an attempt to determine more information concerning the influx of volatiles into the groundwater sampled from these wells.

FLOWERS CHEMICAL LABORATORIES, INC.



ANALYTICAL & CONSULTING CHEMISTS

Received From:

Date Reported: Nov 2 1988

Citrus County PO Box 440 Lecanto,FL 32661

DHRS Lab# : 83139

DER Lab#

: E83018

<1

SEC NO3 NA TB TOC TCOL TKN TEMP LIST1 Lab Numbers: 18956-18959 Sep30 1988 Date Received: REPORT OF ANALYSIS 18956 18957 18958 18959 Unit Method MACC MPRC ₿ С D Parameter 1/5 Detection Limit PCU 5 Color Odor TON 1 <1 <1 ₹1 <1 × mg/L ⟨0.10 <0.10 <0.10 <0.10 ✓ Surfactants 0.1 <0.50 <0.50 <0.50 <0.50 ✓ Hydrogen Sulfide mq/L 0.5 .015 6.41 _3..8 10.5 Chloride_ mg/L -102-18 mg/L .206 V з.з Sulfate 101 2.40 3.24 10 4.91 < √0.67 0.42 / Turbidity NTU 0.05 0.59 0.26 1,134 101 1.00 .153 < .0130 < mg/L .013 .164 Nitrate 0.1 99.9 √0.2 Tot_Kjeldahl_Nitrogn mg/L 0.0 ₹0.10 3.3 0.6 98.8 4.12 <u> 1.51</u> 37 Total Organic Carbon 13 mg/L 1 .002 102 0.00 2.3 6 √ Socium mg/L N 12 1.11) 0.38Ú.39) 0.01 102 1.16 Iron mq/L mg/L .021 < .0050 .005 101 0.39 $\sqrt{0.53}$ 2.103 Manganese Copper mg/L .005 101 0.39 .F61 (.0050 0.18/ .072 .001 102 1.17 .075 0.15 .131~ Zinc mg/L Dilution_Factor 1 1 1 11 <1 × 1 98.2 1.60 1,1,1~Trichlorethane ug/L <1 ⟨1 <1 1,1-Dic≒loroethylene ug/L 1 97.7 10.8 <1 <1 ₹1 <1 × 1,2-Dichloroethane ug/L 102 5.09 ₹1 ⟨1 <1 <1 / 1 97.4 6.00 <1 ✓ Carbon_Tethachloride ug/L <1 <1 <1 108 7.31 ₹1 11-Trichloroethylene ug/L <1 ⟨1 <1° <1 Tetrachloroethylene ug/L 104 9.00 ⟨1 ₹1 <0.50 p-Dichlorobenzene uq/L 0.5 98.3 13.5 <0.50 <0.50 <0.50 € 106 3.15 (1.14) Benzene 0.5 <0.50 <0.50 ug/L <0.50

Data Release Authorization

Sample integrity and reliability certified by Lab personnel prior to analysis. Methods of analysis in accordance with FCL QA and EPA approved methodology.

102 9.92

Joel J Galthers Waboratory Manager

ug/L

Vinyl_Chloride

-43-

FLOWERS CHEMICAL LABORATORIES. INC.

ANALYTICAL & CONSULTING CHEMISTS

Received From:

Date Reported: Nov 2 1988

Citrus County PO Box 440 Lecanto,FL 32661

DHRS Lab#

: 83139

DER Lab#

: E83018

For: SEC NO3 NA TB TOC TCOL TKN TEMP LIST1

Date Received:

Sep30 1988

Lab Numbers: 18956-18959

REPORT OF ANALYSIS

					18956	18957/	18958	18 95 /9	
Parameter	Unit Me	thod :	ACC >	PRC:	A/	в /	C	D 🗸	
	Detec	tion			✓	Ą.	₩	V	
	L	imit							
Ethylene Bromide	ug/L	.005	97.5	1.90	<.0050	<.00 50	<.0050	<.0050	
Conductance	umhos/c	0.01	-	-	(280	38	251	635	
Calcium	mg/L	0.1	102	1.16	112	0.5	47.1	101	
Magnesium	mg/L	0.01	98.5	1.19	6.00	0.25	3.66	6.03	
TotalDissolvedSolids	mg/L	2.5	94	0	₹ 456	25	152.5	3 80 /	
Total_Hardness	mg/L	0.1	102	1.16	304.3	2.3	132.6	277	
Carbonate_Hardness	mg/L	0.1	102	1.16	304.3	2.3	132.6	277	
N_Carbonate_Hardness	mg/L	0.1	102	1.16	<0.10	<0.10	<0.10	<0.10	
Alkalinity	mg/L	0.1	-	-	460.8	8.1	133.4	376.3	
Bicarb_Alkalinity	mg/L	0.1	-	-	460.3	8.1	133.0	375.6	
Carbonate_Alkalinity	mg/L	0.1	-	-	0.6	-	0.3	0.7	
Hydroxide_Alkalinity	mg/L	0.1	-	-	-	-			
Carbon Dioxide	mg/L	0.1			69.7	22.1	12.6	38.5	
Stability_Index	pН	0.01	-	-	6.46	5 کمو 15 م	7.97	6.5	
рН	ρН	0.01	-	-	7.11	(5.87)	7.31	7.29	
pH_saturation	pHs	0.01	-	-	6.79	10.75	7.64	6 .88	
Langelier_Index	LX	0.01	-	-	√ 0.33	-4.88	0.32	0.4	
Temperature-	~~ oC	0.01	-	_	24.8	23.1	23.6	24.3	

Data Release Authorization

Sample integrity and reliability certified by Lab personnel prior to analysis. Methods of analysis in accordance with FCL QA and EPA approved methodology.

