



CITRUS CENTRAL LF  
WACS Facility #39859

CITRUS CENTRAL  
LF WTPF

CITRUS CENTRAL  
LF LTC

LEACHATE  
EFFLUENT  
SAMPLE POINT

PHASE 3  
Leachate influent

PHASE 2  
Leachate influent

PHASES 1 & 1A  
Leachate influent

Sect 6, Twp 19 S, Rge 19 E

Sect 7, Twp 19 S, Rge 19 E

Sect 1, Twp 19 S, Rge 18 E

Sect 12, Twp 19 S, Rge 18 E

MW-2

MW-7

MW-3

MW-1R

MW-20

MW-21

PZ-2

MW-19

MW-18

MW-10

PZ-1

MW-11

MW-9

MW-AA

MW-12

MW-E

MW-8R

MW-13

MW-14

MW-17

MW-16

MW-B

MW-15

NAME	LAT_DD	LAT_MM	LAT_SS	LONG_DD	LONG_MM	LONG_SS	SURV_DATE	LOCATION
MW-AA	28	51	9 22	82	26	35 08	2/11/1998	CITRUS CENTRAL
MW-B	28	50	59 45	82	26	19 59	2/11/1998	CITRUS CENTRAL
MW-C	28	51	2 32	82	26	34 29	2/11/1998	CITRUS CENTRAL
MW-D	28	51	17 24	82	26	33 51	2/11/1998	CITRUS CENTRAL
MW-E	28	51	9 55	82	26	36 68	2/11/1998	CITRUS CENTRAL
MW-1R	28	51	20 46	82	26	19 33	2/11/1998	CITRUS CENTRAL
MW-2	28	51	21 1	82	26	4 91	2/11/1998	CITRUS CENTRAL
MW-3	28	50	55 3	82	26	4 69	2/11/1998	CITRUS CENTRAL
MW-4	28	51	9 7	82	26	18 69	2/11/1998	CITRUS CENTRAL
MW-5	28	51	10 09	82	26	19 6	2/11/1998	CITRUS CENTRAL
MW-6	28	51	9 05	82	26	19 55	2/11/1998	CITRUS CENTRAL
MW-7	28	51	5 1	82	26	4 67	2/11/1998	CITRUS CENTRAL
MW-9	28	51	12 51	82	26	34 17	2/11/1998	CITRUS CENTRAL
NAME	LAT_DD	LAT_MM	LAT_SS	LONG_DD	LONG_MM	LONG_SS	INSP_DATE	LOCATION
MW-8R	28	51	5 36	82	26	34 08	5/13/2003	CITRUS CENTRAL
Leachate @ master lift station	28	51	4 39	82	26	18 8	5/13/2003	CITRUS CENTRAL
Leachate effluent @ plant disc	28	51	11 66	82	26	18 96	5/13/2003	CITRUS CENTRAL
NAME	LAT_DD	LAT_MM	LAT_SS	LONG_DD	LONG_MM	LONG_SS	INSP_DATE	LOCATION
MW-11	28	51	14	82	26	35 2	2/2/2006	CITRUS CENTRAL
MW-12	28	51	9 3	82	26	35 5	2/2/2006	CITRUS CENTRAL
MW-13	28	51	5 2	82	26	35 4	2/2/2006	CITRUS CENTRAL
MW-14	28	51	1 1	82	26	35 5	2/2/2006	CITRUS CENTRAL
MW-15	28	50	57 9	82	26	29 2	2/2/2006	CITRUS CENTRAL
MW-16	28	51	2 9	82	26	19	2/2/2006	CITRUS CENTRAL
MW-17	28	50	58 4	82	26	20 7	2/2/2006	CITRUS CENTRAL
NAME	LAT_DD	LAT_MM	LAT_SS	LONG_DD	LONG_MM	LONG_SS	INSP_DATE	LOCATION
MW-10	28	51	16 2	82	26	30	5/11/2006	CITRUS CENTRAL
NAME	LAT_DD	LAT_MM	LAT_SS	LONG_DD	LONG_MM	LONG_SS	INSP_DATE	LOCATION
Leachate @ Phase 2 primary pump sampling port	28	51	6 2	82	26	18 1	5/9/2008	CITRUS CENTRAL
MW-18	28	51	17 3	82	26	30 7	5/9/2008	CITRUS CENTRAL
MW-19	28	51	16 5	82	26	29 5	5/9/2008	CITRUS CENTRAL
PZ-1	28	51	14 7	82	26	33 6	5/9/2008	CITRUS CENTRAL
PZ-2	28	51	18 2	82	26	27 2	5/9/2008	CITRUS CENTRAL
NAME	LAT_DD	LAT_MM	LAT_SS	LONG_DD	LONG_MM	LONG_SS	SURV_DATE	LOCATION
MW-20	28	51	9 831	82	26	15 135	2/10/2011	CITRUS CENTRAL
MW-21	28	51	17 173	82	26	24 66	2/10/2011	CITRUS CENTRAL
NAME	LAT_DD	LAT_MM	LAT_SS	LONG_DD	LONG_MM	LONG_SS	INSP_DATE	LOCATION
Leachate @ Phase 3 primary pump sampling port	28	51	7 67	82	26	18 53	5/19/2011	CITRUS CENTRAL

Lindsay McCoy  
Bret Galbraith  
Bret Galbraith  
Melissa Madden  
Melissa Madden

Florida Department of Environmental Protection - Enterprise Applications

Alternate Id related Party activity Link project Return exit Help Window

ORACLE

Compliance & Enforcement Tracking System - Site New

Site ID: 21375 County: 9 CITRUS

Name: CITRUS CO CENTRAL SLF (LF1)

Directions:

Address: 3MI E LECANTO, SR44

City: LECANTO State: FL Zip:

**Site Geographic Information**

Feature: center of LF-sjp Method: DPHO Datum: 83 Determination Date: 04/03/2003

Object of Interest: Proximity to Object: Status: NOT REVIEWED

Collector's Name: Collector's Program Area: Affiliation:

Verification Method: Verification Date: Verifier's Name:

Verifying Program Area: Verifier's Affiliation:

Coordinate (choose one method)

Latitude	Degrees	28	Minutes	51	Seconds	7 160
Longitude	Degrees	82	Minutes	26	Seconds	11 460
UTM	Easting		Northing		Zone	

Coordination Accuracy Level:

Enter the county number in which the site resides, or Press [LIST]

Record: 1/1 List of Values

COMET PROJECT # = 21375

Florida Department of Environmental Protection - Enterprise Applications

Facility Search Query Waste detail Test site codes History Help Exit Window

ORACLE

Water Assurance Compliance System - Wacs Facility Details

**Facility Information**

District/County*/Facility	SWD 9 00039859	GMS ID	4009C0086	Updated	02/25/2004	Updated By	WILLIAMS CA
CITRUS CNTRAL SLF		County	CITRUS	Office	SWD		
3MI E LECANTO, SR44		DEP Dist	SOUTHWEST	Latitude *	28 51 07 160		
LECANTO FL 34452		Fac Type *	3 SOLID WASTE	Longitude *	82 26 11 460		
Status * A ACTIVE AS of 01/01/2001		Owner Type *	C COUNTY	Pop Served	81863		
Section/Township/Range	01 19S 18E	Drinking Well on Site?					

Site Supervisor: RICHARD BERG Phone: (352)746-2694

Responsible Authority: CITRUS COUNTY COMMISSIONERS Phone: (352)726-8500

Landowner: FLORIDA BOARD OF FORESTRY Phone:

Disposal Method \* BU BURIAL Waste Handled 110 RESIDENTIAL

VR VOLUME REDUCTION/RES 115 COMMERCIAL

Enter a County Code, press [Ctrl-L] for values, or press [ENTER QUERY]

Record: 1/1 List of Values

4/28

**Morris, John R.**

---

**From:** Morris, John R  
**Sent:** Monday, April 28, 2003 3:05 PM  
**To:** Williams, Christopher A  
**Cc:** Pelz, Susan, Martin, Lee  
**Subject:** WACS Testsite lat/long coordinates

Chris

I am in the process of compiling the sources of information (field GPS data, survey sheets, or summary tables provided by the permittee) that were used for the lat/long coordinates for the Testsites (gw, sw, and leachate sampling locations) that were input into WACS. It appears that you updated Testsite lat/long coordinates for Citrus Central Landfill (WACS Facility ID No 39859) on 1/6/03 and for Lena Road Landfill (WACS Facility ID No 44795) on 1/23/03. I am looking for copies of the source information that you used to update WACS. Would you provide a copy of the submittals you used for the lat/long coordinates at these facilities?

Thanks for your assistance

---

John R. Morris, P.G.  
Solid Waste Section, Southwest District Office  
Telephone 813-744-6100, ext 336 (suncom 512-1042, ext 336)  
Facsimile 813-744-6125  
E-mail john.r.morris@dep.state.fl.us

RECEIVED 7/2/01 ← 7/2/01  
 PREPARED BY JONES, EDMUNDS & ASSOC.  
 PART OF OPERATING PERMIT RENEWAL RAI RESPONSES

Well	Well Type	Depth Ft, bls	Diameter Inches	Top of Casing Elevation Ft NGVD	Top of Screen Elevation Ft, NGVD	Bottom of Screen Elevation Ft, NGVD	Maximum Groundwater Elevation Ft, NGVD	Minimum Groundwater Elevation Ft, NGVD	Lithology of Screened Interval
MW-1R	B	125	2	118 08	3 0	-6 9	7 37	4 6	Limestone
MW-2	B	161	2	136 29	-9 7	-24 7	10 12	6 32	Silty Sand
MW-3	B	119	2	120 47	16 5	1 5	7 92	5 79	Silty Sand
MW-4	P	120	2	122 62	12 6	2 6	10 69	6 12	Fine Sand
MW-5	P	120	2	121 14	11 1	1 1	9 24	5 99	Sand
MW-6	I	122	2	118 48	6 5	-3 5	9 26	5 98	N/A
MW-7	B	137	2	128 66	11 7	-8 3	9 49	6 48	N/A
MW-8R	D	128	2	118 13	10 1	-9 9	5 6	2 88	N/A
MW-9	D	121	2	113 55	12 6	-7 4	11 68	4 72	N/A
MW-AA	D	116	2	106 11	0 1	-10 1	6 69	4 67	Sand w/ Ls frags
MW-B	D	128	4	113 57	5 6	-14 4	7 59	4 71	Sand
MW-C	D	199	4	116 17	-75 8	-82 8	7 45	3 97	Limestone*
MW-D	D	208	4	109 77	-78 2	-98 2	7 35	4 62	Limestone*
MW-E	C	118	2	109 88	11 9	-8 1	7 84	5 05	Limestone

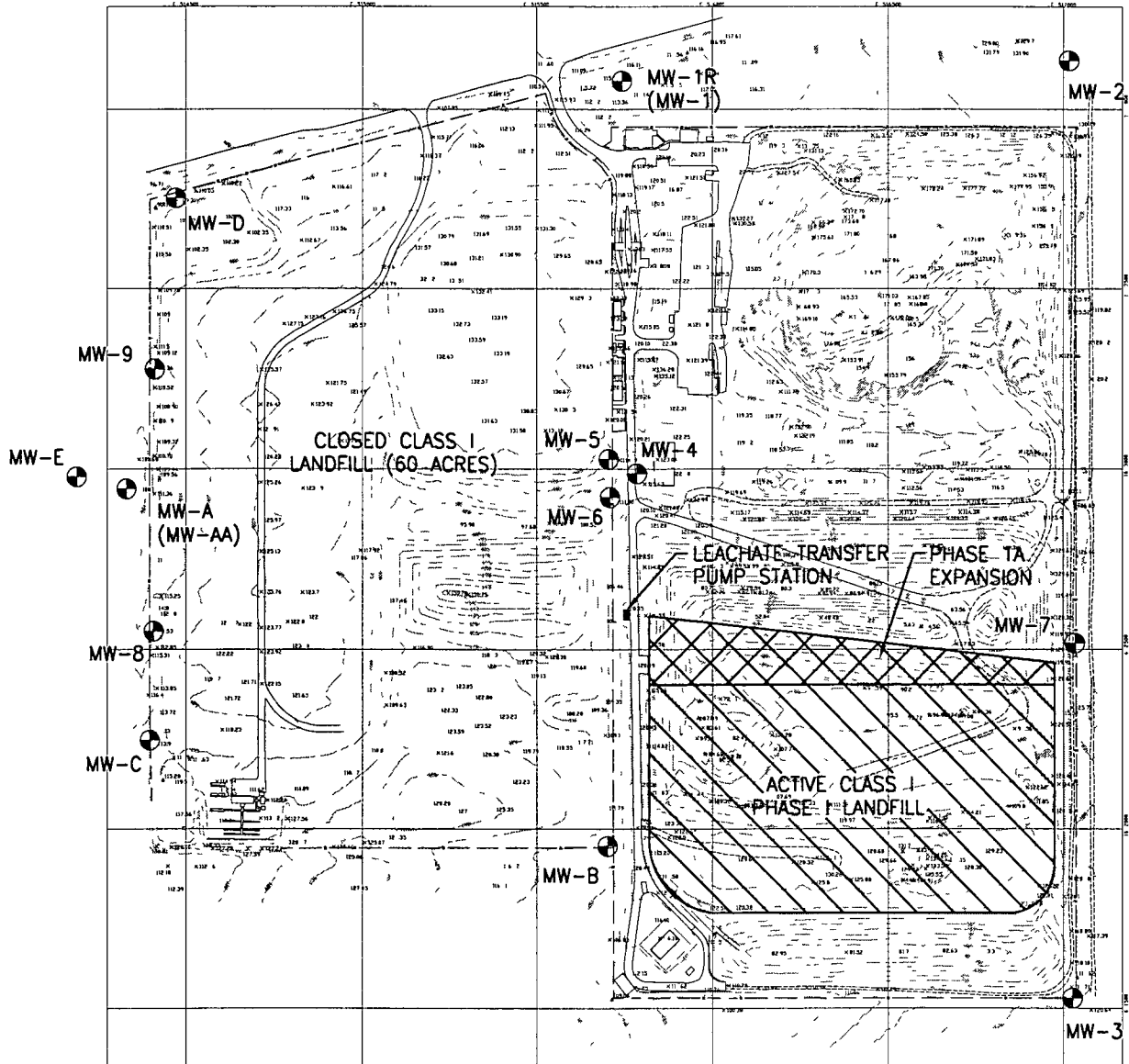
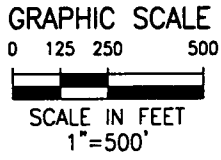
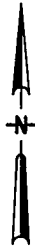
B = Background, P = Piezometer, I = Intermediate, D = Detection, C = Compliance

NGVD = National Geodetic Vertical Datum

\* Assumed based on video logging descriptions of "open hole"

Regional geology in the landfill area is typically characterized by undifferentiated sands and clays at the surface, underlain by clays and other materials associated with the Hawthorn Formation. The thickness and continuity of the Hawthorn sediments varies greatly in the area. The Hawthorn may act as a partial confining unit for the Floridan aquifer in some parts of the region. Beneath the Hawthorn lies a thick sequence of Eocene age carbonate deposits, which generally consist of limestones of the Suwannee, Ocala, and Avon Park formations.

Site specific geology is characterized by approximately 130 feet of surficial sands ranging from fine to medium sands to clayey, silty fine sands. Several 1-foot to 2-foot clay layers are present between 50 and 80 feet bls. These sediments form a low permeability unit over the Floridan aquifer with an average hydraulic conductivity of 0.024 foot per day. Beneath these sediments lies the Suwannee Formation. The Suwannee has a highly irregular surface beneath the site, with elevations ranging from 80 feet NGVD to -54 feet NGVD.



**LEGEND**

⊕ MONITORING WELL

Figure 2

Leachate Influent Sampling Point – Leachate Transfer Pump Station  
Citrus County Central Landfill

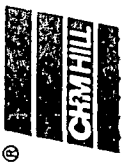
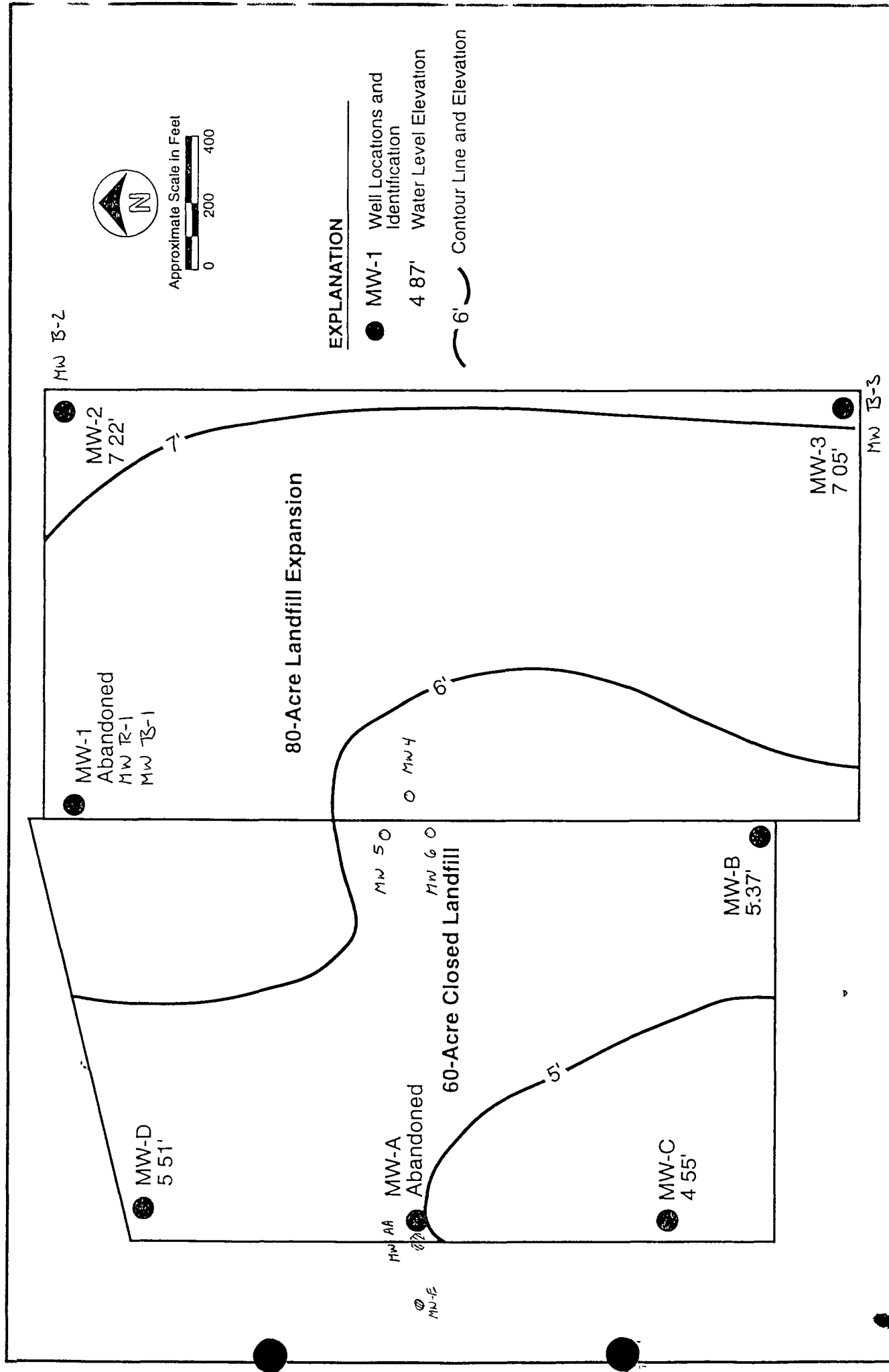


FIGURE 3-3  
Water Table Map for April 1994



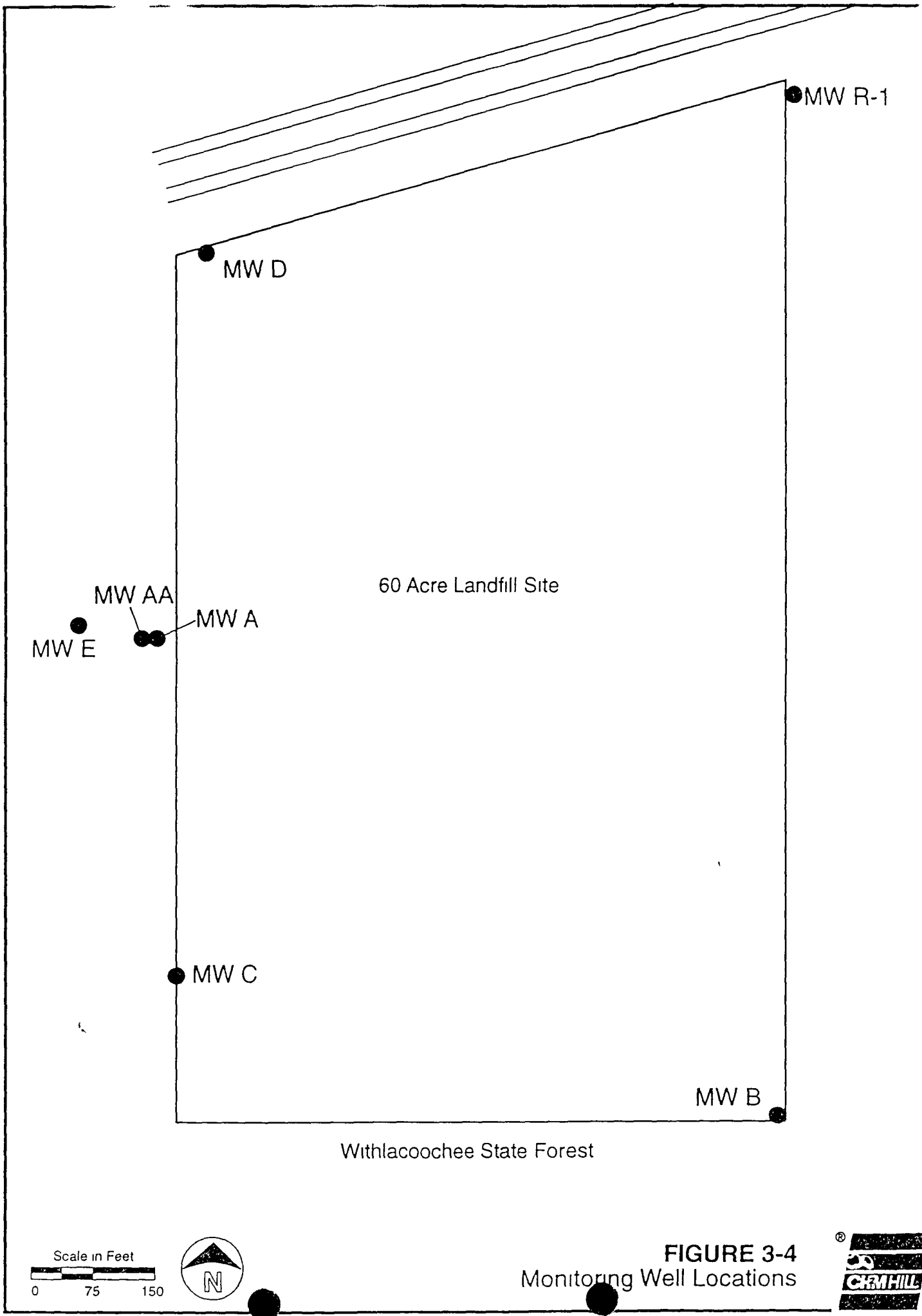
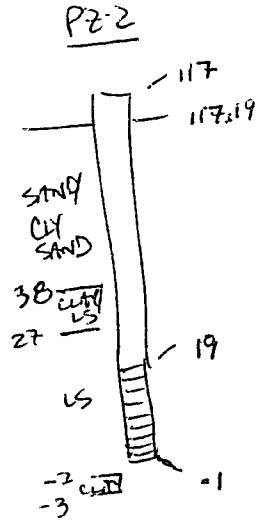
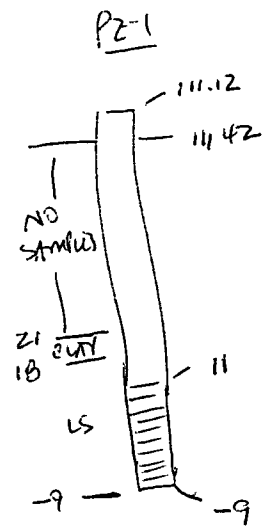
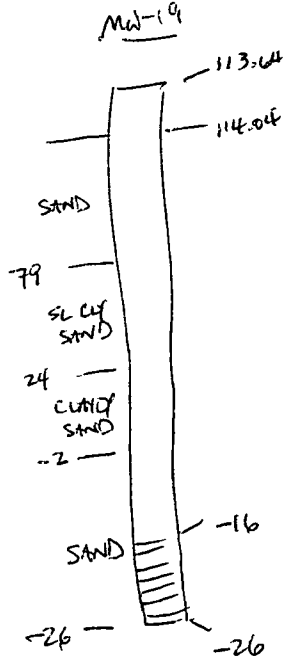
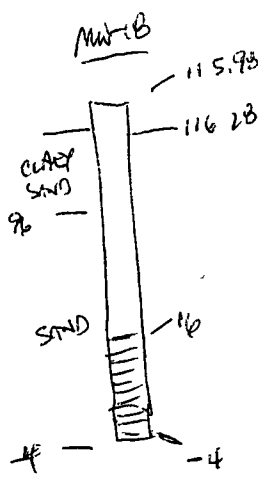
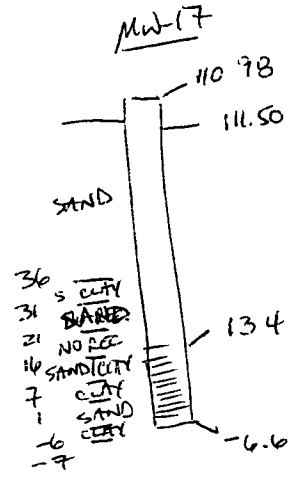
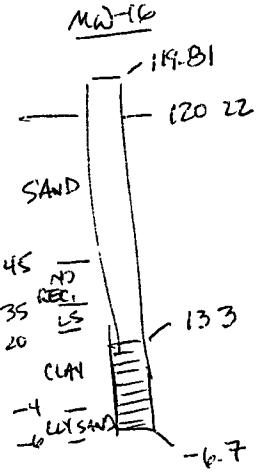
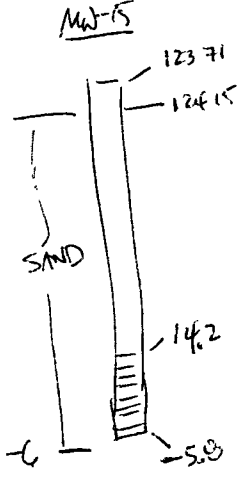
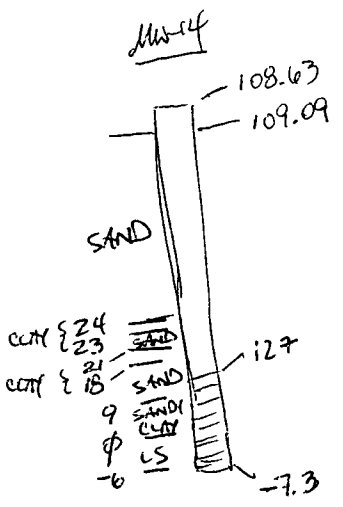
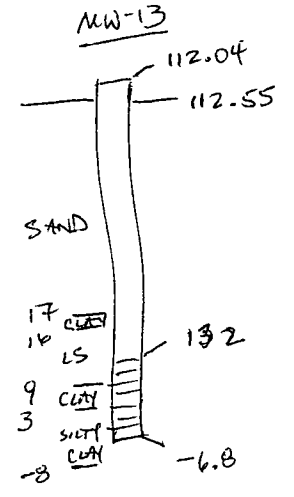
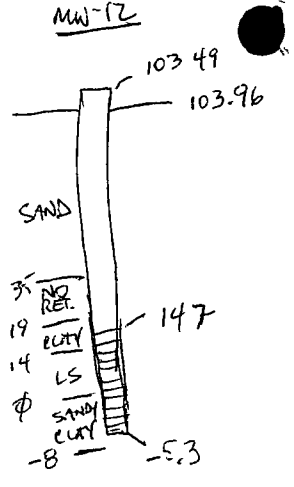
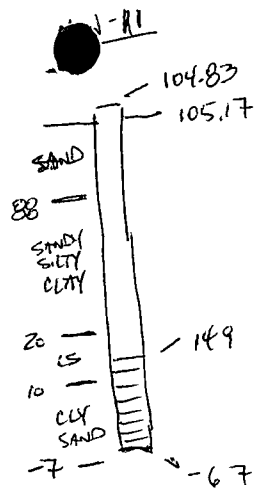
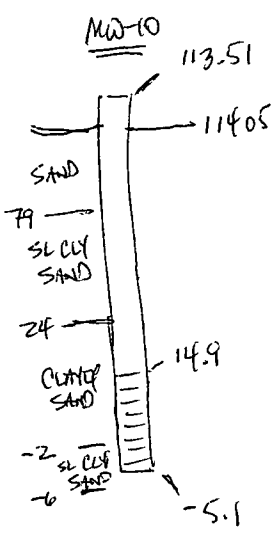


