Environmental Services Waste Petroleum & Water Removal Emergency Oil Spill Responce

P.O. Box 13079, Port Everglades Station, Fort Lauderdale, Florida 33316 • (305) 763-3390

SITE ASSESSMENT REPORT:

Return to the 2nd Floor MAIN FILE ROOM

March 28, 1996

CLEANUP SECTION

Florida Dept. of Environmental Protection P. O. Box 15425 West Palm Beach, FL 33416

ATTENTION: Paul Wierzbicki

Dear Paul:

Included here for your review is the completed IRA report for the following project:

American Land Housing Group Vacant Lot at N.E. intersection of Cypress Creek Rd. & FL Turnpike

If you should have any questions, please feel free to call me at 1-800-899-7745.

Respectfully submitted,

CLIFF BERRY, INC.

Donald Church

Manager

INITIAL REMEDIAL ACTION

FOR

AMERICAN LAND
VACANT LAND LOCATED NORTHEAST OF THE INTERSECTION
OF CYPRESS CREEK ROAD AND THE FLORIDA TURNPIKE
FT. LAUDERDALE, FLORIDA

PROJECT NUMBER: 624903

SUBMITTED TO:

MR. BERNIE DEVLIN
CLIFF BERRY, INC.
P.O. BOX 13079
PORT EVERGLADES STATION
FT. LAUDERDALE, FLORIDA 33316

APR 1 1996

DEPT OF ENV PROTECTION

SUBMITTED BY:

U.S. ENVIRONMENTAL GROUP, INC. 2301 N.W. 33RD COURT, SUITE 115 POMPANO BEACH, FLORIDA 33069 (305) 979-3400

MARCH, 1996

PREPARED BY:	REVIEWED BY:
Brant J. MUEKELEY ENVIRONMENTAL ENGINEER	JOHN C. BARINGER, P.G. SENIOR GEOLOGIST LICENSE NO. 0001208 DATE: 3/24/96

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1.0 INTRODUCTION

On March 18, 1996, U.S. Environmental Group, Inc. (USEG) and Cliff Berry, Inc. (CBI) began an Initial Remedial Action (IRA) on a localized area of hydrocarbon impacted soil near the intersection of Cypress Creek Road and the Florida Turnpike, Ft. Lauderdale, Florida. A site location map is included in **Attachment 1**. The IRA was initiated in response to the discovery of impacted soils during a subsurface investigation. Suspected diesel products had impacted the soils adjacent to monitoring well No. 1 (MW-1) see Site Plan, (**Attachment 2**).

The IRA documented by USEG consisted of the excavation of 1657.7 tons of diesel impacted soil, which was properly disposed of at a thermal treatment facility. The IRA Report Form, required by the regulatory agency for the excavation and disposal of hydrocarbon impacted soil, is included in **Appendix A**.

2.0 INITIAL REMEDIAL ACTION

On March 18 through 21, 1996, USEG personnel collected soil samples from the impacted area as the soils were being excavated by CBI personnel. Sixteen (16) ounce glass jars were half-filled with the soil, covered with aluminum foil and allowed to equilibrate. The headspace of each sample was analyzed in the field using an organic vapor analyzer (OVA), equipped with a flame ionization detector (FID). Since diesel fuel was the suspected source of soil impact, an OVA/FID reading of 50 ppm was used as the limit for "excessively impacted soil" in accordance with the FDEP Guidelines for Assessment and Remediation of Petroleum Contaminated Soil.

Prior to analysis, the OVA/FID was zeroed with the atmosphere and calibrated using 100 ppm methane gas. Soils were excavated horizontally and vertically within the impacted area until soil samples were obtained that verified all "excessively" impacted soil had been removed.

The soil sample locations are illustrated in **Attachment 3**. Throughout excavation, the top six (6) to eight (8) feet of soil below grade level (BGL) did not exhibit excessive OVA readings. The "clean" soil was removed and stockpiled separately from the excessively impacted soil. Impacted soil was excavated horizontally until OVA/FID readings of less than 50 ppm were obtained, and vertically until the water table was encountered. The water table was encountered at approximately 16 feet BGL during the excavation. The final dimensions of the excavation were: 55 feet in length, 50 feet in width, and 15.5 feet in depth (average depth). The OVA/FID readings verified that all soil removed from the site for disposal was excessively impacted.

OVA/FID results from the soil excavation are summarized in **Table 1**. The soil incineration profile laboratory results of the excavated soils is provided in **Appendix B**. The soils were disposed of by incineration at Rinker Materials Corporation in Miami, Florida. Soil disposal manifests are provided in **Appendix C**.

A professional land survey of the site and a proposed building illustration showing the approximate location of the excavation have been included in **Appendix D**. As indicated in the survey, the excavation area is not located beneath any of the proposed buildings.

Table 1 OVA/FID Readings (3/18/96 - 3/21/96)		
Sample No.	Depth (ft)	Results* (ppm)
	1.0	. 0
1	3.0	0
,	10.0	75
	1.0	0
2	3.0	0
, -	10.0	60
	1.0	0
3	3.0	0
,	10.0	65
4	8.0	10
5	10.0	65
	8.0	210
6	10.0	290
	8.0	25
7	10.0	950
	8.0	0
8	10.0	460
9	10.0	260
	8.0	20
10	10.0	20
	12.0	50
11	8.0	50
- · · · · · · · · · · · · · · · · · · ·	8.0	18
12	10.0	35
13	10.0	240
	7.0	900
14	14.0	330
15	9.0	950
16	8.0	930

Table 1 OVA/FID Readings (3/18/96 - 3/21/96)		
Sample No.	Depth (ft)	Results* (ppm)
	9.0	260
17	12.0	170
18	12.0	100
19	12.0	220
	8.0	4
20	10.0	12
	12.0	15
	10.0	20
21	12.0	10
	10.0	1200
22	12.0	110
	8.0	40
23	10.0	20
20	12.0	15
24	8.0	77
25	10.0	1800
	6.0	0
26	10.0	60
27	11.0	230
28	11.0	80
27	14.0	450
28	6.0	40
	8.0	48
29	11.0	15
	10.0	110
30	12.0	120
31	11.0	40
32	10.0	1100
33	11.0	1200

Table 1 OVA/FID Readings (3/18/96 - 3/21/96)		
Sample No.	Depth (ft)	Results* (ppm)
34	. 8.0	300
	8.0	470
35	10.0	200
	8.0	310
36	12.0	800
	10.0	10
37	12.0	15
	10.0	420
38	12.0	420
	10.0	40
39	12.0	45
	10.0	20
40	12.0	25
	12.0	340
41	14.0	110
42	12.0	340
	4.0	40
43	12.0	460
45	16.0	1500
44	10.0	110
45	12.0	130
46	12.0	210
	12.0	36
47	14.0	64
48	12.0	70
	12.0	30
49	14.0	55
50	14.0	1400

Table 1 OVA/FID Readings (3/18/96 - 3/21/96)		
Sample No.	Depth (ft)	Results* (ppm)
	12.0	60
51	14.0	210
	10.0	9
52	12.0	20
	10.0	35
53	12.0	47
	8.0	18
54	10.0	20
•	12.0	19
	10.0	10
55	12.0	16
	15.0	28
,	8.0	84
56	12.0	23
57	12.0	20
58	12.0	15
	10.0	5
59	14.0	14
	10.0	0
60	12.0	4
	12.0	31
· 61	14.0	43
62	12.0	76
	10.0	12
63	12.0	18
	10.0	16
64	12.0	32
	8.0	13
65	12.0	46

Table 1 OVA/FID Readings (3/18/96 - 3/21/96)		
Sample No.	Depth (ft)	Results* (ppm)
	8.0	6
66	12	69
67	10.0	38
	12.0	40
	10.0	20
68	12.0	25
69	8.0	19
	10.0	140
	8.0	19
70	10.0	69
	6.0	46
71	10.0	430
	7.0	240
72	10.0	390
	8.0	32
73	10.0	34
	12.0	40
	10.0	45
74	12.0	38
	8.0	25
75	10.0	26
,•	12.0	32
	8.0	32
76	10.0	42
. •	12.0	35
77	10.0	900
	8.0	18
78	10.0	1100

Table 1 OVA/FID Readings (3/18/96 - 3/21/96)		
Sample No.	Depth (ft)	Results* (ppm)
·	8.0	43
79	10.0	120
,,	14.0	110
	8.0	39
80	10.0	80
	8.0	23
81	14.0	310
	8.0	244
82	10.0	110
	8.0	40
83	10.0	47
	12.0	45
	8.0	65
84	10.0	75
	8.0	210
85	10.0	160
	8.0	189
86	10.0	105
	8.0	46
87	10.0	47
	8.0	55
88	10.0	22
	8.0	40
89	10.0	246
	12.0	128
	8.0	75
90	10.0	66
	8.0	210
91	10.0	130

Table 1 OVA/FID Readings (3/18/96 - 3/21/96)		
Sample No.	Depth (ft)	Results* (ppm)
	6.0	25
92	8.0	22
72	10.0	32
	8.0	34
93	10.0	40
	8.0	34
94	10.0	42
J 4	12.0	30
	8.0	25
95	10.0	6
33	12.0	13
	8.0	8
96	10.0	11
30	12.0	15
	8.0	20
97	10.0	16
37	12.0	40
98	12.0	1300
99	12.0	130
100	10.0	68
	10.0	100
101	12.0	195
	10.0	740
102	12.0	720
	10.0	350
103	14.0	165
104	12.0	150
105	10.0	48
106	10.0	48

OVA	Table 1 /FID Readings (3/18/96 - 3/2	<u>(</u> 1/96)
Sample No.	Depth (ft)	Results* (ppm)
107	12.0	47
	10.0	20
108	12.0	10
	10.0	3
109	12.0	8
	8.0	6
110	10.0	12
1.0	12.0	22
111	10.0	195
	10.0	16
112	12.0	12
	10.0	4
113 .	12.0	2
114	12.0	110
	10.0	16
115	12.0	12
	10.0	32
116	12.0	45
117	12.0	155
	8.0	2
118	10.0	5
110	12.0	4
119	8.0	200
120	10.0	73
	8.0	4
121	10.0	16
141	12.0	24
	10.0	22
122	12.0	40

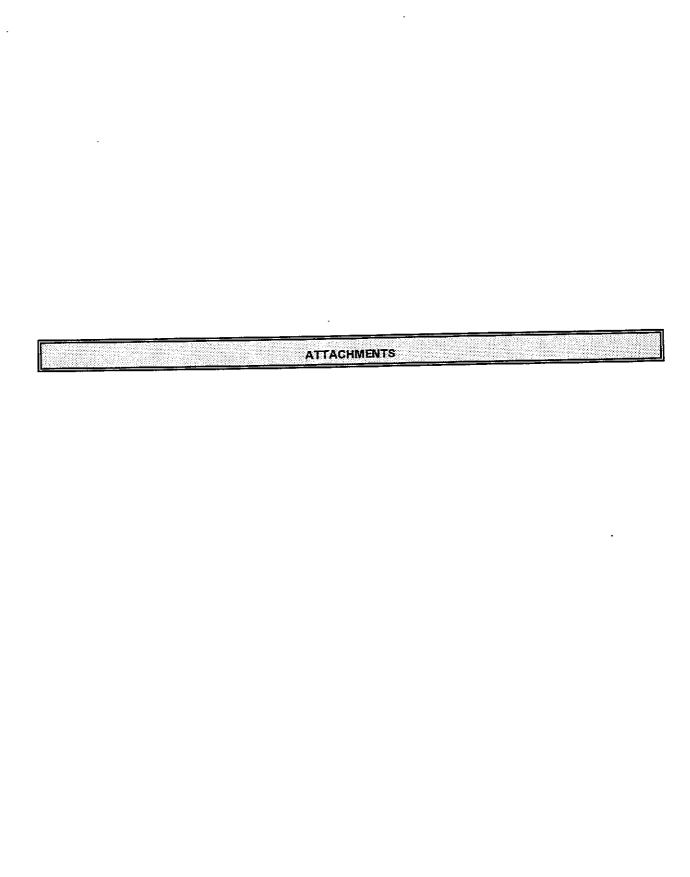
OVA	Table 1 /FID Readings (3/18/96 - 3/2	21/96)
Sample No.	Depth (ft)	Results* (ppm
	10.0	0
123	12.0	8
	10.0	0
124	12.0	0
	10.0	15
125	12.0	17
	14.0	23
	8.0	7
126	10.0	4
	12.0	13
	8.0	18
127	12.0	18
	8.0	40
128	12.0	37
	12.0	47
129	14.0	45
	8.0	17
130	10.0	43
	12.0	44
· · · · · · · · · · · · · · · · · · ·	10.0	2
131	12.0	6
	8.0	16
132	10.0	22
132	10.0	