Joel J Gathers Laboratory Manager

Page 2 of 2



FLOWERS CHEMICAL LABORATORIES, INC.

ANALYTICAL & CONSULTING CHEMISTS CHAIN OF CUSTODY RECORD

Page	of	
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AMBIENT WEATHER CONDITIONS:
AIR TEMP: 27.9 WIND CONDITIONS:
Sunny - Wind 10-15 MPH SE
Sunny - Wind 10-15 MPH SE SAMPLE SOURCE ID: Citrus Co. Land Rill AMW-A
pH Determinatios are made with a Cole-Parmer Model 5985-75 Reading #1: 7.68 " Reading #3: 7.69 "
Conductivity determinations made with YSI Model 33 S-C-T mtr. Reading #1: 788 uMHOS Reading #2: 791 uMHOS Reading #3: 780 uMHOS
Temperature determinations made by H-B laboratory thermometer Reading #1: 24.9 degrees centigrade Reading #2: 24.9 degrees centigrade Reading #3: 24.9 degrees cemtograde
Well Depth determinations made by Brainard-Kilman Model 2220 Reading #1: 43,9 feet from ground level Reading #2: 93.7 feet from ground level Reading #3: 93.7 feet from ground level
All reading taken at intervals during the sampling session to insure consistency of samples after well development.
Additional Field Notes:

AMBIENT WEATHER CONDITIONS:
AIR TEMP: WIND CONDITIONS:
Suny-Wind & 10715 MTH from SE
Sury-Wind & 10715-MPH from 5E SAMPLE SOURCE ID: Citrus Co. Landfill MW-B
pH Determinatios are made with a Cole-Parmer Model 5985-75 Reading #1: 5.58 std. pH units Reading #2: 5.77 " Reading #3: 5.39 "
Conductivity determinations made with YSI Model 33 S-C-T mtr. Reading #1: 39 uMHOS Reading #2: 39 uMHOS Reading #3: 38 uMHOS
Temperature determinations made by H-B laboratory thermometer Reading #1: degrees centigrade Reading #2: 23./ degrees centigrade Reading #3: 23.2 degrees cemtograde
Well Depth determinations made by Brainard-Kilman Model 2220 Reading #1: 100.9 feet from ground level Reading #2: 100.7 feet from ground level Reading #3: 100.7 feet from ground level
All reading taken at intervals during the sampling session to insure consistency of samples after well development.

Additional Field Notes:

AMBIENT WEATHER CONDITIONS:
AIR TEMP: 27.9 WIND CONDITIONS:
Sonny - Wind 10-15 MAH SE
SAMPLE SOURCE ID: Citrus Co. Landfill MW-C)
pH Determinatios are made with a Cole-Parmer Model 5985-75 Reading #1: 7.// std. pH units Reading #2: 7.// " Reading #3: 7.// "
Conductivity determinations made with YSI Model 33 S-C-T mtr. Reading #1: 257 uMHOS Reading #2: 250 uMHOS Reading #3: 25/ uMHOS
Temperature determinations made by H-B laboratory thermometer Reading #1: 23.7 degrees centigrade Reading #2: 23.6 degrees centigrade Reading #3: 23.7 degrees cemtograde
Well Depth determinations made by Brainard-Kilman Model 2220 Reading #1: 10/5 feet from ground level Reading #2: 10/4 feet from ground level Reading #3: 10/4 feet from ground level

All reading taken at intervals during the sampling session to insure consistency of samples after well development.

Additional Field Notes:

AMBIENT WEATHER CONDITIONS:

AIR TEMP: \mathcal{J} . 2 WIND CONDITIONS:
Sung-Wind 8-12 MPH SE SAMPLE SOURCE ID: Citrus County Landill MW-D
SAMPLE SOURCE ID: Citrus County Landil MW-D
pH Determinatios are made with a Cole-Parmer Model 5985-75 Reading #1: 6.71 std. pH units Reading #2: 6.74 " Reading #3: 6.73 "
Conductivity determinations made with YSI Model 33 S-C-T mtr. Reading #1: 647 uMHOS Reading #2: 639 uMHOS Reading #3: 635 uMHOS
Temperature determinations made by H-B laboratory thermometer Reading #1: degrees centigrade Reading #2: 24.5 degrees centigrade Reading #3: 24.4 degrees cemtograde
Well Depth determinations made by Brainard-Kilman Model 2220 Reading #1: 1019 feet from ground level Reading #2: 182.2 feet from ground level Reading #3: 102.7 feet from ground level

All reading taken at intervals during the sampling session to insure consistency of samples after well development.