FIGURE 3-4  
Monitoring Well Locations



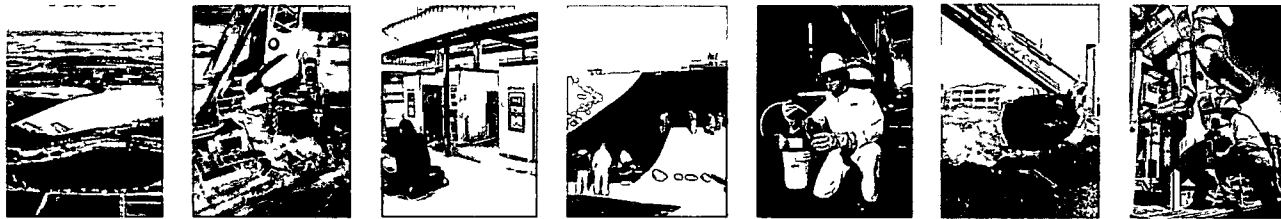


CITRUS CENTRAL LF





# SCS ENGINEERS



## Water Quality and Leachate Monitoring Plan

### Central Landfill Citrus County, Florida

Presented to:

**Citrus County**



230 W. Gulf to Lake Highway  
Lecanto, Florida 34461  
(352) 527-7670

Presented by:

**SCS ENGINEERS**  
4041 Park Oaks Blvd., Suite 100  
Tampa, Florida 33610  
(813) 621-0080

~~July 12, 2010~~ September 22, 2010  
File No. 09208040.03

Offices Nationwide  
[www.scsengineers.com](http://www.scsengineers.com)

ATTACHMENT 2  
WELL CONSTRUCTION INFORMATION TABLE

**ATTACHMENT 2  
CITRUS COUNTY CENTRAL LANDFILL  
WELL CONSTRUCTION DETAILS**

Well Name	Well Designation	Date Installed	Top of Casing Elevation (Ft NGVD)	Ground Elevation (Ft NGVD)	Total Depth (Ft BLS)	Total Depth (Ft BTOC)	Length (Ft)	Screen Details		Filter Pack (Silica Sand)	Well Location		
								Depth (Ft BLS) Bottom	Elevation (Ft NGVD) Top Bottom		Northing (Ft)	Easting (Ft)	
MW-AA <sup>1</sup>	Piezometer	NR	106 11	104 7	116	NR	10	106	116	0 1	-9 9	NR	NR
MW-B <sup>1</sup>	Piezometer	NR	111 94	111 1	128	NR	20	108	128	3 9	-16 1	NR	NR
MW-E <sup>1</sup>	Piezometer	NR	109 88	107 0	118	NR	20	98	118	11 9	-8 1	NR	NR
MW-1R <sup>1</sup>	Piezometer <sup>3</sup>	NR	118 08	115 3	125	NR	10	115	125	3 1	-6 9	NR	NR
MW-2 <sup>1</sup>	Piezometer <sup>3</sup>	NR	136 29	133 5	161	NR	15	146	161	-9 7	-24 7	NR	NR
MW-3 <sup>1</sup>	Background	NR	120 47	119 7	119	NR	15	104	119	16 5	1 5	NR	NR
MW-4R <sup>4</sup>	Piezometer	11/9/05	119 33	119 71	125 0	124 6	20	105 0	125 0	14 7	-5 3	NR	1642794 06
MW-5 <sup>1</sup>	Piezometer	NR	121 14	118 6	120	NR	10	110	120	11 1	1 1	NR	NR
MW-6 <sup>1</sup>	Intermediate	NR	118 48	115 8	122	NR	10	112	122	6 5	-3 5	NR	NR
MW-7 <sup>1</sup>	Background	NR	128 66	NR	137	NR	20	117	137	11 7	-8 3	NR	NR
MW-8R <sup>1</sup>	Piezometer	NR	118 13	NR	128	NR	20	108	128	10 1	-9 9	NR	NR
MW-9 <sup>1</sup>	Piezometer	NR	113 55	NR	121	NR	20	101	121	12 6	-7 5	NR	NR
MW-10	Compliance	11/2/05	113 51	114 05	120 5	118 6	20	100 5	120 5	14 9	-5 1	20/30	1643658 80
MW-11	Compliance	11/2/05	104 83	105 17	112 0	111 5	20	92 0	112 0	13 3	-6 7	Gravel	1643432 56
MW-12	Compliance	11/2/05	103 49	103 98	110 0	108 8	20	90 0	110 0	14 7	-5 3	20/30	1642972 51
MW-13	Compliance	11/10/05	112 04	112 55	120 0	118 8	20	100 0	120 0	13 2	-6 8	20/30	1642402 16
MW-14	Compliance	11/10/05	108 63	109 09	116 0	115 9	20	96 0	116 0	12 7	-7 3	20/30	1641950 73
MW-15	Compliance	11/10/05	123 71	124 15	130 0	129 5	20	110 0	130 0	14 2	-5 8	20/30	1641702 99
MW-16	Piezometer	10/31/05	119 81	120 22	127 0	126 5	20	107 0	127 0	13 3	-6 7	20/30	1642141 07
MW-17	Compliance	11/3/05	110 98	111 50	118 0	117 6	20	98 0	118 0	13 4	-6 6	20/30	1641705 53
MW-18	Assessment	1/23/07	115 98	116 28	120 0	119 6	20	100 0	120 0	16 4	-3 6	20/30	1643745 78
MW-19	Assessment	1/22/07	113 64	114 04	140 0	139 6	10	130 0	140 0	-16 0	-26 0	20/30	1643659 75
MW-20 <sup>2</sup>	Compliance	proposed	~118 5	~119	~124	~123 5	20	~104	~124	15 0	-5 0	20/30	~1643068 7
MW-21 <sup>2</sup>	Compliance	proposed	~114	~114 5	~119	~119	20	~99	~119	-15	-5	20/30	~1643841
PZ-1	Piezometer	1/26/07	111 12	111 42	120 0	119 6	20	100 0	120 0	11 5	-8 5	20/30	1643505 21
PZ-2	Piezometer	1/24/07	117 00	117 19	120 0	119 6	20	100 0	120 0	17 4	-2 6	20/30	1643832 98

BLS = Below Land Surface  
 BTOC = Below Top of Casing  
 NR = Not recorded  
 Ft = Feet  
 NGVD = National Geodetic Vertical Datum

Notes  
<sup>1</sup> Well Construction and Elevation information obtained from the Two-Year Groundwater Monitoring Report for Years 1997 and 1998, prepared by CH2MHill  
<sup>2</sup> Wells MW-20 and MW-21 are proposed, wells will be installed to position the screen interval between 15 and -5 ft NGVD Total depths and location are approximate and will be updated after surveying  
<sup>3</sup> Wells MW-1R and MW-2 changed from background to piezometer with the Phase 3 Expansion  
<sup>4</sup> Piezometer MW-4R is proposed to be abandoned

Elevation and survey data compiled from a Nature Coast Land Surveying, Inc survey dated December 16, 2005 and from a Terrence J Brannan Land Surveyor Inc survey dated March 22, 2007



**Board of County Commissioners**  
**DEPARTMENT OF PUBLIC WORKS**  
**SOLID WASTE MANAGEMENT DIVISION**

P O Box 340, Lecanto, Florida 34460  
Telephone (352) 527-7670 FAX (352) 527-7672  
TDD Telephone 527-5303  
email landfillinfo@bocc citrus fl us  
Citrus Springs/Dunnellon/Inglis/Yankeetown area Toll Free (352) 489-2120

December 15, 2008

Mr John Morris  
Dept of Environmental Protection  
13051 N Telecom Parkway  
Temple Terrace, Fl 33637-0926

Dept of Environmental Protection  
FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
DEC 17 2008  
Southwest District  
SOUTHWEST DISTRICT  
TAMPA

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
DEC 18 2008  
SOUTHWEST DISTRICT  
TAMPA

**Re: Citrus County Groundwater Monitoring Wells – Permit No. 21375-008-SO/01**

Dear Mr Morris

The County's surveyor had been advised that the DOT Benchmark used since 1991 on the Landfills Boundary Survey, Groundwater Monitoring Well Locations and Gas sampling locations had an error. In addition the County found a discrepancy on the groundwater well elevations.

Therefore, the survey has been updated and revisions to Groundwater Monitoring Wells B, 2, 4-R, E, 9 and 8-R elevations were completed.

A signed sealed Survey is enclosed for your records.

If you should need additional information, please let me know.

Sincerely,

Susan J Metcalfe  
Director, Citrus County  
Division of Solid Waste Mgt

CC Glenn W McCracken, Director, Dept Of Public Works w/o attachment  
Chris Kuzler, King Engineering with attachment  
John Banks, SCS Engineers with attachment  
David Rojas, Camp Dresser & McKee with attachment  
Troy Hays, Jones Edmunds & Associates with attachment

# JONES EDMUNDS

File

CONSTRUCTION  
DETAILS  
ONLY

April 11, 2007

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
APR 16 2007  
SOUTHWEST DISTRICT  
TAMPA

Mr John Morris, P G  
Florida Department of Environmental Protection – Southwest District  
13051 N Telecom Parkway  
Temple Terrace, FL 33632-0926

Re Citrus County Central Class I Landfill  
Minor Permit Modification Addendum  
FDEP Permit No 21375-005-SO/01  
Jones Edmunds Project No 03860-021-01

Dear Mr Morris

Please find included in Attachment 1, the requested replacement pages for the Citrus County Central Landfill Operations Permit Minor Modification that was submitted to the Department in November of 2006. The replacement pages are M-1 through M-3, which incorporate two newly installed assessment wells in the semiannual monitoring network, the proposed sampling parameters for these wells, and an updated site map. The site map includes the locations of the two assessment wells along with the locations of two piezometers, which are not included in the minor permit mod, but have been installed for the ongoing site assessment activities.

Attachment 2 includes the boring logs and well completion reports for the two assessment wells and the two piezometers.

If you have any questions or comments please call Troy Hays or me at (352) 377-5821.

Sincerely,



Katherine Weitz  
Project Manager

M:\03860-CitrusCounty\021\_01 Groundwater Investigation\Minor Permit Modification\CORR\2007\_04\_11 LTR Morris FDEP-PermitModAddendum.doc

## Attachments

xc Susan Metcalfe, P G  
Troy Hays, Jones Edmunds

730 NE Waldo Rd  
Gainesville, FL 32641

352 377 5821 Phone  
352-377 3166 Fax  
www.jonesedmunds.com

**Attachment 2**

Boring Logs and Well Completion Reports

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

APR 16 2007

SOUTHWEST DISTRICT  
TAMPA



APR 16 2007

SOUTHWEST DISTRICT TAMPA

Florida Department of Environmental Protection

Twin Towers Office Bldg 2600 Blau Stone Road Tallahassee, Florida 32399-2400

DEP Form # 62-522 900(3)
Form Title <u>MONITOR WELL COMPLETION REPORT</u>
Effective Date _____
DEP Application No _____ (Filled in by DEP)

# MONITOR WELL COMPLETION REPORT

DATE 4/3/2007

INSTALLATION NAME Citrus County Central Landfill

DEP PERMIT NUMBER 21375-008-SO/01 GMS NUMBER \_\_\_\_\_

WELL NUMBER MW-18 WELL NAME MW-18

DESIGNATION Background \_\_\_\_\_ Detection \_\_\_\_\_ Compliance X Assessment

LATITUDE/LONGITUDE N 1643745 78 E 514731 67

AQUIFER MONITORED Floridan

INSTALLATION METHOD Mud rotary

INSTALLED BY Huss Drilling

TOTAL DEPTH 120 ft (bls) DEPTH OF SCREEN 100-120 ft (bls)

SCREEN LENGTH 20 ft SCREEN SLOT SIZE 0.01 in SCREEN TYPE sch 40 slotted PVC

CASING DIAMETER 2 in CASING TYPE sch 40 PVC

LENGTH OF CASING 130 ft FILTER PACK MATERIAL 20/30 clean silica sand

TOP OF CASING ELEVATION (MSL) 115.98 ft

GROUND SURFACE ELEVATION (MSL) 116.28 ft

COMPLETION DATE 1/23/2007

DESCRIBE WELL DEVELOPMENT Initial development by air sparging was conducted by the drillers, additional development with a Grundfos pump  
Was conducted before initial sampling

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL) 5.81 ft

DATE AND TIME MEASURED 2/28/2007 12:36 PM

REMARKS (soils information, stratigraphy, etc ) \_\_\_\_\_

REPORT PREPARED BY Troy Hays, Jones Edmunds & Associates, 352-377-5821  
(name, company, phone number)

# TEST BORING FIELD REPORT

Boring No **MW-18**

Page 1 of 3

Project Name Citrus Co - Central Landfill

Test Boring Completed 1/23/2007 , Well Completed 1/23/2007

Project No 03860-021-01

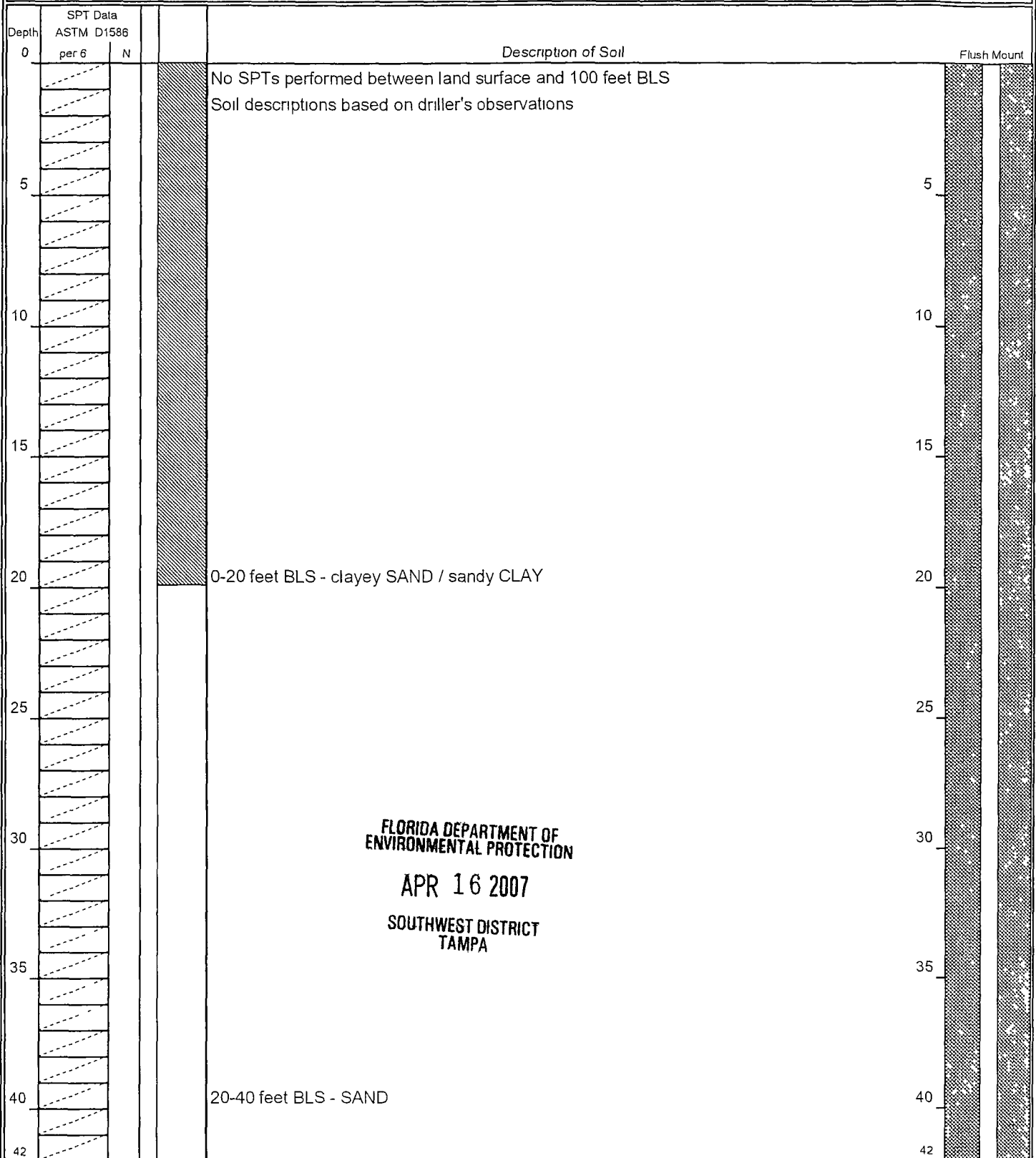
Jones Edmunds Geologist James Tully

Drillers Huss Drilling

ELEVATIONS Ground 116 28 ft NGVD

Drilling/sampling methods Mud Rotary - 6" Bit

Top of Casing 115 98 ft NGVD (Brannan Surveyors)



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

APR 16 2007

SOUTHWEST DISTRICT TAMPA

**Notes & additional data/info (specify if other materials used)**

Total well depth = 120 feet bls

Well casing/pipe Dia & type = 2-in Sch 40 PVC , Solid length = 100 ft , Screen = 20 ft , 0.010-in

Sand filter pack = 9 50 lb Bags, Type= 20/30 silica , Placed from 120 to 98 ft bls (measured)

Annular seal Type = Fine Sand , Thickness = 3 ft , Placed from 98 to 95 ft bls (measured)

Grout = 14 94 lb bags cement grout to surface, Pad = 2x2 ft concrete , Cover = steel flush-mount cover



# TEST BORING FIELD REPORT

Boring No MW-18

Page 2 of 3

Project Name Citrus County - Central Landfill

Project No 03860-021-01

SPT Data		Description of Soil
Depth	ASTM D1586 per 6 N	
42		
45		
50		
55		
60		40-60 feet BLS - SAND
65		
70		
75		
80		60-80 feet BLS - SAND
85		
87		

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

APR 16 2007

SOUTHWEST DISTRICT TAMPA

Notes & additional data/info (specify if other materials used)



# TEST BORING FIELD REPORT

Boring No MW-18

Page 3 of 3

Project Name Citrus County - Central Landfill

Project No 03860-021-01

Depth	SPT Data ASTM D1586		Description of Soil
	per 6	N	
87			
90			
95			
100	50		80-100 feet BLS - SAND SAND, tan, fine grained, wet
105	30 40 50	90	SAND, white, tan, fine grained, moist
110	45 50		No recovery from split spoon
115	45 50		SAND, tan, fine grained, saturated
120	50		No recovery from spoon drilling terminated
125			
130			
132			

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 APR 16 2007  
 SOUTHWEST DISTRICT  
 TAMPA

Notes & additional data/info (specify if other materials used)



APR 16 2007

SOUTHWEST DISTRICT TAMPA

Florida Department of Environmental Protection  
Twin Towers Office Bldg 2600 Blair Stone Road Tallahassee, Florida 32399-2400

DEP Form # 62 522 900(3)
Form Title <u>MONITOR WELL COMPLETION REPORT</u>
Effective Date _____
DEP Application No. _____ (Filled in by DEP)

# MONITOR WELL COMPLETION REPORT

DATE 4/3/2007

INSTALLATION NAME Citrus County Central Landfill

DEP PERMIT NUMBER 21375-008-SO/01 GMS NUMBER \_\_\_\_\_

WELL NUMBER MW-19 WELL NAME MW-19

DESIGNATION Background Detection Compliance  Assessment

LATITUDE/LONGITUDE N 1643659 75 E 514817 07

AQUIFER MONITORED Floridan

INSTALLATION METHOD Mud rotary

INSTALLED BY Huss Drilling

TOTAL DEPTH 140 ft (bls) DEPTH OF SCREEN 130-140 ft (bls)

SCREEN LENGTH 10 ft SCREEN SLOT SIZE 0.01 in SCREEN TYPE sch 40 slotted PVC

CASING DIAMETER 2 in CASING TYPE sch. 40 PVC

LENGTH OF CASING 130 ft FILTER PACK MATERIAL 20/30 clean silica sand

TOP OF CASING ELEVATION (MSL) 113.64 ft

GROUND SURFACE ELEVATION (MSL) 114.04 ft

COMPLETION DATE 1/22/2007

DESCRIBE WELL DEVELOPMENT Initial development by air sparging was conducted by the drillers, additional development with a Grundfos pump  
Was conducted before initial sampling

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL) 5.78 ft

DATE AND TIME MEASURED 2/28/2007 10 59 AM

REMARKS (soils information, stratigraphy, etc ) \_\_\_\_\_

REPORT PREPARED BY Troy Hays, Jones Edmunds & Associates, 352-377-5821  
(name, company, phone number)

# TEST BORING FIELD REPORT

Boring No **MW-19**

Page 1 of 4

Project Name Citrus County - Central Landfill

Test Boring Completed 1/22/2007 , Well Completed 1/22/2007

Project No 03860-021-01

Jones Edmunds Geologist James Tully

Drillers Huss Drilling

ELEVATIONS Ground 114 04 ft NGVD

Drilling/sampling methods Mud Rotary - 6" Bit

Top of Casing 113 64 ft NGVD (Brannan Surveyors)

Depth	SPT Data ASTM D1586		Description of Soil
	per 6	N	
0			No SPTs performed between land surface and 120 feet BLS Please see boring log for MW-10
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

APR 16 2007

SOUTHWEST DISTRICT TAMPA

**Notes & additional data/info (specify if other materials used)**

Total well depth = 140 feet bls

Well casing/pipe Dia & type = 2-in Sch 40 PVC , Solid length = 130 ft , Screen = 10 ft , 0 010-in

Sand filter pack = 5 50 lb Bags, Type= 20/30 silica , Placed from 140 to 128 ft bls (measured)

Annular seal Type = Bentonite Hole-Plug , Thickness = 6 ft , Placed from 128 to 122 ft bls (measured)

Grout = 2 94 lb bags cement grout to surface, Pad = 2x2 ft concrete , Cover = steel flush-mount cover



# TEST BORING FIELD REPORT

Boring No MW-19

Page 2 of 4

Project Name Citrus County - Central Landfill

Project No 03860-021-01

Depth	SPT Data		Description of Soil
	ASTM D1586 per 6	N	
42			
45			
50			
55			
60			
65			
70			
75			
80			
85			
87			

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

APR 16 2007

SOUTHWEST DISTRICT  
TAMPA

Notes & additional data/info (specify if other materials used)



**TEST BORING FIELD REPORT**

Boring No MW-19

Project Name Citrus County - Central Landfill

Project No 03860-021-01

Depth	SPT Data		Description of Soil
	ASTM D1586 per 6	N	
87			
90			
95			
100			
105			
110			
115			
120	50		sandy CLAY, tan, white, soft SAND, orange, fine grained with some silt
125	50		SAND, white, tan, fine grained with some silt, very compacted
130	40 50		SAND, white, tan, fine grained with some silt, very compacted
132			

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

APR 16 2007

SOUTHWEST DISTRICT TAMPA

Notes & additional data/info (specify if other materials used)





# TEST BORING FIELD REPORT

Boring No MW-19

Page 4 of 4

Project Name Citrus County - Central Landfill

Project No 03860-021-01

Depth	SPT Data		Description of Soil
	ASTM D1586 per 6	N	
132			
135	39 50	45 95	No recovery from split spoon
140	38	50	SAND, white, tan, fine grained with some silt, very compacted drilling terminated
145			
150			
155			
160			
165			
170			
175			
177			

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

APR 16 2007

SOUTHWEST DISTRICT  
TAMPA

Notes & additional data/info (specify if other materials used)



APR 16 2007

SOUTHWEST DISTRICT TAMPA

Florida Department of Environmental Protection  
Twin Towers Office Bldg 2600 Blair Stone Road Tallahassee, Florida 32399-2400

DEP Form # 62-522 900(3)
Form Title <u>MONITOR WELL COMPLETION REPORT</u>
Effective Date _____
DEP Application No _____ (Filled in by DEP)

# MONITOR WELL COMPLETION REPORT

DATE 4/3/2007

INSTALLATION NAME Citrus County Central Landfill

DEP PERMIT NUMBER 21375-008-SO/01 GMS NUMBER \_\_\_\_\_

WELL NUMBER PZ-1 WELL NAME Piezometer #1 (water level only)

DESIGNATION Background \_\_\_\_\_ Detection \_\_\_\_\_ Compliance \_\_\_\_\_

LATITUDE/LONGITUDE N 1643505 21 E 514454 92

AQUIFER MONITORED Floridan

INSTALLATION METHOD Mud rotary

INSTALLED BY Huss Drilling

TOTAL DEPTH 120 ft (bls) DEPTH OF SCREEN 100-120 ft (bls)

SCREEN LENGTH 20 ft SCREEN SLOT SIZE 0 01 in SCREEN TYPE sch 40 slotted PVC

CASING DIAMETER 2 in CASING TYPE sch 40 PVC

LENGTH OF CASING 100 ft FILTER PACK MATERIAL 20/30 clean silica sand

TOP OF CASING ELEVATION (MSL) 111 12 ft

GROUND SURFACE ELEVATION (MSL) 111 42 ft

COMPLETION DATE 1/26/2007

DESCRIBE WELL DEVELOPMENT Initial development by air sparging was conducted by the drillers, additional development with a Grundfos pump was conducted before pressure transducer installation

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL) \_\_\_\_\_

DATE AND TIME MEASURED \_\_\_\_\_

REMARKS (soils information, stratigraphy, etc ) \_\_\_\_\_

REPORT PREPARED BY Troy Hays, Jones Edmunds & Associates, 352-377-5821  
(name, company, phone number)

# TEST BORING FIELD REPORT

Boring No **PZ-1**

Page 1 of 3

Project Name Citrus County - Central Landfill

Test Boring Completed 1/25/2007 , Well Completed 1/26/2007

Project No 03860-021-01

Jones Edmunds Geologist Donnie Wilkerson

Drillers Huss Drilling

ELEVATIONS Ground 111.42 ft NGVD

Drilling/sampling methods Mud Rotary

Top of Casing 111.12 ft NGVD (Brannan Surveyors)

Depth	SPT Data		Description of Soil	Flush Mount
	ASTM D1586 per 6'	N		
0			No SPTs performed Soil descriptions based on Driller's observation	
5				
10				
15				
20				
25				
30				
35				
40				
42				

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**APR 16 2007**

**SOUTHWEST DISTRICT TAMPA**

**Notes & additional data/info (specify if other materials used)**

Total well depth = 120 feet bls

Well casing/pipe Dia & type = 2-in Sch 40 PVC , Solid length = 100 ft , Screen = 20 ft , 0.010-in

Sand filter pack = 17.5 50 lb Bags, Type= 20/30 silica , Placed from 98 to 120 ft bls (measured)

Annular seal Type = Fine Sand , Thickness = 2 ft , Placed from 96 to 98 ft bls (measured)

Grout = 16 94 lb bags cement grout to surface, Pad = 2x2 ft concrete , Cover = steel flush mount



**TEST BORING FIELD REPORT**

Boring No PZ-1

Project Name Citrus County - Central Landfill

Project No 03860-021-01

SPT Data		Description of Soil
Depth	ASTM D1586	
42	per 6 N	
45		
50		
55		
60		
65		
70		
75		
80		
85		
87		

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

APR 16 2007

SOUTHWEST DISTRICT TAMPA

Notes & additional data/info (specify if other materials used)