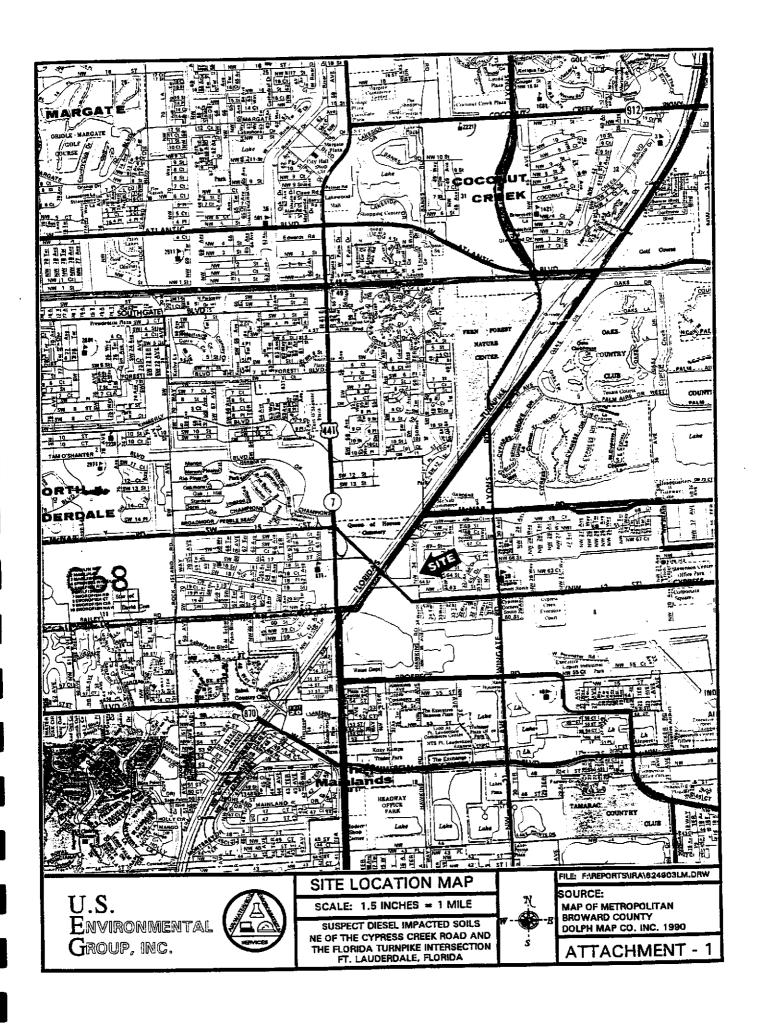
^{*} Note: All readings have been corrected for methane content.

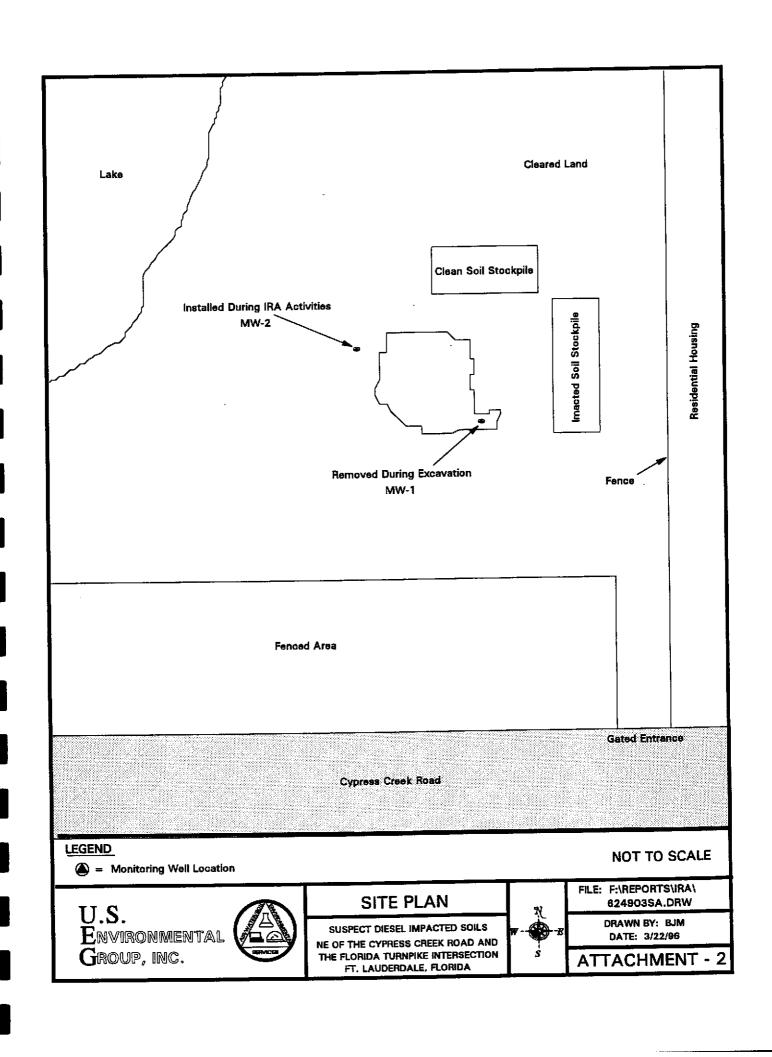
3.0 CONCLUSIONS

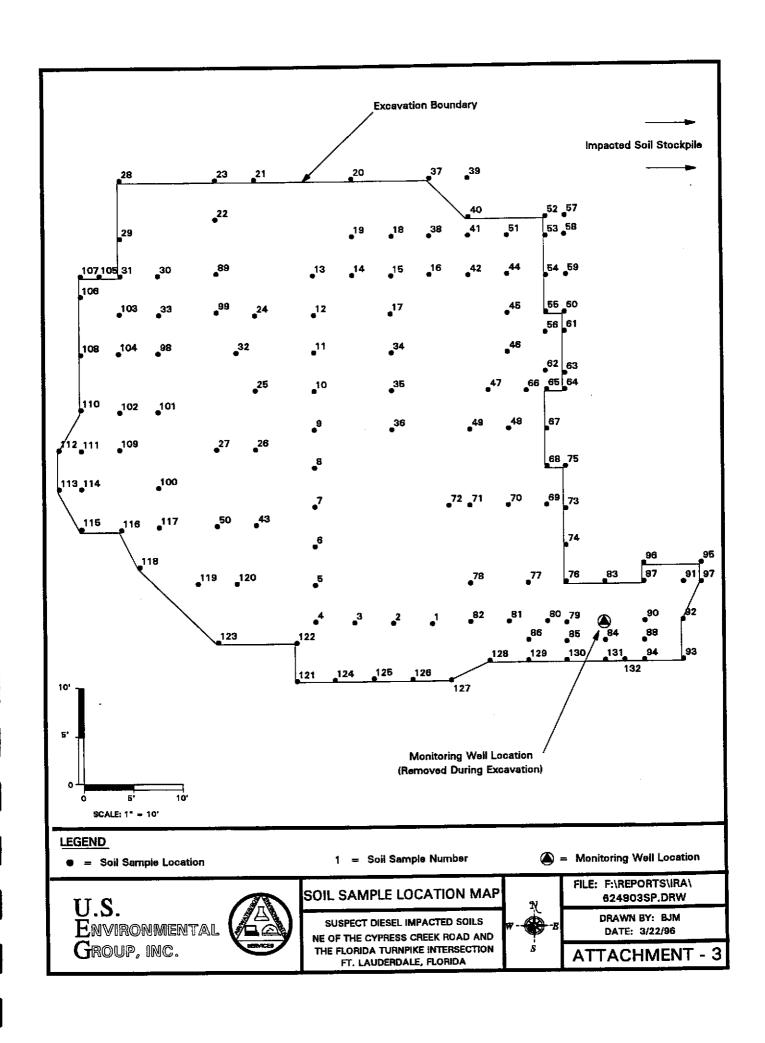
Due to the discovery of suspected diesel impacted soils during a subsurface investigation at the subject site, an Initial Remedial Action (IRA) was performed which involved the excavation of 1657.7 tons of suspected diesel impacted soil. The soils were excavated horizontally and vertically until acceptable OVA readings were obtained indicating that all "excessively impacted" soils from the impacted area had been removed. The groundwater table was encountered at approximately 16 feet below grade level during the excavation.

Based on these conclusions, it is recommended that a groundwater sample be collected from the monitoring well located just west of the excavation (MW-2) to evaluate groundwater quality conditions down gradient of the excavation area. Additionally, a groundwater monitoring well should be installed in the center of the excavation area to evaluate the groundwater quality in the source area. These groundwater samples should be analyzed using EPA Method 602 and 610.









APPENDIX A
IRA REPORT FORM

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PETROLEUM CONTAMINATION INITIAL REMEDIAL ACTION REPORT FORM

An Initial Remedial Action report, summarizing the initial remedial action (IRA), should be prepared to satisfy the requirements of Chapters 17-770.630 (1) 14; 17-773.500 (1) (a) 4; and 17-773.500 (2) (a) 4, Florida Administrative Code, (FAC). This form may be used for the IRA report. The report should be sent to the appropriate local program and:

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION **BUREAU OF WASTE CLEAN-UP ENGINEERING SUPPORT SECTION** 2600 BLAIR STONE ROAD TALLAHASSEE, FLORIDA 32399-2400

FACILITY NAME: i.

American Land

Facility Address:

45 acres of vacant land northeast of the intersection of

Cypress Creek Road and the Florida Turnpike

DER Facility Number (if applicable): N/A

Date IRA Initiated: 03/18/96

Date IRA Completed:

03/21/96

FREE PRODUCT RECOVERY 11.

Type(s) of Product Discharged: Α.

Suspected Diesel Fuel

В. Quantity

> Estimated Gallons Lost: 1.

<u>Unknown</u>

Gallons Recovered: N/A 2.

- Attach Exhibit Indicating Amount of Product Recovered, Dates and 3. Cumulative Totals. N/A
- Attach a Scaled Site Plan, Indicating the Locations and Product Thickness in C. Wells, Boreholes, Excavations, or Utility Conduits and Wells Utilized for Recovery of Free Product. N/A
- Method of Product Recovery: N/A D.
- Type of Discharge During Product Recovery: N/A E.
- Type of Treatment, i.e., Oil/Water Separator: N/A F.
- Attach Written Proof of Proper Disposal of Recovered Product: N/A G. Florida Department of Environmental Regulation April 1992

III. SOIL EXCAVATION

NOTE:

Soil shall be defined as excessively contaminated using the procedure stated in Chapter 27-770.200 (2), FAC. Representative soil sampling shall be performed as close to the time of excavation as possible, but at no time shall exceed three (3) months prior to the start of excavation. Stockpiled soils greater than thirty (30) days on site waiting for treatment and disposal, must be re-sampled immediately prior to disposal to assure soils are still excessively contaminated.

If soil sampling data indicates that the amount of soil that is excessively contaminated exceeds 1500 cubic yards, treatment of all excessively contaminated soil at the site shall be addressed in a remedial action plan, and no soil IRA activities shall be performed except for the removal of soils in the immediate vicinity of the tanks.

Only soil above the ambient water table at the time of excavation can be considered as excessively contaminated soil.

Unless the established weight per unit volume of 1.4 tons/cubic yard (as referenced in FAC rule 17-775) is used for the excavated soil, the weight per unit volume must be determined by a field test (in which an accurately measured volume of soil is weighted) at the time of excavation.

A. Volume of Contaminated Soil Excavated in Cubic Yards: Approximately 1185

Dimensions Including Depth of Excavation(s):

Approximately 55 ft in length X 50 ft in width X 11.6 ft in depth

NOTE:

Attach written proof from the Department in the form of an Alternate Procedure Approval Order authorizing excavating over 1500 cubic yards if applicable. Authorization must be prior to the excavation of soils.

- B. Type(s) of Product in Soil: Suspected diesel fuel
- C. Depth (ft) to Ambient Groundwater at the Time of Excavation(s):

 Approximately 16 ft
- D. Did Dewatering (i.e. groundwater depression) Occur at Time of Excavation?: No
- E. Type of Instrument and Method Used to Determine Excessive Soil Contamination:

<u>Used an OVA/FID, and a reading of 50 ppm as the lower level of delineation for excessive soil contamination.</u>

- F. Attach a table that compares the OVA-FID readings taken with charcoal filter verses readings without filter. Include vertical depths for each sample.
 See Table 1
- G. Using the OVA procedure for defining excessively contaminated soil as referenced in Rule 17-770.200 (2), FAC, include a scaled site plan with the information listed below:
 - Location of excavation, old tank farm, dispensers, and product lines, present tank farm, and all soil samples. The corresponding OVA-FID readings for each soil sample (with charcoal filter and without) and its depth must be given. <u>See Attachment 3 and Table 1</u>
 - Sampling procedure is as follows:

Start sampling in a location where it is suspected that excessively contaminated soil exists. Sample from the first soil boring outward in a grid pattern, at five (5) to ten (10) foot intervals, until the perimeter of the excessively contaminated soil plume is defined. Vertical sampling should be performed starting approximately at the initial area of contamination and continued at three (3) foot intervals, or fraction thereof, until a depth of approximately one (1) foot above the water table is reached.