Additional Field Notes:



FLOWERS CHEMICAL LABORATORIES

ANALYTICAL & CONSULTING CHEMISTS

<u>Drinking Water Bacteriological Analysis</u>

DHRS Certification Number 83139 FDER Lab Number EL0098	/
AIHA Accreditation Number, 253	4.00
Date and Time Analyzed 12/53	
the state of the state of the state of the state of	eterals Stangartonic

For	l.ab	Use	Only
			•
Date	a Rei	ease	Authorization
		(LA	Authorization

System Name	System ID No	DER District
Sample Site		
Raw or Treated (circle one) Date and Time Collected/_	/ <u>:</u>
	rivate well Swimming Pool Boll	
	ystem Non-Community public wa	
Type of Sample (circle o	ne) Compliance Recheck Main Cle	arance Other
Cishe or amming temple a	,	

Completed Dy Collector							
Coll. No.	Sample Point	.C,12 Nes'd	'p11				
	MW-A						
	MW-B	•					
 	MW-C						
	MW-D						
			4				

Completed By LAB					
Sample Number	Non	Caliform			
Sumpre Rumour	Collform	MF/100:nl Total Fecal		MPN 100mL	
18956	MB	41			
18957	MB	21			
18958	mB	<1			
18959	43	41			
	·				

Name and Mailling Address of Person/Firm To Receive Report	Interpretations-Recommendation	ons by FCL DER or HRS
Citrus Country	Reviewing Offical	() SATISFACTORY
	TITLE	() UNSATISFACTORY () RE-SUBMIT
	•	

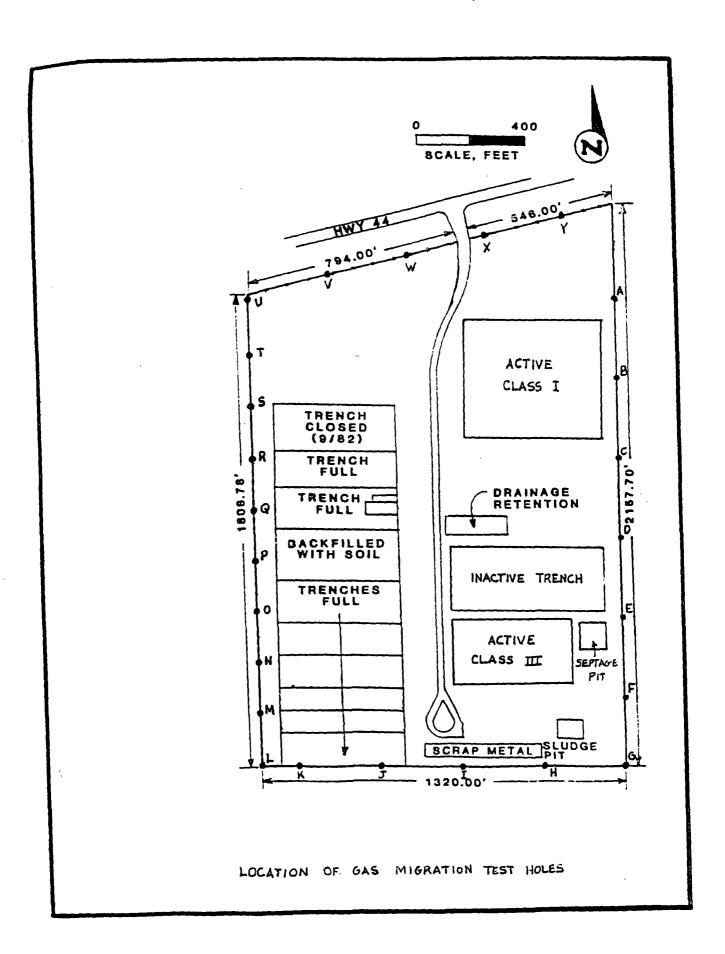
GAS MIGRATION INVESTIGATION

Tests were conducted on October 4, 1988 at the Citrus County Central Landfill to determine the extent and concentration of methane gas migration. The tests were conducted at 300 +/- foot intervals along the perimeter of the property, except for the west boundary which was tested at 200 +/- foot intervals due to the proximity of numerous inactive trenches.

A 3/4 inch hole at least three feet deep was plugged from the ground at each of the test points. A cover was positioned over each hole and allowed to stand undisturbed for a minimum of fifteen minutes. Readings were then taken at each test point, as indicated on attached sheet, with a Gastech Model #GP-204 combustible gas indicator. The maximum levels determined at each test point, as indicated by the meter, are noted in % LEL and are as follows:

TEST POINT	READING (%LEL)
_	^
A	0
B C	0
C	0
D	60
E	Ō
F	0
G	0
Н	0
I	0
J	0
K	100
L	0
M	100
N	0
О	10
P	3
Q	100
Q R	100
S	5
T	0
U .	0
V	0
W	Ö
x	Ö
Y	Ō
-	-

The presence of methane gas along the perimeter of the landfill has indicated the need for gas vents. A total of 24 vents will be installed during the first phase of closure, and they will be placed in a grid pattern at approximately 190 foot intervals. Please refer to the Closure Plan for proposed specific locations.