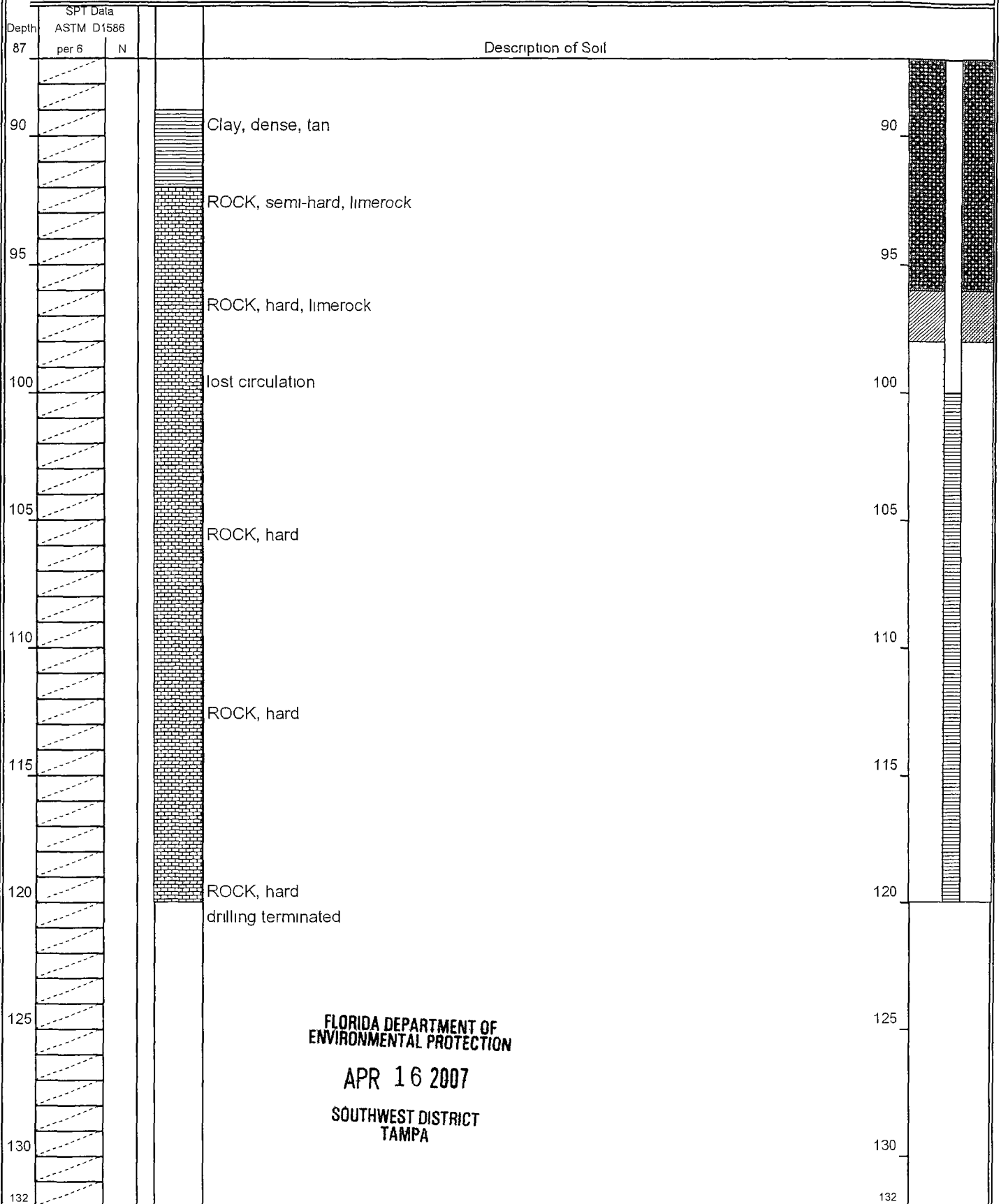
# TEST BORING FIELD REPORT

Boring No PZ-1

Page 3 of 3

Project Name Citrus County - Central Landfill

Project No 03860-021-01



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

APR 16 2007

SOUTHWEST DISTRICT TAMPA

Notes & additional data/info (specify if other materials used)

Used 4 bags of pea gravel to help fill void between 100 and 120 feet BLS



APR 16 2007

SOUTHWEST DISTRICT TAMPA

Florida Department of Environmental Protection

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

DEP Form # 62 522 900(3)
Form Title MONITOR WELL COMPLETION REPORT
Effective Date
DEP Application No (Filled in by DEP)

MONITOR WELL COMPLETION REPORT

DATE 4/3/2007
INSTALLATION NAME Citrus County Central Landfill
DEP PERMIT NUMBER 21375-008-SO/01 GMS NUMBER
WELL NUMBER PZ-2 WELL NAME Piezometer #2 (water level only)
DESIGNATION Background Detection Compliance
LATITUDE/LONGITUDE N 1643832 98 E 515021 33
AQUIFER MONITORED Floridan
INSTALLATION METHOD Mud rotary
INSTALLED BY Huss Drilling
TOTAL DEPTH 118 ft (bls) DEPTH OF SCREEN 98-118 ft (bls)
SCREEN LENGTH 20 ft SCREEN SLOT SIZE 0.01 in SCREEN TYPE sch 40 slotted PVC
CASING DIAMETER 2 in CASING TYPE sch 40 PVC
LENGTH OF CASING 98 ft FILTER PACK MATERIAL 20/30 clean silica sand
TOP OF CASING ELEVATION (MSL) 117.00 ft
GROUND SURFACE ELEVATION (MSL) 117.19 ft
COMPLETION DATE 1/24/2007
DESCRIBE WELL DEVELOPMENT Initial development by air sparging was conducted by the drillers, additional development with a Grundfos pump was conducted before pressure transducer installation
POST DEVELOPMENT WATER LEVEL ELEVATION (MSL)
DATE AND TIME MEASURED
REMARKS (soils information, stratigraphy, etc)
REPORT PREPARED BY Troy Hays, Jones Edmunds & Associates, 352-377-5821 (name, company, phone number)

# TEST BORING FIELD REPORT

Boring No **PZ-2**

Page 1 of 3

Project Name Citrus County - Central Landfill

Test Boring Completed 1/24/2007 , Well Completed 1/24/2007

Project No 03860-021-01

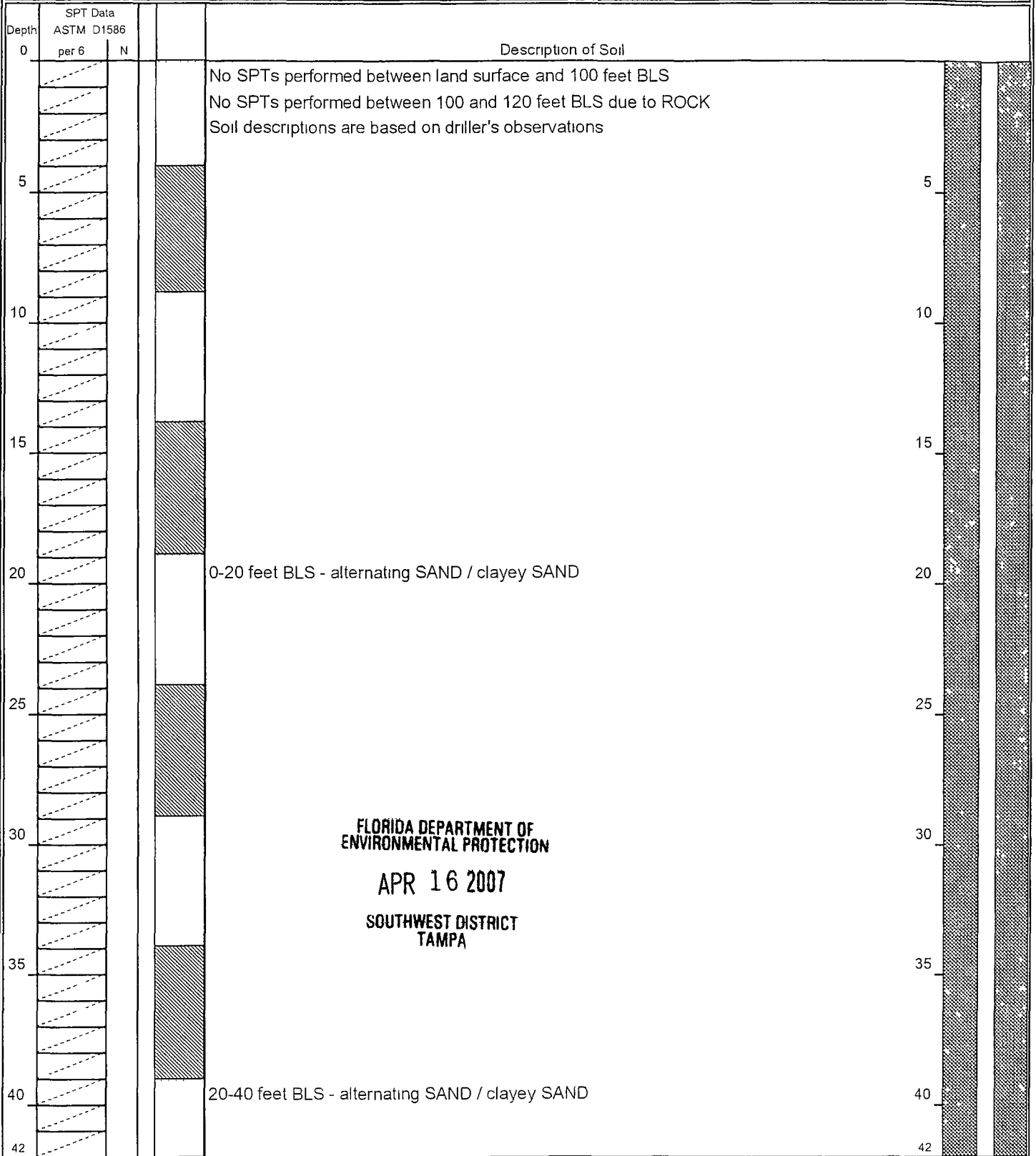
Jones Edmunds Geologist James Tully

Drillers Huss Drilling

ELEVATIONS Ground 117 19 ft NGVD

Drilling/sampling methods Mud Rotary - 6" Bit

Top of Casing 117 00 ft NGVD (Brannan Surveyors)



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

APR 16 2007

SOUTHWEST DISTRICT TAMPA

Notes & additional data/info (specify if other materials used)

Total well depth = 118 feet bls

Well casing/pipe Dia & type = 2-in Sch 40 PVC , Solid length = 98 ft , Screen = 20 ft , 0 010-in

Sand filter pack = 14 5 50 lb Bags, Type= 20/30 silica , Placed from 118 to 96 ft bls (measured)

Annular seal Type = Fine Sand , Thickness = 2 ft , Placed from 96 to 94 ft bls (measured)

Grout = 18 94 lb bags cement grout to surface, Pad = 2x2 ft concrete , Cover = steel flush-mount



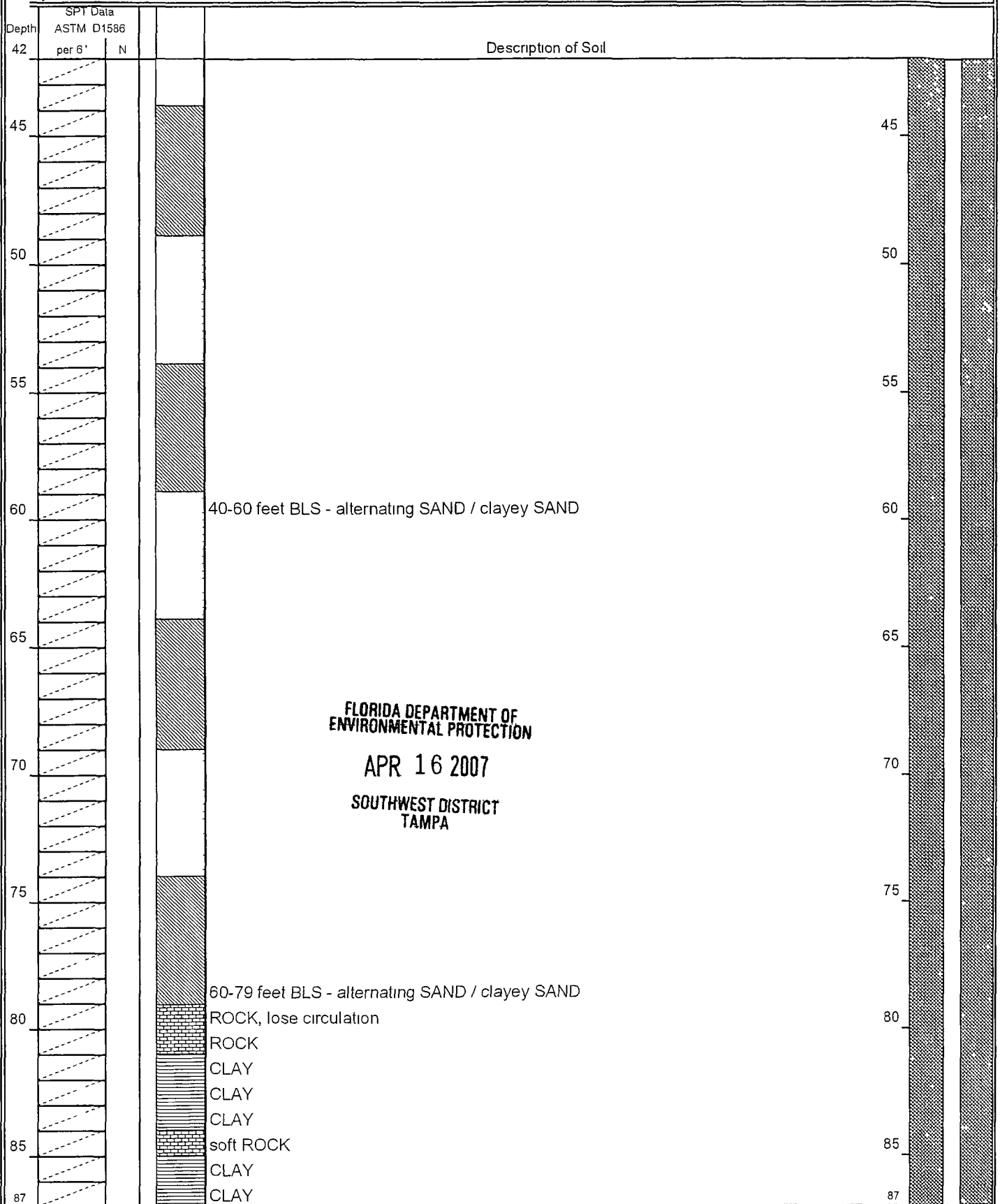
# TEST BORING FIELD REPORT

Boring No PZ-2

Page 2 of 3

Project Name Citrus County - Central Landfill

Project No 03860-021-01



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

APR 16 2007

SOUTHWEST DISTRICT TAMPA

Notes & additional data/info (specify if other materials used)





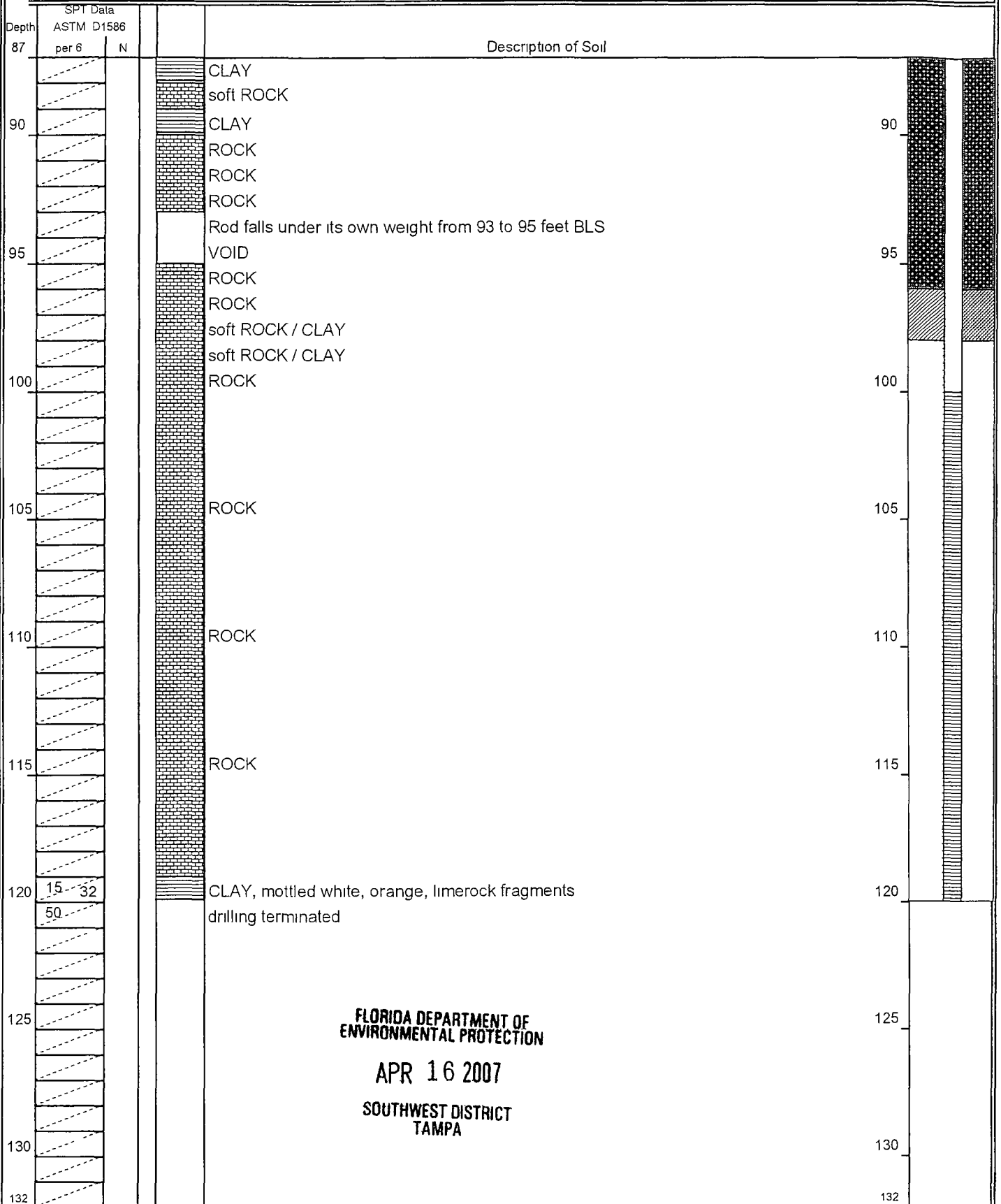
# TEST BORING FIELD REPORT

Boring No PZ-2

Page 3 of 3

Project Name Citrus County - Central Landfill

Project No 03860-021-01



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

APR 16 2007

SOUTHWEST DISTRICT TAMPA

Notes & additional data/info (specify if other materials used)



SEP 15 2006

Southwest District

**CITRUS COUNTY CENTRAL LANDFILL  
GROUNDWATER  
INVESTIGATION REPORT**

**RESPONSE TO FDEP REQUEST  
FOR ADDITIONAL INFORMATION**

*Prepared for*

**CITRUS COUNTY BOARD OF COUNTY COMMISSIONERS**  
110 North Apopka Avenue  
Inverness, Florida 34450

*Prepared by*

**JONES EDMUNDS & ASSOCIATES, INC.**  
730 NE Waldo Road  
Gainesville, Florida 32641

P E Certificate of Authorization #1841  
P G Certificate of Authorization #133

September 2006



Allan H. Biddlecomb, P G  
Florida P G No 0001258

9/15/06

**TABLE 1  
CITRUS COUNTY CENTRAL LANDFILL  
WELL CONSTRUCTION DETAILS**

Well Name	Date Installed	Top of Casing Elevation (Ft NGVD)	Ground Elevation (Ft NGVD)	Total Depth (Ft BLS)	Total Depth (Ft BTOC)	Length (Ft)	Screen Details			Filter Pack (Silica Sand)	Well Location	
							Depth (Ft BLS) Top	Depth (Ft BLS) Bottom	Elevation (Ft NGVD) Top		Elevation (Ft NGVD) Bottom	Northing (Ft)
MW-AA <sup>1</sup>	NR	106.11	104.7	116	NR	10	106	116	0.1	-9.9	NR	NR
MW-B <sup>1</sup>	NR	111.94	111.1	128	NR	20	108	128	3.9	-16.1	NR	NR
MW-C <sup>1</sup>	NR	115.18	114.1	199	NR	OH	192	199	-76.8	-83.8	NR	NR
MW-D <sup>1</sup>	NR	109.77	108.4	208	NR	OH	188	208	-78.2	-98.2	NR	NR
MW-E <sup>1</sup>	NR	109.88	107.0	118	NR	20	98	118	11.9	-8.1	NR	NR
MW-1R <sup>1</sup>	NR	118.08	115.3	125	NR	10	115	125	3.1	-6.9	NR	NR
MW-2 <sup>1</sup>	NR	136.29	133.5	161	NR	15	146	161	-9.7	-24.7	NR	NR
MW-3 <sup>1</sup>	NR	120.47	119.7	119	NR	15	104	119	16.5	1.5	NR	NR
MW-4R	11/9/05	119.33	119.71	125.0	124.6	20	105.0	125.0	14.7	-5.3	NR	1642794.06
MW-5 <sup>1</sup>	NR	121.14	118.6	120	NR	10	110	120	11.1	1.1	NR	NR
MW-6 <sup>1</sup>	NR	118.48	115.8	122	NR	10	112	122	6.5	-3.5	NR	NR
MW-7 <sup>1</sup>	NR	128.66	NR	137	NR	20	117	137	11.7	-8.3	NR	NR
MW-8R <sup>1</sup>	NR	118.13	NR	128	NR	20	108	128	10.1	-9.9	NR	NR
MW-9 <sup>1</sup>	NR	113.55	NR	121	NR	20	101	121	12.6	-7.5	NR	NR
MW-10	11/2/05	113.51	114.05	120.5	118.6	20	100.5	120.5	14.9	-5.1	20/30	1643658.80
MW-11	11/2/05	104.837	105.17	112.07	111.5	20	92.0	112.0	13.3	-6.7	Gravel	1643432.56
MW-12 <sup>1</sup>	11/2/05	103.497	103.98	110.0	108.8	20	90.0	110.0	14.7	-5.3	20/30	1642972.51
MW-13	11/10/05	112.04	112.55	120.0	118.8	20	100.0	120.0	13.2	-6.8	20/30	1642402.16
MW-14	11/10/05	108.63	109.09	116.0	115.9	20	96.0	116.0	12.7	-7.3	20/30	1641950.73
MW-15	11/10/05	123.71	124.15	130.0	129.5	20	110.0	130.0	14.2	-5.8	20/30	1641702.99
MW-16	10/31/05	119.81	120.22	127.0	126.5	20	107.0	127.0	13.3	-6.7	20/30	1642141.07
MW-17	11/3/05	110.98	111.50	118.0	117.6	20	98.0	118.0	13.4	-6.6	20/30	1641705.53

BLS = Below Land Surface

BTOC = Below Top of Casing

NR = Not recorded

Ft = Feet

NGVD = National Geodetic Vertical Datum

OH = Open Hole

Notes

<sup>1</sup> Well Construction and Elevation information obtained from the Two-Year Groundwater Monitoring Report for Years 1997 and 1998, prepared by CH2MHill

Elevation and survey data compiled from a Nature Coast Land Surveying, Inc survey dated December 16, 2005

All wells constructed with 2" PVC risers and screens

Screens are 01" slot size

**APPENDIX D**  
**DRILLING LOGS**

# BORING LOG FIELD REPORT

Boring No MW-10

Page 1 of 3

Project Name Citrus County Groundwater Investigation

Boring Completed 10/25/05, Well Completed 11/02/05

Project No 03860-021-01

JEA Geologist Adam Smith

Drillers Diversified - Dade City, Kevin

ELEVATIONS Ground 114.05 ft NGVD, Top of Slab \_\_\_\_\_ ft NGVD

Drilling/sampling methods HSA, ~~Min. Rotary~~ / SPT

Top of Casing 113.51 ft NGVD (NCLS Surveyors)

Well Details

Depth	SPT Data ASTM D1586		Description of Soil	FLUSH MOUNT	
	per 9"	N			
0					
5					
10			SAND, tan, Fine grained		
15			SAME AS ABOVE		
20			SAME AS ABOVE		
25			SAND, Light tan, fine grained		2" PVC
30			SAME AS ABOVE		
35			SAME AS ABOVE		
40			sl. clayey SAND, tan, Fine grained		← (+79)
42					

Notes & additional data/info (specify if other materials used)

Total well depth = 120.5 feet bls  
 Well casing/pipe Dia & type = 2-in Sch 40 PVC Solid length = 100.5 ft, Screen = 20 ft, 0.010-in  
 Sand filter pack = 17 50 lb Bags, Type = 20/30 silica, Placed from 98 to 20.5 ft bls (measured)  
 Annular seal Type = 30/65, Thickness = 1.5 ft, Placed from 97 to 98 ft bls (measured)  
 Grout = 2 94 lb bags cement grout to surface, Pad = 2x2 ft concrete Cover = Flush Mount

**JONES  
EDMUNDS**

# BORING LOG FIELD REPORT

Boring No MW-10

Page 2 of 3

Project Name Citrus County Groundwater Investigation

Project No 03860-021-01

Depth	SPT Data		Description of Soil	Well Details
	ASTM D1586 per 6"	N		
42				
45			SAME AS ABOVE	
50			SAME AS ABOVE	
55			SAME AS ABOVE	
60			SAME AS ABOVE	
65			SAME AS ABOVE	
70			sl silty, clayey SAND, lt tan, fine grained	
75			SAME AS ABOVE, tan/orange	
80			SAME AS ABOVE	
85			NO RETURN	
87				

2" PVC

Notes & additional data/info (specify if other materials used)

ADDED 6 BAGS (50lb) OF ENVIROPLUG GROUT.

ADDED 2 BAGS OF HOLE PLUG

**JONES**  
**EDMUNDS**

# BORING LOG FIELD REPORT

Boring No MW-10

Page 3 of 3

Project Name Citrus County Groundwater Investigation  
 Project No 03860-021-01

Well Details

Depth	SPT Data		Description of Soil	Well Details
	ASTM D1586 per 6"	N		
87				
90	8 13	14 17	27	
			clayey SAND, lt tan, mottled tan	← (+24)
95	12 14	12 18	26	
			SAME AS ABOVE	
100	20 23	20 16	43	
			SAME AS ABOVE	
105	12 15	12 23	27	
			SAME AS ABOVE	
110	13 21	13 23	34	
			SAME AS ABOVE, becomes wet @ 111' bls	
	23	-	-	
			ROD SLIPPED 1'	
			SAME AS ABOVE, wet	
115				← (-2)
120				
			sl. clayey sand, tan, mottled dk + lt tan, clean, wet	← (-6)
			BORING TERMINATED @ 121' bls	
125				
130				
132				

Notes & additional data/info (specify if other materials used)  
 DTW = 105.5' bls on 10/26/05

**JONES**  
**EDMUNDS**

# BORING LOG FIELD REPORT

Boring No MW-11

Page 1 of 3

Project Name Citrus County Groundwater Investigation

Boring Completed 10/21/05, Well Completed 11/02/05

Project No 03860-021-01

JEA Geologist Adam Smith

Drillers Diversified - Dade City, Kevin

ELEVATIONS Ground 105.7 ft NGVD, Top of Slab \_\_\_\_\_ ft NGVD

Drilling/sampling methods HSA, ~~HSA~~ / SPT

Top of Casing 104.83 ft NGVD (NCLS Surveyors)

Depth	SPT Data		Description of Soil	Well Details	
	ASTM D1586	per 6" N		FLUSH	MOUNT
0					
5			SAND, H. tan, fine grained	+	+
10			SAME AS ABOVE	+	+
15			SAND, tan, Fine grained	+	+
20			Sandy, silty, CLAY, tan mottled orange to brown + dense, STIFF w/ limerock frags, white	+	+
25			Increasing limerock fragments, hard, possibly dolomitized	+	+
30			SAME AS ABOVE, limestone / dolostone, brown	+	+
35			SAME AS ABOVE	+	+
40			SAME AS ABOVE	+	+
42			SAME AS ABOVE	+	+

← BB

2" PVC

Notes & additional data/info (specify if other materials used)

Total well depth = 111.5 feet bls  
 Well casing/pipe Dia & type = 2-in Sch 40 PVC Solid length = 91.5 ft, Screen = 20 ft, 0.010-in  
 Sand filter pack = 17 50 lb Bags, Type = 20/30 silica Placed from 81.5 to 111.5 ft bls (measured)  
 Annular seal Type = BENTONITE, Thickness = 4 ft, Placed from 77.5 to 81.5 ft bls (measured)  
 Grout = 2 94 lb bags cement grout to surface, Pad = 2x2 ft concrete Cover = Flush Mount

**JONES  
EDMUNDS**



# BORING LOG FIELD REPORT

Boring No MW-11

Project Name Citrus County Groundwater Investigation

Project No 03860-021-01

Depth	SPT Data		Description of Soil	Well Details	
	ASTM D1586 per 6"	N			
42					
45			sl sandy silty CLAY, brown w/ common limerock frags, hard, possibly dolomitized, tan / brown		
50			SAME AS ABOVE		
55			SAME AS ABOVE		
60			SAME AS ABOVE		
65			SAME AS ABOVE		
70			SAME AS ABOVE		
75			SAME AS ABOVE		
80			SAME AS ABOVE		
85	17	22	LIMEROCK, white, varies from soft to hard, dry		
87	11	10			

2" PVC

Notes & additional data/info (specify if other materials used)  
 DTW @ 98 12 below TOC, MEASURED ON 11/03/05

**JONES  
EDMUNDS**

# BORING LOG FIELD REPORT

Boring No MW-11

Project Name Citrus County Groundwater Investigation

Project No 03860-021-01

Depth	SPT Data		Description of Soil	Well Details
	ASTM D1586 per 6	N		
87				
90	21-20 23-28	43	LIMEROCK, buff, medium to hard, w/ sandy clay, tan mottled orange and brown to white sand, fine grained, moist	7 PVC
95	13-9 12-12	21	sl. sandy <del>CLAY</del> clayey SAND, white to tan, fine grained, clean, moist, becomes wet @ 96.5' bls	10
100			SAME AS ABOVE	
105			SAME AS ABOVE	
110			SAME AS ABOVE	
115				7
120				
125				
130				
132				

Notes & additional data/info (specify if other materials used)  
 USED 55 BAGS OF PEA GRAVEL AND 61 BAGS OF RIVER PEBBLES AS  
 FILTER PACK  
 USED 4 BAGS OF ENVIROPLUG (SOILS) + 6 BAGS OF HOLEPLUG DURING  
 GROUTING

**JONES**  
**EDMUNDS**

# BORING LOG FIELD REPORT

Boring No MW-12

Page 1 of 3

Project Name Citrus County Groundwater Investigation

Boring Completed 11/02/05, Well Completed 11/02/05

Project No 03860-021-01

JEA Geologist Adam Smith

Drillers Diversified - Dade City, Kevin

ELEVATIONS Ground 103.98 ft NGVD, Top of Slab \_\_\_\_\_ ft NGVD

Drilling/sampling methods HSA, ~~Hand Rotary~~ / SPT

Top of Casing 103.49 ft NGVD (NCLS Surveyors)

Well Details

Depth	SPT Data ASTM D1586		Description of Soil	FLUSH MOUNT
	per 6"	N		
0				
5			SAND, tan, Fine grained	
10			SAME AS ABOVE	
15			SAND, tan / orange, clean	
20			v. sl. silty SAND, tan / orange	
25			v. sl. silty, clayey SAND, tan / orange	
30			sl silty clayey SAND, tan / orange	
35			SAME AS ABOVE	
40			SAME AS ABOVE	
42				

2" PVC

Notes & additional data/info (specify if other materials used)  
 Total well depth = 110 feet bls  
 Well casing/pipe Dia & type = 2-in Sch 40 PVC Solid length = 90 ft, Screen = 20 ft, 0.010-in  
 Sand filter pack = 20 50 lb Bags, Type = 20/30 silica, Placed from 86 to 110 ft bls (measured)  
 Annular seal Type = BENTONITE, Thickness = 6 ft, Placed from 80 to 86 ft bls (measured)  
 Grout = 2 94 lb bags cement grout to surface, Pad = 2x2 ft concrete Cover = Flush Mount

**JONES  
EDMUNDS**

**BORING LOG FIELD REPORT**

Boring No **MW-12**

Page 2 of 3

Project Name Citrus County Groundwater Investigation

Project No 03860-021-01

Depth	SPT Data		Description of Soil	Well Details	
	ASTM D1586 per 6'	N			
42					
45			sl silty clayey SAND, dk tan		
50			SAME AS ABOVE		
55			SAME AS ABOVE, v few limerock frags, tan		
60			SAME AS ABOVE, no limerock frags		
65			SAME AS ABOVE, v. few limerock frags, tan		
70			NO RETURN, possible limerock		
75			NO RETURN, possible limerock		
80			NO RETURN, possible limerock		
85	10 3	7	silty sandy CLAY, tan/orange, stiff, mottled white & black		
87	4 5				

← 35

← 19

2" PVC

Notes & additional data/info (specify if other materials used)  
 USED 6.5 BAGS OF ENVIROPLUS GROUT (50lbs), AND 4 BAGS OF  
 HOLEPLUS DURING GROUTING.