- H. Copies of Laboratory Analyses for Pre Treatment Soil Samples as Required in Chapter 17-775.410 (3), Table II, FAC Must be Attached.
 See Appendix B
- I. Were Tanks Replaced at this Site?: N/A

IV. SOIL TREATMENT AND DISPOSAL

- A. Method of Treatment of Excessively Contaminated Soil: Thermal Treatment
- B. For Off Site Treatment and Disposal at Permitted STTF, Land Farms, or Landfills Attach Documentation From the Treatment Facility Which Confirms the Weight or Volume of Soil Treated and Date Received. See Appendix C

For Other Treatment and Disposal Methods (i.e., On-Site Land Farming, Bioremediation), Attach Post Treatment Laboratory Analyses for Each 250 - 300 Cubic Yards of Treated Soil in Accordance with Chapter 17-775.400 and the "Guidelines for Assessment and Remediation of Petroleum Contaminated Soils", Edition February 1991 or Most Current Revision.

For Mobile Thermal Treatment Units, Attach Laboratory Analysis per Chapter 17-775 (5), FAC.

Wiami, FL 33182

V.ADDITIONAL COMMENTS

Brant J. Muekeley

Person Completing Form

Environmental Engineer
US ENVIRONMENTAL GROUP, INC
Signature, Date

Title, Affiliation

Thermal Treatment: Rinker Materials Corp.

Method of Disposal of Contaminated Soil and Indicate Recipient and Address:

1200 N.W. 137th Avenue

C.

APPENDIX B

SOIL INCINERATION PROFILE LABORATORY RESULTS

All State Engineering and Testing Consultants, Inc. TESTING LABORATORIES - DISPLEMENT - DISPLEME

EPA Method 8010; Purgeable Halocarbons

Client:	Americ	an Housing Group			
Address	65 N. V	V. 168th Street., N. Miami	Beach, FL 33169		
Project:	Forest	Laices			
Address:	Cypress	Creek Rd & Turnpike			
Matrix	Soil.			(50.4)	
Samping Da	ite:	02/06/96	Collected By:	Rahimi	
Analysis Dat		02/07/96 to 02/09/96	Analysia By:	F,A	
Report Date		02/12/96	Sample ID #:	1098-638	
Location:		Boring Holes #1			

Compounds:	BH #1	DL	Units
Promodicibleromethane	RDL	0.050	mg/Kg
Programment in the second	BDL	0.050	mg/Kg
Sronomethane	BDL	0,050	mr/Kg
Carbon tetrachioride	BUL	0.050	mg/Kg
Chlorobenzene	BDL	0.050	mg/Kg
Chloroethane	BUL	0,050	mg/Kg
Chioroform	BDL	0,050	mg/Kg
2-Chlomethylvinylether	BDL	0,050	mg/Kg
Chloremethane	BDL	0.050	mg/Kg
	BDL	0.050	me/Kg
Dibromochiaramethane	BDL	0.050	mg/Kg
2-Dichlerchensene	BDL	0.050	mg/Kg
3-Dichlombatzens	BDL	0.050	mg/Kg
A-Dichlorobensene	BDL	0.050	mg/Kg
Digislorodi/Quoromethane	BDL	0.050	mg/Kg
.]-Dichleroethans	EDL	0.050	me/Kg
1,2-Dichlomothans	BDL	0.050	mg/Kg
1.1-Dichloroethene	ADL	0.050	mg/Kg
rate-1_2-Dichleroethene		0.050	mg/Kg
1,2-Dichloropropane	BDL	0.050	ms/Ks
is-1,3-Dichleropropens	BDL		mg/Kg
rans-1,3-Dichloropropene	BDL	0.050	
Merhylene chloride	BUL	0,050	mg/Kg mg/Kg
1,1,2;1-Tetrachlorocuhanc	BDL	0.050	ms/Kg
Tetrachicroethens	BDL	0.050	
1,1,1-Tricklorosthane	BDL	0.050	mg/Kg
1,1,2-Trichleroothans	BDL	0,050	mg/Kg
Trichloroethene	HDL	0.050	mg/Kg
Trichlerofluoromethane	BDL.	0.050	me/Ke
Vinvishloride	BDL Bolow Detection Li	0,050	mg/Kg

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

Respectfully Submitted,

errist.

3745 N.W. SON STILLET / MEANE, FLORIDA 25142 F.G. BOX 110066, HEALEAR, FLORIDA 28010, PRECNE: (305) 684-5823-53

EPA Method 8020: Purgeable Aromatics

HRS LAB LD. # E-86198

Client:	Amer	can Housing Gr	que		
Address:	65 N.	W. 168th Street	, N. Miami Beach, FL	33169	
Project:		Laices			
Address:	Cypre	ss Creek Rd & T	umpike		
Matrix	Soil.				
Sampling D	ate:	02/06/96	Collected By:	Rahimi	
Analysis Da		02/08/96	Analysis By:	F.A.	
Report Date		02/12/96	Sample ID #:	1098-638	
Location:		Boring Holes	#1		

Compound.	BH #1	DL	Units
Benzene	BDL	0.050	mg/Kg
Chlorobenzene	BDL	0.050	mg/Kg
1,2-Dichlorobenzene	BDL	0.050	mg/Kg
1,3-Dichlorobenzene	BDL	0.050	mg/Kg
1,4-Dichlorobenzene	BDL	0.050	mg/Kg
Ethylbenzene	BDL	0,050	mg/Kg
MTBE	BDL	0.050	mg/Kg
Toluene	BDL	0.050	mg/Kg
Total Xylene	BDL	0.050	mg/Kg

Detection Limit

BDL; Below Detection Limit

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

Respectfully submitted.

Fernana Abbasi

Chemist

3745 N.W. SOIL STREET / MIAMI, PLORIDA 33142 P.O. BOX 110066, HIALMAH, FLORIDA 33010. PHONE: (305) 638-5882-83

Chemical Analysis Report HRS LAB I.D. #E-86198

Client:	Amer	can Housing Group		
Address:	65 N.	W. 168th Street., N. Mi	ami Beach, FL 331	69
Project:		Lakes		
Address:	Cypre	is Creek Rd & Turnpike		
Matrix:	Soil			····
Sampling I	ate:	02/06/96	Collected By:	Rahimi
Analysis D		02/07/96 to 02/09/96	Analysis By:	F.A.
Report Dat		02/12/96	Sample ID #:	1098-538
Location:	· · · · · · · · · · · · · · · · · · ·	Boring Holes #1		

Parameter.	Method	BH#1	DL	Units	Ansiysis Date
Arsenic.	7062	BDL	0,005	mg/L	02/09/96
Bárium.	7080	BDL	0.100	mg/L	02/08/96
Cadmium	7130	BDL	0.005	mg/L	02/07/95
Chromium.	7190	BDL	0.050	mg/L	02/07/96
Lead.	7420	BDL	0.050	mg/L	02/07/96
Mercury.	7471	BDL	0.001	mg/L	02/08/96
Selenium.	7742	BDL	0.002	mg/L	02/09/96
Silver.	7760	BDL	0.010	mg/L	02/07/96
Sodium	7770	BDL	0.020	mg/L	02/09/96
Potassium	7610	BDL	0.010	mg/L	02/08/96
Total Halides	9020	1.27	1.0	mg/Kg	02/09/96
Total Chloride	9252	1.07	0.1	mg/Kg	02/09/96
TRPH	9073	4.08	0,100	mg/Kg	02/08/96

Detection Limit DL.

BDL: Below Detection Limit

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

Respectfully submitted,

Farhana Abbasi

Chemist

2745 N.W. 50th STREET / MIAMI, FLORIDA 13142 P.O. BOX 110066, HIALBAH, FLORIDA 13010. PHONE: (305) 638-5682-83

EPA Method 8010: Purgeable Halocarbons

Client:	American	Bousing Group			
Address:	65 N. W.	168th Street., N. Miami	Beach, FL 33169		
Project:	Forest La	kes			
Address:	Cypicse Cr	cek Rd & Turopike			
Matrix:	·Soil.				,
Sampling De	te: (02/06/96	Collected By:	Rahimi	
Analysis Date		02/07/96 to 02/09/96	Analysis By:	F.A.	
Report Date:		02/12/96	Sample ID #:	1098-639	
Location		Boring Holes #2			

Compounds	BH #2	DL	Units
Bromodicisloromethane	BDL	0.050	mg/Kg
Bromoform	BDL	0.050	mg/Ka
Symmethero	BDL	0.050	mg/Kg
Carbon tetrachloride	BDL	0.050	ms/Ks
Chlorobenzene	BDL	0.050	me/Kg
Chloroettisne	BDL	0.050	mg/Kg
Chloreform	BDL	0.050	mg/Kg
-Chloroethylvinylether	BDL	0,050	mg/Kg ·
hlorometiune :	BDL	0,050	mg/Kg
Disromochloromethane	BDL	0.050	mg/Kg
2-Disklardensene	BDL	0,050	mg/Kg
3-Dichlorobenzene	BDL	0,050	mg/Kg
4-Dichlorobenzene	BDL	0.050	ng/Kg
Dicklerediffactomethens	BDL	0.050	mg/Kg
L-Dichloroethane	EDL.	0.050	mg/Kg
Z-Dichleroethane	BDL	0,050	mg/Kg
Dichioroethene	BDL	0.050	mg/Kg
rans-1,2-Dichleroethene	BDL	0.050	me/Ke
1,2-Dichleropropage	BDL	0.050	me/Kg
risel.3-Dichipropropene	BDL	0,050	mg/Kg
rang-1,3-Dickloropropene	HDL	0.050	mg/Kg
Mativiene chioride	BDL	0,050	mg/Kg
1.1:2.2-Tetrachioroethane	BDL	0.050	mg/Kg
Terrachiorechene	BDL	0,050	mg/Kg
1.1.1Trickloreethane	BDL	0,050	mg/Kg
1.1.2-Trichleroethane	BDL	0.050	me/Kg
Trichlerosthens	BDL	0.050	me/Kg
Trichloroglyoromethane	EDL	0.050	mg/Kg
Vinylchloride	BDL	0.050	mg/Kg

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

Respectfully Submitted,

STAN N.W. SALE STREET / MIANT, PLORIDA SS143

EPA Method 8020: Purgeable Aromatics HRS-LAB I.D. # E-86198

Client:	Amei	iean Housing Gi	roup			
Address:			., N. Miami Beach, FL	33169	· · · · · · ·	
Project:	Fores	it Lakes				
Address:	Сурга	es Creek Rd & T	umpike			
Matrix:	Soil.					
Sampling I	ate:	02/06/96	Collected By:	Rahimi		
Analysis Da	rte;	02/08/96	Analysis By:	F.A.		
Report Dat	e:	02/12/95	Sample ID #:	1098-639		
Location:						

Compound.	BH #2	DL	Units
Beggene	BDL	0.050	mg/Kg
Chicrobenzene	BDL	0.050	пе/Ке
1,2-Dichlorobenzene	BDL	0.050	mg/Kg
1,3-Dichlorobenzene	BDL	0.050	mg/Kg
1,4-Dichlorobenzene	BDL	0.050	mg/Kg
Ethylbenzene	0.182	0.050	mg/Kg
MTBE	BDL	0.050	mg/Kg
Toluene	1.086	0.050	mg/Kg
Total Xylene	0.350	0,050	mg/Kg

DL. Detection Limit BDL: Below Detection Limit

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

Respectfully submitted,

Razhana Abbasi

Chemist

3745 N.W. 50th STREET / MIAMI, PLORIDA 33142 P.O. BOX 110066, HIALEAH, FLORIDA 33010. PHONE: (305) 638-5882-83

Chemical Analysis Report HRS LAB LD. # E-86198

Client:		American Housing Group					
Address:	65 N.	W. 168th Street., N. M.	iami Beach, FL 331	69			
Projects	Fores	Forest Lakes					
Address:	Cypre	ss Creek Rd & Turnpike					
Matrix:	Soil.	· · · · · · · · · · · · · · · · · · ·					
Sampling I	ate:	02/06/96	Collected By:	Rahimi			
Analysis D	nte:	02/07/96 to 02/09/96	Analysis By:	F.A.			
Report Dat		02/12/96	Sample ID #:	1098-639			
Location:		Boring Holes #2					

Parameter.	Method	BH#2	DL	Units	Analysis Date
Arsenic.	7062	BDL	0,005	mg/L	02/09/96
Barium.	7080	BDL	0,100	mg/L	02/08/96
Cadmium	7130	BDL	0,005	mg/L	02/07/95
Chromium.	7190	BDL	0.050	mg/L	02/07/96
Lead.	7420	BDL	0.050	mg/L	02/07/96
Mercury.	7471	BDL	0,001	mg/L	02/08/96
Scientum.	7742	BDL	0.002	mg/L	02/09/96
Silver.	7760	BDL	0.010	mg/L	02/07/96
Sodium	7770	BDL	0,050	mg/L	02/09/96
Potassium	7610	0,074	0.050	mg/L	02/08/96
Total Halides	9020	3.16	1.0	mg/Kg	02/09/96
Total Chloride	9252	2.04	0.1	mg/Kg	02/09/96
TRPH	9073	12.58	0.100	mg/Kg	02/08/96

Bolow Detection Limit BDL:

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

Respectfully submitted,

Fathana Abbasi Chemist

3745 N.W. 50% STREET / MIAMI, FLORIDA 33142 P.O. BOX 110056, WALLAH, FLORIDA 33010, PHONE: (305) 638-5882-81

EPA Method 8010: Purpeable Halocarbons HEB LABID. # E-86198

Client:	American E	Gueing Group	J Bank Br 991	40			
Address:	65 N. W. 168th Street, N. Miami Beach, FL 33169						
Project:		Forest Lakes					
Address:		Cypress Creek Rd & Turngike					
Mariz:	Soil.				Rahimi		
Soppling Dat		/06/96	Collected I				
Agaiysis Date		/07/96 to 02/09/96	Analysis B		F.A.		
Report Date:		/12/96	Sasaple ID	#!	1098-641		
Location:	Be	ring Holes #4			·		
Compound	3 .		BH #4	DL	Units		
remodichlor			BDL	0.050	mg/Kg		
3rometorm			BDL	0,050	mg/Kg		
Tremomethan	¢		BDL	0.050	mg/Kg		
arbon tetrac			BDL.	0,050	mg/Kg		
'hicrobeozen			BDL	0,050	mg/Kg		
hioroethane		_	BDL	0,050	me/Kg		
hioroform			BDL	0.050	mg/Kg		
Chloroethyl	vinylether		BDL	0.050	mg/Kg		
hioromethea			BDL	0.050	mg/Kg		
dromochior			HDL	0.050	mg/Kg		
2-Dichlorob			BDL	0,050	ma/Ke		
3-Dichlorob			BDL	0.050	mg/Kg		
,4-Dichloreb			BDL	0,050	ms/Kg		
Heblorodiflu			HDL	0,050	ng/Ka		
.l-Dichloroc			BDL_	0.050	mg/Kg		
2-Dichlaros			BDL	0.050	nig/Ka		
l'.1-Dichleres			BDL	0,050	mg/Ka		
rans-1.2-Dichleroethene			BDL	0.050			
1,2 Dichieropropane		BDL	0.050				
is-1,3-Dichle			BDL	0,050			
rans-1,3-Dio			HDX.	0.050			
Viethylene ch			BDL	0,050			
1,1,2.Term			BDL	0.050			
l'etrachloroet			BDL	0.050	mg/K		
i, i, i-Trichle			BDL	0.050			
1 1 4 10 1 1			200	0.050	ma/K o		

Vinylchloride

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

BDL

BDL

BDL

BDL.

Respectfully Submitted,

1.1,2-Trichloroethans

Trichloroflyoromethane

Trichloroethene

Chemist.

3745 M.W. SOR STERRY / MIANG FLORIDA 33144 P.C. BOX 110066, HIALEAN, FLORIDA 58012, PHONE: (805) 632-5132-61

0.050

0.050

0,050

0.050

me/Kg

me/Ke

mg/Kg

me/Ke

EPA Method 8020: Purgeable Aromatics HRS LAB LD, # E-86198

Client:	Amer	ican Housing Gr	oup	
Address:	65 N	W. 168th Street.	N. Mjami Beach, FL	33169
Project:		t Lakes		
Address:	Cypre	ss Creek Rd & T	umpike	
Matrix:	Soil.			
Sampling D	late:	02/06/96	Collected By:	Rahimi
Analysis Da		02/08/96	Analysis By:	F,A.
Report Dat		02/12/96	Sample ID #:	1098-641
Location:		Boring Holes	i4	

Compound.	BH #4	DL	Units
Benzene	BDL	0.050	mg/Kg
Chlorobenzene	BDL	0,050	mg/Kg
1,2-Dichlorobenzene	BDL	0.050	mg/Kg
1,3-Dichlorobenzene	BDI.	0.050	mg/Kg
1,4-Dichlorobenzene	BDL	0.050	mg/Kg
Ethylbenzene	BDL	0.050	mg/Kg
MTBE	BDL	0.050	mg/Kg
Toluene	BDL	0,050	mg/Kg
Total Xylene	BDL	0.050	mg/Kg

DL: Détection Limit

RDL: Below Detection Limit

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

Respectfully submitted,

Rarhena Abbasi

Chemist

3745 N.W. 50th STREET / MIAMI, FLORIDA 33142 P.O. BOX 110060, FILALEAH, FLORIDA 33010. PHONE: (305) 638-3882-83

Chemical Analysis Report HRS LAB LD. # E-86198

Client:	Ameri	can Housing Group		
Address:	65 N.	W. 168th Street., N. Mi	ami Beach, FL 331	69
Project:	Forest	Lakes		
Address	Cypres	a Creek Rd & Turapike		
Matrix:	Soil.			
Sampling I	late:	02/06/96	Collected By:	Rahimi
Analytis D		02/07/96 to 02/09/96	Analysis By:	F.A.
Report Dat		02/12/96	Sample ID #:	1098-641
Location:		Boring Holes #4		

Parameter.	Method	BH#4	DL	Units	Analysis Date
Amenic.	7062	BDL	0,005	mg/L	02/09/96
Barlum.	7080	BDL.	0.100	mg/L	02/08/96
Cadmium	7130	BDL	0.005	mg/L	02/07/95
Chromium.	7190	BDL	0,050	mg/L	02/07/96
Lead:	7420	BDL	0,050	mg/L	02/07/96
Mercury.	7471	BDL	0.001	mg/L	02/08/96
Selenium.	7742	BDL	0,002	mg/L	02/09/96
Silver.	7760	BDL	0.010	mg/L	02/07/96
Sodium	7770	BDL	0.020	mg/L	02/09/96
Potessium	7610	BDL	0.010	mg/L	02/08/96
Total Halides	9020	1.15	1.0	mg/Kg	02/09/96
Total Chloride	9252	1.25	0.1	mg/Kg	02/09/96
ТЯРН	9073	3,6	0.100	mg/Kg	02/08/96

Detection Limit DL.

Below Detection Limit BDL:

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved nisthods.

Respectfully submitted,

Pathena Abbasi

Chemist

3745 N.W. SQL STREET / MIANE, FLORIDA 33142 F.O. BOX 110066, HIALEAH, FLORIDA 33010. PHONE: (305) 638-5882-83

...Ll. 77ilosochone

EPA Method 8010: Purreable Halocardons HES LAB LD. # E-46198				
•				
	_	_		

Client.	American Housing Group		
Address	65 N. W. 168th Street., N.	Mismi Beach, FL 33169	<u> </u>
Project:	Forest Lakes		
Address	Cymess Creek Rd & Tumpi	ke	
Matrix:	Sati		
Sampling De	te: 02/06/96	Collected By:	Rahimi
Agalysis Date		Analysis By:	F.A.
Report Date:	02/12/96	Sample ID #:	1098-642 & 643
Locations	Boring Holes #5	& #6	

Compounds	BH#5 (1098-442)	BH #6 (1092-642)	DL	Units
Bromodickleromathana	BDL	BDL	0.050	mg/Kg
Bromeform '	BDL	BUL	0.050	mg/Kg
Bromomethane	HDL	BDL	0.050	mg/Kg
Carbon tetrachloride	BDI.	BDL	0.050	mg/Kg
Chlorobenzene	BDL	BDL	0.050	mg/Kg
Chloroethane	BDL	BDL	0.050	mg/Kg
Chloreform	BDL	BDL	0.050	mg/Kg
2-Chloroethylvinylether	BDL	BDL	0,050	mg/Kg
Chiloromathane	BDL	EDL	0.050	mg/Kg
Dikromochlommethané	BDL	BDL	0.050	mg/Kg
1,2-Dichlorobenzene	BDL	BDL	0.050	me/Kg
1,3-Dichlorobenzens	BDL	BDL	0,050	mg/Kg
1,4-Dichlorobenzone,	BDL	BDL	0.050	mg/Kg
Dichloredificomethers	BDL	BDL	0.050	me/Kg
: 1-Dichloroethane	BDL	BDL	0.050	mg/Kg
1:2-Dichlorocthane	BDL	BDL	0.050	mg/Kg
	BDL	EDL	0.050	mg/Kg
1.1-Dichlorosthene	BDL	BDL	0.050	mg/Kg
trans-i_2-Dichloroothens	BDL	BDL	0.050	mg/Kg
1.2-Dichleropropane	EDL	BDL	0.050	mg/Kg
cis-1,3-Dichleropropenc	BOL	BDL	0.050	mg/Kg
trans-1,3-Dickloropropens	HDL	ADL	0.050	me/Kg
Methylane chloride	BDL	BDL	0.050	me/Kg
1,1,2,2-Tetrachloroethana	BDL.	EDL	0.050	mg/Kg
Terrachlomethene	BOL	BDL	0.050	mg/Kg
1.1.1-Tricitloroethane	BDL	BDL	0.050	ma/Ka
1:1,2-Trichloroothane	BDL	BDL	0,050	mg/Kg
Trichlomethene	BDL	BDL	0.050	mg/Kg
Trichlossilvéromethana Vinvichloside	BDL	BDL	0.050	mg/Kg

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

Respectfully Submitted,

Chemist.

2746 N.W. SON STREET / MARCH PLORIDA 28144 P.O. BOX 110000, HEALBAR, PLORIDA 28010, PRICEE: (2007-681-5112-82

Chemical Analysis Report HRS LAB I.D. # E-86198

Client	Amer	can Housing Group		
Address:	65 N.	W. 168th Street., N. Mi	ami Beach, FL 331	69
Projecti	Fores	Lakes		
Address:	Cypre	sa Creek Rd & Turnpike		
Matrix:	Soil.			
Sampling D	late:	02/06/96	Collected By:	Rahimi
Analysis De		02/07/96 to 02/09/96	Analysis By:	F.A.
Report Dat		02/12/96	Sample ID #:	1098-642 & 643
Lucation:		Boring Holes #5 & #	<u> </u>	

Parameter.	Method	BH#5 (1098-642)	BH#6 (1098-543)	DL	Units	Analysis Date
Arsenic.	7062	BDL	BDL	0.005	mg/L	02/09/96
Barium.	7020	BDL	BDL	0.100	mg/L	02/08/96
Cadmium	7130	BDL	BDL	0.005	mg/L	02/07/95
Chromium.	7190	BDL	BDL	0.050	mg/L	02/07/96
Lead	7420	BDL	BDL	0.050	mg/L	02/07/96
Mercury.	7471	BDL	BDL	0.001	mg/L	02/08/96
Selenium.	7742	BDL	BDL	0.002	mg/L	02/09/96
Silver.	7760	BDL	BDL	0,010	mg/L	02/07/96
Sodium	7770	2.1	1.98	0.020	mg/L	02/09/96
Potassium	7610	1.1	0.89	0,010	mg/L	02/08/96
Total Halldes	9020	4.97	3,67	1,0	mg/Kg	02/09/96
Total Chloride	9252	3.95	4.25	0.1	mg/Kg	02/09/96
TRPH	9073	7.60	9.75	0.100	mg/Kg	02/08/96

Detection Limit DL:

Below Detection Limit RDL:

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

Respecifully submitted,

Chemist

1745 N.W. 50th STREET / MIAMI, FLORIDA 33142 P.O. BOX 110066, HIALTAK, FLORIDA 33010. PHONE: (305) 628-5882-83

All State Engineering and Testing Consultants, Inc. TESTING LABORATURES - ENGINEERIC MERCHING - ENVIRONMENTAL SERVICES

EPA Method 8020: Purgeable Aromatics HRS LAB LD. # E-86198

Client:	Amer	ican Housing Grou	10					
Address:	65 N.	N. W. 168th Street., N. Miami Beach, FL 33169						
Project:	Forest Lakes							
Address:	Cypre	Cypress Creek Rd & Turnpike						
Matrix:	Soil.							
Sampling I)ate:	02/06/96	Collected By:	Rahimi				
Analysis D		02/11/96	Analysis By:	F.A.				
Report Dat		02/12/96	Sample ID #:	1098-642 & 643				
Location:		Boring Holes #5	& #6					

Compound.	百H #5 (1098-642)	BH #6 (1098-643)	DL	Units
Benzene	BDL	BDL	0.050	mg/Kg
Chlorobenzene	BDL	BDL	0,050	mg/Kg
1,2-Dichlorobenzene	BDL	BDL	0.050	mg/Kg
1,3-Dichlorobenzene	BDL	BDL	0.050	mg/Kg
1.4-Dichlorobenzene	BDL	BDL	0.050	mg/Kg
Ethylbenzene	BDL	BDL	0.050	mg/Kg
MTBE	BDL	BDL	0.050	mg/Kg
Toluene	BDL	BDL	0,050	mg/Kg
Total Xylene	BDL	BDL	0,050	mg/Kg

Detection Limit DL:

BDL: Below Detection Limit

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

Respectfully submitted,

Earhana Abbasi

Chemist

3745 N.W. SOLL STREET / MIAMI, FLORIDA 33142 P.O. BOX 110066, HIALEAH, FLORIDA 39010. PHONE: (305) 638-5882-83

All State Engineering and Testing Consultants, Inc. TESTING LABORATORIES - PREDICTION SELVICES - CHELOSES - DRILLING - ENVIRONMENTAL BETWEEN

EPA Method 8020: Purgeable Aromatics HRS LAB LD. # B-86198

Client	Amer	can Housing Gr	oup	20160
Address:			N. Miami Beach, FL	33107
Project:	Forest	Lakes		
Address:	Cypre	s Creek Rd & T	urnoike	
Matrix:	Soil.		·····	
Sampling Da	te:	02/06/96	Collected By:	Rahimi
Analysis Date		02/11/96	Analysis By:	F.A.
Report Date: 02/12/96		02/12/96	Sample ID #:	1098-644
Location: Composit sample		nle of site.		

