



**Springstead
Engineering, inc.**

Consulting Engineers — Planners — Surveyors

727 South 14th Street
Leesburg, Florida 34748

Lake (904) 787-1414
Sumter (904) 793-3639
Fax (904) 787-7221

February 21, 1990

Mr. Kim Ford, P.E.
Solid Waste Section
State of Florida
Department of Environmental Regulation
4520 Oak Fair Blvd.
Tampa, Florida 33610-7847

D.E.R.

FEB 23 1990

SOUTHWEST DISTRICT
TAMPA

Re: Sumter County Landfill
FDER Permit No. SC60-132071
Volume Reduction and Solid Waste Composting
C-103

Dear Mr. Ford:

Sumter County requests that Florida Department of Environmental Regulation Permit No. SC60-132071 be modified to include the following items:

1. Treatment of leachate from the leachate holding pond via extended aeration and disposal of the effluent via percolation ponds. Plans, test results and design data for the proposed treatment and disposal system are enclosed.
2. Operating and testing requirements to be in accordance with FAC 17-709.

You indicated during our telephone conversation on Thursday, February 1, 1990 that you would consider these modifications to be major modifications requiring a \$2,000 permit modification fee.

We do not consider these modifications to be major for the following reasons:

1. The solid waste composting process was new in Florida at the time the original permit was issued. FDER did not have any regulations addressing composting. Sumter County initiated the use of composting as an alternative to land filling solid waste with the stated goal of 100% recycling of solid waste. The composting process is an integral part of this goal.

*Must meet applicable
17-3 & 17-7 requirements
includes design features per
17-709.500 & properly operated
& maintained.*

*We did have rego. addressing
compost. What we didn't have
is rego. addressing compost
quality & use.*

February 21, 1990
Mr. Kim Ford, P.E.
C-103

Page 2

FDER has adopted regulations addressing the composting of solid waste, the testing of the composted material and the disposal of the compost since the Sumter County composting process was permitted and initiated. FAC 17-709.300 states that facilities which have submitted complete applications prior to the effective date of FAC 17-709 shall meet the requirements of the rule by October 1, 1992.

Sumter County does not consider a modification of the permit to comply with FDER regulations to be a major modification.

2. The treatment and disposal of leachate from the leachate holding pond was discussed and addressed during the permitting process. Data pertaining to the contaminants in leachate from the solid waste composting process was not available.

Sumter County indicated that the leachate would be tested after initiation of the composting process and that a leachate treatment and disposal process would be designed and implemented.

Sumter County tested the leachate from the composting process and determined that treatment via extended aeration would provide high quality effluent.

Sumter County constructed an extended aeration plant, put the plant on line with the effluent returned to the leachate pond and tested the influent and effluent.

This procedure was discussed with FOER and FDER was informed prior to implementation.

Sumter County considers this to be a minor modification because it was considered during the permitting process with the understanding by FDER and Sumter County that the treatment and disposal of leachate would be incorporated when an effective method of treatment could be identified and implemented.

You indicated that the disposal of the compost generated to date would have to be addressed.

February 21, 1990
Mr. Kim Ford, P.E.
C-103

Page 3

The compost generated to date will be mixed with incoming solid waste and run through the composting process a second time to comply with FAC 17-709.501(e). *17-709.501(e)*

Sumter County considers the modifications requested to be minor. Please advise us at your earliest convenience as to whether FDER considers the modifications to be minor or major. Please advise us of the reasons if the modifications are considered major.

Please do not hesitate to call me at (904) 787-1414 if you have any questions or require additional information.

Very truly yours,

SPRINGSTEAD ENGINEERING, INC.

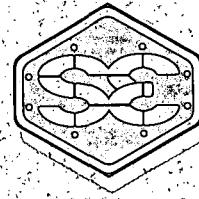
Paul Bradley

Paul Bradley, P.E.
PB:db

cc: Mr. Garry Breeden
Mr. Tommy Hurst

17-709.501(e) 75% of compost stored @ facility shall be sold/used 1 yr after being yr. 3 after reprocessed so that it can be sold/used. Last part of rule is for a finished material that can not be marketed. If Sumter County's older material is tested & can be marketed, may not have to reprocess. CHECK w/ CHAIS! I agree

(C103L21290)



Supplemental Information

for

Sumter County Landfill

Leachate Treatment and Disposal System

FDER Permit No. SC60-132071

February 21, 1990

Springstead Engineering, Inc.

Consulting Engineers — Planners — Surveyors

727 South 14th Street

Leesburg, Florida 34748

Lake (904) 787-1414

Sumter (904) 793-3639

Fax (904) 787-7221

D. E. R.

FEB 23 1990

SOUTHWEST DISTRICT
TAMPA

Supplemental Information

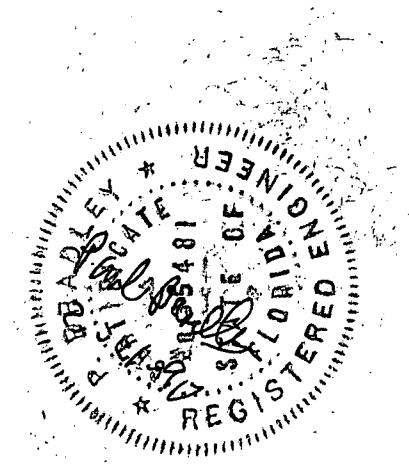
for

Sumter County Landfill

Leachate Treatment and Disposal System

FDER Permit No. SC60-132071

February 21, 1990





**Springstead
Engineering, inc.**

Consulting Engineers — Planners — Surveyors

727 South 14th Street

Leesburg, Florida 34748

Lake (904) 787-1414

Sumter (904) 793-3639

Fax (904) 787-7221

February 21, 1990

Mr. Kim Ford, P.E.
Solid Waste Section
State of Florida
Department of Environmental Regulation
4520 Oak Fair Blvd.
Tampa, Florida 33610-7847

Re: Sumter County Landfill
FDER Permit No. SC60-132071
Volume Reduction and Solid Waste Composting
C-103

Dear Mr. Ford:

Sumter County requests that Florida Department of Environmental Regulation Permit No. SC60-132071 be modified to include the following items:

1. Treatment of leachate from the leachate holding pond via extended aeration and disposal of the effluent via percolation ponds. Plans, test results and design data for the proposed treatment and disposal system are enclosed.
2. Operating and testing requirements to be in accordance with FAC 17-709.