ASSESSMENT OF THE EFFECTIVENESS OF EXISTING LANDFILL DESIGN AND OPERATION

A) EFFECTIVENESS AND RESULTS OF GROUNDWATER INVESTIGATION

Information regarding our most recent groundwater analysis and an assessment of the results can be found following TAB 4. Certain levels of parameters related to drinking water standards have been exceeded at each of the monitor wells. The final closure of the unlined and inactive trenches, using a geotextile liner as a cap, should help to minimize infiltration and the influx of these substances into the groundwater.

B) EFFECTS OF SURFACE WATER RUN-OFF, DRAINAGE PATTERNS AND EXISTING STORMWATER CONTROLS

The stormwater management system already in operation at the landfill is adequate to insure that no surface water run-off enters adjacent properties. Berms have been constructed along the property boundaries and retention areas are in place to retain the stormwater collected on the landfill site. All stormwater controls are functioning properly, although the stormwater management system will require revision as steps are taken to close the landfill site. Refer to the Closure Plan for information regarding proposed stormwater control systems.

C) EXTENT AND EFFECTS OF METHANE GAS MIGRATION

Information concerning our recent gas migration investigation can be found at TAB 5 of this permit application information package. Please note the table which indicates levels of methane detected at each of the test points. The results obtained indicate that a gas control system will be required to vent the gas and reduce the migration off-site.

The proposed gas control system shall be addressed in the Closure Plan and will show methane vents placed on approximately 190 ft. \times 190 ft. centers in order to preclude methane buildup.

D) TYPE AND CONDITION OF EXISTING COVER AND EFFECTIVENESS AS LEACHATE CONTROL MECHANISM

The existing cover material in place over each of the inactive trenches varies from two to three feet deep. This soil has been analyzed and found to have a permeability of 1.2x10-4 cm/sec. Further discussion with your office on October 5, 1988 informed us that this silty-sand soil is inadequate for exclusive use as final cover material. The Closure Plan, therefore, provides for a 30 mil geotextile liner to prevent infiltration following closure of the west half of the landfill site.

E) NATURE AND CHARACTERISTICS OF WASTES DISPOSED OF AT THE LANDFILL

All wastes disposed of at the landfill have been properly disposed of in accordance with FDER regulations and requirements. These wastes are as follows:

Household garbage (organics, wrappings such as plastics, paper and metals)

Construction debris (wood, metals, asphalt products, stone, etc.)

Brush (tree trimmings, branches, logs, etc.)

White goods (appliances consisting of wood, metal, plastic, glass, etc.)

Asbestos (placed in FDER approved containers)

Tires

Animal Carcasses

The landfill is permitted to dispose of septic sludge in accordance with F.A.C. Section 17-7.540(6). Although the permit allows for the permanent disposal of septage under these guidelines, septage is being stored in a lined pit until FDER approval is obtained to allow off-site disposal at an approved wastewater treatment facility.

CLOSURE DESIGN PLAN

A) PHASING OF SITE CLOSING

This office is proposing the site closing to be accomplished in two (2) phases. The first phase will include the inactive trenches on the west half of the site as well as the mound of Class I refuse on the eastern side of the landfill known as Cell #2 just south of the DRA. The second phase will include the remainder of the eastern half including the area South of Cell #2 now used as the Class III cell, lined and unlined septage pit. Closure will commence in conjunction with the lined seven (7) acre trench in compliance with F.A.C. 17-7.

B) EXISTING TOPOGRAPHY AND PROPOSED FINAL GRADES

Please see Attachment XI (Existing Topography) and Attachment XII (proposed final grades). Full sized copies of each of these attachments is included in the Closure Plan.

C) FINAL COVER INSTALLATION PLANS

The final cover of the closed sections will consist of a 30 mil geotextile liner as a "cap", a minimum of 5.5 feet of clean fill, and six (6) inches of topsoil capable of supporting vegetative growth. Approximately 112,800 square yards of the 30 mil PVC will be used to "cap" the area, and a total of approximately 126,000 cubic yards of fill material will be used as cover. The final cover shall provide a minimum of six (6) feet of fill material above the refuse as required by the lease agreement with the Division of Forestry.

D) PROPOSED METHOD OF LEACHATE CONTROL

Leachate control shall be accomplished by placement of a 30 mil geotextile liner as a cap. Grading will also insure that surface water is diverted to proper conveyance and retention facilities.

Leachate from the seven (7) acre trench will be collected, pumped to a storage facility, and trucked off-site to a treatment facility. An ongoing leachate characterization program will be implemented in order to allow the establishment of a leachate treatment facility in the new 80 acre landfill expansion.

E) COMPLIANCE WITH GROUNDWATER PROTECTION REQUIREMENTS OF 17-4.245 AND 17-4.246, F.A.C.