Compound.	Results.	DL	Units
Benzane	BDL	0.050	mg/Kg
Chlorobenzena	BDL	0.050	mg/Kg
1.2-Dichierobenzene	BDL	0.050	mg/Kg
1.3-Dichiorobenzene	BDL	0.050	mg/Kg
1.4-Dichlorobenzene	BDL	0.050	mg/Kg
Ethylbenzene	BDL	0,050	mg/Kg
MTBE	BDL	0.050	mg/Kg
Toluene	BDL	0.050	mg/Kg
Total Xylene	BDL	0.050	mg/Kg

Detection Limit

BDL: Below Detection Limit

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

Respectfully submitted,

Faihana Abbasi

Chemist.

3745 N.W. 50th STREET / MIAMI, FLORIDA 33142 P.O. BOX 110066, HIALEAH, FLORIDA 33010. PHONE: (305) 638-5882-83

All State Engineering and Testing Consultants, Inc. TESTING LABORATORIES - ENGINEERS - INSPECTION SERVICES - CHEMISTS - DELLING - ENVIRONMENTAL SERVICES

EPA Method 8010: Purpeable Halocarbons HES LABID. # 24198

٠.			
Client:	American Housing Group	4 7 20160	
Address	65 N. W. 168th Street., N. I	Vismi Beach, FL 33109	
Project:	Forest Lakes		
Address).	Cypress Crock Rd & Turnpil	2	
Matrix	'Soil,	Legallander Vers	Rahimi
Sempling Da	te: 02/06/96	Collected By:	F.A.
Assisted Date		Analysis By:	1098-644
Report Date:	02/12/96	Sample ID #:	7039-044
Location:	Composite sample	of stic	

	Results.	DL	Units
ompounds	BDL	0.050	mg/Kg
romodichloromethans	BOL	0.050	mg/Kg
romotetm	BDL	0.050	mg/Kg
iremomethane	BDL	0.050	mg/Kg
arbon tetrachloride	BDL	0,050	me/Kg
hiprobenzene	BDL	0.050	mg/Kg
hloroethene	BDL	0.050	mg/Kg
hioroform	BDI.	0.050	те/Ка
-Chloroethylvinylether	BDL	0.050	me/Kg
hioromethane	BDL	0,050	ms/Kg
) ibramachlistamathane	BDL	0.050	mg/Kg
3-Dichlorobenzens	BDL	0.050	mg/Kg
.3-Dicklombenzene		0.050	me/Ke
4-Dishlorobenzene	BDL	0.050	me/Kg
Chalden diffusion methans	BDL	0.050	mg/Kg
. Dichlorosthans	BDL	0.050	mg/Kg
1,2-Dighlorosthene	BDL	0.050	mg/Kg
1,1-Dichlorosthese	BDL	0,050	mg/Kg
rang-1,1-Dichloroethene	BDL	0.050	me/Kr
1.2-Dichloroproment	ADL .	0.050	mg/Kg
cis-1,3-Dichloropropens	BDL.	0.050	mg/Kg
transe 1,3-Dichloropropene	BDL		me/Kg
Methylene chloride	BD1.	0,050	me/Ke
1:1.2.2-Tetrechloroethans	BDL	0,050	me/Kg
Tatzachloroethene	BDL	0,050	mg/Kg
1.1.1-Trichloroethane	BDL	0.050	mg/Kg
1.1.2-Tricklorouthane	BDL	0,050	mg/Kg
Trichlososthens	HDL	0.050	
Trightogotheromethane	EDL	0.050	mg/Kg
Vinylchlorida	BDL Below Detection L	0.050	me/Kg

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

Respectfully Submitted.

Pichania Alth

Chemin.

1746 N.W. 500 STREET / MAME FLORIDA 11176 PA BOX 110066, HIALEAN, FLORIDA 11010, PRENDE (105) 618-5182-82

All State Engineering and Testing Consultants, Inc.

Chemical Analysis Report

Client:	Amer	can Housing Group		60
Address:	65 N.	W. 168th Street., N. Mi	ami Beach, FL 331	09
Project:	Forest	Lakes		
Address:	Cypre	s Creek Rd & Turnpike		
Matrix:	Soil.			Debler
Sampling I	Pate:	02/06/96	Collected By:	Rahimi
Analysis Date:		02/07/96 to 02/09/96	Anaiysis By:	F.A.
Report Date:		02/12/96	Sample ID #:	1098-644
Location:		Composite sample of si	<u>te</u>	

Parameter.	Method	B H #3	DL	Units	Analysis Date
Arzenic.	7062	BDL	0.005	mg/L	02/09/96
Barium.	7080	BDL	0.100	mg/L	02/08/96
Cadmium	7130	BDL	0,005	mg/L	02/07/95
Chromium.	7190	BDL	0.050	mg/L	02/07/96
Lead.	7420	BDL	0.050	mg/L	02/07/96
Mercury.	7471	BDL	0.001	mg/L	02/08/96
Selenium.	7742	BDL	0.002	mg/L	02/09/96
Silver.	7760	BDL	0.010	mg/L	02/07/96
Sodium	7770	BDL	0.020	mg/L	02/09/96
Potassium	7610	BDL	0.010	mg/L	02/08/96
Total Halides	9020	4.89	1.0	mg/Kg	02/09/96
Total Chloride	9252	5,21	0.1	mg/Kg	02/09/96
TRPH	9073	63.85	0.100	mg/Kg	02/08/96

Detection Limit DL:

Bolow Detection Limit BDL:

Analysis performed in accordance with E.P.A., A.S.T.M., Standard Methods, or other approved methods.

Respectfully submitted,

Farhana Abbasi

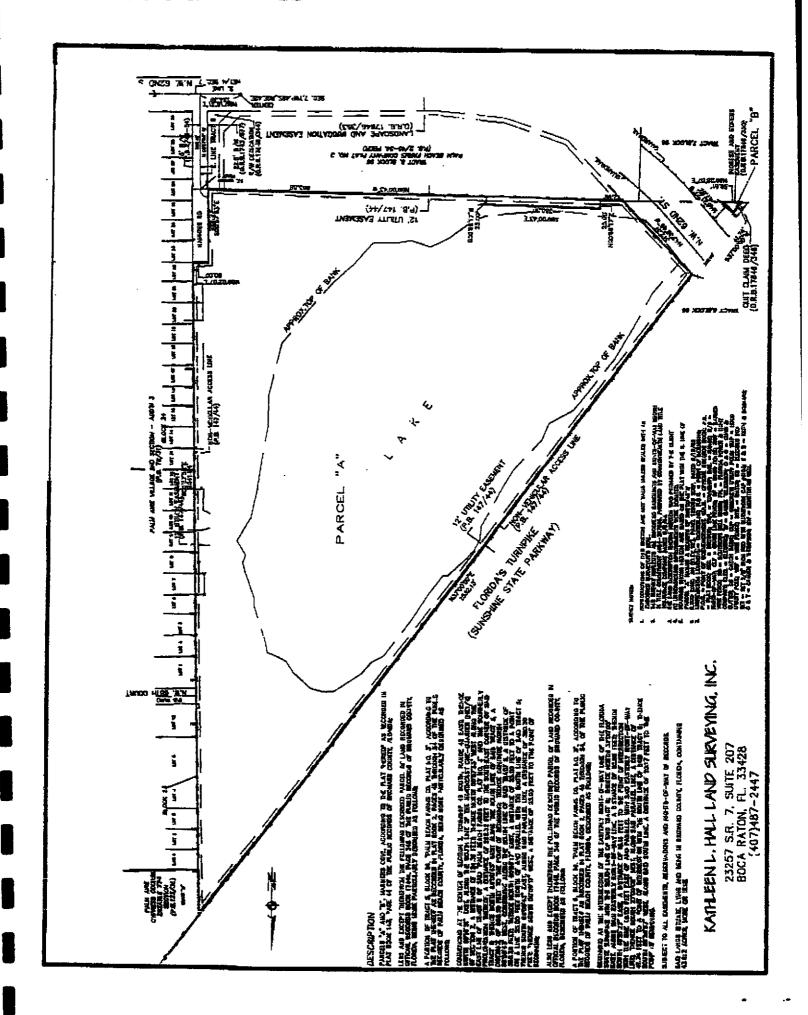
Chemist

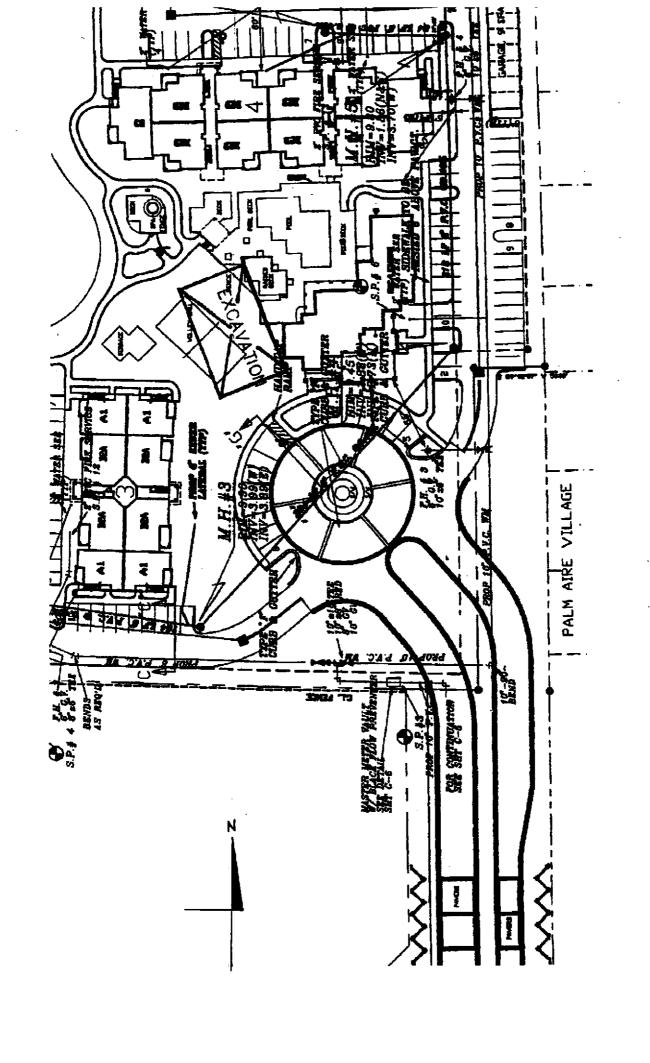
1745 N.W. SON STREET / MIAMI, FLORIDA 33142 P.O. HOX 110066, HIALEAH, FLORIDA 33010, PHONE: (303) 638-5882-43

APPENDIX C
SOIL DISPOSAL MANIFESTS

APPENDIX D

LAND SURVEY AND PROPOSED BUILDING ILLUSTRATION





Envirogant. Inc.

CONTAMINATION ASSESSMENT REPORT AND RECOMMENDATIONS FOR REMEDIAL ACTION

CLIFF BERRY, INCORPORATED SITE CLOSURE

MARCH 7, 1986

SUBMITTED TO:

B.C.E.Q.C.B. 500 S.W. 14TH COURT FT. LAUDERDALE, FLORIDA

AND

STATE OF FLORIDA DER SOUTHEAST FLORIDA DISTRICT P.O. BOX 3858 WEST PALM BEACH, FLORIDA SUBMITTED BY:

ENVIROPACT, INC. 4790 N.W. 157 STREET HIALEAH, FLORIDA

RECEIVED

EXPONENT COMING BYARD ENVIRONMENTAL QUALITY CONTROL BYARD

MAR 14 1986

BUDEAU OF OFERMIONS Emiregal. Inc.

INTRODUCTION AND BACKGROUND

Enviropact, Inc. has completed a contamination assessment project at Cliff Berry, Inc. in Port Everglades, Ft. Lauderdale, Florida. This study was undertaken as a step toward obtaining approval for closure at the site, and is a continuation of one conducted in April 1985.

The preliminary investigation consisted of taking samples from trenches dug on the western and southern edges of the property (labelled D.F., W.B. and S.B. in Figure 1). Soil and water samples from the trenches were found to contain phenols, PCB's, oil/grease, EPA test series 602 compounds, and barium, chromium, and lead.

Samples were collected using more conventional methods during the course of this investigation. Soil samples were collected in 12 soil borings taken using a penetration drilling, split spoon method (ASTM D1586) in accordance with "Soil Boring, Monitoring Well, and Associated Protocols" submitted to the B.C.E.Q.C.B. with the proposal for this study. Water samples were collected from six monitoring wells installed and developed according to B.C.E.Q.C.B. specifications. Wells were constructed of 2 feet of riser casing and 17 feet of well screen, and secured with a locking steel casing. All spoons, rods, and augers were steam-cleaned between holes. See Figure 1 for the location of soil borings and monitoring wells.