You indicated during our telephone conversation on Thursday, February 1, 1990 that you would consider these modifications to be major modifications requiring a \$2,000 permit modification fee.

We do not consider these modifications to be major for the following reasons:

1. The solid waste composting process was new in Florida at the time the original permit was issued. FDER did not have any regulations addressing composting. Sumter County initiated the use of composting as an alternative to land filling solid waste with the stated goal of 100% recycling of solid waste. The composting process is an integral part of this goal.

February 21, 1990
Mr. Kim Ford, P.E.
C-103

Page 2

FDER has adopted regulations addressing the composting of solid waste, the testing of the composted material and the disposal of the compost since the Sumter County composting process was permitted and initiated. FAC 17-709.300 states that facilities which have submitted complete applications prior to the effective date of FAC 17-709 shall meet the requirements of the rule by October 1, 1992.

Sumter County does not consider a modification of the permit to comply with FDER regulations to be a major modification.

2. The treatment and disposal of leachate from the leachate holding pond was discussed and addressed during the permitting process. Data pertaining to the contaminants in leachate from the solid waste composting process was not available.

Sumter County indicated that the leachate would be tested after initiation of the composting process and that a leachate treatment and disposal process would be designed and implemented.

Sumter County tested the leachate from the composting process and determined that treatment via extended aeration would provide high quality effluent.

Sumter County constructed an extended aeration plant, put the plant on line with the effluent returned to the leachate pond and tested the influent and effluent.

This procedure was discussed with FDER and FDER was informed prior to implementation.

Sumter County considers this to be a minor modification because it was considered during the permitting process with the understanding by FDER and Sumter County that the treatment and disposal of leachate would be incorporated when an effective method of treatment could be identified and implemented.

You indicated that the disposal of the compost generated to date would have to be addressed.

February 21, 1990
Mr. Kim Ford, P.E.
C-103

Page 3

The compost generated to date will be mixed with incoming solid waste and run through the composting process a second time to comply with FAC 17-709.501(e).

Sumter County considers the modifications requested to be minor. Please advise us at your earliest convenience as to whether FDER considers the modifications to be minor or major. Please advise us of the reasons if the modifications are considered major.

Please do not hesitate to call me at (904) 787-1414 if you have any questions or require additional information.

Very truly yours,

SPRINGSTEAD ENGINEERING, INC.



Paul Bradley, P.E.
PB:db

cc: Mr. Garry Breeden
Mr. Tommy Hurst

(C103L21290)

**OPERATION/CONSTRUCTION
TREATMENT AND DISPOSAL SYSTEMS**

GENERAL PROJECT

This application is for the construction of a new percolation pond treatment system at the Sumter County Landfill on County Road 470 in Sumter County, Florida. The system is located at Longitude 82° 05' 26", Latitude 28° 44' 34". The applicant is Sumter County. The applicant's address is 209 North Florida Street, Bushnell, Florida, 33513.

DESCRIPTION OF SYSTEM

The new project will consist of two percolation ponds which will percolate the effluent from an extended aeration tank that treats runoff from a compost pad. These new percolation ponds will improve the performance of the extended aeration tank by providing a new outfall location for the effluent instead of recirculation the effluent.

CONSTRUCTION SCHEDULE

Construction will start immediately upon receipt of this permit.
Construction will be completed thirty (30) days thereafter.

CONSTRUCTION COST (Approximate)

2 Pumps	\$ 200/each	\$ 400.00
1 Blower	300/each	300.00
1 Control Board	300/each	300.00
310' PVC Pipe	3/foot	930.00
Aeration Tank and Accessories		5,600.00
205 Cu.Yd. Fill	3.50/Cu.Yd.	717.50
2 Splash Pads	100/each	<u>200.00</u>
	Total	\$8,447.50

PREVIOUS PERMITS

Permit No. SC60-132071, issued July 10, 1987, expires June 1, 1992.
(We are requesting a modification)

WASTEWATER TREATMENT PROCESS

Type of Business - County landfill.

SIC Code - Not known.

Raw materials and chemicals used - shredded solid waste with metals and recyclables removed; enzymes for the biological decomposition of compost.

Production Rate - 105 tons compost/day.

Normal Operation - 9 hours/day, 6 days/week, year around.

TREATMENT PROCESS AND UNITS

Extended aeration process; extended aeration tank and clarifier with no sludge or slurry treatment units.

SLUDGE DESCRIPTION

Minimal volume of activated sludge from extended aeration tank.
Sludge will be mixed with compost on compost pad.

FLOW MEASUREMENT Flow is controlled by an orifice which is in the inlet box of the treatment plant. Size of the orifice is fixed to flow one (1) gallon/ minute. Head on orifice is controlled by a fixed weir.

EMERGENCY PRACTICES

There will be no flow to, or through, the treatment plant during an emergency such as power loss.

LABORATORY

Flowers Chemical Laboratory and Envirolab, both Florida Department of Environmental Regulation approved labs, will provide testing services.

WASTEWATER CHARACTERISTICS

The average, maximum, and design flow from the extended aeration tank will be a constant 1.44×10^{-3} MGD. Please refer to the enclosed laboratory results for water quality characteristics of effluent.

EFFLUENT DISPOSAL

The effluent will not be discharged to surface waters but into groundwater. The disposal method will be a percolation/evaporation pond located southerly and adjacent to leachate pond and northerly and adjacent to existing paved road. (see plan)

Refer to the attached groundwater plan for a description of the hydrology and geologic structures of the affected area. The groundwater flows in a northerly direction. The water table levels generally range from a high of 22.3 feet to a low of 23.8 feet below average land surface elevation. There will be no surface of sub-surface irrigation.

The surface impoundments are as follows:

Number and location of cells: The two (2) cells are located at longitude $82^{\circ}05' 26''$ West and latitude $28^{\circ}44' 34''$ North.