**JONES  
EDMUNDS**

# BORING LOG FIELD REPORT

Boring No MW-12

Page 3 of 3

Project Name Citrus County Groundwater Investigation

Project No 03860-021-01

Depth	SPT Data		Description of Soil	Well Details
	ASTM D1586 per 6"	N		
87				
90	R R		LIMESTONE, buff, hard, dry	← (14) 90
	R R		SAME AS ABOVE, moist	
	R R			
	R R			
95	41 17	28	LIMESTONE, buff, soft, becomes wet @ 96' bls	95
	11 15			
100			SAME AS ABOVE	100
105			sandy CLAY, tan/orange, w/ white lime mud	← (18) 105
110			SAME AS ABOVE	110
115				← (18) 115
120				120
125				125
130				130
132				132

Notes & additional data/info (specify if other materials used)

DTW = 96.75' BELOW TOC, MEASURED ON 11/03/05

**JONES**  
**EDMUNDS**

# BORING LOG FIELD REPORT

Boring No MW-13

Project Name Citrus County Groundwater Investigation

Boring Completed 11/09/05, Well Completed 11/10/05

Project No 03860-021-01

JEA Geologist Adam Smith

Drillers Diversified - Dade City, Kevin

ELEVATIONS Ground 112.56 ft NGVD, Top of Slab \_\_\_\_\_ ft NGVD

Drilling/sampling methods HSA, ~~and rotary~~ / SPT

Top of Casing 112.04 ft NGVD (NCLS Surveyors)

Well Details

Depth	SPT Data		Description of Soil	FLUSH MOUNT
	ASTM D1586	N		
0	per 6"			
5			SAND, tan, fine grained	
10			SAND, lt. tan, Fine grained	
15			sl. clayey silty SAND, dk tan / orange	
20			SAME AS ABOVE	
25			SAME AS ABOVE, lt tan / orange	
30			SAME AS ABOVE	
35			SAND, tan, Fine grained	
40			SAME AS ABOVE	
42				

2" PVC

Notes & additional data/info (specify if other materials used)  
 Total well depth = 120 feet bls  
 Well casing/pipe Dia & type = 2-in Sch 40 PVC Solid length = 100 ft, Screen = 20 ft, 0.010-in  
 Sand filter pack = 20 50 lb Bags, Type = 20/30 silica Placed from 95 to 120 ft bls (measured)  
 Annular seal Type = 30/65, Thickness = 3 ft, Placed from 92 to 95 ft bls (measured)  
 Grout = 2 94 lb bags cement grout to surface, Pad = 2x2 ft concrete Cover = Flush Mount



**BORING LOG FIELD REPORT**

Boring No **MW-13**

Page 2 of 3

Project Name Citrus County Groundwater Investigation

Project No 03860-021-01

Depth	SPT Data		Description of Soil	Well Details	
	ASTM D1586 per 6"	N			
42					
45					
50			SAND, tan, Fine grained		
55			SAME AS ABOVE		
60			SAME AS ABOVE		
65			sl silty clayey SAND, tan		
70			SAME AS ABOVE		
75			SAME AS ABOVE		
80			SAME AS ABOVE, H tan		
85			SAME AS ABOVE		
87					

2" PVC

Notes & additional data/info (specify if other materials used)

ADDED 2<sup>16</sup> BAGS OF ENVIROPLUG (50lb) + 10 BAGS HOLEPLUG DURING GROUTING.

**JONES**

**EDMUND**

# BORING LOG FIELD REPORT

Boring No MW-13

Page 3 of 3

Project Name Citrus County Groundwater Investigation  
 Project No 03860-021-01

Depth	SPT Data		Description of Soil	Well Details
	ASTM D1586 per 6'	N		
87				
90			SAND, H. tan, fine grained, w/ v. few limerock frags, white	
95	14 9 9	18	CLAY, brown, mottled grey, white, black and dk red, plastic LIMESTONE, white, soft, w/ clay, soft, dk red	
100	6 2 3 4	5 2 3 4	SAME AS ABOVE, WITH UNKNOWN ODOR	
105			CLAY, grey mottled dk. red + tan w/ sandy lenses, brown, no odor, wet @ 104.5' bls	
110			silty CLAY, tan, plastic, w/ limerock frags throughout, white	
115			SAME AS ABOVE	
120			SAME AS ABOVE	
125				
130				
132				

Notes & additional data/info (specify if other materials used)  
 DTW = 105.06 bls MEASURED ON 11/15/05



# BORING LOG FIELD REPORT

Boring No MW-14

Page 1 of 3

Project Name Citrus County Groundwater Investigation

Boring Completed 11/07/05, Well Completed 11/10/05

Project No 03860-021-01

JEA Geologist Adam Smith

Drillers Diversified - Dade City, Kevin

ELEVATIONS Ground 109.09 ft NGVD, Top of Slab \_\_\_\_\_ ft NGVD

Drilling/sampling methods HSA, ~~Mod Rotary~~ / SPT

Top of Casing 108.63 ft NGVD ( NCLS Surveyors)

Well Details

Depth	SPT Data ASTM D1586		Description of Soil	BOLT DOWN	
	per 6"	N			
0					
5			SAND, tan, fine grained		
10			SAME AS ABOVE		
15			sl silty SAND, tan / orange		
20			SAME AS ABOVE		
25			sl silty SAND, dk tan / orange		
30			SAME AS ABOVE		
35			SAME AS ABOVE		
40			sl silty clayey SAND, dk tan / orange		
42					

2' PVC

Notes & additional data/info (specify if other materials used)

Total well depth = 115 feet bls  
 Well casing/pipe Dia & type = 2-in Sch 40 PVC Solid length = 95 ft, Screen = 20 ft, 0.010-in  
 Sand filter pack = 20 50 lb Bags, Type = 20/30 silica, Placed from 40 to 115 ftbls (measured)  
 Annular seal Type = 30/65, Thickness = 5 ft., Placed from 85 to 90 ft bls (measured)  
 Grout = 2 94 lb bags cement grout to surface, Pad = 2x2 ft concrete Cover = Flush Mount

**JONES  
EDMUNDS**

**BORING LOG FIELD REPORT**

Boring No MW-14

Page 2 of 3

Project Name Citrus County Groundwater Investigation

Project No 03860-021-01

Well Details

Depth	SPT Data		Description of Soil		
	ASTM D1586 per 6"	N			
42					
45			SAME AS ABOVE, dk red/orange	45	
50			SAME AS ABOVE	50	
55			SAME AS ABOVE	55	
60			SAME AS ABOVE	60	
65			SAME AS ABOVE, tan/orange orange	65	2" PVC
70			SAME AS ABOVE, tan	70	
75			SAME AS ABOVE	75	
80			SAME AS ABOVE	80	
85	5	10	CLAY, TAN mottled white and brown	85	← 24
87	4	7	SAND, white, clean, wet @ 86' bls	87	← 23

Notes & additional data/info (specify if other materials used)

DRILLERS ADDED 8 BAGS OF ENVIROPLUG (50lb) AND TWO BAGS OF HOLE PLUG DURING GROUTING.

**JONES  
EDMUNDS**

# BORING LOG FIELD REPORT

Boring No MW-14

Page 3 of 3

Project Name Citrus County Groundwater Investigation

Project No 03860-021-01

Depth	SPT Data		Description of Soil	Well Details
	ASTM D1586 per 6"	N		
87				
88	7			
89	9		CLAY, tan mottled black, white and brown, wet ← 21	
90				
91	7			
92	9		SAND, tan to lt. tan, moist ← 18	
93				
94	7			
95	4		SAME AS ABOVE, with limerock frags, tan, dry	
96	3			
97				
98	7			
99	1			
100	1		sandy CLAY, brown, becomes wet @ 101' b/s ← 9	
101	2			
102				
103				
104				
105			SAME AS ABOVE w/ limestone frags	
106				
107				
108				
109				
110			LIMESTONE, white to buff, soft, w/ sand and clay, tan ← 8	
111				
112				
113				
114				
115			SAME AS ABOVE ← 6	
116				
117				
118				
119				
120				
121				
122				
123				
124				
125				
126				
127				
128				
129				
130				
131				
132				

Notes & additional data/info (specify if other materials used)

DTW = 102.25' BELOW TOC, MEASURED ON 11/08/05

**JONES  
EDMUNDS**

# BORING LOG FIELD REPORT

Project Name Citrus County Groundwater Investigation  
 Project No 03860-021-01  
 Drillers Diversified - Dade City, Kevin  
 Drilling/sampling methods HSA, ~~Hand~~/SPT

Boring No MW-15 Page 1 of 3  
 Boring Completed 11/04/05, Well Completed 11/10/05  
 JEA Geologist Adam Smith  
 ELEVATIONS Ground 124.15 ft NGVD, Top of Slab \_\_\_\_\_ ft NGVD  
 Top of Casing 123.71 ft NGVD ( NCLS Surveyors)

Depth	SPT Data		Description of Soil	Well Details	
	ASTM D1586	N		FLUSH MOUNT	
0	per 6"				
5			silty SAND, orange, fine grained	5	
10			SAME AS ABOVE	10	
15			SAME AS ABOVE, dk tan	15	
20			silty clayey SAND, tan, fine grained, hard, dense	20	
25			SAME AS ABOVE, tan to orange/brown	25	
30			silty clayey SAND, lt tan, dense	30	
35			SAME AS ABOVE	35	
40			sl. clayey SAND, tan	40	
42				42	

Notes & additional data/info (specify if other materials used)  
 Total well depth = 129 feet bls  
 Well casing/pipe Dia & type = 2-in Sch 40 PVC Solid length = 109 ft, Screen = 20 ft, 0.010-in  
 Sand filter pack = 15 50 lb Bags, Type = 20/30 silica, Placed from 107 to 129 ft bls (measured)  
 Annular seal Type = BENTONITE, Thickness = 3 ft, Placed from 104 to 107 ft bls (measured)  
 Grout = 2 94 lb bags cement grout to surface, Pad = 2x2 ft concrete Cover = Flush Mount

**JONES**  
**EDMUNDS**

**BORING LOG FIELD REPORT**

Boring No MW-15

Project Name Citrus County Groundwater Investigation

Project No 03860-021-01

Depth	SPT Data ASTM D1586		Description of Soil	Well Detail
	per 6'	N		
42				
45			SAND, tan, Fine grained	
50			sl. clayey SAND, tan	
55			SAME AS ABOVE, lt. tan	
60			SAME AS ABOVE	
65			SAME AS ABOVE	
70			SAND, buff, Fine grained	
75			SAME AS ABOVE	
80			SAME AS ABOVE	
85			SAND, lt. tan, Fine grained	
87				

2" PVC

Notes & additional data/info (specify if other materials used)

ADDED 6 BAGS OF ENVIROPLUG (SOIL) AND TWO BAGS OF HOLE-PLUG

**JONES**  
**EDMUND**

# BORING LOG FIELD REPORT

Boring No MW-15

Page 3 of 3

Project Name Citrus County Groundwater Investigation

Project No 03860-021-01

Depth	SPT Data		Description of Soil	Well Details
	ASTM D1586 per 6"	N		
87				
90			SAND, H tan, fine grained	
95			SAND, tan, fine grained	
100			SAME AS ABOVE	
105			sl. clayey SAND, tan	
110	9 40	25 65 60/5	sl. clayey SAND, buff, unknown odor	
115	10 36	26 62 42	SAME AS ABOVE, odor, becomes wet @ 116' b/s	
120			SAME AS ABOVE	
125			SAME AS ABOVE	
130			SAME AS ABOVE	
132				

Notes & additional data/info (specify if other materials used)

DTW = 116.63', BELOW TOC, MEASURED ON 11/08/05

**JONES**  
**EDMUNDS**

# BORING LOG FIELD REPORT

Boring No MW-16

Page 1 of 3

Project Name Citrus County Groundwater Investigation

Boring Completed 10/28/05, Well Completed 10/31/05

Project No 03860-021-01

JEA Geologist Adam Smith

Drillers Diversified - Dade City, Kevin

ELEVATIONS Ground 120.22 ft NGVD, Top of Slab \_\_\_\_\_ ft NGVD

Drilling/sampling methods HSA, ~~Hand Rotary~~ / SPT

Top of Casing 119.81 ft NGVD ( NCLS Surveyors)

Well Details

Depth	SPT Data ASTM D1586		Description of Soil	12" BOLT DOWN
	per 6"	N		
0				
5			SAND, tan/orange, Fine grained, clean	
10			clayey SAND, tan/brown, fine grained, <del>steep</del>	
15			SAND, tan/brown, fine grained, clean	
20			SAME AS ABOVE	
25			SAME AS ABOVE	
30			sl silty SAND, tan/brown	
35			sl, silty clayey SAND, tan/orange	
40			SAME AS ABOVE	
42				

2" PVC

Notes & additional data/info (specify if other materials used)

Total well depth = 126 feet bls

Well casing/pipe Dia & type = 2-in Sch 40 PVC Solid length = 106 ft, Screen = 20 ft, 0 010-in

Sand filter pack = 19 50 lb Bags, Type = 20/30 silica Placed from 102 to 126 ftbls (measured)

Annular seal Type = 30/65, Thickness = 2 ft, Placed from 100 to 102 ft bls (measured)

Grout = 2.5 94 lb bags cement grout to surface, Pad = 2x2 ft concrete Cover = Flush Mount

**JONES  
EDMUNDS**

# BORING LOG FIELD REPORT

Boring No MW-16

Page 2 of 3

Project Name Citrus County Groundwater Investigation

Project No 03860-021-01

Well Details

Depth	SPT Data		Description of Soil	
	ASTM D1586 per 6'	N		
42				
45			SAME AS ABOVE, dk tan	45
50			SAME AS ABOVE, tan / orange	50
55			SAME AS ABOVE, tan / brown	55
60			SAME AS ABOVE	60
65			SAME AS ABOVE	65
70			clayey SAND, dk tan w/ limerock frags, buff, medium hardness	70
75			NO RECOVERY	75
80			NO RECOVERY	80
85				85
87	19 21	26 10	LIMEROCK, white, soft, dry	87

2" PVC

← (45)

← (35)

Notes & additional data/info (specify if other materials used)  
 ADDED 6 BAGS OF ENVIROPLUG GROUT (5016),  
 ADDED 12 BAGS OF HOLEPLUG.

**JONES  
EDMUNDS**



# BORING LOG FIELD REPORT

Boring No MW-16

Page 3 of 3

Project Name Citrus County Groundwater Investigation

Project No 03860-021-01

Depth	SPT Data		Description of Soil	Well Details
	ASTM D1586 per 8"	N		
87				
90	8 15	18 19	LIMESTONE, white, soft, dry, w/ clay, white.	
95	8 8	8 12	SAME AS ABOVE	
100	-	-	SPoon FELL IN FIRST FOOT CLAY, brown, w/ LIMESTONE, white, soft, dry	← (20)
105	6 6	4 6	sl silty CLAY, tan, mottled white + brown w/ many SAND lenses, brown, fine grained, moist	
110	4 5	4 8	sl. silty CLAY, brown, mottled tan/orange, w/ many SAND lenses, brown to tan, wet @ 111' bls	
115			SAME AS ABOVE	
120			SAME AS ABOVE	
125			silty, clayey SAND, white BORING TERMINATED @ 126' bls	← (4) ← (6)
130				
132				

Notes & additional data/info (specify if other materials used)

DEPTH TO WATER, 112' bls on 10/31/05

# BORING LOG FIELD REPORT

Boring No MW-17

Page 1 of 3

Project Name Citrus County Groundwater Investigation

Boring Completed 11/03/05, Well Completed 11/03/05

Project No 03860-021-01

JEA Geologist Adam Smith / ANGELA K. OWEN

Drillers Diversified - Dade City, Kevin

ELEVATIONS Ground 11.60 ft NGVD, Top of Slab \_\_\_\_\_ ft NGVD

Drilling/sampling methods HSA, ~~...~~ / SPT

Top of Casing 110.98 ft NGVD ( NCLS Surveyors)

Depth	SPT Data		Description of Soil	Well Details	
	ASTM D1586	N		FLUSH MOUNT	
0	per 6"	N			
5			Sd., f, tn - dk gry, silty mott, cln	5	
10			silty silty Sd, f, or mott w/tn ± beige	10	
15			a.a. + silty cl; scant sml frags carb Mat	15	
20			v silty Sd, f-med, rdsh-or, lse	20	2" PVC
25			a.a. + mott w/beige; Tr sml Cl peas (1/8-1/16" D)	25	
30			v silty Sd, f-med, rdsh-or	30	
35			a.a.	35	
40			silty Sd, f-med, rdsh-or w/tn mott, Tr Cl peas (~1/16" D)	40	
42				42	

Notes & additional data/info (specify if other materials used)

Total well depth = 118 feet bls

Well casing/pipe Dia & type = 2-in Sch 40 PVC Solid length = 98 ft, Screen = 20 ft, 0.010-in

Sand filter pack = 1750 lb Bags, Type = 20/30 silica Placed from 95 to 118 ft bls (measured)

Annular seal Type = BENTONITE, Thickness = 6 ft, Placed from 89 to 95 ft bls (measured)

Grout = 2 94 lb bags cement grout to surface, Pad = 2x2 ft concrete Cover = Flush Mount

**JONES  
EDMUNDS**

**BORING LOG FIELD REPORT**

Boring No MW-17

Project Name Citrus County Groundwater Investigation

Project No 03860-021-01

Depth	SPT Data		Description of Soil	Well Details
	ASTM D1586 per 5"	N		
42				
45			v slty Sd, med, orsh tn, lse	45
50			v slty Sd, f-med, orsh tn, slily cohesive	50
55			N.R.	55
60			slty, v cl Sd, f, orsh brn, hi plas, scant Ls Frags	60
65			a.a. w/Tr Ls Frags	65
70			a.a. but less plas, more slty	70
75			sd Cl, w/f Sd, orsh tn, hi plas, scant Ls Frags ← (30)	75
80			cl slty Sd, f, orsh tn, slily plas ← (31)	80
85			v slty Sd, f-med, Tr gry Cl peas, scant Ls Frags, lse	85
87				87

2" PVC

Notes & additional data/info (specify if other materials used)

ADDED 5 BAGS OF ENVIROPLUG (SO 1b) DURING GRouting.

**JONES**  
**EDMUND**

**BORING LOG FIELD REPORT**

Boring No **MW-17**

Page 3 of 3

Project Name Citrus County Groundwater Investigation  
 Project No 03860-021-01

Depth	SPT Data		Description of Soil	Well Details
	ASTM D1586 per 6"	N		
87				
90			N.R.	2" PVC
95	5 3	12	silty sd Cl, orsh tn, mott wh; scant carb Mat, <del>h</del> plus Sd, f-vf, wh, cln, "sugary"	16 15
100	4 5 7	9	Sd, f, bu-or-wh mott, w/Cl Len(s), much carb Mat, moist Cl, orsh tn mott w/wh, lam of carb Mat, stiff	10
105	7 7	11	sd Cl, orsh tn mott w/wh lmy Cl, carb Mat, plus Cl, orsh tn mott w/wh lmy Cl, carb Mat, plus	8
110			v sd Cl, pale orsh brn to tn, w/ f wh Sd + Sd Len(s)	7
115			cl Sd, f, wh, "sugary"	1
120			Sd, f, wh, "sugary", w/Cl Len(s)	
(TD)			sd Cl, w/ f Sd, orsh tn, scant carb Mat + LS Fraggs (TD)	16 17
125				
130				
132				

Notes & additional data/info (specify if other materials used)

DTW = -104.09 Below T.O.C; MEASURED 11/08/05.

**JONES EDMUNDS**

**APPENDIX E**

**WELL COMPLETION REPORTS**

DEP Form # 62-522 900(3)  
 Form Title MONITOR WELL COMPLETION REPORT  
 Effective Date \_\_\_\_\_  
 DEP Application No \_\_\_\_\_  
 (Filled in by DEP)

Florida Department of Environmental Protection  
 Twin Towers Office Bldg 2600 Blair Stone Road Tallahassee, Florida 32399-2400

MONITOR WELL COMPLETION REPORT

DATE 11/30/05

INSTALLATION NAME Citrus County Central Landfill

DEP PERMIT NUMBER 21375-003-SO GMS NUMBER \_\_\_\_\_

WELL NUMBER MW-10 WELL NAME MW-10

DESIGNATION Background \_\_\_\_\_ Immediate \_\_\_\_\_ Compliance X

LATITUDE/LONGITUDE \_\_\_\_\_

AQUIFER MONITORED Flordan

INSTALLATION METHOD Hollow Stem Auger / SPT

INSTALLED BY Diversified Drilling, Dade City, FL

TOTAL DEPTH 120.5 (bls) DEPTH OF SCREEN 100.5 - 120.5' (bls)

SCREEN LENGTH 20' SCREEN SLOT SIZE 0.010" SCREEN TYPE Slotted

CASING DIAMETER 2" CASING TYPE SCH 40 PVC

LENGTH OF CASING 100.5' FILTER PACK MATERIAL 20/30 Silica

TOP OF CASING ELEVATION (MSL) 113.51'

GROUND SURFACE ELEVATION (MSL) 114.05'

COMPLETION DATE 11/02/05

DESCRIBE WELL DEVELOPMENT Purged approx 125 gallons from well with submersible pump. Well draws down at rates greater than 0.5 gpm. At end of development, the turbidity had dropped to 11.3 NTU.

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL) 7.95'

DATE AND TIME MEASURED 12/02/05

REMARKS (soils information, stratigraphy, etc.) \_\_\_\_\_

REPORT PREPARED BY Adam Smith, Jones Edmunds & Associates, 352-377-5821  
 (name, company, phone number)

NOTE PLEASE ATTACH BORING LOG

(bls)= Below Land Surface

DEP Form # <u>62-522 900(3)</u>
Form Title <u>MONITOR WELL COMPLETION REPORT</u>
Effective Date _____
DEP Application No _____ (Filled in by DEP)

Florida Department of Environmental Protection  
Twin Towers Office Bldg 2600 Blair Stone Road Tallahassee, Florida 32399-2400

## MONITOR WELL COMPLETION REPORT

DATE 11/30/05

INSTALLATION NAME Citrus County Central Landfill

DEP PERMIT NUMBER 21375-003-SO GMS NUMBER \_\_\_\_\_

WELL NUMBER MW-11 WELL NAME MW-11

DESIGNATION Background \_\_\_\_\_ Immediate \_\_\_\_\_ Compliance X

LATITUDE/LONGITUDE \_\_\_\_\_

AQUIFER MONITORED Floridan

INSTALLATION METHOD Hollow Stem Auger / SPT

INSTALLED BY Diversified Drilling, Dade City, FL

TOTAL DEPTH 111.5 (bls) DEPTH OF SCREEN 91.5 - 111.5 (bls)

SCREEN LENGTH 20' SCREEN SLOT SIZE 0.010" SCREEN TYPE Slotted

CASING DIAMETER 2" CASING TYPE SCH 40 PVC

LENGTH OF CASING 91.5' FILTER PACK MATERIAL 20/30 Silica, Pea Gravel and River Pebbles

TOP OF CASING ELEVATION (MSL) 104.83'

GROUND SURFACE ELEVATION (MSL) 105.17'

COMPLETION DATE 11/02/05

DESCRIBE WELL DEVELOPMENT Purged approximately 512 gallons from well over a 3.5 hr event. No drawdown noted while pumping at a rate of 1.1 gpm. Turbidity at 14.4 NTU at end of development. Developed with a submersible pump.

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL) 6.57'

DATE AND TIME MEASURED 12/02/05

REMARKS (soils information, stratigraphy, etc ) \_\_\_\_\_

REPORT PREPARED BY Adam Smith, Jones Edmunds & Associates, 352-377-5821  
(name, company, phone number)

NOTE PLEASE ATTACH BORING LOG

(bls)= Below Land Surface

Florida Department of Environmental Protection  
Twin Towers Office Bldg 2600 Blair Stone Road Tallahassee, Florida 32399-2400

DEP Form # <u>62-522-900(3)</u>
Form Title <u>MONITOR WELL COMPLETION REPORT</u>
Effective Date _____
DEP Application No. _____ (Filled in by DEP)

## MONITOR WELL COMPLETION REPORT

DATE 11/30/05

INSTALLATION NAME Citrus County Central Landfill

DEP PERMIT NUMBER 21375-003-SO GMS NUMBER \_\_\_\_\_

WELL NUMBER MW-13 WELL NAME MW-13

DESIGNATION Background \_\_\_\_\_ Immediate \_\_\_\_\_ Compliance X

LATITUDE/LONGITUDE \_\_\_\_\_

AQUIFER MONITORED Flondan

INSTALLATION METHOD Hollow Stem Auger / SPT

INSTALLED BY Diversified Drilling, Dade City, FL

TOTAL DEPTH 120' (bls) DEPTH OF SCREEN 100' - 120' (bls)

SCREEN LENGTH 20' SCREEN SLOT SIZE 0.010" SCREEN TYPE Slotted

CASING DIAMETER 2" CASING TYPE SCH 40 PVC

LENGTH OF CASING 100' FILTER PACK MATERIAL 20/30 Silica

TOP OF CASING ELEVATION (MSL) 112.04'

GROUND SURFACE ELEVATION (MSL) 112.55'

COMPLETION DATE 11/10/05

DESCRIBE WELL DEVELOPMENT Purged approximately 175 gallons from well over a 2.25 hr event. A 5' drawdown is noted while pumping at a rate of 0.75 gpm. Turbidity at 5.33 NTU at end of development. Developed with a submersible pump.