RESULTS

SOIL SAMPLES

Splits from the surface (0 to 1 foot), water table/soil interface (4 to 5 feet, except 6 to 7 feet in soil borings 1, 7, and 12), and 14 to 15 feet were analyzed for phenols, oil/grease (soxhlet), EPA test series 602 compounds, PCB scan, and metals barium, chromium, and lead. Results are attached as Appendix I.

Most of the soil contamination at Cliff Berry, Inc. is due to metals and oil/grease. No phenols were found in the soil. Two samples (soil boring 3, 0 to 1 foot, and seit bering 6, 14 to 15 feet) contained trace amounts of PCB's (2.0 and 1.5 ppm

respectively). Various 602 compounds such as xylene, benzene, 1,3- and 1_d-dishbaratement are present in all borings except 9 and 10 at low levels (mostly less than 32 ppm). The only sample with higher concentrations of volatile organic compounds is the water table/soil interface split from boring 7, where 50.2 ppm xylene and 284.0 ppm 1,4-dichlororbenzene were detected.

Oil and grease were found in every soil sample. Generally, the greatest concentrations (15,369 ppm to 181 ppm) are at the surface, and decrease with depth (1544 ppm to 26 ppm at 14 to 15 feet). Barium is the metal found in greatest concentrations at this site. Barium is present in all samples, in concentrations ranging from 23 ppm in the 14 to 15 feet split of boring 9 to 1190 ppm in boring 1 at 14 to 15 feet. Generally, barium concentration increases with depth.

Lead levels, on the other hand, generally decrease with depth. Lead is found in almost every soil sample, in concentrations ranging from 1.1 ppm to 238 ppm. Two samples, soil boring 2 and 3, 0-1 foot, had lead in sufficiently high concentrations to run extraction procedure leachable tests. Results of the tests showed cally small amounts of leachable lead (see Appendix 1). Chromium is also present in almost every sample; however, this metal shows no trend in concentration with depth.

2. GROUNDWATER SAMPLES

Europaet Inc.

Of the parameters analyzed, phenols are the only compounds found in the monitoring wells at Cliff Berry, Inc. in concentrations which exceed groundwater standards. Total phenols ranged in concentration from 0.03 mg/l to 0.11 mg/l; this range is above the B.C.E.Q.C.B. standard for phenols of 0.001 mg/l. Other contaminants found below groundwater standards are: zinc (0.09 mg/l to 0.18 mg/l) in all six wells; nickel (0.17 mg/l) in well 4; and oil/grease in concentrations of 1.0 mg/l in four of the wells. Other metals and the 602 compounds were not found in any of the groundwater samples.

Charged & Sic.

DISCUSSION AND RECOMMENDATIONS

Comparison of soil and groundwater data and site-specific geological conditions aides in the interpretation of the data gathered at Cliff Berry, Inc. The clay layer present throughout the site at Cliff Berry, Inc. seems to prevent the majority of the contamination found in the soil from reaching the groundwater. Figures 2 and 3 are geological cross sections (see Figure 1 for index map) north-south and east-west across the site. The clay is almost eleven (11) feet thick in the north and decreases to five (5) feet in thickness at the southern end of the property. This low permeability clay layer appears to cover the entire area; evidence of the unit is found in every boring (see geologic logs attached as Appendix II) except 6, and was found in most of the trenches as well.

A comparison of the data collected from the trenches and data collected by more conventional (and presumably more accurate) methods from the same area is shown in Table 1. Data collected from the same area on the western side of the site, trench WB4 and boring 5/well 2, are used for comparison.

Overall, data from soil collected using a split spoon and soil from the trench correspond fairly well. Soil collected at the soil/water table interface in the trench contains less lead and oil/grease but greater concentrations of PCB's and phenols than the corresponding sample taken using a split spoon.

Water samples collected by the different methods show a greater discrepancy. Metals and 602 compounds are present in the water collected in the trench, whereas these constituents are absent (except zinc) in water collected from the monitoring well. Oil/grease and phenols are also found in lower concentrations in groundwater from the monitoring well than in standing water in the trench.

We believe that the second set of soil and groundwater data more accurately reflect contamination at Cliff Berry, Inc. The crude and imprecise methods of sample collection in the trenches lead to unrepresentative samples and more possibilities for cross-contamination.

Envirgnet, Inc.

TABLE 1

SOIL WB4A	(Trench) 4-5	TBS (B.	ردرون		
soil/w	ratertable interface	0 - 1	4 - 5	14 - 15	EPTOXIC 1000/3
Barium	210 ppm	253 ppm	646 ppm	902 ppm	MCL 100 Mm
Chromium (total)	1.9	6.8	8.6	7.2	MCL 5 PPM
Lead	< 1.0	36	9.9	2.3	MCL 5 IPM
PCB's	3.2	< 1	< 1	< 1	
Benzene	< 1.0	21.2	< 1	17.8	
Oil & Grease	205	5697	1419	51	
Phenols	3.1	< 1	< 1	< 1	

GROUNDWATER	5 B4	
	WB4	<u>W-2</u>
	standing water in trench	monitoring well
Arsenic	0.01 mg/l	< 0.005 mg/l
Barium	1.58	
Chromium	0.02	< 0.005
Lead	0.02	< 0.005
Zine	-	0.12
Xylene	6.4 µg/l	$< 1 \mu g/1$
1,3-dichlorobenzen	e 658 µg/l	$< 1 \mu g/1$
Benzene	19.4 µg/l	< 1 µg/l
Oil & Grease	5 mg/l	1.0 mg/l
Phenols (total)	0.09	0.04

Enviry and Inc.

Based on the results of the two rounds of sampling at Cliff Berry, Inc., Enviropact, Inc. recommends the following remedial action plan for the site:

- 1. Monitor groundwater quality in the six (6) new wells on a quarterly basis for one year, and semi-annually for the next two years. Samples will be analyzed for phenols, oil/grease, PCB scan, and barium, chromium, and lead. The clay layer seems to effectively contain most contamination, but monitoring groundwater periodically for the next few years for contaminants known to be in the soil will confirm our hypothesis.
- Monitor water in the unsaturated zone along the southern and southeastern edges of the site. This remedial action is necessary to insure that contaminants are not leaching into the lake to the south and the borrow canals to the east of the site. This will be done by analyzing samples taken from 2 foot long suction lysimeters installed in locations shown in Figure 4. The depth to the top of the clay layer as seen in trenches and soil borings ranges from 2 feet (S.B. 3) to 5 feet (T.B. 1) below land surface. Lysimeters will be sampled at the same time as the monitoring wells and for the same parameters.
- 3. Areas found to contain elevated (greater than 10,000 ppm) levels of oil/grease in the soil will be excavated to the depth of the water table. High concentrations of oil/grease are found along the eastern edge of the site (T.B. 3, T.B. 12, T.B. 8). Soil excavated will be spread out in the scutheastern corner of the site and treated with 8-8-8 fertilizer to reduce levels of oil and grease (approximately 60 to 100 pounds of fertilizer per acre of soil). Soil moisture must be maintained at 20 to 25%; this will be accomplished by attaching a moisture meter to a sprinkler system. To ensure that all soil is exposed to the bacterial action of the fertilizer, the soil will be tilled once or twice a week.
- 4. Drainfields 1 and 2 on the northeastern perimeter of the site will also be excavated. These drainfields were found to contain PCB's in both the soil and water. We need to define the extent of PCB contamination (both in terms of concentration and areal extent) more accurately; this will be done by a dig and test method. We are unable to specify the fate of soil excavated from these drainfields until further analyses are done on the soil. Groundwater in the excavated drainfields will be filtered to reduce levels of PCB contamination.

DIRECT EXAMINATION OF RON LANE:

- 1. Your name is Ron Lane and you are presently employed by the Department of Environmental Regulation in the West Palm Beach Office. Is that right Mr. Lane?
- 2. How long have you been so employed by the Department?
- Please describe for the Hearing Officer your work experience beginning chronologically with the first job you held after the completion of your education up to the present time.

ANSWER:

- 1981-1983 water quality lab FAU--Geo-chemical Lab Researcher. Duties: analysing soils and crude oil core samples and sediments
- U.S. Forestry Service, Field Hydrologist, Alaska. Duties: Studying affects of discontinuous perma frost regions in a watershed area, sample collection.
- C. Same lab Geo-chemical laboratory research 6 months.
- September 1984, 1-1/2 years with Palm Beach County Health Department, position Geologist. Duties: Hydrology local DER program for enforcement of FAC 17-61 stationary tank rule, also groundwater contamination problems monitoring wells, appointed member of Technical Advisory Committee for well field protection ordinance of Palm Beach County.
- DER Environmental Specialist III, Groundwater Section. Duties: Evaluate hydrogeological investigations permitting, RAPS - CARS.
- Mr. Lane please tell the Hearing Officer your educational background.

ANSWER:

- 1) Associate Degree Biotechnology
- 2) Marine Biology Sampling hardware, State University in
- 3) BS Biology FAU, minor in chemistry (water chemistry)
- 4) BS Geology FAU, hydrogeology class, other emphasis
- 5. Had any additional training or education?
- 6. Mr. Lane have you had any involvement in the Cliff Berry case?
- 7. How did you become involved in that case?



8. As part of your duties with the Department and your previous work experience, have you had occasion to become familiar with any Florida Administrative Code Rules or Florida 17-3.021(17) Not factor with Nulsance Species (Pollution)
17-3.402 Mississing 17-34, Florida Statutes Park Park Chapter 376, Florida Statutes Chapter 403, Florida Statutes 9. Mr. Lane you stated that you have evaluated, investigated or otherwise dealt with groundwater contamination cases. How many do you estimate you have dealt with? 10. And in how many of those cases were groundwater flow directions indicated? 11. How many contamination assessment reports have you dealt with? 12. Have you seen a contamination assessment report relating to the Cliff Berry Property? 13. How did you get that? 14. Mr. Lane, I am now handing you Respondents Exhibit No. _ for identification; can you identify this document? ANSWER: Document: Contamination Assessment Report

15. Mr. Lane were you asked to review this CAR?

Ron, I want you to go over the Contamination Assessment Report in detail, pointing out problems with it and detailing the contaminants which have been found, the fact that it doesn't submit groundwater flow directions, and detailing all the problems you had with it.

- 16. Did you make those comments in a written report?
- 17. I am now handing you Respondents Exhibit No. ____ for identification, is that the report which you drafted?
- 18. Does it contain all of your concerns?
- 19. What additional concerns, if any do you have?
- 20. Mr. Lane I am now handing you Exhibit No. ____. Do you recognize this document?

ANSWER: Dredge and fill permit application

- 21. Does this document contain any groundwater flow directions?
- Have the Berry's or their agents ever to your knowledge, submitted such information.
- 23. Mr. Lane are you familiar with Florida Administrative Code Section 17-3.401(3)?

ANSWER: a violation of any groundwater criterion contained in this part constitutes pollution.

24. Are you familiar with 17-3.402?

ANSWER: FREE-FROMS

25. Do you know what classification the groundwater is at the Cliff Berry site?

26. What water quality standards are applicable to Class G-II?

ANSWER: 17-3.404(1)(a), 17-22.104 - Drinking Water

- 27. Mr. Lane do you know what the maximum contaminant level is for arsenic?
- 28. Mr. Lane do you know what the maximum contaminant level is for Barium?
- 29. Mr. Lane do you know what the maximum contaminant level is for Lead?
- 30. Are you aware of any Rules relating to polychlorinated byphenols?
- 31. Are there any water quality standards related to polychlorinated byphenols?
- 32. Mr. Lane are you familiar with Section 376.302, Florida Statutes?

ANSWER: the discharge of pollutants into or upon any waters of the state or lands, which discharge violates any Departmental "standard" as defined in s.403.803(13) is prohibited.

33. Mr. Lane are you familiar with the definition of pollution as it is found in Florida Administrative Code Section 17-3.021?

34. In your opinion would the presence of any of the contaminants disclosed by the Contamination Assessment Report or the departments own testing in the waters of the state be potentially harmful or injurious to human health or welfare, animal or plant life, or property, including outdoor recreation?
35. Mr. Lane you have listened to all of the testimony so far in this case and you have seen the proposals which the Berry's say have been sufficient. In your opinion have the Berry's provided the Department with reasonable assurance that water quality standards will not be violated by their project as that term is used in Section 403.918(1), Florida Statutes?

36. What information would they need to provide you with to so satisfy the statute?



BROWARD COUNTY ENVIRONMENTAL QUALITY CONTROL BOARD

500 S.W. 14th Court Fort Lauderdale, Florida 33315 (305) 765-5881

March 19, 1986

Mr. Cliff Berry Cliff Berry, Inc. PO Box 13079 Port Everglades Ft. Lauderdale, FL 33316 APR 3 1986

BUREAU OF OPERATIONS

Subject:

Submittal of Contaminant Assessment Report (CAR) and Recommendations for Remedial Actions, at 1000 SE 28 Street facility, Port Everglades, Florida

Dear Mr. Berry:

On 2/7/86, BCEQCB received the above submittal titled "Report for Continued site Investigation and Recommendations for Remedial Action", dated 1/31/86, prepared by Enviropact, Inc. Copies of the final submittal have been distributed to FDER and Amoco Oil for review and comment.