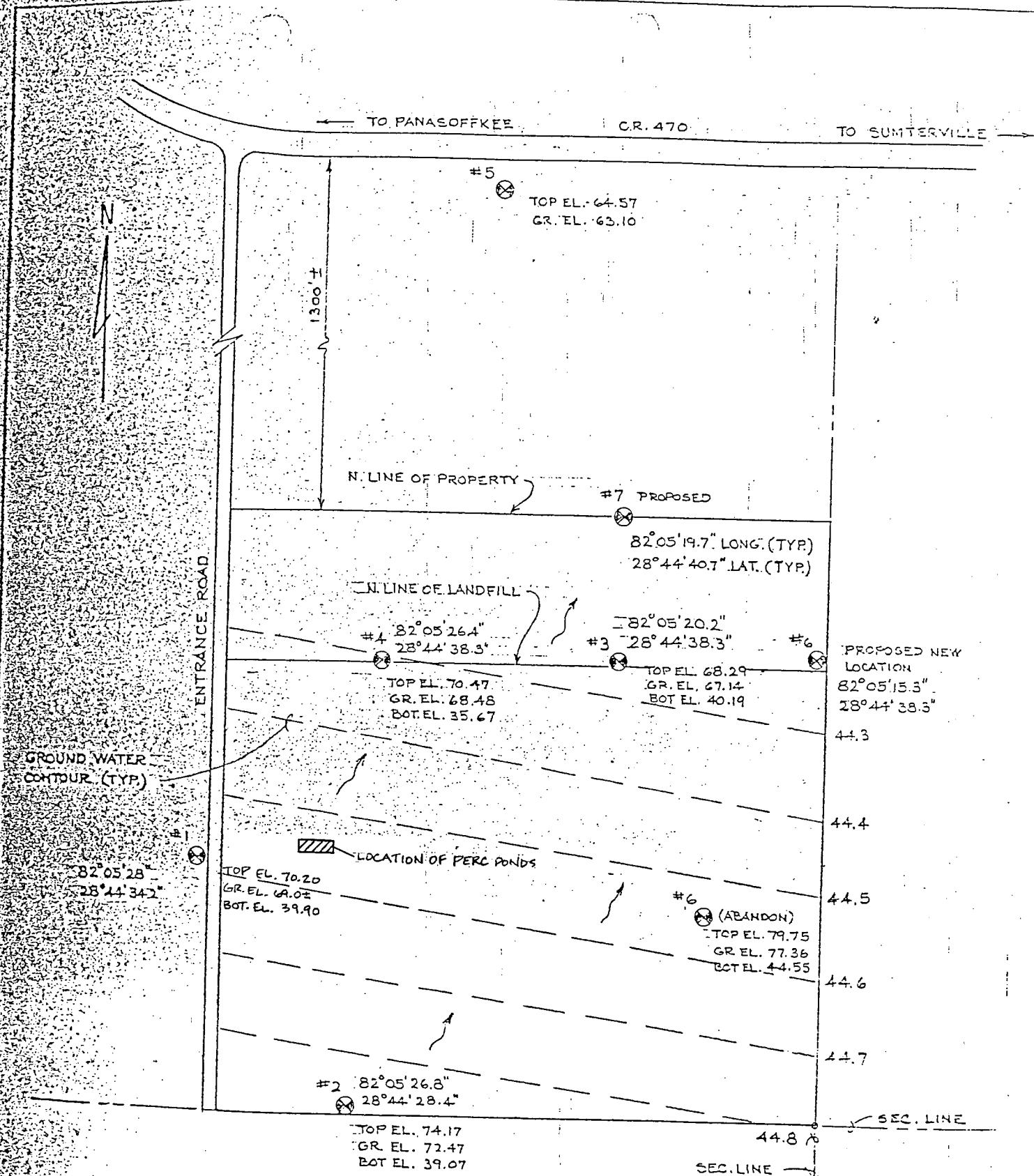
Bottom area of cells: 630 feet², or .014 acres each.

Design depth of water in cells: 0.375 feet

Cell configuration: Length: 30 feet Width: 21 feet.

Average hydraulic loading rate: Four (4) inches per day or 2.49 GPD/ft²
Hydraulic loading period: Three (3) days, resting period: three (3) days.
Percolation: 162.64 GPD/ft².

Number and location of monitoring wells: Seven (7) wells (refer to attachment for location)



NOTES:

1. GROUND WATER CONTOURS ESTABLISHED JAN. 84
2. WELLS #6 & #3 WERE DRY WHEN CHECKED - 10/86

SPRINGSTEAD AND ASSOC. INC.		MONITORING WELLS PLAN (LATITUDES & LONGITUDES)		
		SUMTER COUNTY LANDFILL		
DATE	SCALE	NAME	DESIGN	NAME
1-27-87	1:3000	C-103	JMD	RLD
				P.B.
				100 ft or 1

Leesburg — Bushnell

C-470

C103

B
HOLE #2
EL. = 56.19 FT.

HOLE #4
EL. = 69.04 FT.

LOCATION OF PERC PONDS

HOLE #1
EL. = 64.23 FT.

HOLE #5

EL. = 68.11 FT.

B
HOLE #3
EL. = 57.94 FT.

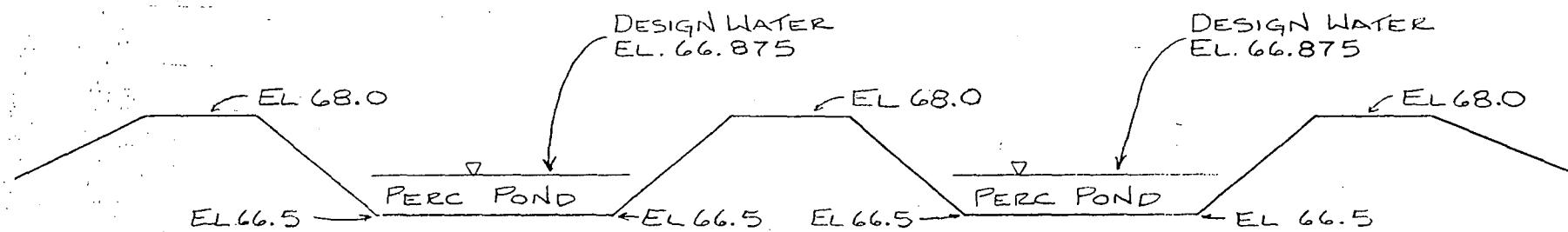
FIG. 3

SUMTER COUNTY LANDFILL

EXPLORATORY TEST BORINGS

(COREHOLE LOCATIONS AND ELEVATIONS)

SCALE : 1:1,000 = 200 FT.



EL 47.17

EL 44.66

EL 36.23

SAND

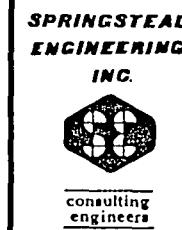
(TOP OF CLAY LAYER)

▽ GROUND WATER TABLE (1/84)

CLAY

SAND

SOIL PROFILE UNDER PERCOLATION PONDS
N.T.S.



SOIL PROFILE
FOR
SUMTER COUNTY
LANDFILL

DATE	SCALE	FILE	JOB NO.
2-22-90	NTS	C103.3	C103.