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL) 6.75'

DATE AND TIME MEASURED 12/02/05

REMARKS (soils information, stratigraphy, etc.) \_\_\_\_\_

REPORT PREPARED BY Adam Smith, Jones Edmunds & Associates, 352-377-5821  
(name, company, phone number)

NOTE PLEASE ATTACH BORING LOG

(bls)= Below Land Surface



DEP Form # <u>62-522 900(3)</u>
Form Title <u>MONITOR WELL COMPLETION REPORT</u>
Effective Date _____
DEP Application No _____ (Filled in by DEP)

Florida Department of Environmental Protection  
Twin Towers Office Bldg 2600 Blair Stone Road Tallahassee, Florida 32399-2400

## MONITOR WELL COMPLETION REPORT

DATE 11/30/05

INSTALLATION NAME Citrus County Central Landfill

DEP PERMIT NUMBER 21375-003-SO GMS NUMBER \_\_\_\_\_

WELL NUMBER MW-12 WELL NAME MW-12

DESIGNATION Background \_\_\_\_\_ Immediate \_\_\_\_\_ Compliance X

LATITUDE/LONGITUDE \_\_\_\_\_

AQUIFER MONITORED Floridan

INSTALLATION METHOD Hollow Stem Auger / SPT

INSTALLED BY Diversified Drilling, Dade City, FL

TOTAL DEPTH 110' (bls) DEPTH OF SCREEN 90' - 110' (bls)

SCREEN LENGTH 20' SCREEN SLOT SIZE 0.010" SCREEN TYPE Slotted

CASING DIAMETER 2" CASING TYPE SCH 40 PVC

LENGTH OF CASING 90' FILTER PACK MATERIAL 20/30 Silica

TOP OF CASING ELEVATION (MSL) 103.49'

GROUND SURFACE ELEVATION (MSL) 103.98'

COMPLETION DATE 11/02/05

DESCRIBE WELL DEVELOPMENT Purged approximately 815 gallons from well over a 9 hr / 3 day event No drawdown noted while pumping at a rate of 2.0 gpm Turbidity at 1.07 NTU at end of development Developed with a submersible pump

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL) 6.56'

DATE AND TIME MEASURED 12/02/05

REMARKS (soils information, stratigraphy, etc) \_\_\_\_\_

REPORT PREPARED BY Adam Smith, Jones Edmunds & Associates, 352-377-5821  
(name, company, phone number)

NOTE PLEASE ATTACH BORING LOG

(bls)= Below Land Surface

DEP Form # <u>62-522 900(3)</u>
Form Title <u>MONITOR WELL COMPLETION REPORT</u>
Effective Date _____
DEP Application No _____ (Filled in by DEP)

Florida Department of Environmental Protection  
Twin Towers Office Bldg 2600 Blair Stone Road Tallahassee, Florida 32399-2400

## MONITOR WELL COMPLETION REPORT

DATE 11/30/05

INSTALLATION NAME Citrus County Central Landfill

DEP PERMIT NUMBER 21375-003-SO GMS NUMBER \_\_\_\_\_

WELL NUMBER MW-14 WELL NAME MW-14

DESIGNATION Background \_\_\_\_\_ Immediate \_\_\_\_\_ Compliance X

LATITUDE/LONGITUDE \_\_\_\_\_

AQUIFER MONITORED Floridan

INSTALLATION METHOD Hollow Stem Auger / SPT

INSTALLED BY Diversified Drilling, Dade City, FL

TOTAL DEPTH 115' (bls) DEPTH OF SCREEN 95' - 115' (bls)

SCREEN LENGTH 20' SCREEN SLOT SIZE 0.010" SCREEN TYPE Slotted

CASING DIAMETER 2" CASING TYPE SCH 40 PVC

LENGTH OF CASING 95' FILTER PACK MATERIAL 20/30 Silica

TOP OF CASING ELEVATION (MSL) 108.63'

GROUND SURFACE ELEVATION (MSL) 109.09'

COMPLETION DATE 11/10/05

DESCRIBE WELL DEVELOPMENT Purged approximately 520 gallons from well over a 4.75 hr event. No drawdown is noted while pumping at a rate of 2.0 gpm. Turbidity at 4.70 NTU at end of development. Developed with a submersible pump.

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL) 5.88'

DATE AND TIME MEASURED 12/02/05

REMARKS (soils information, stratigraphy, etc) \_\_\_\_\_

REPORT PREPARED BY Adam Smith, Jones Edmunds & Associates, 352-377-5821  
(name, company, phone number)

NOTE PLEASE ATTACH BORING LOG

(bls)= Below Land Surface

DEP Form # <u>62-522.900(3)</u>
Form Title <u>MONITOR WELL COMPLETION REPORT</u>
Effective Date _____
DEP Application No _____ (Filled in by DEP)

**Florida Department of Environmental Protection**  
Twin Towers Office Bldg 2600 Blair Stone Road Tallahassee, Florida 32399-2400

## MONITOR WELL COMPLETION REPORT

DATE 11/30/05

INSTALLATION NAME Citrus County Central Landfill

DEP PERMIT NUMBER 21375-003-SO GMS NUMBER \_\_\_\_\_

WELL NUMBER MW-15 WELL NAME MW-15

DESIGNATION Background \_\_\_\_\_ Immediate \_\_\_\_\_ Compliance X

LATITUDE/LONGITUDE \_\_\_\_\_

AQUIFER MONITORED Floridan

INSTALLATION METHOD Hollow Stem Auger / SPT

INSTALLED BY Diversified Drilling, Dade City, FL

TOTAL DEPTH 129' (bls) DEPTH OF SCREEN 109' - 129' (bls)

SCREEN LENGTH 20' SCREEN SLOT SIZE 0.010" SCREEN TYPE Slotted

CASING DIAMETER 2" CASING TYPE SCH 40 PVC

LENGTH OF CASING 109' FILTER PACK MATERIAL 20/30 Silica

TOP OF CASING ELEVATION (MSL) 123.71'

GROUND SURFACE ELEVATION (MSL) 124.15'

COMPLETION DATE 11/10/05

DESCRIBE WELL DEVELOPMENT Purged approximately 373 gallons from well over a 8 hr event. No drawdown is noted while pumping at a rate of 5 gpm. Turbidity at 7.72 NTU at end of development. Developed with a submersible pump.

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL) 7.01'

DATE AND TIME MEASURED 12/02/05

REMARKS (soils information, stratigraphy, etc) \_\_\_\_\_

REPORT PREPARED BY Adam Smith, Jones Edmunds & Associates, 352-377-5821  
(name, company, phone number)

NOTE PLEASE ATTACH BORING LOG

(bls)= Below Land Surface

DEP Form # 62-522 900(3)
Form Title <u>MONITOR WELL COMPLETION REPORT</u>
Effective Date _____
DEP Application No _____ (Filled in by DEP)

Florida Department of Environmental Protection  
Twin Towers Office Bldg 2600 Blair Stone Road Tallahassee, Florida 32399-2400

## MONITOR WELL COMPLETION REPORT

DATE 11/30/05

INSTALLATION NAME Citrus County Central Landfill

DEP PERMIT NUMBER 21375-003-SO GMS NUMBER \_\_\_\_\_

WELL NUMBER MW-16 WELL NAME MW-16

DESIGNATION Background \_\_\_\_\_ Immediate \_\_\_\_\_ Compliance X

LATITUDE/LONGITUDE \_\_\_\_\_

AQUIFER MONITORED Floridan

INSTALLATION METHOD Hollow Stem Auger / SPT

INSTALLED BY Diversified Drilling, Dade City, FL

TOTAL DEPTH 126' (bls) DEPTH OF SCREEN 106' - 126' (bls)

SCREEN LENGTH 20' SCREEN SLOT SIZE 0 010" SCREEN TYPE Slotted

CASING DIAMETER 2" CASING TYPE SCH 40 PVC

LENGTH OF CASING 106' FILTER PACK MATERIAL 20/30 Silica

TOP OF CASING ELEVATION (MSL) 119 81'

GROUND SURFACE ELEVATION (MSL) 120 22'

COMPLETION DATE 10/31/05

DESCRIBE WELL DEVELOPMENT Purged approximately 375 gallons from well over a 5 hr event No drawdown is noted while pumping at a rate of 1 25 gpm Turbidity at 2 80 NTU at end of development Developed with a submersible pump

POST DEVELOPMENT WATER LEVER ELEVATION (MSL) 6 88'

DATE AND TIME MEASURED 12/02/05

REMARKS (soils information, stratigraphy, etc ) \_\_\_\_\_

REPORT PREPARED BY Adam Smith, Jones Edmunds & Associates, 352-377-5821  
(name, company, phone number)

NOTE PLEASE ATTACH BORING LOG

(bls)= Below Land Surface

Florida Department of Environmental Protection  
Twin Towers Office Bldg 2600 Blair Stone Road Tallahassee, Florida 32399-2400

DEP Form # 62 522 900(3)
Form Title <u>MONITOR WELL COMPLETION REPORT</u>
Effective Date _____
DEP Application No _____ (Filled in by DEP)

## MONITOR WELL COMPLETION REPORT

DATE 11/30/05

INSTALLATION NAME Citrus County Central Landfill

DEP PERMIT NUMBER 21375-003-SO GMS NUMBER \_\_\_\_\_

WELL NUMBER MW-17 WELL NAME MW-17

DESIGNATION Background \_\_\_\_\_ Immediate \_\_\_\_\_ Compliance X

LATITUDE/LONGITUDE \_\_\_\_\_

AQUIFER MONITORED Floridan

INSTALLATION METHOD Hollow Stem Auger / SPT

INSTALLED BY Diversified Drilling, Dade City, FL

TOTAL DEPTH 118' (bls) DEPTH OF SCREEN 98' - 118' (bls)

SCREEN LENGTH 20' SCREEN SLOT SIZE 0 010" SCREEN TYPE Slotted

CASING DIAMETER 2" CASING TYPE SCH 40 PVC

LENGTH OF CASING 98' FILTER PACK MATERIAL 20/30 Silica

TOP OF CASING ELEVATION (MSL) 110 98'

GROUND SURFACE ELEVATION (MSL) 111 50'

COMPLETION DATE 11/03/05

DESCRIBE WELL DEVELOPMENT Purged approximately 350 gallons from well over a 3 75 hr event No drawdown is noted while pumping at a rate of 1 25 gpm Turbidity at 4 67 NTU at end of development Developed with a submersible pump

POST DEVELOPMENT WATER LEVER ELEVATION (MSL) 6 74'

DATE AND TIME MEASURED 12/02/05

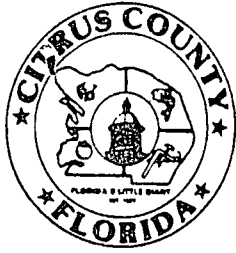
REMARKS (soils information, stratigraphy, etc ) \_\_\_\_\_

REPORT PREPARED BY Adam Smith, Jones Edmunds & Associates, 352-377-5821  
(name, company, phone number)

NOTE PLEASE ATTACH BORING LOG

(bls)= Below Land Surface

Citrus Well  
construction folder



# BOARD OF COUNTY COMMISSIONERS DEPARTMENT OF PUBLIC WORKS

**REPLY TO:**  
Solid Waste Management  
P O Box 340  
Lecanto, Florida 34460-0340

3600 W. SOVEREIGN PATH  
LECANTO, FLORIDA 34461

ADMINISTRATION OFFICE  
Suite 212  
352-527-5477 Phone  
352-527-5479 Fax

ENGINEERING DIVISION  
Suite 241  
352-527-5446 Phone  
352-527-5476 Fax

- Land Section  
Suite 205  
352-527-5447 Phone  
352-527-5459 Fax
- Permits & Compliance Sec  
Suite 204  
352-527-5448 Phone  
352-527-5319 Fax
- Project Management Sec  
Suite 241  
352-527-5449 Phone  
352-527-5482 Fax
- Survey Section  
Suite 241  
352-527-5446 Phone  
352-527-5482 Fax

1300 S. LECANTO HIGHWAY  
LECANTO, FLORIDA 34461

- MAINTENANCE OPERATIONS
- Facilities Maint Section  
PO Box 143  
Lecanto FL 34460  
352-527-0333 Phone  
352-527-0654 Fax
  - Fleet Management Section  
PO Box 215  
Lecanto FL 34460  
352-746-6888 Phone  
352-746-5011 Fax

AQUATIC SERVICES  
PO Box 440  
Lecanto FL 34460  
352-746-2694 Phone  
352-746-9189 Fax

ROAD MAINTENANCE  
PO Box 167  
Lecanto FL 34460  
352-746-4107 Phone  
352-746-1203 Fax

UTILITIES DIVISION  
PO Box 440  
Lecanto FL 34460  
352-746-2694 Phone  
352-746-1676 Fax

SOLID WASTE MANAGEMENT  
230 W Gulf to Lake Highway  
PO Box 340  
Lecanto FL 34460  
352-746-5000 Phone  
352-527-1204 Fax

March 18, 1998

Allison Amram, P G  
Solid Waste Section  
Department of Environmental Protection  
3804 Coconut Palm Drive  
Tampa, Florida 33619

Re Citrus County Central Landfill,  
Permit No SO09-274381  
SC 36 Groundwater Monitoring Well Construction

Dear Ms Amram

This is in response to your follow-up question on monitoring well construction as to the length of the filter pack and well seal of wells MW-7, MW-8R and MW-9 I have attached revised copies of the well construction diagrams to include all the requested information

Please contact me if you have any questions

Yours truly,

Susan J Metcalfe, P G  
Director, Division of  
Solid Waste Management

CC Ken Saunders, Director, Public Works Department  
Bob Butera, FDEP, Tampa  
Kim Ford, FDEP, Tampa

RECEIVED  
MAR 23 1998  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
SOUTHWEST DISTRICT

# ( ) ELL COMPLETION LC ( )

Location Citrus County Central Landfill  
State Road 44 Lecanto, Florida

Work Order # 3370

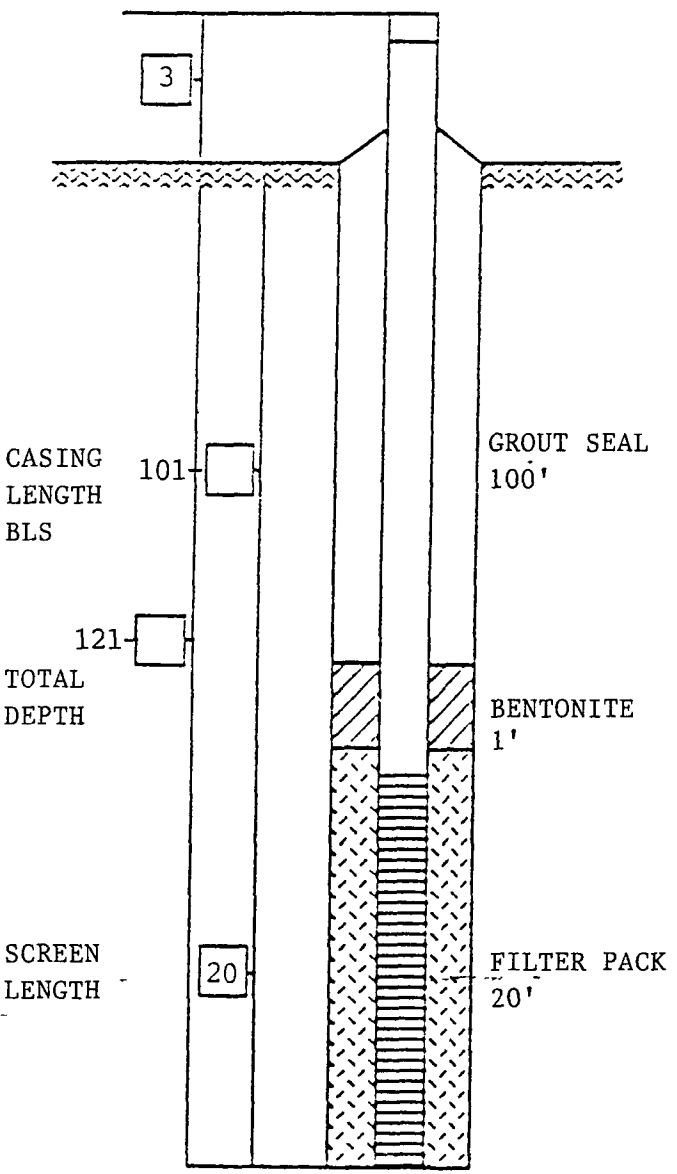
Client Citrus County

Date March 30, 1997

Well Number: MW-8 Contact: Susan Metcalf

Installed By Doug Heath

Other Services Performed \_\_\_\_\_



\_\_\_\_\_ Flush Manhole  
 Above Grade Protector  
 \_\_\_\_\_ None

Concrete 26 Bags  
 Cement Grout 24 Bags  
 Riser - Type PVC  
 Size 2"

Bentonite Yes

Screen - Type PVC  
 Size 2" .060 Slot

Filter Type 60/45 Silica

REPORT MODIFIED BY SUSAN J. METCALFE 3/18/98

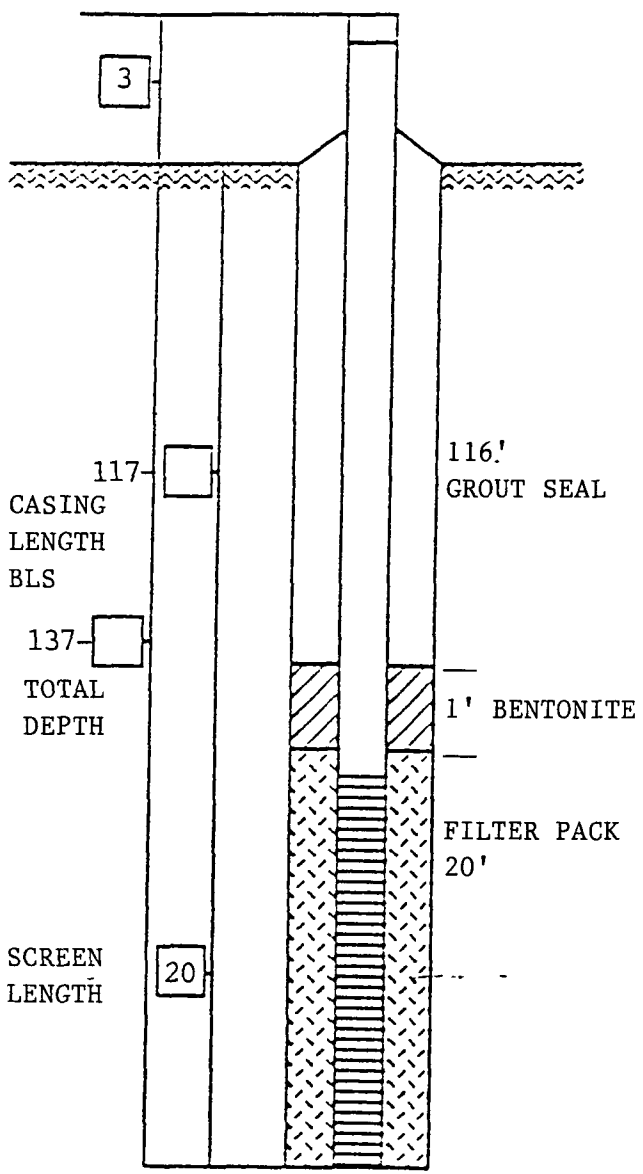
Development: Bailed \_\_\_\_\_, Pumped , Air Lift \_\_\_\_\_, Surge \_\_\_\_\_, Swab \_\_\_\_\_, None \_\_\_\_\_

Total Time 6 Hours Total Gallons 10

Water Appearance Start Cloudy Finish Clear

# WELL COMPLETION LC

Location Citrus County Central Landfill Work Order # 3370  
State Road 44 Lecanto, Florida  
 Client: Citrus County Date March 25, 1997  
 Well Number: MW-7 Contact: Susan Metcalf  
 Installed By Doug Heath  
 Other Services Performed: \_\_\_\_\_



Flush Manhole  
 Above Grade Protector  
 None  
  
 Concrete 26 Bags  
 Cement Grout 18 Bags  
 Riser - Type PVC  
           Size 2"  
  
 Bentonite Yes  
  
 Screen - Type PVC  
               Size 2" .060 Slot  
  
 Filter Type 60/45 Silica

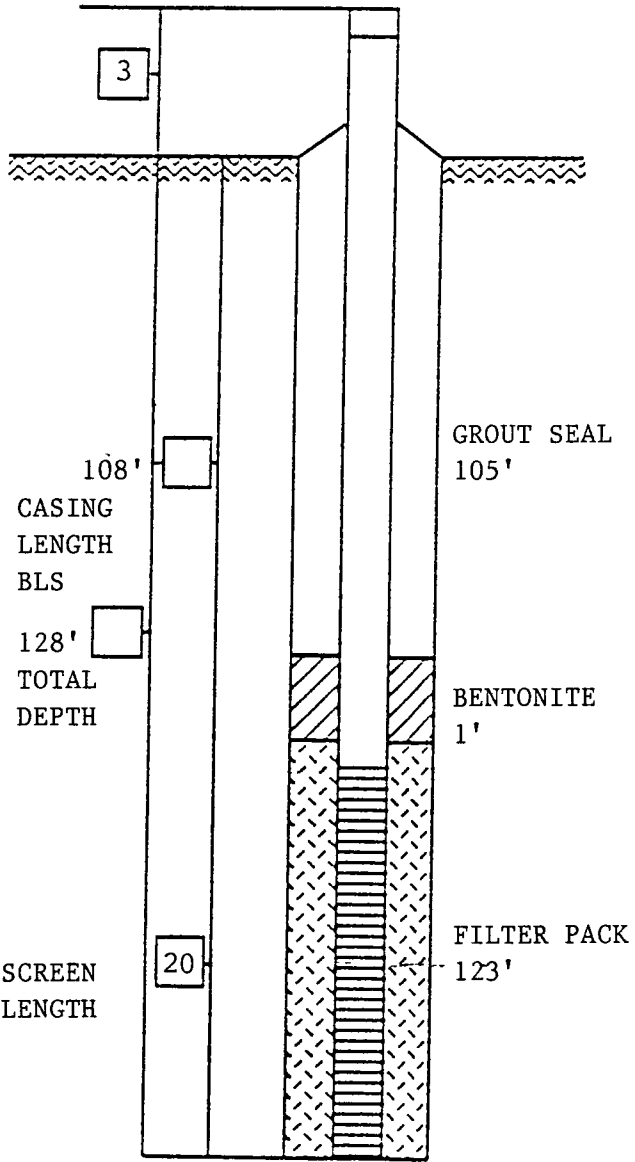
REPORT MODIFIED BY SUSAN J. METCALFE 3/18/98

Development. Bailed \_\_\_\_\_, Pumped x, Air Lift \_\_\_\_\_, Surge \_\_\_\_\_, Swab \_\_\_\_\_, None \_\_\_\_\_  
 Total Time 8 Hours Total Gallons: 23  
 Water Appearance Start Cloudy Finish Clear  
Environmental Drilling Service Inc



# WELL COMPLETION LOG

Location Citrus County Central Landfill Work Order # \_\_\_\_\_  
State Road 44 Lecanto, Florida  
 Client: Citrus County Date: October 22, 1997  
 Well Number: MW- 8 R Contact: Susan Metcalf  
 Installed By Doug Heath  
 Other Services Performed \_\_\_\_\_



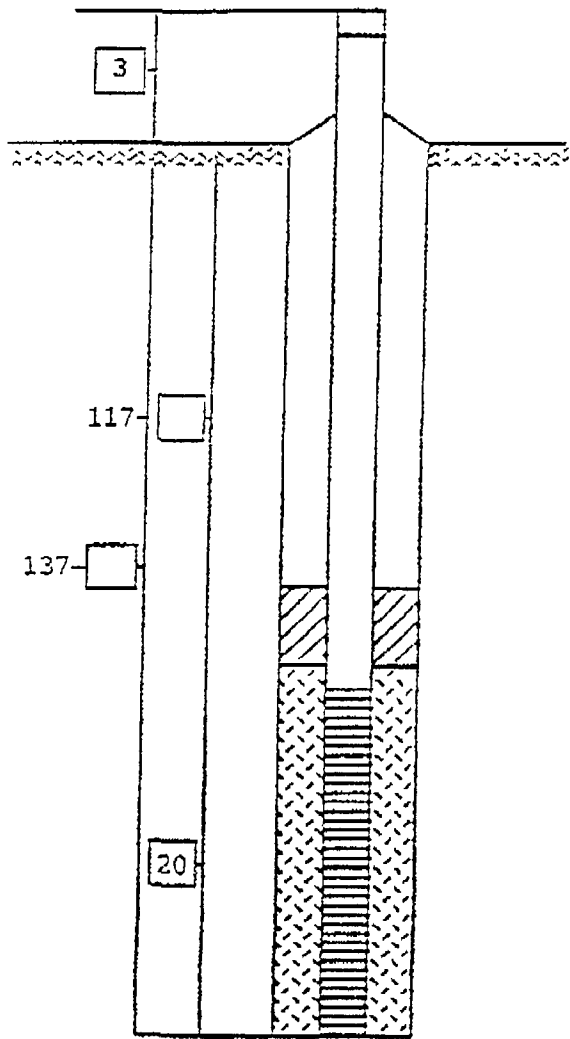
Flush Manhole  
 Above Grade Protector  
 None  
  
 Concrete \_\_\_\_\_ Bags  
 Cement Grout 20 Bags  
 Riser - Type PVC  
 Size 2"  
  
 Bentonite Yes  
  
 Screen - Type PVC  
 Size 2" .060 Slot  
  
 Filter Type 60/45 Silica

REPORT MODIFIED BY SUSAN J. METCALFE 3/18/98

Development. Bailed \_\_\_\_\_, Pumped x, Air Lift \_\_\_\_\_, Surge \_\_\_\_\_, Swab \_\_\_\_\_, None \_\_\_\_\_  
 Total Time \_\_\_\_\_ Total Gallons: \_\_\_\_\_  
 Water Appearance Start \_\_\_\_\_, Finish \_\_\_\_\_

# WELL COMPLETION LOG

Location: Citrus County Central Landfill Work Order # 3370  
State Road 44 Lecanto, Florida  
 County: Citrus County Date: March 25, 1997  
 Well Number: MW-7 Contact: Susan Metcalfe  
 Staffed By: Doug Heath  
 Other Services Performed: \_\_\_\_\_



Flush Manhole  
 Above Grade Protector  
 None  
  
 Concrete 26 Bags  
 Cement Grout 18 Bags  
 Riser - Type PVC  
 Size 2"  
  
 Bentonite Yes  
  
 Screen - Type PVC  
 Size 2" .060 slot  
  
 Filter Type 60/45 silica

Development: Bailed \_\_\_\_\_, Pumped x, Air Lift \_\_\_\_\_, Surge \_\_\_\_\_, Swab \_\_\_\_\_, None \_\_\_\_\_  
 Total Time 8 Hours Total Gallons. 23  
 Water Appearance: Start Cloudy Finish Clear

Environmental Drilling Service, Inc.

# Log of Boring

Location Citrus Cty Landfil  
SR 44 Citrus Cty. Fl.  
 Client Citrus Cty  
 Project # \_\_\_\_\_  
 Boring # MW-7  
 Method Hammer adv. xx, Thru auger \_\_\_\_\_, Rotary xx, Split spoon xx, Shelby tube \_\_\_\_\_  
 Static water level 115'

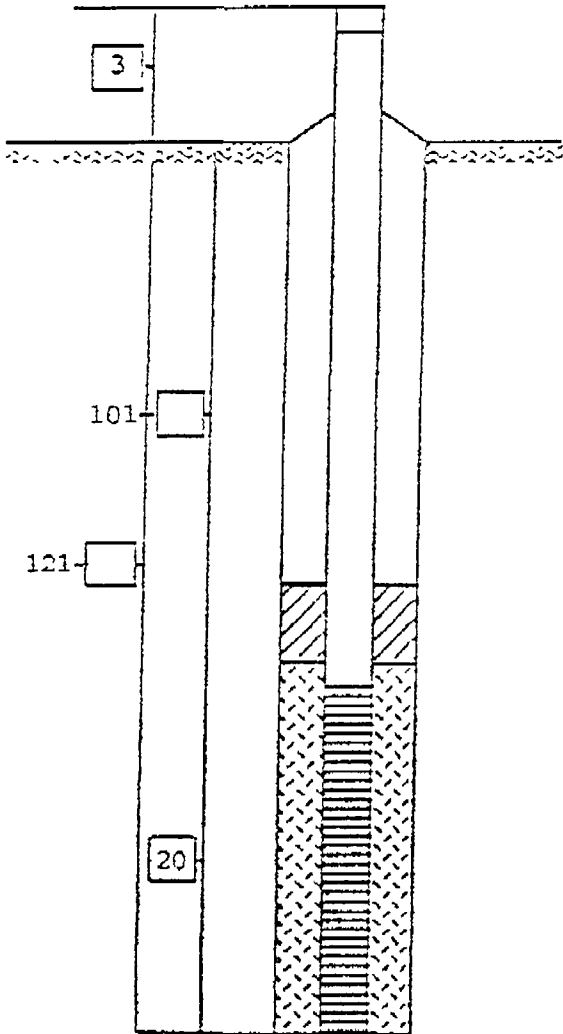
Driller \_\_\_\_\_  
 Drill Crew \_\_\_\_\_  
 Boring begin date \_\_\_\_\_

Sample #	Sample Depth	N Value	Sample Type	Water Presence	Description/remarks
MW-7	5-7	4,5,5,9	S.S.	Dry	
	10-7	6,8,10,10			Fine-Med sands
	15-17	8,8,7,8			orange
	20-22	10,14,12,18			
	25-27	10,10,8,10			clay orange to red
	30-32	7,9,7,14			
	35-37	5,7,7,12			
	40-42	6,7,9,9			tan fine sands
	45-47	10,12,18,17			
	50-52	7,6,6,14			
	55-57	10,14,16,15			
	60-62	11,12,12,16			
	65-67	5,6,7,12			tan clayey sands
	70-72	9,7,7,11			
	75-77	9,12,15,17			
	80-82	14,23,18,12			
	85-87	10,12,19,24			
	90-92	14,14,12,16			
	95-97	19,15,13,19			
	100-102	12,14,14,19			
	105-107	21,50 +			
	110-112	50+	NR	Wet	silty fine-med sands
	115-117	29,41,34,50	NR		
	110-122	37,50 +			
	125-127	29,32,50 +			tan white
	130-132	26,29,50 +			
					E.O.B.