Four Monitor wells are already in place at the landfill site and are sampled quarterly. Results of the quarterly sampling are sent to FDER for review. Closure grading, liner placement, and long-term maintenance will aid in the protection of the groundwater resources.

F) PROPOSED METHOD OF GAS AND ODOR CONTROL

Gas and odor control will be accomplished by a venting system consisting of twenty four (24) gas vents placed on centers of approximately 190 feet. The vents will be constructed of four (4) inch diameter PVC pipe extending approximately twenty-nine (29) feet into the ground. The lower twenty (20) feet of pipe will be perforated and encased in a two (2) foot diameter hole backfilled with coarse aggregate to allow gas accumulation. Additional details of the gas vents are described on sheet seven (7) of the Closure Plan.

G) PROPOSED METHOD OF STORMWATER CONTROL

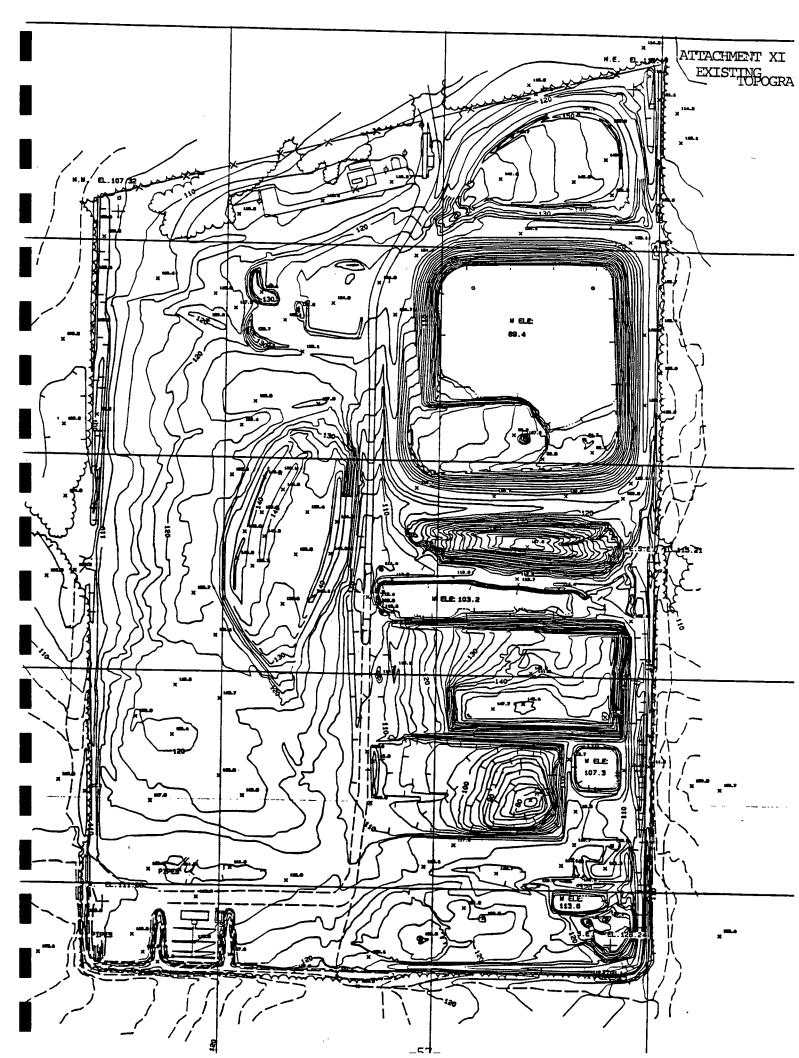
Stormwater Control will be accomplished by proper grading to provide conveyance facilities to the retention areas. Stormwater will be retained on site and the facilities will meet Southwest Florida Water Management District guidelines.

H) PROPOSED METHOD OF ACCESS CONTROL

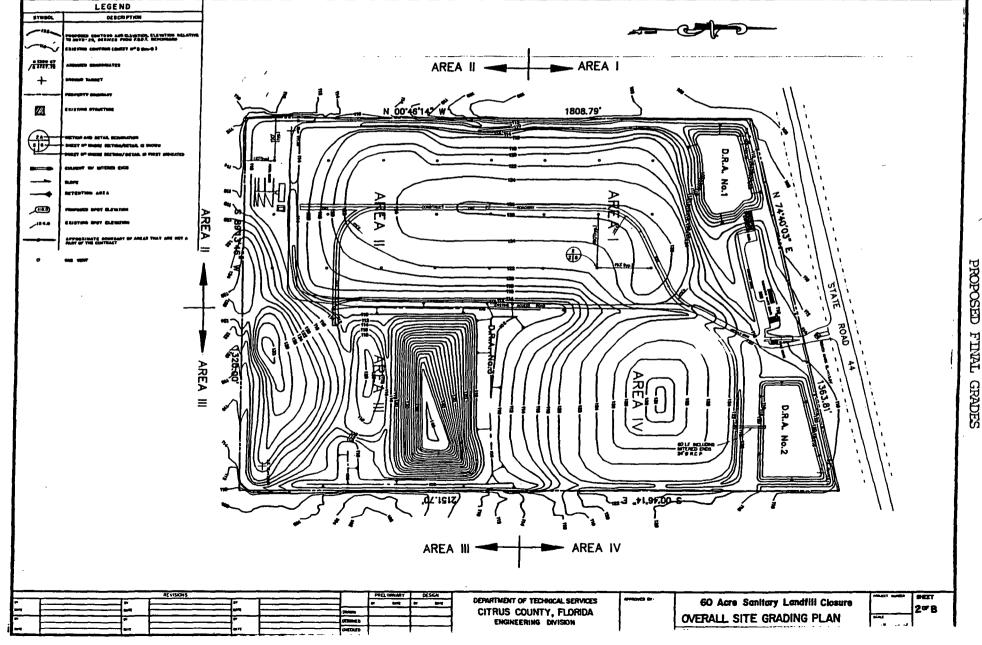
Unauthorized access will be controlled by the existing fence along the northern boundary and by large berms along the three remaining sides.