DESIGN DRAWN CHECKED SHEET 1
TK MC PB

CENTRAL TESTING LABORATORY

P. O. Box 883
Floral City, Florida 32636
(904) 726-6447
Chet Main, Director

P. O. Box 448
Leesburg, Florida 32749-0448
(904) 787-1268
John W. Springstead, P.E.
Fla. Reg. Eng. 8579

I HEREBY CERTIFY THE ABOVE TESTING WAS PERFORMED IN ACCORDANCE WITH THE ABOVE REFERENCED SPECIFICATIONS.

John W. Springstead, P.E., Florida Engineering No. 8579

CENTRAL TESTING LABORATORY

P. O. Box 883
 Floral City, Florida 32636
 (904) 726-6447
 Chet Main, Director

P. O. Box 448
 Leesburg, Florida 32749-0448
 (904) 787-1268
 John W. Springstead, P.E.
 Fla. Reg. Eng. 8579

SAMPLE #		BORING LOG	GENERAL DATA
DEPTH IN FEET	BLOWS/FOOT ON SPOON	DESCRIPTION OF MATERIALS	
5		Dark gray, fine sand Gray sand Light gray sand (fine) Light tan sand	FILE NO. 4070
10		Yellowish tan sand (fine)	SITE Sumter County Landfill
15		Grayish tan sand (fine)	HOLE # 4 SHEET 1 OF 1
20		Pinkish gray sand Light tan sand	LOCATION OF BORING
25		Clay-pinkish tan- and sand Clay-light tan Dark gray sand w/grayish tan clay Blue & tan clay	#4 See Map
30		Blueish gray clay 28' broke through hard clay	DATE 1-24-84
35		Gray clay (wet)	CASING:
40		Grayish brown clay wet	INSIDE DIAMETER -- IN. OUTSIDE DIAMETER -- IN. DEPTH OF CASING -- FT.
45			SPOON:
50			INSIDE DIAMETER -- IN. OUTSIDE DIAMETER 2 IN.
			HAMMER:
			HAMMER WEIGHT 140 LB. DROP OF HAMMER 30 IN.
			ELEVATION:
			GROUND SURFACE -- FT.
			G.W.T.
			BELOW EXISTING GRADE ACTUAL ELEVATION
			DRILLING CREW: Lovett Opsahl
			REMARKS: WATER 25'9" from string 1/2 hr. later--26'1" from string-- String 19" from ground
			SPECIFICATION REQUIRED:

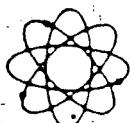
I HEREBY CERTIFY THE ABOVE TESTING WAS PERFORMED IN ACCORDANCE WITH THE ABOVE REFERENCED SPECIFICATIONS.

John W. Springstead, P.E., Florida Engineering No. 8579

Jefferson L. Flowers, Ph. D.
Jefferson S. Flowers, Ph. D.

Ph. (305) 339-5924

FLOWERS CHEMICAL LABORATORIES
ANALYTICAL & CONSULTING CHEMISTS



Received From:

Env. Spec.
1675 Lee Rd
Winter Park, FL

Date Reported: Oct 4 1985

HEW Provider #: 10-8220
DHRS Lab# : 83139
DER Lab# : EL0096
CDC Lab# : 091036
AIHA Lab# : 253

For: Sb Ni Bb Tl As Cd Cr Pb Hg Se Ag Cu Zn

Date Received: Sep 12 1985 Lab Numbers: 3766-3773

REPORT OF ANALYSIS

Parameter	Unit	Method	%ACC	%PRC	3766	3767	3768	3769	3770
					1a	1B	2A	2B	1C
Antimony	mgSb/L	0.002	99.1	.14	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	mgNi/L	0.01	99.2	.6	0.03	0.01	0.2	<0.01	0.09
Beryllium	mgBe/L	0.001	97.5	4.6	<0.001	<0.001	<0.001	<0.001	0.013
Thallium	mgTl/L	0.005	93.3	6.3	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mgAs/L	0.002	101	3.9	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	mgCd/L	.0001	100	0	<.0001	<.0001	<.0001	<.0001	<.0001
Chromium	mgCr/L	0.001	100	0	0.008	0.006	0.001	0.007	0.002
Lead	mgPb/L	0.002	99.4	.5	0.097	0.02	0.026	0.017	0.007
Mercury	mgHg/L	.0002	100	0	0.002	.0005	<.0002	<.0002	<.0002
Selenium	mgSe/L	0.002	100	0	<0.002	<0.002	<0.002	<0.002	<0.002
Silver	mgAg/L	0.001	100	0	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	mgCu/L	0.001	104	0	0.01	<0.001	<0.001	<0.001	<0.001
Zinc	mgZn/L	0.02	100	0	<0.02	<0.02	<0.02	<0.02	<0.02

Data Release Authorization

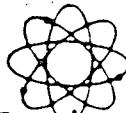
Sample integrity and reliability certified by Lab personnel prior to analysis.
Methods of analysis in accordance with FCL QA and EPA approved methodology.

Jefferson S. Flowers, Ph. D.
Technical Director

Jefferson L. Flowers, Ph. D.
Jefferson S. Flowers, Ph. D.

Ph. (305) 339-5984

FLOWERS CHEMICAL LABORATORIES
ANALYTICAL & CONSULTING CHEMISTS



Received From:

Env. Spec.
1675 Lee Rd
Winter Park, FL

Date Reported: Oct 4 1985

HEW Provider #: 10-8220
DHRS Lab# : 83139
DER Lab# : EL0096
CDC Lab# : 091036
AIHA Lab# : 253

For: Sb Ni Bb Tl As Cd Cr Pb Hg Se Ag Cu Zn

Date Received: Sep 12 1985 Lab Numbers: 3766-3773

REPORT OF ANALYSIS

Parameter	Unit	Method	%ACC	%PRC	3771	3772	3773
		Detection			1D	2C	2D
		Limit					
Antimony	mgSb/L	0.002	99.1	.14	<0.002	<0.002	<0.002
Nickel	mgNi/L	0.01	99.2	.6	0.17	0.55	0.08
Beryllium	mgBe/L	0.001	97.5	4.6	<0.001	<0.001	<0.001
Thallium	mgTl/L	0.005	93.3	6.3	<0.005	<0.005	<0.005
Arsenic	mgAs/L	0.002	101	3.9	<0.002	<0.002	<0.002
Cadmium	mgCd/L	.0001	100	0	<.0001	<.0001	<.0001
Chromium	mgCr/L	0.001	100	0	<0.001	<0.001	0.001
Lead	mgPb/L	0.002	99.4	.5	<0.002	0.014	<0.002
Mercury	mgHg/L	.0002	100	0	<.0002	<.0002	<.0002
Selenium	mgSe/L	0.002	100	0	<0.002	<0.002	<0.002
Silver	mgAg/L	0.001	100	0	<0.001	<0.001	<0.001
Copper	mgCu/L	0.001	104	0	<0.001	<0.001	<0.001
Zinc	mgZn/L	0.02	100	0	<0.02	<0.02	<0.02