Environmental Drilling Service, Inc.

# WELL COMPLETION LOG

Location: Citrus County Central Landfill Work Order # 3370  
State Road 44 Lecanto, Florida  
 Client: Citrus County Date March 30, 1997  
 Well Number: MW-8 Contact: Susan Verzaal  
 Installed By Doug Heath  
 Other Services Performed \_\_\_\_\_



Flush Manhole  
 Above Grade Protector  
 None  
  
 Concrete 26 Sags  
 Cement Grout 24 Sags  
 Risar - Type PVC  
                   Size 2"  
  
 Bentonite Yes  
  
 Screen - Type PVC  
                   Size 2" .060 Slot  
  
 Filter Type 60/45 Silica

Development: Bailed \_\_\_\_\_, Pumped x, Air Lift \_\_\_\_\_, Surge \_\_\_\_\_, Swab \_\_\_\_\_, None \_\_\_\_\_  
 Total Time 6 Hours Total Gallons 10  
 Water Appearance: Start Cloudy Finish Clear  
Environmental Drilling Service, Inc

## Log of Boring

Location Citrus Cty. Landfill Driller Doug Heath  
SR 44 Citrus Cty Drill Crew Roger, Don  
 Client Citrus Cty Boring begin date 3-31-97  
 Project # \_\_\_\_\_  
 Boring # MW-8  
 Method. Hammer adv. , Thru auger \_\_\_\_\_, Rotary , Split spoon , Shelby tube \_\_\_\_\_  
 Static water level 100'

Sample #	Sample Depth	N Value	Sample Type	Water Presence	Description/remarks
MW-8	0-4		PH	Dry	orange fill
	5-7	12,9,9,18	SS		
	10-12	7,14,17,24			clayey sands
	15-17	8,8,17,19			
	20-22	14,12,12,23			
	25-27	7,19,21,25			fine to med
	30-32	14,31,37,50			sands (tight)
	35-37	21,19,32,41			
	40-42	3,1,19,50			
	45-47	15,24,18,32			
	50-52	5,9,21,30			
	55-57	12,19,14,28			
	60-62	17,31,50 +			fine sands
	65-67	27,50 +			
	70-72	9,18,50 +			
	75-77	12,7,32,37			
	80-82	12,7,32,37			
	85-87	17,23,34,41			
	90-92	24-50 +			sands
	95-97	31,50 +			
	100-102	50 +			
	105-107	19,50 +		Wet	soft rock
	110-112	41,50 +			sands
	115-117	50 +			
					E.O.B.

Environmental Drilling Service, Inc

**SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT**  
**WELL GROUTING/ABANDONMENT FORM**

GROUTING \_\_\_\_\_ ABANDONMENT

Permit No 5734401 Drilling Contractor D. McHale, Inc. License No 11  
 1/4 1 1/4 41 SEC 1 TWP 17 RNG 12 Latitude 29 51 / Longitude 80 51  
 Data obtained from GPS  or Map Datum NAD 27 \_\_\_\_\_ NAD 83  or survey \_\_\_\_\_  
 Property Owner \_\_\_\_\_  
 Address of Well \_\_\_\_\_  
 City \_\_\_\_\_ County \_\_\_\_\_ WUP No \_\_\_\_\_  
 DID No \_\_\_\_\_

**WELL SPECIFICATIONS**

T D of Well (to be verified by inspector) 115' Water Level \_\_\_\_\_  
 Casing Double \_\_\_\_\_ Single \_\_\_\_\_ Diameter \_\_\_\_\_ Depth \_\_\_\_\_ Measured \_\_\_\_\_ Estimated \_\_\_\_\_  
 Material Black Steel, Galv Steel, PVC, Other \_\_\_\_\_  
 Drill Method \_\_\_\_\_ Rotary \_\_\_\_\_ Cable Tool \_\_\_\_\_ Combination \_\_\_\_\_ Other \_\_\_\_\_  
 Was well information verified from driller's log? Yes  No  (Explain in comments) \_\_\_\_\_  
 Special Construction Stipulation? Yes  No  Stipulation No \_\_\_\_\_ Was Special Condition met Yes  No   
 Old Permit Yes  No  Permit # \_\_\_\_\_ Well Depth \_\_\_\_\_ Casing Depth \_\_\_\_\_ Diameter \_\_\_\_\_  
 (For public supply) Approved Public Supply Plan match location Yes  No   
 (For 62-524) Yes  No  Well location same as surveyed location Yes  No

**GROUT SPECIFICATIONS AND INSPECTION**

Date 10-22-17

BENTONITE INTERVAL	3/8 size	3/4 size	3/8 size	1/2 size
Type, circle - <u>hole plug, chips</u>				
Estimated No Bags bentonite				
Actual No bags				
**Special additives				
% of water with slurry				
<b>CEMENT INTERVAL</b>				
Type, circle - <u>I</u> II				
*Estimated No Of sacks / yds	<u>1 bag</u>			
Actual No Of sacks / yds	<u>2 bags</u>			
% bentonite added				
Gallons water per sack / yds	<u>5.5</u>			
Grout Method (types)	<u>fr-mix</u>			
Total time on site				

**COMMENTS**

Driller did a test at surface - water observed

Driller or Contractor Signature \_\_\_\_\_ Date 10-22-17  
 Observer Signature and Patrick Date 10-22-17  
 Work was satisfactorily completed in accordance with 40D-3 F A C Yes  No   
 Attach Field Investigation Report for unsatisfactory work CT# \_\_\_\_\_  
 Water Samples Taken Yes  No   
 Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_



# Log of Boring

Location Central Landfill  
230 W. Gulf to Lake Blvd.  
 Client Citrus County  
 Project # \_\_\_\_\_  
 Boring # MW #8R  
 Method Hammer adv , Thru auger \_\_\_\_\_, Rotary , Split spoon , Shelby tube \_\_\_\_\_  
 Static water level 111'

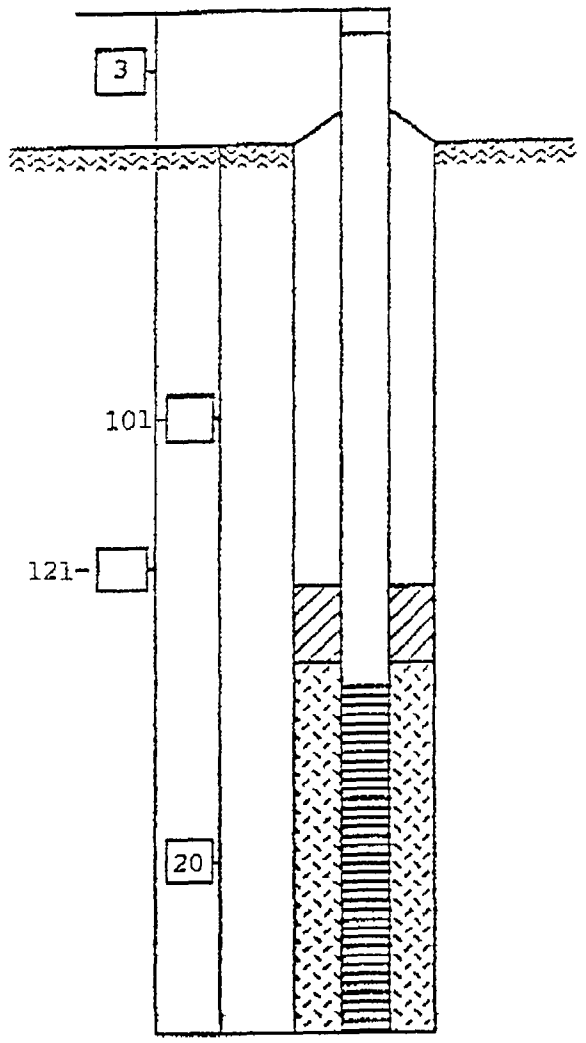
Driller Doug H.  
 Drill Crew Roger Scott.  
 Boring begin date October 20 1997

Sample #	Sample Depth	N Value	Sample Type	Water Presence	Description/remarks
	0-4'	NA	PH	DRY	Brn. Sand (Fill)
	5-7'	4,5,5,4	SS.		
	10-12'	4,4,4,4			
	15-17'	3,4,3,5			
	20-22'	6,5,6,7			Tan Sands
	25-27'	5,5,6,5			
	30-32'	7,7,6,5			
	35-37'	6,8,7,7			
	40-42'	4,8,8,9			
	45-47'	9,7,6,7			
	50-52'	6,5,5,6			
	55-57'	8,9,9,7			
	60-62'	9,9,10,11			
	65-67'	11,10,8,			
	70-72'	11,8,10,			Lt. Tan Fn. Sand
	75-77'	21,24,22			
	80-82'	7,9,18,21			
	85-87'	11,12,9,			
	90-92'	13,15,18			
	95-97'	21,10,50+			Tan Clayey Sand
	100-102'	50+			
	105-107'	50+		Wet	
	110-112'	50+			
	115-117'	24,19,50+			Lt. Gray/Brn. Fn. Sand
	120-122'	1114,10			
	125-127'	50+			Lt. Gray/Brn Fn. Sand
					W/ Limestone Frag.
					E.O.B.



# WELL COMPLETION LOG

Location Citrus County Central Landfill Work Order # 3370  
State Road 44 Lecanto, Florida  
 Client Citrus County Date: April 1, 1997  
 Well Number: MW-9 Contact: Susan Metcalf  
 Installed By: Doug Heath  
 Other Services Performed: \_\_\_\_\_



Flush Manhole  
 Above Grade Protector  
 None  
  
 Concrete 25 Bags  
 Cement Grout 23 Bags  
 Riser - Type PVC  
 Size 2"  
  
 Bentonite Yes  
  
 Screen - Type PVC  
 Size 2" .060 Slot  
  
 Filter Type 60/45 Silica

Development: Bailed \_\_\_\_\_, Pumped x, Air Lift \_\_\_\_\_, Surge \_\_\_\_\_, Swab \_\_\_\_\_, None \_\_\_\_\_  
 Total Time: 8 Hours Total Gallons: 20  
 Water Appearance: Start Cloudy Finish Clear  
Environmental Drilling Service, Inc.

# Log of Boring

Location Citrus Cty Landfill  
SR 44 Citrus Cty  
 Client Citrus Cty  
 Project # \_\_\_\_\_  
 Boring # MW-9  
 Method. Hammer adv. , Thru auger \_\_\_\_\_, Rotary , Split spoon , Shelby tube \_\_\_\_\_  
 Static water level 104.5'

Driller Doug Heath  
 Drill Crew Roger, Don  
 Boring begin date 3-27-97

Sample #	Sample Depth	N Value	Sample Type	Water Presence	Description/remarks
MW-9	0-4		PH	Dry	Orange clay
	5-9	5,4,4,11	SS		fill
	10-12	11,14,10,12			
	15-17	9,7,7,14			brown clayey sands
	20-22	13,12,15,17			
	25-27	11,9,9,7			
	30-32	10,10,11,16			
	35-37	8,5,7,11			tan sands
	40-42	10,12,13,18			
	45-47	7,6,6,12			
	50-52	5,7,9,14			
	55-57	5,8,8,9			
	60-62	11,18,17,24			
	65-67	10,21,50 +			soft rock
	70-72	24,50 +			limestone
	75-77	50 +			
	80-82	31,50 +			
	85-87	17,31,27,49			soft rock
	90-92	24,18,16,41			
	95-97	37,50 +			loss mud flow
	100-102	50 +			
	105-107	32,41,50 +		Wet	sands
	110-112	48,50 +			wet rock
	115-117	50 +			rock
					E.O.B.

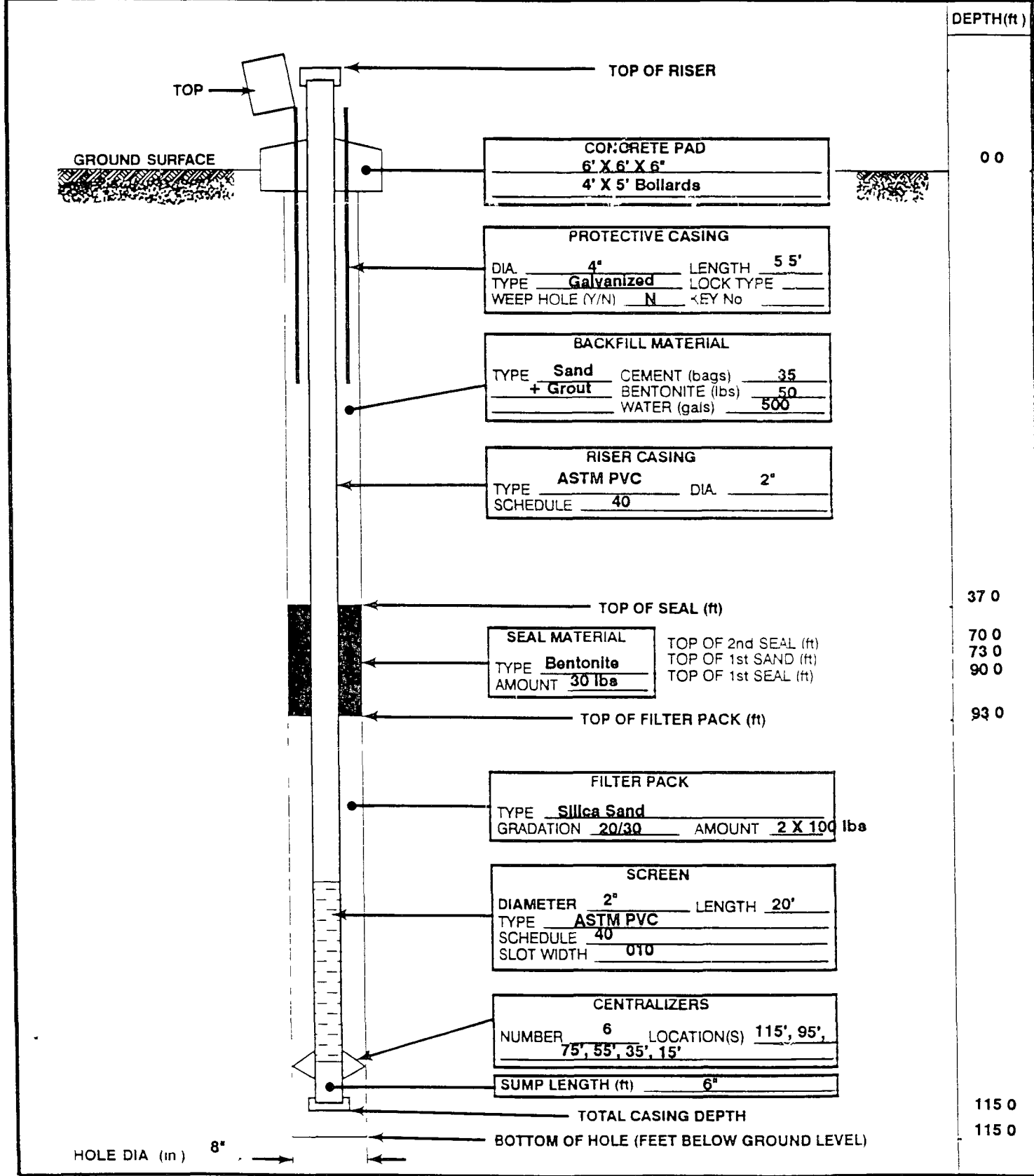
Environmental Drilling Service, Inc



# MONITOR WELL INSTALLATION '94

FILE No <b>94-6509</b>	CLIENT <b>CITRUS COUNTY</b>	PROJECT <b>CITRUS COUNTY LANDFILL</b>	PERMIT No <b>559889 01</b>
			WELL No <b>MW-E</b>
DATE STARTED <b>11-8-94</b>	DATE FINISHED <b>11-10-94</b>	INSTALLED BY <b>R PRATHER</b>	SUPERVISOR <b>R BURR</b>
			INITIAL WATERLEVEL (Below Top of Riser) <b>02.0ft</b>

REMARKS  
8" hole to 95', 4" hole 95.0' to 115.0', Well off-gassing at explosive levels



# BORING LOG

## ARDAMAN & ASSOCIATES, INC.

BORING NO: TH-1/MW-E  
 TOTAL DEPTH: 115' 0ft  
 SHEET 1 OF 3

PROJECT <u>Citrus County, Inverness, Florida</u>	FILE NO. <u>94-6509</u>
CLIENT <u>Citrus County Solid Waste Department</u>	ELEVATION <u>120 0' (NGVD)</u>
BORING LOCATION _____	BORING TYPE _____
COUNTY <u>Citrus County</u> STATE <u>Florida</u>	CASING TYPE <u>4 1/4 HSA to 95', 3 15/16 to 115'</u>
DATE STARTED <u>11/10/94</u> COMPLETED <u>11/10/94</u>	DRILLER/RIG <u>R Prather</u>
WATER TABLE: 1st depth <u>99'</u> DATE <u>11/09/94</u>	TIME _____
WATER TABLE: 2nd depth <u>99'</u> DATE <u>11/10/94</u>	TIME _____
REMARKS _____	

Elevation	Depth (ft)	Standard Pen Test ASTM D-1586			Lab Data					Soils Description and Remarks	Depth (ft)	Graphic Log
		Blows/ 6 in	N Value	Sample Number	NM (%)	-200 (%)	LL (%)	PI (%)	Dry Den (pcf)			
115	5											
110	10			1						Light brown fine sand		
105	15											
100	20			2								
95	25											
90	30			3						Orangish-brown fine sand		
85	35											
80	40			4/5						Light brown limestone with clay		

# BORING LOG

## ARDAMAN & ASSOCIATES, INC.

**BORING NO:** TH-1/MW-E  
**TOTAL DEPTH:** 115 0ft  
**SHEET** 2 OF 3

**PROJECT** Citrus County, Inverness, Florida  
**CLIENT** Citrus County Solid Waste Department  
**BORING LOCATION** \_\_\_\_\_

**FILE NO.** 94-6509  
**ELEVATION** 120 0' (NGVD)  
**BORING TYPE** \_\_\_\_\_

Elevation	Depth (ft)	Standard Pen Test ASTM D-1586			Lab Data				Soils Description and Remarks	Depth (ft)	Graphic Log
		Blows/ 6 in	N Value	Sample Number	NM (%)	-200 (%)	LL (%)	PI (%)			
75	45			4/5					Light brown limestone		
70	50			6							
65	55										
60	60			7							
55	65										
50	70			8							
45	75										
40	80			9							

# BORING LOG

## ARDAMAN & ASSOCIATES, INC.

BORING NO: TH-1/MW-E  
 TOTAL DEPTH: 115 0ft  
 SHEET 3 OF 3

PROJECT Citrus County, Inverness, Florida FILE NO. 94-6509  
 CLIENT Citrus County Solid Waste Department ELEVATION 120 0' (NGVD)  
 BORING LOCATION \_\_\_\_\_ BORING TYPE \_\_\_\_\_

Elevation	Depth (ft)	Standard Pen Test ASTM D-1586			Lab Data					Soils Description and Remarks	Depth (ft)	Graphic Log
		Blows/ 6 in	N Value	Sample Number	NM (%)	-200 (%)	LL (%)	PI (%)	Dry Den (pcf)			
35	85			9						Light brown limestone  rehole began offgassing at 95' and continued offgassing to end of boring		
30	90			10								
25	95											
20	100			11								
15	105			12								
10	110			13								
5	115			14								
0	120									End of Boring at 115 0 feet below existing grade		

MEMORANDUM

DATE: MAY 22, 1992  
TO: GROUNDWATER MONITORING FILE  
FROM: CATHY WINTER, ENG. TECH. III CW  
SUBJECT: WELL DESIGNATION

=====

Upon review of the groundwater monitoring plans submitted by Seaburn and Robertson, Inc. and PBS & J to the Dept. of Environmental Regulation, (and DER comments) the wells have been designated as follows:

60 ACRE SITE

MW-A COMPLIANCE WELL  
MW-B UPGRADIENT WELL FOR 60 ACRE SITE  
DOWNGRADIENT WELL FOR 80 ACRE SITE  
MW-C DOWNGRADIENT WELL  
MW-D DOWNGRADIENT WELL - SUPPLY WELL FOR FORMER OFFICES

80 ACRE SITE

MW-1 DOWNGRADIENT AND COMPLIANCE WELL  
MW-2 DOWNGRADIENT AND COMPLIANCE WELL  
MW-3 UPGRADIENT WELL AND BACKGROUND WELL

/CW



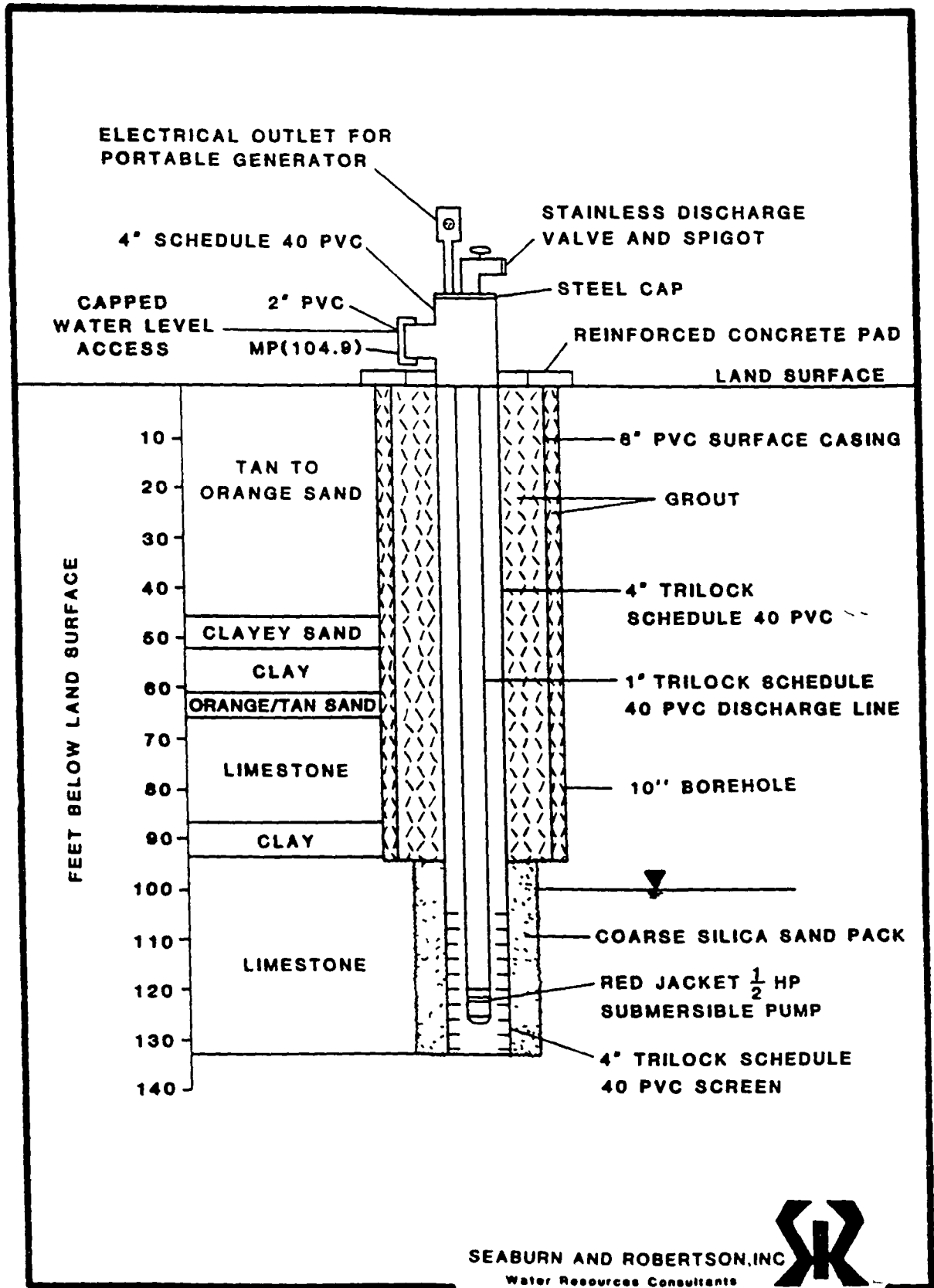


FIGURE 12.- MONITOR WELL A CONSTRUCTION DETAILS AND GEOLOGIC LOG. 49

Site: \_\_\_\_\_

Seaburn And Robertson, Inc.

Borehole: "A" Project No.: 83153  
Lat.-Long.: Lat. 28° 51' 09" Long. 82° 26' 34" Client: Citrus County  
Location: West boundary of landfill Geologist: J. McAllister/  
Elevation of Land Surface: 103.8 feet above msl Total Depth: 135.0'  
Log Reference Datum: Land surface Drilling Method: Rotary Mud SPT

Description Parameters: Primary rock type, color, hardness, texture, secondary rock type, specific minerals, fossils, observable porosity.

Depth Interval (ft)	Description
0 - 10.0	<u>SAND</u> - Light to med. tan/orange, fine grained, well sorted, quartz; loose, some roots, minor heavy mineral grains, slight "leachate" odor.
13.5 - 15.0	<u>SAND</u> - Light tan with med. orange/tan mottling, fine grained well sorted quartz; loose, v. minor heavy mineral grains, slight "leachate" odor.
18.5 - 20.0	<u>SAND</u> - Light to med. tan, fine -rained with rare medium grains, mod. well sorted, quartz; mod. loose to loose, minor heavy mineral grains, v. slight "leachate" odor.
23.5 - 25.0	<u>SAND</u> - Light to med. tan/orange mottled, fine grained, well sorted quartz some slightly silty fine gr. materials, rare heavy mineral grains, v. slight "leachate" odor.
28.5 - 30.0	<u>SAND</u> - Medium tan/orange, fine to very fine grained well sorted quartz; moderately loose to mod. dense, some sl. silty fine grained materials, no noticeable odor.
33.5 - 35.0	<u>SAND</u> - Med. tan/orange, fine grained, well sorted quartz with some very minor lt. tan quartz seams; mod. loose to mod. dense, some sl. silty fine grained material, no noticeable odor.
38.5 - 40.0	<u>SAND</u> - Med. tan/orange, minor thin light tan sand seams, fine grained, well sorted quartz; mod. dense, sl. clayey, minor phosphorite grains.
43.5 - 45.0	<u>SAND</u> - Med. tan/orange, fine grained, well sorted, mod. dense quartz; minor thin light tan sand seams, slightly clayey, very minor white poorly cemented sands.