I) PROPOSED FINAL USE OF LANDFILL PROPERTY

The landfill property will be returned to the control of the Division of Forestry upon closure, although Citrus County is granted access to the land for groundwater monitoring and long-term care through a letter of agreement (see TAB 9) The property shall be maintained by Citrus County for a minimum of twenty (20) years in accordance with the Closure Plan. The Division of Forestry has stated that there is no specific final use of this land.







CLOSURE OPERATION PLAN

(A) DESCRIBE ACTIONS WHICH WILL BE TAKEN TO CLOSE THE LANDFILL

Closure actions will commence upon receipt of a closure permit from FDER. The County bid procedure has been implemented for Phase I in order to select a contractor and the contracts will then be negotiated. Construction will begin with earthwork to take place in the phase one section of the closure. The grading, liner placement, and final fill material placement will take place in accordance with the approved Closure Plan. Methane gas vents will be installed and the completed area will be revegetated using standard seed and mulching techniques. Those areas prone to rapid erosion shall be sodded.

The second phase of closure will basically involve the same steps although it will take place upon reaching maximum capacity in the lined seven (7) acre trench.

(B) TIME SCHEDULE FOR COMPLETION OF CLOSURE AND LONG TERM CARE

The proposed time schedule for completion of closure of the first phase will require approximately 240 days from receipt of a closure permit from FDER. Closure of the second phase should require considerably less time due to a smaller overall area and less earthmoving required.

Long term care will commence immediately upon completion of closure of each phase and will continue for a minimum of twenty (20) years for each phase in accordance with F.A.C. 17-7.

(C) PROPOSED METHOD OF DEMONSTRATING FINANCIAL RESPONSIBILITY FOR LONG TERM MONITORING AND MAINTENANCE

The finances to maintain and monitor the landfill property is an item addressed on the County's annual budget approved by the Citrus County Board of County Commissioners. The County accepts all responsibilities for the long-term care and maintenance of the Citrus County Central Landfill for a period of not less than twenty years form date of closing in compliance with F.A.C. 17-7.

For additional financial responsibility information, please refer to TAB 10 of this package for the required Financial Responsibility Document.

(D) EQUIPMENT AND PERSONNEL NEEDS TO COMPLETE CLOSURE

The equipment and personnel necessary to complete closure of the landfill site will be the responsibility of the contractor to whom the construction contract is awarded. The actual amount of equipment and personnel will depend upon the time frame in which the contractor has to complete construction.

County personnel will be involved only by inspecting the construction to insure compliance with the Closure Plan.

REQUIREMENTS FOR LONG TERM CARE

A) ESTABLISH LONG TERM CARE PERIOD

The long term care period shall be for a period of twenty (20) years and shall commence upon completion of the closure process for each phase.

B) ACQUIRE RIGHT OF ACCESS AGREEMENT BETWEEN OPERATOR AND PROPERTY OWNER FOR CLOSING AND LONG TERM CARE

Please find attached a copy of the letter from Mr. W. R. Helm, Jr., Chief of Forest Management, Division of Forestry, dated October 11, 1988 granting Citrus County right of access for a minimum of 20 years after the lease extension terminates in December of 1990 (Attachment XIII).



FLORIDA DEPARTMENT OF AGRICULTURE & CONSUMER SERVICES

DIVISION OF FORESTRY = 3125 CONNER BLVD. = TALLAHASSEE, FLORIDA 32399-1650

6231.3 October 11, 1988

Mr. James Barker, Department of Technical Services Citrus County Engineering Division 110 North Apopka Avenue Inverness, Florida 32650

Dear Mr. Barker:

Reference is made to your recent telephone conversation with John O'Meara concerning access to the 60 acre Citrus County Landfill on Withlacoochee State Forest, after the current Extension Agreement terminates.

This letter confirms that for a minimum of 20 years, Citrus County will be granted continuous access to the entire 60 acre parcel for purposes of long term care and maintenance and for groundwater monitoring.

If you require additional information, please advise.