Data Release Authorization

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

Jefferson S. Flowers, Ph. D.
Technical Director

FLOWERS CHEMICAL LABORATORIES, INC.
ANALYTICAL & CONSULTING CHEMISTS

Received From:

Springstead Eng.
PO Box 488
Leesburg, FL 32749

Date Reported: Dec 6 1988

DHRS Lab# : 83139
DER Lab# : E83018

For: TDS COD S04 TKN TP TOC NA CA SR AL CD AS PB HG CU

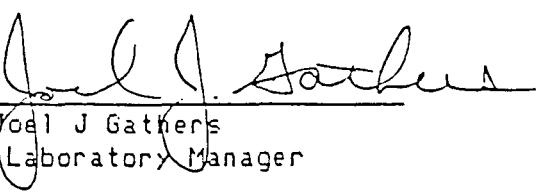
Date Received: Oct 27 1988 Lab Numbers: 7080-7080

REPORT OF ANALYSIS

Parameter	Unit	7080			
		Method	%ACC		
			%PRC	WATER	SAMPLE
		Detection			Limit
Temp_Top	oC	0.1	-	-	22.5
Temp_Middle	oC	0.1	-	-	22.5
Temp_Bottom	oC	0.1	-	-	22.5
DO_Top	ppm	0.1	-	-	5.2
DO_Middle	ppm	0.1	-	-	4.6
DO_Bottom	ppm	0.1	-	-	3.8
pH_Top	pH	0.01	-	-	8.07
pH_Middle	pH	0.01	-	-	8
pH_Bottom	pH	0.01	-	-	7.96
Cond_Top	umhos/c	0.2	-	-	448
Cond_Middle	umhos/c	0.2	-	-	447
Con_Bottom	umhos/c	0.2	-	-	445
Chloride	mg/L	.015	102	0.10	18.6
Sulfate	mg/L	0.2	102	3.20	16
TDS	mg/L	2.5	75	6.00	284
Suspended_Solids	mg/L	2.5	-	-	165
Fluoride	mg/L	.005	102	7.40	.278
Tot_Kjeldahl_Nitrogen	mg/L	0.1	-	-	3.7
Total_Phosphorous	mg/L	0.1	-	-	0.2
Total_Organic_Carbon	mg/L	1	99	1.5	55
BOD	mg/L	0.2	105	7.2	15.9
COD	mg/L	20	100	4.6	148
Arsenic	mg/L	.0005	101	2.0	<.0005
Cadmium	mg/L	.001	98.5	2.0	.002
Lead	mg/L	.001	101	0.2	<.0010
Mercury	mg/L	.0002	98.5	1.2	<.0002

Data Release Authorization

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


Joel J. Gathers

Laboratory Manager

Jefferson L. Flowers, Ph.D.
Jefferson S. Flowers, Ph.D.

Ph. (407) 339-598
Fax (407) 260-611

FLOWERS CHEMICAL LABORATORIES, INC.
ANALYTICAL & CONSULTING CHEMISTS

Received From:

Springstead Eng.
PO Box 488
Leesburg, FL 32749

Date Reported: Dec 6 1988

DHRS Lab# : 83139
DER Lab# : E83018

For: TDS COD SO4 TKN TP TOC NA CA SR AL CD AS PB HG CU

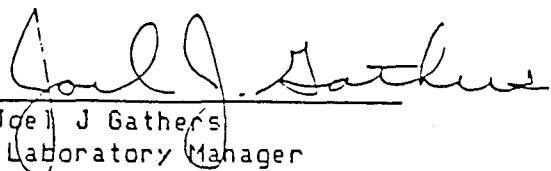
Date Received: Oct 27 1988 Lab Numbers: 7080-7080

REPORT OF ANALYSIS

Parameter	Unit	Method	%ACC	%PRC	WATER
	Detection		SAMPLE		
	Limit				
Selenium	mg/L	.0005	98.3	1.6	<.0005
Sodium	mg/L	.002	103.	2.7	<.0020
Copper	mg/L	.005	97.3	2.0	<.0050
Zinc	mg/L	.001	101.	0.9	<.0010
Calcium	mg/L	0.1	102.	1.91	54.2
Magnesium	mg/L	0.01	98.5	1.99	2.71
Aluminum	mg/L	0.01	105.	4.09	0.23
Potassium	mg/L	0.01	103.	0.27	30.1
Nickel	mg/L	.001	98.0	1.60	0.01
Strontium	mg/L	.001	98.3	1.3	<.113
Dilution_Factor		1	-	-	1
1,1,1-Trichlorethane	ug/L	2	95.6	4.67	<2
1,1,2,2-Tetachlorethane	ug/L	1	98.0	5.83	<1
1,1,2-Trichlorethane	ug/L	1	98.0	5.43	<1
1,1-Dichloroethane	ug/L	1	98.6	1.41	<1
1,1-Dichloroethene	ug/L	1	83.5	2.01	<1
1,2-Dichloroethane	ug/L	1	105	4.80	<1
1,2-Dichloropropane	ug/L	1	104	6.62	<1
2-Chloroethylvinylet	ug/L	1	106	1.41	<1
Bromodichloromethane	ug/L	2	101	3.97	<2
Bromoform	ug/L	2	97.8	3.20	<2
c-1,3-Dichloropropene	ug/L	1	96.8	1.13	<1
Carbon_Tetrachloride	ug/L	1	100	1.04	<1
Chloroform	ug/L	1	99.2	0.31	<1
Dibromochloromethane	ug/L	2	100	0.90	<2
Methylene_Chloride	ug/L	1	106	8.69	<1

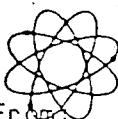
Data Release Authorization

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


Joel J. Gathers
Laboratory Manager

FLOWERS CHEMICAL LABORATORIES, INC.

ANALYTICAL & CONSULTING CHEMISTS.