Sheet: \_\_\_\_\_

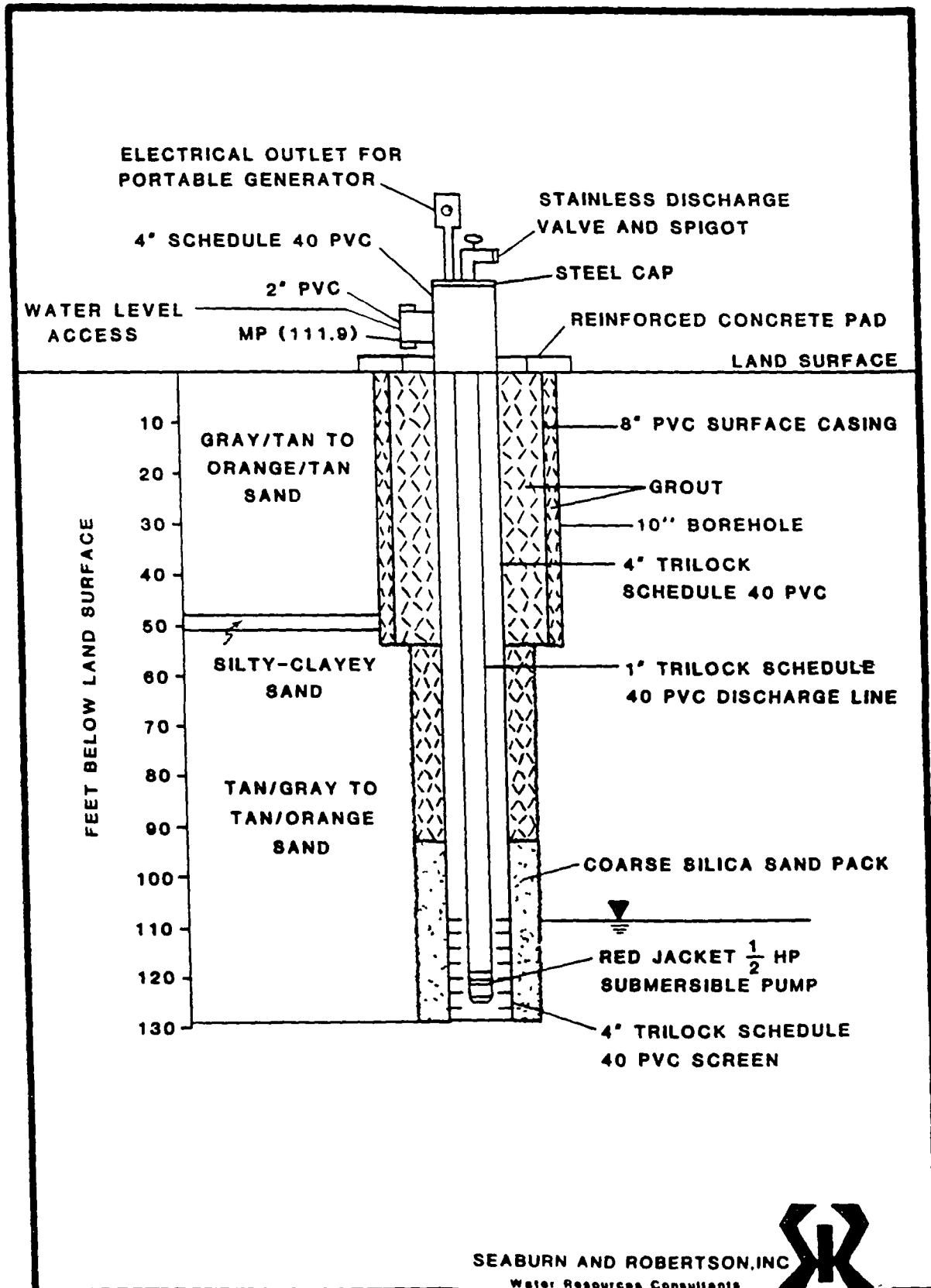
Site: \_\_\_\_\_

Depth Interval	Description
(ft)	
48.5 - 50.0	<u>SAND</u> - Med. tan/orange, very fine grained, well sorted quartz; mod. dense v. slightly sticky, mod. soft, siliceous; some white poorly cemented sands.
53.5 - 55.0	<u>CLAYEY SAND AND CLAY</u> - Med. and lt. tan/orange to brown/orange, fine grained, well sorted mod. dense quartz; some white poorly to mod. well cemented sands; clay - mod. firm to firm, sl. sticky, siliceous minor lignite.
58.5 - 60.0	<u>CLAY</u> - Lt. tan/orange with some lt. gray and some black (lignite) mottling. Stiff, siliceous, sl. sticky to sticky, minor fine quartz sand grains.
63.5 - 65.0	<u>SAND</u> - Mottled orange/tan and tan, fine grained, well sorted quartz; v. sl. sticky in part.
68.5 - 70.0	<u>LIMESTONE</u> - Cream to lt. brown, granular to pebble sized, weathered; minor fine quartz sand grains.
73.5 - 75.0	<u>LIMESTONE</u> - Cream to lt. tan, granular to pebble sized, mod. soft to mod. hard, vugular in part; minor lt. orange/tan sand and clay, some lignite present.
78.5 - 80.0	<u>LIMESTONE</u> - Cream to lt. tan, granular to pebble sized, mod. soft to mod. hard; no sand or clay present.
85.0 - 88.5	<u>LIMESTONE</u> - Cream colored, mod. soft, small granular cuttings.
88.5 - 90.0	<u>CLAY</u> - Mottled lt. orange/tan, lt. gray and black (lignite), mod. stiff to soft, malleable, v. sl. sticky, siliceous.
93.5 - 95.0	<u>LIMESTONE AND CALCAREOUS CLAY</u> - Cream to very lt. tan, extremely well weathered, chalky, friable, poorly cemented; some siliceous clay, lt. tan/orange, firm, sticky, very soft, malleable; minor fine grained quartz sand seams, orange, well sorted.
98.5 - 100.0	<u>LIMESTONE</u> - Lt. cream to lt. tan, mod. well cemented, sandy, granular.
103.0 - 105.0	<u>LIMESTONE</u> - Cream to lt. orange/tan, fine granular cuttings; minor shell fragments.
108.5 - 110.0	<u>LIMESTONE</u> - Cream with minor orange/tan specks, granular, poorly cemented; some calcareous clay, soft, sticky; minor shell fragments.
118.5 - 120.0	<u>LIMESTONE</u> - Cream to lt. orange/tan, granular, poorly cemented with minor mod. well cemented pieces, vugular; minor shell fragments.
120.0 - 125.0	<u>LIMESTONE</u> - Cream to lt. orange/tan, granular cuttings, poorly to mod. well cemented; minor shell fragments.

Sheet: \_\_\_\_\_

Site: \_\_\_\_\_

Depth Interval	Description
(ft)	
128.5 - 130.0	<u>LIMESTONE</u> - Cream to lt. tan and lt. orange/tan, mod. hard to mod. soft poorly to mod. well cemented, fossiliferous in part (molds and costs); minor shell fragments, minor amounts of calcareous clay.
133.5 - 135.0	<u>LIMESTONE</u> - Cream to lt. tan, slight orange tint -n part, poorly to well cemented, soft to hard, slightly fossiliferous in part; minor calcareous clays.



**FIGURE 13.- MONITOR WELL B CONSTRUCTION DETAILS AND GEOLOGIC LOG.**

Site: \_\_\_\_\_

Seaburn And Robertson, Inc.

Borehole: "B"

Project No.: 83153

Lat.-Long.: Lat. 28° 50' 58" Long. 82° 26' 20"

Client: Citrus Co.

Location: Southeast corner of landfill

J. McAllister

Geologist: J. Morris

Elevation of Land Surface: 111.2 feet above msl

Total Depth: 250.4'

Log Reference Datum: Land surface

Drilling Method: Rotary SPT

Description Parameters: Primary rock type, color, hardness, texture, secondary rock type, specific minerals, fossils, observable porosity.

Depth Interval (ft)	Description
0 - 1.0	<u>SAND</u> - Lt. gray/tan, fine grained, well sorted, loose quartz; some roots.
1.0 - 6.0	<u>SAND</u> - Lt. tan/orange, fine grained, well sorted, loose, quartz; some dark gray organic streaks 1-4 feet.
6.0 - 8.0	<u>SAND</u> - Lt. to med. tan/orange, fine grained, well sorted, mod. loose to loose quartz.
8.0 - 10.0	<u>SAND</u> - Lt. to med. tan/orange with med. orange mottling, fine grained, well sorted, mod. loose quartz.
13.5 - 15.0	<u>SAND</u> - Lt. to med. tan with some lt. orange streaks and rare lt. tan streaks, fine grained, well sorted, mod. loose quartz.
18.5 - 20.0	<u>SAND</u> - Lt. gray/tan, fine grained, well sorted, loose to mod. loose quartz; minor v. fine heavy mineral grains.
23.5 - 30.0	<u>SAND</u> - Lt. gray/tan, fine to v. fine grained, well sorted, loose to mod. loose quartz; minor v. fine heavy mineral grains; rare lignite shiny, black, soft, highly organic.
33.5 - 35.0	<u>SAND</u> - Lt. gray/tan, v. fine grained, well sorted, some lt. orange streaks, loose, quartz; some v. fine heavy mineral grains.
38.5 - 40.0	<u>SAND</u> - Lt. to med. tan, fine to v. fine grained, well sorted, mod. loose rare lt. tan/orange streaks, quartz; v. minor fine heavy mineral grains.
43.5 - 45.0	<u>SAND</u> - Lt. tan, fine grained, well sorted, mod. loose, quartz; sl. silt
48.5 - 50.0	<u>SILTY-CLAYEY SAND</u> - Lt. tan and lt. gray mottled, fine to v. fine grained, well sorted, mod. loose, quartz; sl. clayey in part, sl. silty throughout.

Site: \_\_\_\_\_

Depth Interval	Description
(ft)	
53.5 - 59.5	<u>SAND</u> - Lt. tan/gray with lt. to med. tan and lt. orange streaks, fine grained, well sorted, mod. loose, quartz; v. sl. silty, minor v. fine heavy mineral grains.
59.5 - 60.0	<u>SAND</u> - Lt. to med. tan and med. tan/orange mottled, fine grained, well sorted, mod. loose, quartz; v. minor heavy mineral grains, v. sl. silty.
63.5 - 65.0	<u>SAND</u> - Lt. tan/gray with minor med. tan streaks, fine to v. fine grained well sorted, mod. loose, quartz; v. sl. silty, rare v. fine heavy mineral grains.
68.5 - 70.0	<u>SAND</u> - Lt. to very lt. tan/gray, fine to v. fine grained, well sorted, mod. loose, quartz; v. sl. silty.
73.5 - 75.0	<u>SAND</u> - Lt. tan and med. tan/orange mottled, fine to v. fine grained, well sorted, mod. loose to mod. dense, quartz; v. sl. silty; rare heavy mineral grains.
78.5 - 80.0	<u>SAND</u> - Lt. tan with minor med. tan/orange streaking, fine to v. fine grained, well sorted, mod. loose, rare med. grains, quartz; v. sl. silty.
83.5 - 85.0	<u>SAND</u> - Lt. tan and lt. gray mottled, fine to v. fine grained, well sorted, mod. loose to mod. dense, rare med. grains, quartz; v. sl. clayey.
88.5 - 90.0	<u>SAND</u> - Lt. tan and lt. gray mottled, fine grained, well sorted, mod. loose to mod. dense, quartz; sl. silty.
93.5 - 95.0	<u>SAND</u> - Lt. tan/orange and med. tan/orange mottled, fine grained, well sorted, mod. loose quartz; v. minor v. fine heavy mineral grains.
98.5 - 100.0	<u>SAND</u> - Med. to dk. orange/brown with varying amounts of lt. tan/orange mottling, fine to v. fine grained, rare med. grains, med. well sorted, mod. loose to loose, quartz.
103.5 - 105.0	<u>SAND</u> - Lt. tan/orange, med. to dk. orange/brown and lt. tan/green mottled fine to v. fine grained, well sorted, mod. dense to mod. loose quartz; rare lignite, soft, shiny, black; sl. clayey.
108.5 - 110.0	<u>SAND</u> - Lt. tan/orange, med. to dk. orange/brown and med. tan/green mottled fine grained, well sorted, mod. loose, quartz; sl. silty, v. sl. clayey.
113.5 - 115.0	<u>SAND</u> - Clean, white, very fine grained, well sorted, quartz; minor fine heavy mineral grains.
118.5 - 120.0	<u>SAND</u> - Clean, white, v. fine grained, well sorted, quartz; minor heavy mineral grains.

Site: \_\_\_\_\_

Depth Interval	Description
(ft)	
123.5 - 130.0	<u>SAND</u> - V. lt. gray to white, v. fine grained, well sorted, dense quartz sl. silty, rare v. fine heavy mineral grains.
133.5 - 135.0	<u>SAND</u> - Lt. gray with some lt. gray mottling and rare orange/tan streaks fine to v fine grained, well sorted, mod. dense, quartz; some lt gray sandy clay lenses (calcareous), rare fine heavy mineral gra-
138.5 - 145.0	<u>SAND</u> - Lt. gray with minor lt. gray/tan streaks, fine to med. grained, well sorted, mod. dense quartz, v. slightly silty.
148.5 - 155.0	<u>SAND</u> - Lt. gray and lt. gray/tan mottled, fine to v. fine grained, rare medium grains, well sorted, dense to mod. dense, quartz; v. sl. silty; rare v. fine heavy mineral grains.
158.5 - 160.0	<u>SAND</u> - Lt. tan with some lt. gray, fine grained with some med. grains, well sorted, mod. loose to mod. dense, quartz; sl. silty, v. minor heavy mineral grains.
163.5 - 165.0	<u>SAND AND SANDY CLAY</u> - Lt. to med. tan/yellow with rare tan/orange streak fine grained, well sorted, dense to v. dense, quartz; v. minor fine heavy mineral grains; clay is sl. sticky, siliceous.
168.5 - 170.0	<u>SAND</u> - Lt. gray, lt. tan and med. tan/orange streaked, fine grained, well sorted, dense to v. dense, quartz; sl. clayey in part; minor v. fine heavy mineral grains.
173.5 - 174.5	<u>SAND</u> - Lt. tan with lt. gray streaks, fine grained, well sorted, mod. dense, quartz; v. sl. clayey.
174.5 - 175.0	<u>SAND</u> - Med. tan/orange, fine grained, well sorted, mod. dense, quartz; v. sl. clayey.
178.5 - 180.0	<u>LIMESTONE</u> - Lt. gray/white, cuttings granular mod. hard to soft.
180.0 - 185.0	<u>LIMESTONE</u> - Lt. gray/white to orange/tan, hard, cuttings granular.
185.0 - 190.0	<u>LIMESTONE</u> - Tan, cuttings fine grained, mod. hard to hard, well cemented, sl. dolomitized in part.
190.0 - 195.0	<u>LIMESTONE</u> - Tan, cuttings fine grained, hard, well cemented, minor chert fragments.
195.0 - 200.0	<u>LIMESTONE</u> - Lt. gray/white to tan, mod. hard to mod. soft, mod. well to poorly cemented, fine grained, rare chert fragments, granular cuttings.
200.0 - 205.0	<u>LIMESTONE</u> - Lt. gray, mod. hard, fine grained, granular cuttings.
205.0 - 210.0	<u>LIMESTONE</u> - White to lt. tan, mod. well to well cemented, fine grained, some chert fragments, granular cuttings.



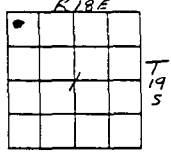
Sheet: \_\_\_\_\_

Site: \_\_\_\_\_

Depth Interval (ft)	Description
210.0 - 215.0	<u>LIMESTONE</u> - White to lt. tan, mod. well to well cemented, fine grained granular cuttings.
215.0 - 220.0	<u>LIMESTONE</u> - White to lt. tan, well cemented, fine grained, granular to sm. pebble sized cuttings.
220.0 - 223.5	<u>LIMESTONE</u> - White with sl. tannish tint, hard, well cemented, granular cuttings.
223.5 - 228.5	<u>LIMESTONE</u> - Lt. tan and lt. to med. gray, mod. hard to mod. soft, friable, fine grained cuttings.
228.5 - 233.5	<u>LIMESTONE</u> - Lt. tan to white with some lt. gray and med. tan, mod. hard to mod. soft, friable.
233.5 - 238.5	<u>SOFT LIMESTONE</u> - Tan/gray, soft, sticky, calcareous clay.
238.5 - 238.7	<u>LIMESTONE</u> - Lt. tan/gray, mod. poorly cemented, mod. soft to soft, v. friable; interlayered with lt. gray, soft calcareous clay.
238.7 - 243.5	<u>LIMESTONE</u> - Lt. tan/gray, v. soft, friable; some lt. gray, soft, sticky calcareous clay.
243.5 - 250.0	<u>LIMESTONE</u> - Lt. tan/gray to lt. tan, soft to mod. hard, friable in part minor lt. gray, soft, calcareous clay.
250.0 - 250.4	<u>LIMESTONE</u> - White, mod. hard to mod. soft, friable, fine grained; some v. lt. gray, soft, calcareous clay.

SOUTHWEST FLORIDA WATER MANAGEMENT DIST. DIST

SWFWMD PROJECT NUMBER 900200 LOG HEADING  
 WELL NAME CENTRAL LANDFILL #1 15-13 DATE 4-30-84  
 COUNTY CITRUS OWNER CITRUS COUNTY  
 LOCATION T 18 R 18 SEC 01 NW 1/4 NW 1/4 SE 1/4  
 LATITUDE 28 51 17 LONGITUDE 82 26 33  
 WELL DEPTH 209 DEPTH LOGGED 209  
 CASING DEPTH 186 DIAMETER 4"  
 ELEVATION 8110 FT MSL OF TOP OF CASING 112

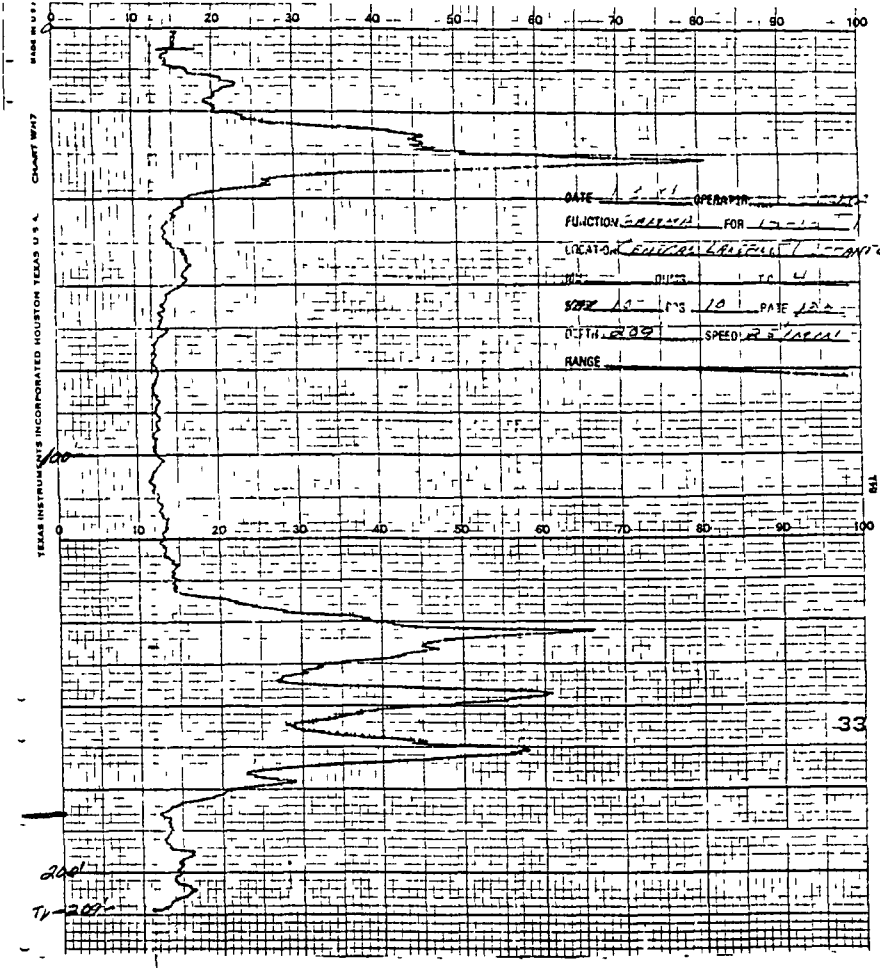


TOP OR START OF LOG 5.7 FT ABOVE LSD  
 BELOW  
 WATER LEVEL 101 FT BELOW TOP OF CASING 112 FT MSL  
 LOGGING SPEED 25 FT/MIN LOGGED UP DOWN  
 OPERATOR J. L. DECKER

TYPE LOG  
 CALIPER  ELECTRIC  TEMPERATURE  SAMPLE  
 GAMMA  FLOW  FLUID CONDUCTIVITY

USE OF WELL MONITOR  
 QW SAMPLE DATE 4-30-84  
 DEPTH SAMPLED 200 TEMP 25.5C CONDUCT 650  $\mu$ MMS  
CL 33mg/L, SO4 75mg/L

R(8/83)



SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

#20 Project  
 Number P00200 LOG HEADING

WELL NAME CENTRAL LAUREL #2 15-11 DATE 4-9-84

COUNTY CITRUS OWNER: CITRUS COUNTY

LOCATION T 19 R 18 SEC. 01 SW 1/4 NW 1/4 SE 1/4

LATITUDE 28° 51' 00" LONGITUDE 82° 26' 33"

WELL DEPTH 198' DEPTH LOGGED 198'

CASING DEPTH 184' DIAMETER 4"

ELEVATION 120 FT. MSL. OF TOP OF CASING 121.5

TOP OR START OF LOG 42 FT. ABOVE LSD  
 (BELOW)

WATER LEVEL 108.5 FT. BELOW TOP OF CASING 13 FT. MSL

LOGGING SPEED 25 FT./MIN. LOGGED UP  DOWN

OPERATOR J L Decker

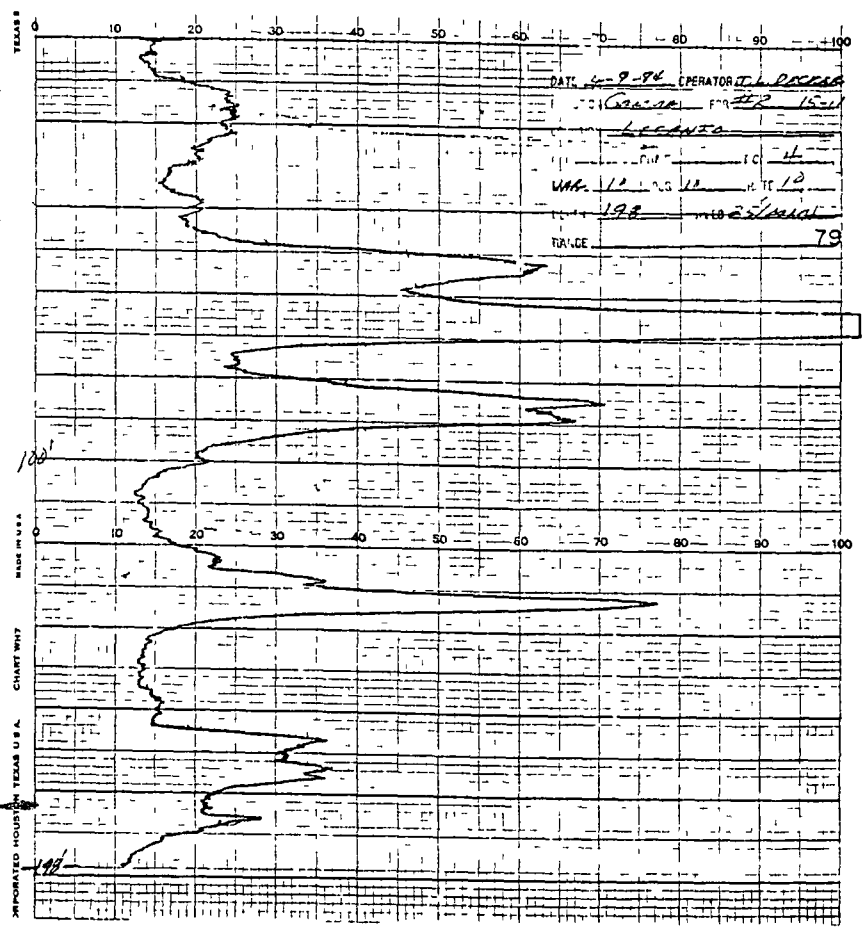
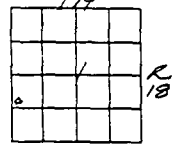
TYPE LOG

CALIPER  ELECTRIC  TEMPERATURE  SAMPLE  
 GAMMA  FLOW  FLUID RESISTIVITY

USE OF WELL MANITRE

OW SAMPLE DATE 4-9-84

DEPTH SAMPLED 195 - TEMP 24°C, SP CONDUCT 128 μmhos  
 CL 6mg/L, SO<sub>4</sub> 31 mg/L



# FIELD LOG - SOIL BOREHOLE

SITE NAME AND LOCATION Citrus County Landfill Lacanto, FL		DRILLING METHOD mud-rotary		BORING NO B-1	
		SAMPLING METHOD split-spoon		SHEET 1 OF 4	
		WATER LEVEL W 110 ft = 10 ft = 5 NGVD		DRILLING START TIME 1330	FINISH TIME 1500
		TIME 1000 0830		DATE 5/24/88	DATE 5/26/88
		DATE 5/24/88 5/31/88		CASING DEPTH	DATE 5/24/88 5/26/88
		DATUM NGVD ELEVATION 115 NGVD			

DRILL RIG CME 45	SURFACE CONDITIONS scrub-brush
ANGLE BEARING	
SAMPLE HAMMER TORQUE FT - LBS	

DEPTH IN FEET (ELEVATION)	BLOWS/BLK ON SAMPLER (RECOVERY)	SOIL GRAPH	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT CASING TYPE	BLOWS/FOOT ON CASING	DEPTH IN FEET		DESCRIPTION OF OPERATION AND REMARKS
						FROM	TO	

2	W		Sand + orange-brown, F-M, HS, SA-A, dry; trace roots, heavy mineral silt.	6" bit	UNCASED	12 <sup>30</sup>	1 <sup>30</sup>	de-coned rig.
4	W		slightly silty - As Above -			130	-	Setting up on site B-1.
6	W		orange, damp (A.A.)			140	-	started continuous
8	W		As Above			215	-	split spooning from 0 to 10 ft
10	W		Silty Fine Sand: orange, HS/SA-A, damp; trace, heavy mineral silt			215	-	drilled + sampled from 10 to 40 ft.
15	W		Silty, slightly clayey, Fine SAND - light tan-orange, trace medium sand, HS, A					
20	W		Silty Sand - light tan-orange, HS, A, damp					

DRILLING CONTR. Geadrill, Inc.

LOGGED BY Glenda Jones  
DATE 6-6-88  
CHK'D BY  
FS03993

# FIELD LOG - SOIL BOREHOLE

SITE NAME AND LOCATION				DRILLING METHOD				BORING NO B-1			
				SAMPLING METHOD				SHEET 2 OF 4		DRILLING	
				WATER LEVEL				START		FINISH	
				TIME				TIME		TIME	
				DATE				DATE		DATE	
				CASING DEPTH							
				DATUM				ELEVATION			
DRILL RIG				SURFACE CONDITIONS							
ANGLE				BEARING							
SAMPLE HAMMER TORQUE				FT -LBS							
DEPTH IN FEET (ELEVATION)	BLOWS/ 6" BIT (RECOVERY)	SOIL GRAPH	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT CASING TYPE	BLOWS/FOOT ON CASING	DEPTH IN FEET		DESCRIPTION OF OPERATION AND REMARKS			
						FROM	TO				
25	7		Silty, slightly clayey, Fine SAND - lt yellow-tan w/ orange mottling, sl damp, HS, A, trace, medium @.					35 to 60 - drilled and sampled from 40 to 65 feet.			
30	9		Silty, sl. cl., F SAND - white to light tan, damp, trace, heavy mineral silt, HS-A.								
35	11		Silty F Sand - Lt tan - white, HS, A, moist, tr heavy mineral silt								
40	14		Silty F Sand - Lt tan, moist, HS, A, tr. h m silt								
45	14		Silty, v sl cl, Sand - white, moist, tr clay, h m silt								
50	16		Silty Fine Sand - A A. no clay								
55	24		Silty Fine Sand - A A dense								
60	33		Silty Fine Sand - AA sl damp, dense								

DRILLING CONTR. Goodall, Inc.

FS 03993

LOGGED BY Glenda Jones

DATE 6-19-88

CHK'D BY

# FIELD LOG - SOIL BOREHOLE

SITE NAME AND LOCATION		DRILLING METHOD				BORING NO <b>B-1</b>		
		SAMPLING METHOD				SHEET <b>3 OF 4</b>		
						DRILLING		
		WATER LEVEL		START TIME		FINISH TIME		
		TIME		DATE		DATE		
		DATE		CASING DEPTH				
DATUM		ELEVATION						
DRILL RIG				SURFACE CONDITIONS				
ANGLE		BEARING						
SAMPLE HAMMER TORQUE				FT -LBS				
DEPTH IN FEET (ELEVATION)	BLOWS/AMPER (RECOVERY)	SOIL GRAPH	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT CASING TYPE	BLOWS/FOOT ON CASING	DEPTH IN FEET		DESCRIPTION OF OPERATION AND REMARKS
						FROM	TO	
60								
14	23		<u>Silty, sl. cl. Fine Sand - AA.</u> w/ trace, orange mottling.					5/23 9am - washing from to 35 ft. to 68.5 ft 10:15
65	26		<u>Silty Fine Sand - white-</u> tan, v. dense, HS-A, moist, trace clay, tan mottling, lt. yellow silt pockets.					10:30 - 6:15 drilling and sampling from 65 to 105 ft.
17	26		<u>Silty Fine Sand - AA</u>					5/26 7am to 9:30am - re-washed from 60 to 105 ft
70	38		<u>Slightly silty Fine Sand -</u> white, F-M grained, HS-A, v dense, moist, tr h m sil.					9:30 to 4:30 - drilled and sampled from 105 to 130 ft
17	29		<u>Silty Fine Sand - AA</u>					
75	43		<u>Silty Fine Sand - AA</u>					
23	24		<u>Silty Fine Sand - H yellow</u> tan, w/ lenses of white med gr. qtz sand, HS-A, v dense; tr h m silt.					
80	60		<u>Silty Sand - AA</u>					
17	23							
85	56							
16	28							
90	58							
20	44							
95	63							

DRILLING CONTR. Greendale

FS 03993

LOGGED BY Glenda Jones

DATE 6-6-88 CHK'D BY ...