Sincerely,

W. R. Helm, Jr., Chi Forest Management Divison of Forestry

904/488-6611

cc: Bill Korn, Withlacoochee Forestry Center Manager

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION FINANCIAL RESPONSIBILITY CHECKLIST ID No. 4009C00086 GENERAL INFORMATION: Permit No.: S009-111795 Expiration Date: 6-1-92 Facility Name: Citrus County Central Landfill Address (Main Entrance): 380 W. Gulf to Lake Hwy. Lecanto, FL 32661 Address (Mailing): P. O. Box 440 Lecanto, FL 32661 Fill Acreage: Approx. Permittee (Operating Authority): Citrus Co. Facility Lat/Long: 82° 26' 38" TYPE OF LANDFILL: X Class Closure Plan Approved: -Class II Class III:Trash/Yard Trash Yes X No Exempt: Type of Exemption: Date: Reviewing Person (Include Title): GOVERNMENT OWNED LANDFILL: II Type of Plan or Documentation Submitted to Ensure Financial Responsibility: Enactment of County Ordinance or Special Act Letter of Certification by the Board of County Commissioners X Annual Funding Item in Approved County Budget Sinking Fund Resolution with a Plan by the Board of County Commissioners Other (Explain): Government Owned Landfill Estimated Itemized Closure Cost: ITEM COST Monitoring Wells .N/A 285,000 INSTALLED..... Slope and Fill Final Cover Final Cover Material 310,000 Contour Grading and Surface Water Diversion (Stormwater Control) 250,000 Gas Higration Control 12,000 92,400 Revegetation Security System N/A INSTALLED.. Installation of Benchmarks N/A INSTALLED.... Certification of Closure 954,600 95,400 ADDITIONAL MISC.. Government Owned Itemized Annual Cost of Long Term Care: .1,050,000 TOTAL CLOSURE COST.... ITEM ANNUAL COST Groundwater Monitoring (Sampling and Testing) .000 Gas Monitoring OPERATOR DUTY.... Collection and Disposal or Treatment of Leachate 150,000 Haintenance of Cover Integrity Including Landscaping and Stormwater Controls 5,000 General Haintenance for Pumps, Wells, Fences, Etc. 10,000 Maintenance of Benchmarks 000 Remedial · Action 5.000 TOTAL ANNUAL COST OF LONG TERM CARE 191.000 III HON-GOVERNMENT OWNED LANDFILL: Type of Financial Document Submitted to Ensure Financial Responsibility: Trust Fund Agreement Performance Bond (only for landfills with an approved closure plan letter of Credit Financial Guarantee Bond Insurance Certificate Escrow Account Standby Trust Fund Agreement Other (Explain): В. Non-Government Owned Landfill Estimated Itemized Closure Cost for the Time Period in the Landfill Operatio When the Extent and Hanner of its Operation Makes Closing Most Expensive UNIT COST ITEH TOTAL COST SOURCE OF ESTIMATE

Gravel Pack
Slotted Screen
Casing
Cap

2. SLOPE AND FILL

HONITORING WELLS

Backfill

Borehole Excavation

١.

(Intra Party Work)

Prelim. Engineers Estimate

Bid Schedule -1

6

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENT for the listed unit prices shown in the BID SCHEDULE:

BID SCHEDULE

CITRUS COUNTY 60-ACRE SANITARY LANDFILL CLOSURE PLAN, PHASE I APPROXIMATELY 25 ACRES PROJECT NUMBER 89-64

ITEM NO.	DESCRIPTION	UNIT	EST. QUANTITY	UNIT PRICE	AMOUNT		
1.	MOBILIZATION	L.S.	1	\$ <i>50,00</i> 0/LS	\$ <u>50,000</u>		
2.	CLEAR & GRUB (24 AC including approx5AC trees)	L.S.	1	\$ <u>3600</u> /LS	\$ <u>3600 °°</u>		
3.	EARTHWORK (Approx. 93,000 c.y cut approx. 126,000 c.y. fill off-site borrow 33,000 c.y.)	2 1.001401	· 1	\$ <i>285,0</i> 00/ls	; <u>\$ 285,000</u>		
4.	4. SOLID WASTE RELOCATION (Approx. 34,000 c.y. cut @5.00/yd. Approx. 18,000 c.y. fill on exist. mound 16,000 c.y. fill to be placed in designated area. Approx. 40,000 c.y. fill required for cover (NOT INCLUDED IN ITEM 3). L.S. 1 \$250,000/LS \$ 250,000						
5.	30 MIL PVC LINER (Complete)	s.Y.	112,800	\$ 2.75 /SI	\$310,200		
6.	GAS VENTS (4"PVC wells-complete)	EA.	24	\$ 500 /EI	\$17,000		
7.	PISTOL RANGE (Remove Replace-Complete)		1	\$ <u>10,000</u> /LS	\$ 10,000		
8.	SOD	S.Y.	49,500	\$ 1.50 /ST	\$ 74,250		
9.	SEED & MULCH (All dapprox. 25 AC)	isturbed a L.S.	reas - 1	\$ <u>18,150</u> /LS	\$ \$18,150		
10.	ASPHALT ROADWAY	TON	295	\$_40.00/TI	s 11,800		

BID SCHEDULE #89-64

11. LIMEROCK @ 6" DEPTH INCLUDE PRIME. S.Y.

S.Y. 5000 \$ 5.00 /SY \$ 25,000

TOTAL AMOUNT

\$1,050,000

NOTE: ANY ITEMS THAT ARE SPECIFIED ON THE PLANS AND/OR CONTRACT DOCUMENTS AND ARE NOT LISTED IN THE BID SCHEDULE ARE CONSIDERED INCIDENTIAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE MADE.