Staff feels that scheduling a cooperative final review meeting will expedite the comment and response period necessary for regulatory review of the subject submittal. A tentative date of 4/16/86 at 2 PM at the office of BCEQCB has been scheduled. Please contact our staff hydrogeologist, Mr. T. A. Lawrence, if further details are necessary.

Sincerely,

VICTOR N. HOWARD, P.E.

POLLUTION CONTROL OFFICER

cc: A. Pavda (DER/WPB

T. Gogle (Amoco)

J. Tostanoski (Enviropact)

T. Zinn (attorney C. Berry)

To Dean (DER/Tell.)

TAL/VNH/sc T3/ltrClfBry9



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PROPOSAL FOR CONTINUED SITE INVESTIGATION

CLIFF BERRY, INC. SITE CLOSURE

AUGUST 8, 1985

SUBMITTED TO:

B.C.E.Q.C.B. 500 S.W 14 COURT FT. LAUDERDALE, FLORIDA

AND

STATE OF FLORIDA D.E.R. SOUTHEAST FLORIDA DISTRICT P.O. BOX 3858 WEST PALM BEACH, FLORIDA SUBMITTED BY:

ENVIROPACT, INC. 4790 N.W. 157 STREET HIALEAH, FLORIDA

RECEIVED

MUG 19 1985

Environment County
CHATROLEMENTAL QUALITY CONTROL BRIATO

INTRODUCTION AND BACKGROUND

This proposal addresses the continued site investigation at Cliff Berry, Inc., located in Port Everglades, Ft. Lauderdale, Florida. In an effort to facilitate closure at the site, a preliminary soil and groundwater investigation was conducted in April 1985. The preliminary investigation consisted of taking samples from trenches dug on the western and southern-edges of the property (see Figure 1). Samples were analyzed for metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), EPA test methods 601 and 602 for volatile organic compounds (VOC's), oil and grease, phenols, PCD's, and pH.

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Based on the results of this preliminary investigation, the B.C.E.Q.C.B. and the D.E.R. have requested further investigation of the site. Pursuant to the requests for further site investigation, the following plan of action has been developed for submittal to the B.C.E.Q.C.B. and the D.E.R.

RECOMMENDATIONS

1. SOIL SAMPLING

We propose to take ten 15 foot soil borings at Cliff Berry's Port Everglades location. spaced so that we get a representative sampling of the site. The one area excluded is the nursery on the eastern side of the property. According to conversations with the client, this area has been used solely to raise plants since he has occupied the property. See Figure 1 for the proposed soil boring locations. Soil borings will be taken in accordance with ASTM D 1586 procedure using a State of Florida certified driller. See "Soil Boring, Monitoring Well, and Associated Protocols" in Appendix 1 for details of drilling, sampling, and decontamination procedures. Borings will be geologically logged and sampled at the surface (0-1 ft.), the water table, the base of the boring (14-15 ft.) and in other zones as determined by Enviropact personnel. Soil samples will be analyzed for extraction procedure (E.P.) toxic barium, chromium, and lead, and phenois, PCB's, oil and grease, and E.P.A. test (method 602) for volatile organic compounds such as benzene, xylene, toluene, dichlorobenzene, and ethyl benzene. High concentrations of these parameters were found in water and/or soil samples taken in April 1985, and have been specified by the B.C.E.Q.C.B. and the D.E.R. in a letter of 31 May 1985.

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Ènvirgpact, Inc.

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Based on the results of this preliminary investigation, the B.C.E.Q.C.B. and the D.E.R. have requested further investigation of the site. Pursuant to the requests for further site investigation, the following plan of action has been developed for submittal to the B.C.E.Q.C.B. and the D.E.R.

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other confus

2. MONITORING WELL INSTALLATION AND GROUNDWATER SAMPLING

The proposed groundwater monitoring program places wells evenly down the eastern and western edges of the site (see Figure 1). A well will also be placed in the area where underground tanks were excavated. Wells will be installed according to the B.C.E.Q.C.B. specifications, and will be 17 feet deep, with 10 feet of screen, 5 feet of casing above the screen, two feet of tailpipe below the screen, and secured with a locking steel casing or meter box. A total of six wells will be installed in addition to the existing monitoring well which is located in the northwestern corner. If the water table proves to be higher than six feet below land surface, the wells will be analyzed from the surface to 15 feet. Groundwater samples from all six wells will be analyzed for the same parameters as the soil: barium; chromium, lead, phenols, PCB's, oil and grease, and the 602 VOC's. Again, drilling, decontamination and sampling procedures to be followed are described in Appendix 1.

3. QUALITY ASSURANCE AND SAFETY PROCEDURES

Field techniques for soil and groundwater sample acquisition and preservation are detailed in "Soil Boring, Monitoring Well, and Associated Protocols" in Appendix 1. This section details procedures used in the field up to the point where samples are delivered to the laboratory. Analytical procedures are as follows:

- (a) Metals analyses will be conducted as described in "Methods for Testing Water and Wastewater", U.S.E.P.A. 600-4-79-020, March 1983. Direct aspiration will be used.
 - The extraction procedure is described in "Extraction Procedure (EP) Toxicity Test Method and Structural Integrity Test", Method 1310 SW-846, from "Test Methods for Evaluating Solid Waste", U.S.E.P.A., Second Edition, July 1982.
- (b) The VOC analysis will be conducted as described in "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater", EPA-600/4-82057, July 1982.

- (c) PCB analyses will be according to U.S.E.P.A. Test Method Organochloride Pesticides and PCB's, Method 608, in EPA 600/4-82-057.
- (d) Analyses for oil and grease will be according to Standard Methods 1985 #503C. Soxhlet extraction procedures will be used on soil samples.
- (e) Analyses for phenols will be conducted as described in "Methods for Testing Water and Wastewater", U.S.E.P.A. 600/4-79-020, March 1983.

Internal laboratory quality control procedures used are those described in "Handbook for Laboratory Quality Control in Water and Wastewater Laboratories", U.S.E.P.A. 600/4-79-019.

Safety procedures used by Enviropact field personnel are detailed in Enviropact's Safety Procedures Manual. An organic vapor analyzer (OVA) will be on site during all phases of drilling and sampling. We anticipate using a Level 4 type of safety gear: air purifying respirator with chemical cartridge available on beltpack at all times, TYVEK-SARAN or polylaminated coveralls, safety boots, gloves, hard hats, goggles, and personal first aid kit.

4. INVESTIGATION OF GROUNDWATER RECLASSIFICATION

In conjunction with the legal effort to reclassify groundwater in Port Everglades and/or at the Cliff Berry, Inc. site, fire wells around Cliff Berry's site will be sampled to determine ambient water quality. This effort will focus on classification of groundwater to class G-III or G-IV based on the concentration of total dissolved solids and/or on obtaining an exempted aquifer status (F.A.C. 17-28.13(3)) or non-drinking water status.

Water will be sampled from fire wells which penetrate approximately 100 feet into the aquifer and will be analyzed for total dissolved solids (TDS), chlorides, and the 602 E.P.A. test series parameters. We have been unable thus far to obtain locations of all the fire wells around the Port and their well construction details; however we have been advised by the client that two wells are located close to the site. Consequently, for the purpose of this proposal, we plan to sample and analyze groundwater from only two fire wells.

TIME TABLE

The investigation outlined in this report will commence within thirty (30) days of approval of the Broward County Environmental Quality Control Board (BCEQCB), and the Florida Department of Environmental Regulation (DER). Sampling will be completed within seventy (70) days of Notice to Proceed, and analyses of samples from soil borings and monitoring wells will be completed within an additional forty-five (45) days. A report on the results of the initial analyses will be submitted within 150 days of agency approvals for the proposed activities.

COST ESTIMATE - CONTINUED SITE INVESTIGATION - CLIFF BERRY, INC.

I.	Soil I	Borings:		
	a.	Ten 15 ft. deep borings, @ \$12.50/ft.	\$	1,875.00
	b.	Driller down time for decontamination,		
		est. 0.5 hrs. per boring @ \$60.00/hr.	\$	300.00
	c.	Enviropact geologist labor:		
		1. geologic logging, sample acquisition/		
		preservation, sampler decontamination,		
		est. 12 hrs. @ \$75.00/hr.	\$	900.00
		2. field mobilization/demobilization, est.		
		2 hrs. per day @ \$75.00/hr.	\$	300.00
	d.	Enviropact field technician labor:		
		1. sampler steam-cleaning and decon-		
		tamination, est. 12 hrs. @ \$45.00/hr.	\$	540.00
п.	Monit	toring Well Installation:		
	a.	Six (6) 17 ft. monitoring wells @ \$500.00*		
		each, installed according to BCEQCB well		
		specifications, includes down time for		
		decontamination.	\$	3,000.00
	b.	Enviropact geologist labor:		
		1. geologic logging, decontamination of		
		well casing, well installation supervision.		·
		Est. 16 hrs. @ \$75.00/hr.	\$	1,200.00
		2. field mobilization/demobilization.		
		Est. 1 hr. per day @ \$75.00/hr.	. \$	150.00
		• •		



III. Sample Analysis: Soil samples -Est. 30 soil samples analyzed for phenols, PCB scan, oil & grease (Soxhlet), 602 VOC's., and E.P. toxic Ba, Cr, Pb @ \$380.00 each ** \$ 11,400.00 b. Groundwater samples for Ba, Cr, Pb, phenols, PCB scan, oil and grease, 602's Six samples @ \$320.00** each. \$ 1,920.00 Fire wells - water samples c. samples for 602's, TDS and chlorides. Est. 2 samples @ \$92.00** each. 184.00 This price provided to client at cost. ** All prices for analyses are at a 20% discount from book price. IV. Safety Gear Level 4 safety equipment, 4 men @ \$65.00/day each. 520.00 ٧. Consulting Services: Report writing, consultations with BCEQCB. Est. 40 hrs. @ \$90.00/hr. 3,600.00 Est. 8 hrs. @ \$125.00/hr. 1,000.00 VI. Drafting Services 20 hrs. @ \$37.50/hr. 750.00

TOTAL ESTIMATED COST \$ 27,639.00

^{**} If unforseen problems arise during the course of the project which require additional time and/or materials, charges will be adjusted accordingly.**



APPENDIX 1

SOIL BORING, MONITORING WELL AND ASSOCIATED PROTOCOLS

I. FIELD PREPARATION

- A. Check maintenance of field equipment (pumps, meters, drill rig) to be used in the field; calibrate instruments as necessary.
- B. Labels for sample containers and chain-of-custody records.
 - 1. All sample containers should be pre-labeled to save time in the field and to insure an adequate supply.
 - 2. All appropriate information must be filled-in (see example):
 - a. date, time, person who collected sample,
 - b. date, time, person who received sample,
 - c. client name, address, phone number,
 - d. sample designation,
 - e. preservative and sample description,
 - f. log number assigned; these are recorded in the office each day and the analysis work orders turned in to the appropriate data processing employee,
 - g. fill-in label using black, waterproof marker.
- C. Chain of Custody records.

In special cases, field personnel will be required to follow chain of custody procedures.

- An entry must be on the form for each sample.
- 2. Samples must not leave the custody of the field investigator until relinquished to another party after the appropriate signatures, dates, and times have been recorded.
- 3. Transfer of samples will be achieved by:
 - a. field personnel personally relinquish possession of samples after obtaining the appropriate signatures, dates and times,
 - b. if using a common carrier, samples must be secured in such a way that containers cannot be opened in transit. Also, carrier used and date of delivery should be noted on chain of custody form.
- D. Sampling plan of action.

If possible, when sampling both soil and water, plan order of sampling so that the areas of least contamination are sampled first and the areas of greatest contamination are sampled last.

II. DRILLING PROCEDURES FOR SOIL BORINGS SAMPLES

A. EQUIPMENT AND USE (CONFORMS TO ASTM D 1586 PROCEDURE)

- 1. Use penetration drilling equipment with pile driver type hammer.
- 2. Use a standard 24" long ASTM split spoon or split barrel coring device.
- 3. Do not use air or water during drilling operation.
- 4. Use a sand catcher when soft, porous material or sand is encountered.

B. DRILLING OPERATION

It is extremely important to maintain in situ soil conditions throughout the drilling operation.

Although caving of materials is inevitable during the soil boring operation, the following method can be employed to keep it to a minimum.

- Use more than one split spoon, keeping one clean and ready for use at all times.
- 2. Do NOT remove the contaminated split spoon from the hole until a decontaminated split spoon is ready for use.
- 3. Replace the contaminated split spoon with a clean split spoon immediately, reducing time between runs, thereby minimizing caving.

III.SOIL SAMPLE COLLECTION

Since analyses may differ from one project to the next, sampling procedures should be tailored to meet the analytical specifications of each project.