# FIELD LOG - SOIL BOREHOLE

SITE NAME AND LOCATION	DRILLING METHOD				BORING NO <b>B-1</b>	
	SAMPLING METHOD				SHEET <b>4 OF 4</b>	
					DRILLING	
	WATER LEVEL		START TIME		FINISH TIME	
	TIME		DATE		DATE	
	DATE		CASING DEPTH			

DATUM		ELEVATION		SURFACE CONDITIONS	
DRILL RIG		ANGLE		BEARING	
SAMPLE HAMMER TORQUE		FT -LBS			

DEPTH IN FEET (ELEVATION)	BLOWS/BLANK ON SAMPLER (RECOVERY)	SOIL GRAPH	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT CASING TYPE	BLOWS/FOOT ON CASING	DEPTH IN FEET		DESCRIPTION OF OPERATION AND REMARKS
						FROM	TO	

100	25 98 73		Silty Sand - white to lt. yellow w/lenses of med. grz sand, moist, dense, HS-A; trace in silt					
105	15 24 28		Silty, clayey SAND - A A. w/lt. orange mottling, damp, dense					
110	33 64 68	H T	Silty, slightly clayey SAND - moist to wet, v. dense, HS-A					
115	17 34 40		Silty sand - tan, v dense, wet, HS-A					
120	18 48 44		A A					
125	20 32 36		Silty Sand - lt tan to orange (A A)					
130	16 26 33		Silty, slightly clayey, SAND - white to tan, w/lt. orange mottling, HS-A, v. dense, moist					

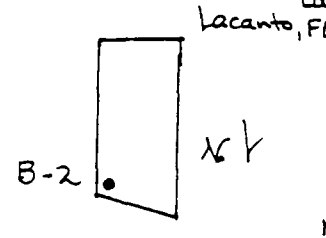
DRILLING CONTR Goodall

FS 03993

LOGGED BY Glenda Jones

DATE 6-6-88 CHK'D BY ...

# FIELD LOG - SOIL BOREHOLE

SITE NAME AND LOCATION Citrus County Central Land fill Lacanto, FL 		DRILLING METHOD mud rotary		BORING NO B-2	
		SAMPLING METHOD split spoon		SHEET 1 OF 4	
DATUM NGVD		ELEVATION 133.1		DRILLING START TIME 12:45	
DRILL RIG CME55		SURFACE CONDITIONS		FINISH TIME 11:45	
ANGLE		BEARING		DATE 6/9/88	
SAMPLE HAMMER TORQUE		FT -LBS		DATE 6/10/88	

DEPTH IN FEET (ELEVATION)	BLOWS/FOOT ON SAMPLER (RECOVERY)	SOIL GRAPH	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT CASING TYPE	BLOWS/FOOT ON CASING	DEPTH IN FEET		DESCRIPTION OF OPERATION AND REMARKS
						FROM	TO	

0			F-M SAND - black, orange, HS-A, damp, tr. roots loose					12:45 - on site started SPT continuous from 0-10'
2	4		F-M SAND - orange, HS-A, damp, tr. heavy mineral silt, loose					1:05 - mixing mud washing from 0-13.5'
4	6		F-M SAND - lt tan/orange HS-A, damp, loose					2:30 - drilling and sampling @ 35'
6	8		F-M SAND - Light tan, HS-A, damp, loose					
8	10		F-M SAND as above					
10	12							
12	14		SI Sandy, SI clayey, SILT - dark orange, dry, crumbly, very stiff, & pl.					
14	16		As Above					

DRILLING CONTR GEORRILL

FS 03993

LOGGED BY Glenda Jones  
DATE 6/12/88  
CHK'D BY



# FIELD LOG - SOIL BOREHOLE

SITE NAME AND LOCATION		DRILLING METHOD				BORING NO	
						B-2	
		SAMPLING METHOD				SHEET	
						2 OF 4	
						DRILLING	
						START	FINISH
		WATER LEVEL				TIME	TIME
		TIME					
		DATE				DATE	DATE
DATUM	ELEVATION	CASING DEPTH					

DRILL RIG		SURFACE CONDITIONS	
ANGLE	BEARING		
SAMPLE HAMMER TORQUE		FT -LBS	

DEPTH IN FEET (ELEVATION)	BLOWS/ FEET ON SAMPLER (RECOVERY)	SOIL GRAPH	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT CASING TYPE	BLOWS/FOOT ON CASING	DEPTH IN FEET		DESCRIPTION OF OPERATION AND REMARKS
						FROM	TO	

25	12		SI Sandy SILT - orange, dry, crumbly, v. stiff, v. plastic					drilling and sampling at 5' intervals
	10		silty F SAND - orange, dry, HS-A, m. dense, n pl.					
30	12		As Above w/ vertical thin lamina of white silty clay					
	12		SILTY F SAND - buff / orange, dry, HS/A, m dense, n pl.					
35	12		SILTY F SAND - white, dry, HS/A, dense, n. pl, trace heavy mineral silt					
	14		As Above w/ orange silty vertical thin lamina throughout spoon					
40	16		SI. CL, SI. SA, SILT - white, damp, dense, v. pl., tr. h. m silt.					
	14		SILTY, SL. CLAYEY F. SAND - white, damp, dense, tr. h. m. silt.					
45	16							
50	20							
55	23							
60	20							

DRILLING CONTR GEORRILL

LOGGED BY Glenda Jones DATE 6/12/88 CHK'D BY \_\_\_\_\_

FS 03993

# FIELD LOG - SOIL BOREHOLE

SITE NAME AND LOCATION		DRILLING METHOD				BORING NO B-2	
		SAMPLING METHOD				SHEET 3 OF 4	
						DRILLING	
		WATER LEVEL				START	FINISH
						TIME	TIME
		DATE				DATE	DATE
CASING DEPTH							

DATUM		ELEVATION		SURFACE CONDITIONS	
DRILL RIG		BEARING		SAMPLE HAMMER TORQUE FT-LBS	

DEPTH IN FEET (ELEVATION)	BLOWS/FOOT ON SAMPLER (RECOVERY)	SOIL GRAPH	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT CASING TYPE	BLOWS/FOOT ON CASING	DEPTH IN FEET		DESCRIPTION OF OPERATION AND REMARKS
						FROM	TO	

60	19 30 45		SILTY F SAND - white, damp, v. dense, HS/A, tr. h.m. silt.					drilling and sampling @ 5' intervals
65	29 46 50		SILTY to sl s. F-M SAND - white/buff, damp, HS/A, v. dense, tr h.m. silt					
70	24 41 43	2 ↓	F-M SAND - buff, wet, v. dense, HS-A, n.pl.					
75	15 29 35		F-M SAND to silty SAND - tan to buff, wet to moist, v. dense, HS-A.					
80	25 37 43		As Above					
85	22 50 1/4		Silty F-M SAND - white, v. dense, HS-A, wet, n pl tr h.m. silt,					
90	29 42 50		Silty F-M SAND - tan/white, v. dense, wet, HS-A, w/ Pockets of dk brown F-M SAND.					
95								
95								

Split Spoon ait w/ 6" bit UNCASED

DRILLING CONTR Geodril

LOGGED BY Glenda Jansz  
DATE 6/13/88 CHK'D BY FS03993

# FIELD LOG - SOIL BOREHOLE

SITE NAME AND LOCATION		DRILLING METHOD				BORING NO <b>B-2</b>		
		SAMPLING METHOD				SHEET <b>4 OF 4</b>		
						DRILLING		
		WATER LEVEL				START	FINISH	
		TIME				TIME	TIME	
		DATE				DATE	DATE	
DATUM		ELEVATION		CASING DEPTH				
DRILL RIG			SURFACE CONDITIONS					
ANGLE		BEARING						
SAMPLE HAMMER TORQUE			FT -LBS					
DEPTH IN FEET (ELEVATION)	BLOWS / 6 IN. (ON SAMPLER) (RECOVERY)	SOIL GRAPH	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT CASING TYPE	BLOWS/FOOT ON CASING	DEPTH IN FEET		DESCRIPTION OF OPERATION AND REMARKS
						FROM	TO	
100	32 45		SILTY F-M SAND - white, wet, v. dense, HS-A, to 4 m silt.					drilling and sampling @ 5' intervals
105	30 50/4"		As Above - tan/white					
110	34 43 50		As Above					
115	26 38 50		As Above					
120	24 40 50		As Above					
125	23 50/3"		As Above					
	T.D.							

DRILLING CONTR GeoDrill

FS03993

LOGGED BY Glenda Jones

DATE 6/13/88 - CHK'D BY [Signature]

# FIELD LOG - SOIL BOREHOLE

SITE NAME AND LOCATION Citrus County L.F. G-WMP Lacanto, FL  B-3	DRILLING METHOD mud-rotary		BORING NO B-3		
	SAMPLING METHOD split spoon		SHEET 1 of 4		
	WATER LEVEL 105 ft + 20' NGVD		START TIME 1400	FINISH TIME 1500	
	DATE 6-2-88		DATE 6-1-88		DATE 6-2-88
DATUM NGVD		ELEVATION 119.50		CASING DEPTH	

DRILL RIG CME 45	SURFACE CONDITIONS scrub brush
ANGLE	BEARING
SAMPLE HAMMER TORQUE	FT -LBS

DEPTH IN FEET (ELEVATION)	BLOWS/ FEET ON SAMPLER (RECOVERY)	SOIL GRAPH	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT CASING TYPE	BLOWS/FOOT ON CASING	DEPTH IN FEET		DESCRIPTION OF OPERATION AND REMARKS
						FROM	TO	

0			Sand - orange-brown, F-M, HS-A, damp					6-1-88 1 <sup>00</sup> - 2 <sup>00</sup> : deconned rig
2			As Above					2 <sup>00</sup> - 2 <sup>15</sup> set upon B-4
4			As Above					2 <sup>15</sup> - 2 <sup>45</sup> split spoons from 0 to 10'
6			slightly silty, light orange dry (As Above)					2 <sup>45</sup> to 5 <sup>00</sup> drilled and sampled from 10' to 70'
8			Light - orange/tan (As Above)					
10			Orange, slightly silty, damp, (As Above)					
15			Silty, clayey, dark orange					
20			Sand - F-M grained, sticky, moist.					

DRILLING CONTR. Geodrill

LOGGED BY Glenda Jones

FS 03993

DATE 6-7-88 CHK'D BY

# FIELD LOG - SOIL BOREHOLE

SITE NAME AND LOCATION		DRILLING METHOD				BORING NO <b>B-3</b>	
		SAMPLING METHOD				SHEET <b>2 OF 4</b>	
						DRILLING	
		WATER LEVEL					
TIME						FINISH TIME	
DATE						DATE	
DATUM		ELEVATION				CASING DEPTH	

DRILL RIG		SURFACE CONDITIONS	
ANGLE	BEARING		
SAMPLE HAMMER TORQUE		FT -LBS	

DEPTH IN FEET (ELEVATION)	BLOWS/BLK ON SAMPLER (RECOVERY)	SOIL GRAPH	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT CASING TYPE	BLOWS/FOOT ON CASING	DEPTH IN FEET		DESCRIPTION OF OPERATION AND REMARKS
						FROM	TO	

25	9 10		(As Above)					
30	7 8		<u>Silty, slightly clayey, Fine Sand</u> - light tan-orange, moist, HS-A, sticky					
35	10 11		<u>Silty Fine Sand</u> - lt. tan/orange, HS-A, moist					
40	7 10		As Above					
45	5 8		<u>Silty Fine Sand</u> - buff to light tan/orange, moist, HS-A					
50	10 12 18		As Above					
55	10 10 12		* buff (As Above)					
60	12 12 21		As Above					

DRILLING CONTR Creedwell

LOGGED BY Glenda Jones FS03993  
DATE 6-7-88 CHK'D BY

# FIELD LOG - SOIL BOREHOLE

SITE NAME AND LOCATION		DRILLING METHOD				BORING NO <b>B-3</b>	
		SAMPLING METHOD				SHEET <b>3 OF 4</b>	
DATUM		ELEVATION				DRILLING	
DRILL RIG		SURFACE CONDITIONS				START	FINISH
ANGLE		BEARING				TIME	TIME
SAMPLE HAMMER TORQUE		FT -LBS				DATE	DATE
WATER LEVEL							
TIME							
DATE							
CASING DEPTH							

DEPTH IN FEET (ELEVATION)	BLOWS/BLK ON SAMPLER (RECOVERY)	SOIL GRAPH	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT CASING TYPE	BLOWS/FOOT ON CASING	DEPTH IN FEET		DESCRIPTION OF OPERATION AND REMARKS
						FROM	TO	

60	15 15 23		As Above					61-1-88 88-1-20: drilled and sampled from 70' to 120 ft.
65	18 21 24		As Above					
70	15 16 20		<u>Silty, slightly clayey, Fine Sand - buff w/orange mottling, HS-A, moist</u>	split spoon alt w/ 6" bit				
75	15 15 28		<u>Silty, clayey, F. Sand - white, dense, moist, HS-A</u>					
80	25 30 34		As Above w/F Sand pockets					
85	29 32 45		<u>Silty, Fine Sand, buff, moist dense, HS-A</u>					
90	15 26 34		As Above - slghtly clayey					

DRILLING CONTR. Goodwill

LOGGED BY Glenda Jones

FS 03993

DATE 6-7-88 CHK'D BY

# FIELD LOG - SOIL BOREHOLE

SITE NAME AND LOCATION		DRILLING METHOD				BORING NO <b>B-3</b>	
		SAMPLING METHOD				SHEET <b>4 OF 4</b>	
						DRILLING	
		WATER LEVEL				START	FINISH
						TIME	TIME
		DATE				DATE	DATE
CASING DEPTH							

DATUM		ELEVATION	SURFACE CONDITIONS	
DRILL RIG	ANGLE	BEARING		
SAMPLE HAMMER TORQUE		FT -LBS		

DEPTH IN FEET (ELEVATION)	BLOWS/ FEET ON SAMPLER (RECOVERY)	SOIL GRAPH	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT CASING TYPE	BLOWS/FOOT ON CASING	DEPTH IN FEET		DESCRIPTION OF OPERATION AND REMARKS
						FROM	TO	

100	19 23 50		Silty, sl. cl., F-M SAND - white/buff, v. dense, w/ pockets of M SAND, HS-A				
105	29 41 48	▼	Silty SAND - buff, wet, HS-A, w/ pockets of M SAND				
110	24 35 50		As Above				
115	26 39 50		Silty F-M SAND - buff, wet w/ lenses of M SAND, HS-A, dense, trace clay				
120	15 35 50		Sand - buff/gray, F-M grained, HS-A, wet dense.				
	T.O			split spoon alt w/ 6" bit			

DRILLING CONTR Geodril

LOGGED BY Glenda Jones

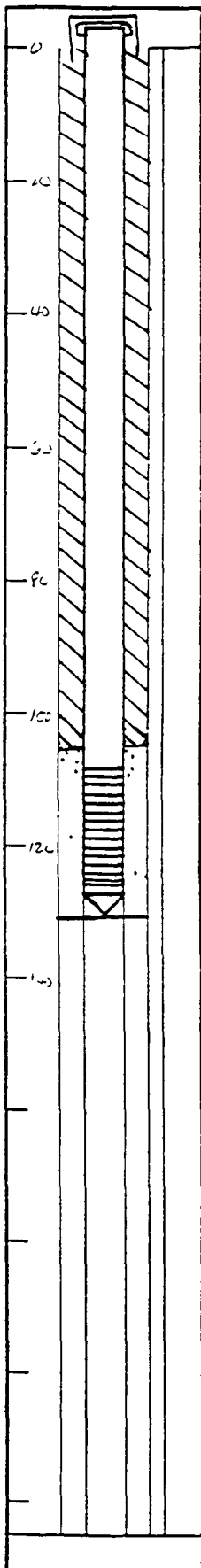
DATE 6-7-88 CHK'D BY \_\_\_\_\_

FS03993

Well No MW-1  
 Boring No X-Ref: B-1

### MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords N 79 34 9562 Elevation Ground Level 115.50  
E10030 7034 Top of Casing 117.54



**Drilling Summary**  
 Total Depth 128 feet  
 Borehole Diameter 6 inches  
 Casing Stick up Height 2.04 feet  
 Driller Geo Drill, E. H. Niles  
 Rig GMESS  
 Bit(s) 6 inch  
 Drilling Fluid Bentonite  
 Protective Casing yes

**Construction Time Log**

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	5/24/88	1400	5/27/88	0730
Geophys Logging				
Casing	5/27/88	0930	5/27/88	1100
Filter Placement	5/27/88	1100	5/27/88	1230
Cementing	5/27/88	1230	5/27/88	1330
Development	6/27/88	1430	6/27/88	1630

**Well Design & Specifications**  
 Basis Geologic Log  Geophysical Log   
 Casing String (s) C = Casing S = Screen

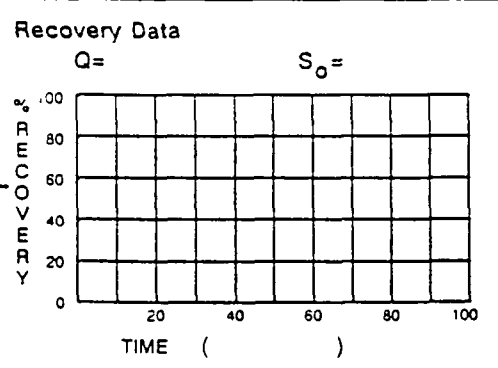
Depth	String(s)	Elevation
+2.04' - 113'	C	117.54 - +2.50
113' - 128'	S	+2.50 - -12.50
-	-	-
-	-	-
-	-	-
-	-	-

Casing C1 2" PVC tri-loc schedule 40  
 C2 \_\_\_\_\_  
 Screen S1 2' 0.010 slot schedule 40 PVC  
 S2 \_\_\_\_\_  
 Filter Pack 20/30 silica sand 128' to 110'  
 Grout Seal Type I 110 to surface  
 Bentonite Seal \_\_\_\_\_

**Well Development**  
200 Corrosion - 2 hours  
bailed - 2 hours

**Stabilization Test Data:**

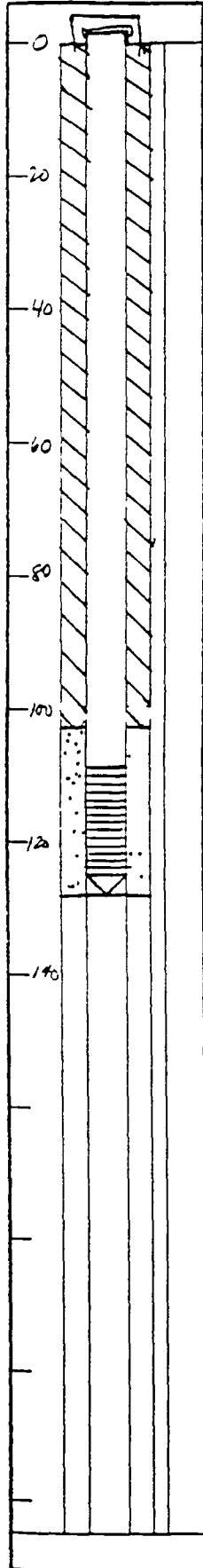
Time	pH	Spec Cond	Temp (C)



**Comments** slow recovery at development

SITE NAME CITRUS COUNTY L.F.  
 COUNTY CITRUS COUNTY  
 WCI 1111  
 SUPERVISED BY G. JONES  
 DATE 8/25/88





Well No MW-2

Boring No. X-Ref B-2

### MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords N 9983 4083 Elevation Ground Level 133 10  
E 11296.4915 Top of Casing 135.54

**Drilling Summary**

Total Depth 123 feet  
 Borehole Diameter 6-inch  
 Casing Stick-up Height 2.44 ft  
 Driller Geod. II

Rig ONE SS  
 Bit(s) 3-inch to cone

Drilling Fluid BENTONITE

Protective Casing YES

**Construction Time Log**

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	6/9/88	1245	6/11/88	1300
Geophys Logging				
Casing	7/1/88	1330	7/1/88	1400
Filter Placement	6/11/88	1400	6/11/88	1545
Cementing	6/11/88	1615	6/11/88	1700
Development	6/27/88	1030	6/27/88	1330

**Well Design & Specifications**

Basis Geologic Log  Geophysical Log

Casing String (s) C = Casing S = Screen

Depth	String(s)	Elevation
2.44 - 108	C	135.54 - 1010
108 - 123	S	1010 - 1490
-	-	-
-	-	-
-	-	-

**Well Development**

air compressor - 3 hrs  
foamed - 2 hrs

Casing C1 2" schedule 40 PVC  
 C2 \_\_\_\_\_

Screen S1 2" 0.010 slot schedule 40 PVC  
 S2 \_\_\_\_\_

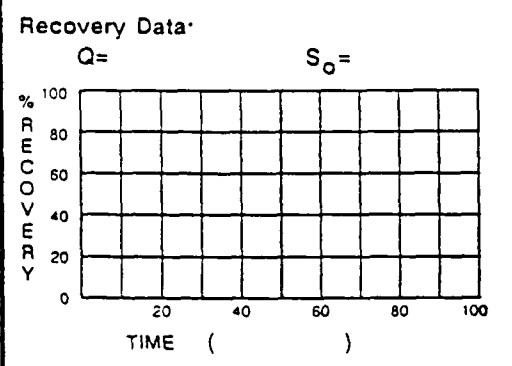
Filter Pack 20/30 silica sand  
123' to 103'

Grout Seal Type =  
103' to surface

Bentonite Seal \_\_\_\_\_

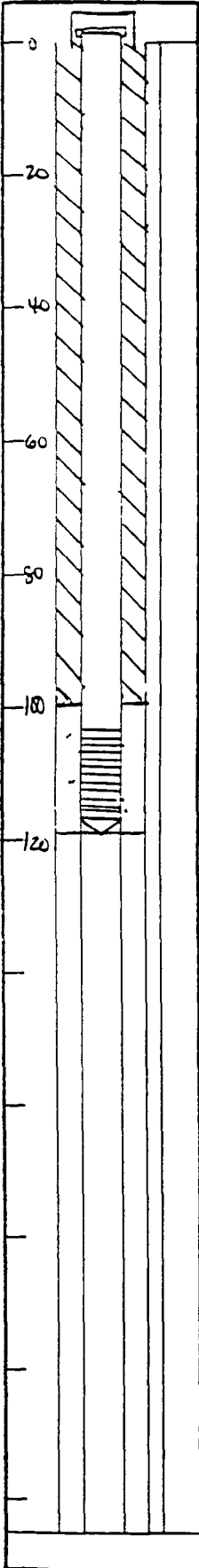
**Stabilization Test Data**

Time	pH	Spec Cond	Temp (C)



**Comments** Well not deep enough, set above water table

SITE NAME Citrus County LE  
 SUPERVISED BY G. Jones  
 DATE 6/25/88  
 W.C. 11111111



Well No. MW - 3  
 Boring No. X-Ref: B-3

### MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords N 7375 2835 Elevation Ground Level 119 50  
E 11290 7524 Top of Casing 120 51

**Drilling Summary**  
 Total Depth 119 feet  
 Borehole Diameter 6-inch  
 Casing Stick-up Height 201 feet  
 Driller Geodrill  
 Rig CME 55  
 Bit(s) 6-inch  
 Drilling Fluid Bentonite  
 Protective Casing yes

**Construction Time Log**

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	6/2/88	8:00	6/3/88	10:00
Geophys Logging				
Casing	6/3/88	10:30	6/3/88	11:00
Filter Placement	6/2/88	11:00	6/3/88	12:30
Cementing	6/3/88	12:30	6/3/88	14:00
Development	6/2/88	13:30	6/2/88	14:30

**Well Design & Specifications**

Basis Geologic Log  Geophysical Log   
 Casing String (s) C = Casing S = Screen

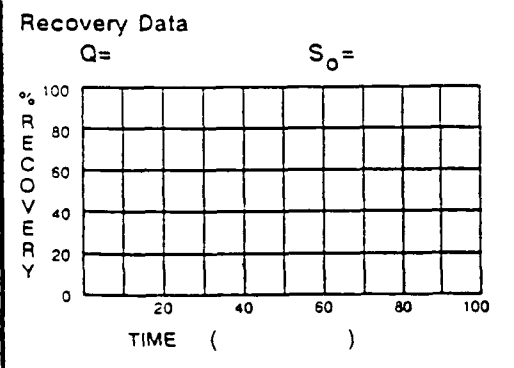
Depth	String(s)	Elevation
101' - 104'	C	11950 - 1550
104' - 119'	S	1550 - 050
-	-	-
-	-	-
-	-	-

**Well Development**  
air lifting 2200 1 hour  
bailed ~ 2 hours

Casing C1 2" Schedule 40 PVC  
 C2 \_\_\_\_\_  
 Screen S1 2' 0.010 5ht Schedule 40 PVC  
 S2 \_\_\_\_\_  
 Filter Pack 20/30 silica sand  
119 to 100 feet  
 Grout Seal Type I  
100' to surface  
 Bentonite Seal \_\_\_\_\_

**Stabilization Test Data**

Time	pH	Spec Cond	Temp (C)



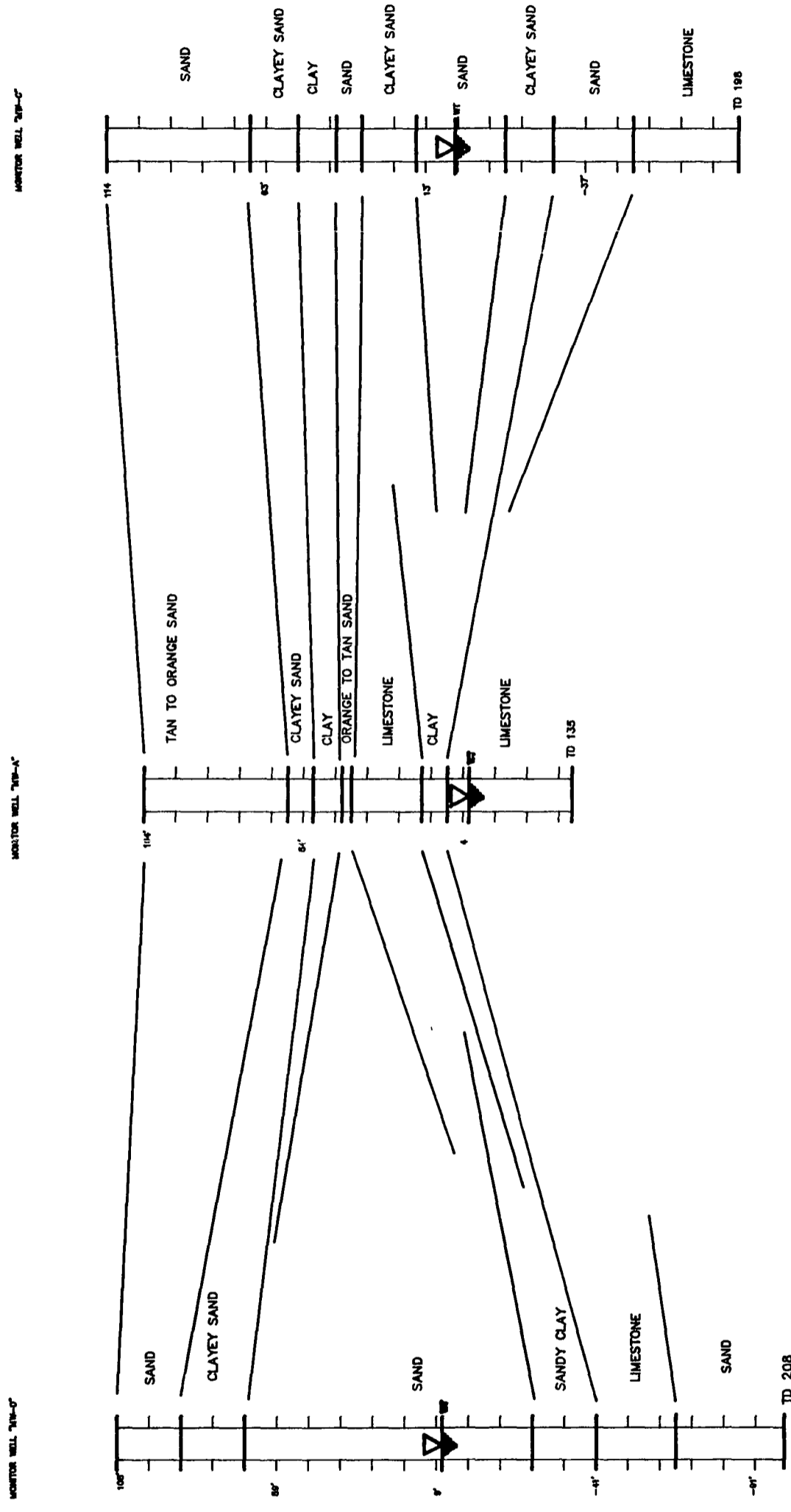
**Comments:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SITE NAME C. Kent County G.F.  
 COUNTY C. Kent  
 W.C. 11107  
 SUPERVISED BY G. JONES  
 DATE 8/25/88





# NORTH-SOUTH GEOLOGIC X-SECTIONS FOR CITRUS COUNTY LANDFILL



NOTE: WATER ELEVATIONS SHOWN WERE AT TIME OF WELL DEVELOPMENT

BY DATE	BY DATE	BY DATE	BY DATE	BY DATE	BY DATE	BY DATE	BY DATE
DESIGNED	CHECKED	DESIGNED	CHECKED	DESIGNED	CHECKED	DESIGNED	CHECKED
DEPARTMENT OF TECHNICAL SERVICES CITRUS COUNTY, FLORIDA ENGINEERING DEPARTMENT				APPROVED BY: _____ DATE: _____			
CITRUS COUNTY CENTRAL LANDFILL GEOLOGIC CROSS-SECTIONS FOR MONITOR WELLS				SECTION 01	TOWNSHIP 19	RANGE 18	PROJECT NUMBER 89-615
						SCALE NTS	SHEET 4 OF 5 FILE

Maps

Scanned

Separately