C103

Received From:

Date Reported: Dec 6 1988

Springstead Eng.

PO Box 488

Leesburg, FL 32749

DHRS Lab# : 83139

DER Lab# : E83018

For: TDS COD S04 TKN TP TOC NA CA SR AL CD AS PB HG CU

Date Received:

Oct 27 1988

Lab Numbers: 7080-7080

REPORT OF ANALYSIS

7080

Parameter	Unit	Method	%ACC	%PRC	WATER
		Detection	SAMPLE		
		Limit			
Selenium	mg/L	.0005	98.3	1.6	<.0005
Sodium	mg/L	.002	103.	2.7	<.0020
Copper	mg/L	.005	97.3	2.0	<.0050
Zinc	mg/L	.001	101.	0.9	<.0010
Calcium	mg/L	0.1	102.	1.91	54.2
Magnesium	mg/L	0.01	98.5	1.99	2.71
Aluminum	mg/L	0.01	105.	4.09	0.23
Potassium	mg/L	0.01	103.	0.27	30.1
Nickel	mg/L	.001	98.0	1.60	<.01
Strontium	mg/L	.001	98.3	1.3	.113
Dilution_Factor		1	-	-	1
1,1,1-Trichlorethane	ug/L	2	95.6	4.67	<2
1,1,2,2-Tetchloretan	ug/L	1	98.0	5.83	<1
1,1,2-Trichlorethane	ug/L	1	98.0	5.43	<1
1,1-Dichloroethane	ug/L	1	98.6	1.41	<1
1,1-Dichloroethene	ug/L	1	83.5	2.01	<1
1,2-Dichloroethane	ug/L	1	105	4.80	<1
1,2-Dichloropropane	ug/L	1	104	6.62	<1
2-Chloroethylvinylet	ug/L	1	106	1.41	<1
Bromodichloromethane	ug/L	2	101	3.97	<2
Bromoform	ug/L	2	97.8	3.20	<2
c-1,3-Dichloropropene	ug/L	1	96.8	1.13	<1
Carbon_Tetrachloride	ug/L	1	100	1.04	<1
Chloroform	ug/L	1	99.2	0.31	<1
Dibromochloromethane	ug/L	2	100	0.90	<2
Methylene_Chloride	ug/L	1	106	8.69	<1

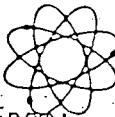
Data Release Authorization

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

Joe J. Gathers
Laboratory Manager

erson L. Flowers, Ph.D.
Jefferson S. Flowers, Ph.D.

FLOWERS CHEMICAL LABORATORIES,
ANALYTICAL & CONSULTING CHEMISTS



Received From:

Springstead Eng.
PO Box 488
Leesburg, FL 32749

Date Reported: Dec 6 1988

DHRS Lab# : 83139
DER Lab# : E83018

For: TDS COD SO₄ TKN TP TOC NA CA SR AL CD AS PB HG CU

Date Received: Oct 27 1988 Lab Numbers: 7080-7080

REPORT OF ANALYSIS

Parameter	Unit	Method	%ACC	%PRC	WATER SAMPLE
		Detection			
		Limit			
Temp_Top	oC	0.1	-	-	22.5
Temp_Middle	oC	0.1	-	-	22.5
Temp_Bottom	oC	0.1	-	-	22.5
DO_Top	ppm	0.1	-	-	5.2
DO_Middle	ppm	0.1	-	-	4.6
DO_Bottom	ppm	0.1	-	-	3.8
pH_Top	pH	0.01	-	-	8.07
pH_Middle	pH	0.01	-	-	8
pH_Bottom	pH	0.01	-	-	7.96
Cond_Top	umhos/c	0.2	-	-	448
Cond_Middle	umhos/c	0.2	-	-	447
Con_Bottom	umhos/c	0.2	-	-	445
Chloride	mg/L	.015	102	0.10	18.6
Sulfate	mg/L	0.2	102	3.20	16
TDS	mg/L	2.5	75	6.00	284
Suspended_Solids	mg/L	2.5	-	-	165
Fluoride	mg/L	.005	102	7.40	.278
Tot_Kjeldahl_Nitrogen	mg/L	0.1	-	-	3.7
Total_Phosphorous	mg/L	0.1	-	-	0.2
Total_Organic_Carbon	mg/L	1	99	1.5	55
BOD	mg/L	0.2	105.	7.2	15.9
COD	mg/L	20	100.	4.6	148
Arsenic	mg/L	.0005	101.	2.0	<.0005
Cadmium	mg/L	.001	98.5	2.0	.002
Lead	mg/L	.001	101.	0.2	<.0010
Mercury	mg/L	.0002	98.5	1.2	<.0002

Data Release Authorization

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

Joel J. Gathers
Laboratory Manager



Envirolab, Inc.

1042 U.S. Highway 1 • P.O. Box 607
Ormond Beach, Florida 32074 • (904) 672-5668

Drinking Water Certification
HRS #83160

SPRINGSTEAD ENGINEERING

P.O. BOX 448
LEESBURG FL 32749-0448
ATTN: PAUL BRADLEY

Description: 1 Sample Received on 06/16/89

Sampled By: ENVIROLAB

Client Job/PO Number:

Reference Number: 893592

Reported Date : 08

Invoice Number: 89-3592

Sample

Description

=====

0001 FROM HOLDING POND

=====

SAMPLE NUMBER

0001

PARAMETER

1,2 - DIBROMOETHANE (EDB)	UG/L	< 1
ALUMINUM FLAME	MG/L	0.37
ARSENIC HYDRIDE	MG/L	0.006
BARIUM BY FLAME	MG/L	< 0.05
BERYLLIUM BY FLAME	MG/L	< 0.005
CADMIUM BY FLAME	MG/L	< 0.005
CALCIUM BY FLAME	MG/L	53
CALCIUM HARDNESS	MG/L	120
CHEMICAL OXYGEN DEMAND	MG/L	360
CHLORIDE	MG/L	67
CHROMIUM BY FLAME	MG/L	< 0.02
COLOR	PT CO	40
CONDUCTIVITY	UMHOS	620
COPPER BY FLAME	MG/L	0.01
CORROSIVITY	UNITS	- 0.3
FLUORIDE	MG/L	0.06
IRON BY FLAME	MG/L	0.46
LEAD BY FLAME	MG/L	0.03
MAGNESIUM BY FLAME	MG/L	4.0



Envirolab, Inc.