(Seal, if bid is by a Corporation)

	Contractor's Name
	Address
Attest:	by: Signature (Title)

CITRUS_COUNTY+_FLORIDA_ 1988 — 1989 BUDGET

FUND	DEP	ARTMENT	ACTIVITY		FUNCTION
LANDFILL	LANDFILL		GARBAGE/SOLID WAS	TE DISP PHYSICA	L ENVIRONMENT
ACCOUNT NUMBER: 401-5212	-534				
ACCOUNT DESCRIPTION	ACCOUNT Number	1987 - 1988 Budget	DEPARTMENT BUDGET REQUEST	COUNTY ADMINISTRATOR BUDGET REQUEST	APPROVED BUDGET BUARD OF COUNTY COMMISSIONERS
REGULAR SALARIES & WAGES	1200	113,410.00	135,167.00	112,475.00	155,875.00/
OVERTIME	1400	11,440.00			5,750.00 [/]
SPECIAL PAY	1500	5,000.00	5,000.00	5,000.00	5,000.00√
FICA TAXES	2100	8,110.00	10,435.00	10,435.00	11,706.00
RETIREMENT CONTRIBUTIONS	2200	14,905.00	18,925.00	18,925.00	20,856.00/
LIFE & HEALTH INSURANCE	2300	6,810.00	11,135.00	11,135.00	14,951.00
WORKMENS COMPENSATION	2400	3,000.00	7,500.00	7,500.00	7,500.00
UNEMPLOYMENT COMPENSA	2500	500.00	500.00	500.00	500.00 1
OTHER CONTRACTUAL SERV	3400	105,000.00	500,000.00	100,000.00	100,000.00
TRAVEL & PER DIEM	4000	1,000.00	4,000.00	3,000.00	7,000.00
COMMUNICATIONS SERVICES	4100	1,700.00	1,700.00	1,700.00	2,450.00
POSTAGE	4201	240.00	1,000.00	250.00	750.00
UTILITY SERVICES	4300	2,000.00	2,000.00	2,000.00	م-2,000.00
RENTALS & LEASES	4400	9,143.00	10,000.00	10,000.00	10,000.00
EQUIPMENT RENTAL	4402	9,000.00	9,000.00	9,000.00	9,000.00 1
VEHICLE MAINTENANCE	4603	35,000.00	50,000.00	50,000.00	51,000.00

FUND DEPARTMENT		ACTIVITY		FUNCTION		
LANDFILL	LANDFILL		GARBAGE/SOLID WAS	TE DISP PHYSICA	L ENVIRONMENT	
ACCOUNT NUMBER: 401-5212-534						
ACCOUNT DESCRIPTION	ACCOUNT NUMBER	1987 - 1988 BUDGET	DEPARTMENT BUDGET REQUEST	COUNTY ADMINISTRATOR BUDGET REQUEST	APPROVED BUDGET BOARD OF COUNTY COMMISSIONERS	
OFFICE SUPPLIES	5 100	1,300.00	3,300.00	1,300.00	3,800.00	
TOOLS, IMP.E SPEC. CLOTH	. 5 201	800.00	1,500.00	800.00	800.00	
UNIFORMS	5205	500.00	500.00	500.00	500.00	
FUEL & LUBES	5208	41,000.00	54,530.00	50,000.00	51,000.00	
MISC SUPPLIES.	5210	2 • 000 • 00	2,000.00	2,000.00	2,000.00	
SAFETY SUPPLIES	5226	1,000.00	1,000.00	1,000.00	1,000.00	
DUES, BKS, SUBSCP, MEM, PUBL	5400	100.00	300.00	100.00	800.00	
IMPROVE OTHER THAN BLDG.	6300	32,000.00	4,702,000.00	4,702,000.00	5,102,000.00	
TRANSFER STATION	6328	50,000.00	50,000.00	•00	•00	
MACHINERY & EQUIPMENT	6400	24,700.00	57,150.00	47,150.00	58,200.00	
EQUIPMENT-LEASE-PURCHASE	6402	290,000.00	290,000.00	290,000.00	290,000.00	
PR. INCIPAL	7100	132,904.00	1,234,457.00	1,060,100.00	1,060,100.00	
LAND AQUISITION-PTY	7101	46,800.00	•00	•00	•00	
INTEREST	7200	32,627.00	420,116.00	458,450.00	458,450.00	
LAND ACOUISITION-INT	7201	35,022.00	•00	•00	•00	
TRANSFERS-ENGINEERING	9115	10,000.00	10,000.00	10,000.00	10,000.00	

JAN 0 9 1989