1042 U.S. Highway 1 • P.O. Box 607
Ormond Beach, Florida 32074 • (904) 672-5668

Drinking Water Certification
HRS #83160

Reference Number: 893592

PARAMETER	SAMPLE NUMBER	0001
MANGANESE BY FLAME	MG/L	0.32
MERCURY BY COLD VAPOR	MG/L	0.0005
NICKEL BY FLAME	MG/L	< 0.02
OXIDIZED NITROGEN	MG/L	< 0.5
PH FIELD	UNITS	7.3
PH LAB	UNITS	7.5
POTASSIUM BY FLAME	MG/L	31
SELENIUM BY HYDRIDE	MG/L	< 0.005
SILVER BY FLAME	MG/L	< 0.01
SODIUM BY FLAME	MG/L	53
STRONTIUM	MG/L	0.11
SULFATE	MG/L	18
SURFACTANTS	MG/L	0.27
THALLIUM BY FURNACE	MG/L	< 0.005
TOTAL ALKALINITY	MG/L	170
TOTAL CYANIDE	MG/L	< 0.05
TOTAL DISSOLVED SOLIDS	MG/L	430
TOTAL KJELDAHL NITROGEN	MG/L	7.9
TOTAL NITROGEN	MG/L	7.9
TOTAL ORGANIC CARBON	MG/L	51
TOTAL PHOSPHOROUS	MG/L	0.65
TOTAL SOLIDS	MG/L	580
TURBIDITY	NTU	49
ZINC BY FLAME	MG/L	0.078

PROFILE: EPA 624

1,1,1-TRICHLOROETHANE	UG/L	< 1
1,1,2,2-TETRACHLOROETHANE	UG/L	< 1
1,1,2-TRICHLOROETHANE	UG/L	< 1
1,1-DICHLOROETHANE	UG/L	< 1
1,1-DICHLOROETHENE	UG/L	< 1
1,2-DICHLOROBENZENE	UG/L	< 1
1,2-DICHLOROETHANE	UG/L	< 1



Envirolab, Inc.

1042 U.S. Highway 1 • P.O. Box 607
Ormond Beach, Florida 32074 • (904) 672-5668

Drinking Water Certification
HRS #83160

Reference Number: 893592

PARAMETER	SAMPLE NUMBER	0001
1,2-DICHLOROPROPANE	UG/L	< 1
1,3-DICHLOROBENZENE	UG/L	< 1
1,4-DICHLOROBENZENE	UG/L	< 1
2-CHLOROETHYL VINYL ETHER	UG/L	< 1
BENZENE	UG/L	< 1
BROMODICHLOROMETHANE	UG/L	< 1
BROMOFORM	UG/L	< 1
BROMOMETHANE	UG/L	< 1
CARBON TETRACHLORIDE	UG/L	< 1
CHLOROBENZENE	UG/L	< 1
CHLOROETHANE	UG/L	< 1
CHLOROFORM	UG/L	< 1
CHLOROMETHANE	UG/L	< 1
CIS-1,3-DICHLOROPROPENE	UG/L	< 1
DIBROMOCHLOROMETHANE	UG/L	< 1
ETHYLBENZENE	UG/L	< 1
METHYLENE CHLORIDE	UG/L	< 1
TETRACHLOROETHENE	UG/L	< 1
TOLUENE	UG/L	< 1
TRANS-1,2-DICHLOROETHENE	UG/L	< 1
TRANS-1,3-DICHLOROPROPENE	UG/L	< 1
TRICHLOROETHENE	UG/L	< 1
TRICHLOROFLUOROMETHANE	UG/L	< 1
VINYL CHLORIDE	UG/L	< 1

PROFILE: EPA METHOD 625

1,2,4-TRICHLOROBENZENE	UG/L	< 1
1,2-DICHLOROBENZENE	UG/L	< 1
1,3-DICHLOROBENZENE	UG/L	< 1
1,4-DICHLOROBENZENE	UG/L	< 1
2,4,6-TRICHLOROPHENOL	UG/L	< 5
2,4-DICHLOROPHENOL	UG/L	< 5
2,4-DIMETHYL PHENOL	UG/L	< 5



Envirolab, Inc.

1042 U.S. Highway 1 • P.O. Box 607
Ormond Beach, Florida 32074 • (904) 672-5668

Drinking Water Certification
HRS #83160

Reference Number: 693592

PARAMETER	SAMPLE NUMBER	
	0001	
2,4-DINITROPHENOL	UG/L	< 50
2,4-DINITROTOLUENE	UG/L	< 10
2,6-DINITROTOLUENE	UG/L	< 5
2-CHLORONAPHTHALENE	UG/L	< 5
2-CHLOROPHENOL	UG/L	< 5
2-METHYL-4,6-DINITROPHENOL	UG/L	< 30
2-NITROPHENOL	UG/L	< 1
3,3'-DICHLOROBENZIDINE	UG/L	< 20
4,4'-DDC	UG/L	< 10
4,4'-DDT	UG/L	< 5
4-4'-DDD	UG/L	< 5
4-BROMOPHENYLPHENYLETHER	UG/L	< 5
4-CHLORO-3-METHYLPHENOL	UG/L	< 1
4-CHLOROPHENYLPHENYLETHER	UG/L	< 5
4-NITROPHENOL	UG/L	< 5
ACENAPHTHENE	UG/L	< 5
ACENAPHTHYLENE	UG/L	< 5
ALDRIN	UG/L	< 5
ANTHRACENE	UG/L	< 5
BENZIDINE	UG/L	< 50
BENZO(A)ANTHRACENE	UG/L	< 10
BENZO(A)PYRENE	UG/L	< 1
BENZO(B)FLUORANTHENE	UG/L	< 5
BENZO(GHI)PERYLENE	UG/L	< 1
BENZO(K)FLUORANTHENE	UG/L	< 5
BIS(2-CHLOROETHOXY)METHANE	UG/L	< 10
BIS(2-CHLOROETHYL)ETHER	UG/L	< 4
BIS(2-CHLOROISOPROPYL)ETHER	UG/L	< 10
BIS(2-ETHYLHEXYL)PHTHALATE	UG/L	< 5
BUTYL BENZYL PHTHALATE	UG/L	< 5
CHLORDANE	UG/L	< 30
CHRYSENE	UG/L	< 5
D-BHC	UG/L	< 5
DI-N-BUTYL PHTHALATE	UG/L	< 5



Envirolab, Inc.

1042 U.S. Highway 1 • P.O. Box 607
Ormond Beach, Florida 32074 • (904) 672-5668

Drinking Water Certification
HRS #83160

Reference Number: 893592

SAMPLE NUMBER
0001

PARAMETER

DI-N-OCTYL PHTHALATE	UG/L	< 5
DIBENZO(A,H)ANTHRACENE	UG/L	< 5
DIELDRIN	UG/L	< 5
DIETHYL PHTHALATE	UG/L	< 30
DIMETHYL PHTHALATE	UG/L	< 5
ENDOSULFAN I	UG/L	< 10
ENDOSULFAN II	UG/L	< 10
ENDOSULFAN SULFATE	UG/L	< 10
ENDRIN	UG/L	< 0.05
ENDRIN ALDEHYDE	UG/L	< 10
FLUORANTHENE	UG/L	< 5
FLUORENE	UG/L	< 5
HEPTACHLOR	UG/L	< 5
HEPTACHLOR EPOXIDE	UG/L	< 5
HEXACHLOROBENZENE	UG/L	< 5
HEXACHLOROBUTADIENE	UG/L	< 1
HEXACHLOROCYCLOPENTADIENE	UG/L	< 10
HEXACHLOROETHANE	UG/L	< 5
INDENO(1,2,3-CD)PYRENE	UG/L	< 5
ISOPHORONE	UG/L	< 10
N-NITROSODI-N-PROPYLAMINE	UG/L	< 10
N-NITROSODIMETHYLAMINE	UG/L	< 5
N-NITROGODIPHENYLAMINE	UG/L	< 1
NAPHTHALENE	UG/L	< 5
NITROBENZENE	UG/L	< 30
PCB 1016	UG/L	< 30
PCB 1221	UG/L	< 30
PCB 1232	UG/L	< 30
PCB 1242	UG/L	< 30
PCB 1248	UG/L	< 40
PCB 1254	UG/L	< 40
PCB 1260	UG/L	< 5
PENTACHLOROPHENOL	UG/L	< 10
PHENANTHRENE	UG/L	< 10



Envirolab, Inc.

1042 U.S. Highway 1 • P.O. Box 607
Ormond Beach, Florida 32074 • (904) 672-5668

Drinking Water Certification
HRS #83160

Environmental Certification
HRS #E83079

Reference Number: 893592

Page: 6

SAMPLE NUMBER
0001

PARAMETER

PHENOL	UG/L	< 5
PYRENE	UG/L	< 5
TOXAPHENE	UG/L	< 1
β -BHC	UG/L	< 5

PROFILE: PRIMARY HERBICIDES

2,4,5-TF SILVEX	UG/L	< 8
2,4-D	UG/L	< 4

A handwritten signature in black ink that reads "Michael C. Price".

APPROVED BY: _____
MICHAEL C. PRICE
LABORATORY MANAGER



Envirolab, Inc.
1042 U.S. Highway 1 • P.O. Box 607
Ormond Beach, Florida 32074 • (904) 672-5668

Drinking Water Certification
HRS #83160

Environmental Certification
HRS #E83079

SPRINGSTEAD ENGINEERING

P.O. BOX 448
LEESBURG FL 32749-0448
ATTN: PAUL BRADLEY

Description: 4 Samples Received on 09/19/89

Sampled By: ENVIROLAB

Client Job/PO Number:

Reference Number: 894411

Reported Date : 10/13/89

Invoice Number: 89-4411

Sample	Description	Client Id
0001	SUMTER COUNTY LANDFILL LEACHATE	INFLUENT
0002	SUMTER COUNTY LANDFILL LEACHATE	EFFLUENT
0003	SUMTER COUNTY LANDFILL LEACHATE	INFLUENT-EP TOX
0004	SUMTER COUNTY LANDFILL LEACHATE	EFFLUENT-EP TOX

SAMPLE NUMBER

PARAMETER	0001	0002	0003	0004
-----------	------	------	------	------

PROFILE: EP TOXICITY METALS

LEAD	MG/L	< 0.1	< 0.1
ARSENIC	MG/L	0.006	< 0.005
BARIUM	MG/L	< 0.25	< 0.25
CADMIUM	MG/L	< 0.025	< 0.025
CHROMIUM	MG/L	< 0.1	< 0.1
MERCURY	MG/L	< 0.002	< 0.002
SELENIUM	MG/L	< 0.005	< 0.005
SILVER	MG/L	< 0.05	< 0.05

PROFILE: PRIMARY INORGANIC

LEAD	MG/L	< 0.02	< 0.02
ARSENIC	MG/L	0.005	0.009



Envirolab, Inc.

1042 U.S. Highway 1 • P.O. Box 607
Ormond Beach, Florida 32074 • (904) 672-5668

Drinking Water Certification
HRS #83160

Environmental Certification
HRS #E83079

Reference Number: 894411

Page: 2

SAMPLE NUMBER

PARAMETER		0001	0002	0003	0004
BARTUM	MG/L	0.05	0.06		
CADMUM	MG/L	< 0.005	< 0.005		
CHROMIUM	MG/L	< 0.005	< 0.005		
FLUORIDE	MG/L	0.08	0.11		
MERCURY	MG/L	< 0.0002	< 0.0002		
NITRATE NITROGEN	MG/L	< 0.5	1.5		
SELENIUM	MG/L	< 0.005	< 0.005		
SILVER	MG/L	< 0.01	< 0.01		
SODIUM	MG/L	120	120		
TURBIDITY	NTU	90	35		

PROFILE: PRIORITY POLLUTANT METALS

LEAD	MG/L	< 0.02	< 0.02
ANTIMONY	MG/L	< 0.002	< 0.002
ARSENIC	MG/L	0.005	0.009
BERYLLIUM	MG/L	< 0.005	< 0.005
CADMUM	MG/L	< 0.005	< 0.005
CHROMIUM	MG/L	< 0.02	< 0.02
COPPER	MG/L	< 0.01	< 0.01
MERCURY	MG/L	< 0.0002	< 0.0002
NICKEL	MG/L	< 0.02	0.02
SELENIUM	MG/L	< 0.005	< 0.005
SILVER	MG/L	< 0.01	< 0.01
THALLIUM	MG/L	< 0.001	< 0.001
ZINC	MG/L	0.024	0.094

PROFILE: SECONDARIES

CALCIUM HARDNESS	MG/L	73	67
CHLORIDE	MG/L	140	140
COLOR	PT CO	200	200
COPPER	MG/L	< 0.01	< 0.01
CORROSIVITY	UNITS	- 0.3	0.0