A. GENERAL SAMPLING PROCEDURE

- 1. Take samples from the split spoon at one foot intervals or at the intervals called for in the project description.
- 2. Open the device. Visually inspect the sample to determine caved portions and discard them.
- Divide the remaining section of the core in half; each half represents one (1) foot of drill penetration.
- Only analyze the bottom half of each core. This will minimize cross contamination from down hole caving.

5. Bag sample in a two mil Ziplock heavy duty plastic bag; squeeze out air, seal bag, or use mason jar with aluminum foil liner depending on parameter being sampled.

6. Transport and store in an individually labelled box or

container.

B. VOLATILE ORGANIC COMPOUNDS (VOC) SAMPLING PROCEDURE

1. Clean the outside of the split spoon coring device prior to opening.

2. Disassemble split spoon and cut the core longitudinally, bottom to top, with a clean spatula.

3. Locate and discard the caved sections.

4. Subdivide the boring into one (1) foot sections.

5. Scoop out sample from the center of the core with a curved scoopula taking care that the sample has never contacted the side of the split spoon and has not been touched by hand.

6. Insert soil into a THM vial with a Teflon septum and cap

tightly.

7. Using the spatula, place the remaining portion of the sample in an appropriate container.

8. Label the THM vial, place it on ice, and transport to the laboratory as soon as possible.

C. ALTERNATE PROCEDURE

Sometimes it is impossible to cut the core in half and take a sample from the center (e.g. rocky soil character). In a case such as this, the following method may be employed.

1. Locate and discard caved portion.

2. Sub-divide the boring into one (1) foot sections.

3. Take sample by filling a pint glass Mason jar as full as possible, thus eliminating all excess air and place on ice. Specially cleaned jars must be used (same cleaning/baking as VOC vials) and the caps must be screwed down over an aluminum foil seal.

IV. GEOLOGIC LOGS AND NOTES

The geologist and driller must keep detailed notes from which reports and geologic logs can be constructed.

These notes should include all information required to fully complete the Florida DER Water Well Contractor's Well Completion Report (if applicable). If not required, the minimum should include:

- 1. Date, start and finish time for each boring
- 2. Offset distance and directon or location of each boring
- 3. Footages of high porosity areas, caving, over-drilling, zones of poor recovery.
- 4. Footages of lost or no-sample.
- Geologic descriptions and classifications these may be completed in either the field or office.
- 6. Special care must be taken to avoid cross contamination of samples logged in the office.
- 7. Record Depth to Water. DTW readings are recorded to the average of undisturbed ground surface.

V. DECONTAMINATION PROCEDURE

To prevent cross contamination the following four phase cleaning procedure must be adhered to strictly.

- PHASE 1 CLEANING OPERATION

 Clean the split spoon in a bucket of tap water using a large sponge or brush. The objective of this operation is to wash off all adhering soil and debris.
- PHASE 2 WASH OPERATION

 Wash the split spoon thoroughly in a tub of mild detergent and distilled water using a separate brush.
- PHASE 3 RINSE OPERATION
 Rinse the split spoon in a bucket of distilled water to remove detergent. Follow with a fresh rinse using a squeeze bottle or a cup of fresh distilled water.
- PHASE 4 DRY OPERATION

 Dry both sides of the split spoon using a paper towel soaked in pesticide grade methanol.

Care should be taken to clean the bit head, sand catcher and tail assembly of the split spoon device following the same Four Phase Cleaning Procedures with these exceptions:

- a two inch baby bottle brush should be used in the washing operation.
- 2) a squeeze bottle of pesticide grade methanol should be used for the dry operation instead of a pesticide grade methanol soaked towel.
- 3) special care should be taken to ensure that the sand catcher is properly decontaminated.

Brushes and/or sponges used in the cleaning and washing phases should not be interchanged. Cleaning, washing and rinse water should be changed frequently to ensure adequacy of decontamination. Care should be taken to keep hands clean when reassembling the split spoon.

B. DRILLING EQUIPMENT DECONTAMINATION

It is customary to drill from the least to most highly contaminated areas, thus each day's drilling should be layed out with this in mind. Wash and rinse the drilling rods inside and out between each boring. Wash the drilling rig as necessary to prevent cross-contamination.

C. SPECIAL DECONTAMINATION PROCEDURE FOR SAMPLING IN OIL AND GREASE CONTAMINATED AREAS

The split spoon should be hot-water pressure cleaned or steam cleaned before the Four Phase Decontamination Operation. The drill rod and drilling rig should be similarly cleaned between borings to prevent cross-contamination.

VI. QUALITY CONTROL SAMPLE PROCEDURE

Quality control samples should be taken regularly; a minimum of one per day or one per project. It is generally recommended that at least one quality control sample be taken per soil boring. Clean disposable surgical gloves should be worn when taking samples. The sample should be taken randomly, without advance notice, to insure consistency in cleaning.

Quality control samples should be analyzed for the same parameters as those called for in the project when needed.

A. RINSE SAMPLING PROCEDURE

1. Rinse the inside of the assembled decontaminated split spoon with distilled water and collect the sample in a Mason jar as it drains from the opposite end of the coring device.

2. Use the same preservation and transportation procedure as employed for water samples for identical parameters.

B. WIPE SAMPLING PROCEDURE

1. Wipe the inside of the split spoon with a fresh sterilized cotton ball moistened with deionized, distilled water and store in an air tight container.

VII. MONITORING WELL DRILLING AND INSTALLATION

A. DRILLING OPERATION

1. Use hollow stem augers to desired depth.

2. The bore hole shall be at least six (6) inches in diameter. All temporary casings must be removed.

B. INSTALLATION PROCEDURE

1. The monitoring well(s) shall be two (2) inches in diameter with coupled or threaded joints. The monitoring well casing shall be constructed of stainless steel, PVC (schedule 40 minimum) or black iron or equivalent. The materials may be specified as a license condition.

2. The monitoring well screen shall be two (2) inch dia-

meter, with slot size 0.010 inches.

3. A tail pipe two (2) feet in length, connected at the bottom of the well screen to accumulate sediment shall be a two (2) inch diameter casing with coupled or threaded joints. The bottom of the tail pipe shall be sealed.

4. Solvents or P.V.C. glue shall NOT be used. P.V.C. threaded/slip couplings may be secured using stainless

steel screws or rivets.

5. The monitoring well casing shall be installed sufficiently plumb and straight/vertical in the drilled hole.

- 6. Screen depths shall be based upon site specific hydrologic conditions. Generally, the top of the screen should be set one to two feet above the encountered water table.
- 7. A sand pack shall be used, the annular space between the drilled hole and the monitoring well screen shall be sand packed with clean washed quartz sand to a depth of approximately two (2) feet above the top of the well screen.
- 8. Clean washed sand shall be used as a seal above the sand pack material to avoid grout migration into the sand pack.
- 9. The remaining bore hole shall be filled with cement grout from the top of the fine sand seal to approximately one (1) foot below grade.
- 10. The well-heads shall be slightly elevated (1 inch) above grade to prevent run-off into the well head.
- 11. The top of the monitoring well shall be protected with a threaded slip P.V.C. removable cap containing a vent hole.
- 12. When necessary, monitoring well-heads may extend two
 (2) feet above grade. A locking protective steel casing
 and concrete pad shall be installed around the monitoring well.
- 13. A designated identification number shall be clearly visible on each completed monitoring well.

C. WELL COMPLETION AND DEVELOPMENT

- 1. All completed wells will be developed by surging or interrupted over-pumping, using a centrifugal gasoline powered pump, a peristaltic pump, or a teflon bailer in low permeability zones. A fully developed well should be producing water that is free of sand and drilling contaminants.
- 2. When necessary, completed monitoring wells will be surveyed at the top of the well casing (measuring point) with reference to the N.G.V.D.

VIII.GROUNDWATER SAMPLING

A. Purging monitoring wells

- 1. Determine well volume:
 - a. sound the well to determine the depth using a clean tape measure,

- b. determine the depth to water (DTW) using a tape measure and chalk,
- c. calculate the volume of water in the well casing (see attached groundwater sampling work sheet).

2. Pump well:

- a. 3 to 5 times the volume of the well casing should be evacuated, using a gasoline powered centrifugal pump, a peristaltic pump, a bladder pump, or a teflon bailer.
- b. during purging, temperature, conductivity, and pH will be measured after each volume of the easing is pumped.

B. Decontamination of sampling equipment

- Peristaltic pump; rinse tubing with pesticide-grade methanol and distilled water.
- 2. Bailer; wash in laboratory detergent using a bottle brush. Rinse with distilled water, then rinse and dry with pesticide-grade methanol.

 Sampling

C. Sampling

- 1. only a peristaltic or bladder pump, or teflon bailer should be used for sample collection. Tubing on pumps should be silicon or teflon. The pump and tubing should be flushed with sample water prior to filling sample containers. If not used for purging, bailers should be triple rinsed.
- No filtering device will be used during sample collection
- 3. Sample containers and preservatives used for each parameter are detailed in Table 1.

D. Quality Control/Quality Assurance

To insure the integrity of the cleaning process of sampling devices, field blanks will be taken regularly; a minimum of one per day per project. Quality control samples should be analyzed for the same parameters as those called for in the project when needed.

- 1. Perstaltic or bladder pump: water from a clean well will be run through the pump; the same preservation and transportation procedures as with other water samples will be used.
- Bailer: The bailer will be filled with water from a clean well; identical preservation and transportation procedures will be employed as with other water samples.



REFERENCES

- 1. Broward County Environmental Quality Control Board Minimum Requirements for Monitoring Wells.
- 2. Remedial Action at Waste Disposal Sites EPA-625/6-82-006.
- 3. Supplement A to Standard Operating Procedures and Quality Assurance Manual, Florida Department of Environmental Regulation, Tallahassee Solid Waste Section, Tallahassee Special Analytical Laboratory, Draft, June 15, 1981.

Énviropact, Inc.

EXAMPLE OF SAMPLE CONTAINER LABEL

LABORATORY SAMPLE			LOG	#	
COLLECTED	COLLECTED DATE: TIME:				
RECEIVED	RECEIVED DATE: TIME:				
CLIENT NAME: /CONTACT:			REO	REQ. BY:	
ADDRESS:			PHONE:		
DESIGNATION:				PRES.	
DESCRIPTION					
Enviropact, Inc. Environmental Consulting and Analysis			(305) 6	N.W. 157 ST. AH, FL. 33014 520-1700 132-9706	

Attachments for
Soil boring, monitoring
well and associated
protocols, didn't
get attached to the
written portion-sorry!

JMP

RECEIVED

AUG 27 1985

Broward County
ENVIRONMENTAL QUALITY CONTROL BOARD

CHAIN-OF-CUSTODY RECORD

Environmental Consulting and Analysis
4790 N.W. 157th Street / Hialeah, Florida 33014
Phone: (305) 620-1700

,					
Remarks	Person Re		umber	Item	Project Location
	Person Responsible for		Nurber	Sample	ocation
-	Sample		of Containers	Number & S	
	Date		irs	Size	
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№ 0000



GROUNDWATER SAMPLING WORK SHEET FOR 2 INCH DIAMETER WELLS

4790 N.W. 157 Street Hialeah, Florida 33014 Telephone: (305) 620-1700 Fla. Watts: (800) 432-9706

LIENT:							
WELL #:							
)ATE:	TIME:						
SAMPLER:	·						
DEPTH OF WELL:							
•					DEPTH	TO WATER	
WATER TABLE:				_			
VOLUME OF WATER = V _f							3
$v_{ft}^3 = (0.022 f)$	t ²) (ft		f	t) =		ft
v = (v - 3)	(7.48 gall	ons/ft)				
'gal ''ft'' V _{gal} = (_ ft ³) (7	.48 gal	lons/ft ³) =	storag	e volume	

VOLUME	CUMULATIVE VOLUME	T (°C)	COND	рН
1				
2				
3				
4				
5				
6				
7			S	

NOTES:	
	Tomas



Payameter No./nema	Container 1	Preservation 1.1	Meamum holding time
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Facal shaptococci	P. G		Do.
En la company Toronto	l	Cool 4°C	14 deys.
Active to the second se	P. G		Da.
Allebrity	PG	Cool, 4°C, H-SO, to pH < 2	28 days.
Ammoria Biochemical caygon Careerd	P. G.	Cool, 4°C	48 hours.
Bronade	P.G.	None required	28 days
Biochemical (mycen demand, carbonaceaus	P. G	Cook 4°C	48 hours.
Chemical congra demand	. P, G	Cook, 4°C, H ₆ SO, to pH < 2	26 days.
Chionde	P, G		Do. Analyza immadiately.
Chlorine, local residual	. P. G	Cool 4°C	46 hours.
I. Color	P. G.	Cool. 4°C, NeOH to pH>12, 0.6g escorbic acid 1	14 days.*
1-24. Cyanda, total and amenable to chlorination	P. G	Stone we said	20 days.
Fuorido	+ G	HAND, to pH < 2 M-SO, to pH < 2	6 months.
7. Nachana	PG	None receipt	. Analyze immediately
I. Hydrogen ion (ph)	P. G	Cool, 4°C, H _s SO, to pH < 2	. 26 deys.
', d. Mage at of an explor			
Cronum VI	P. G	Cool, 4°C	. 24 hours.
t there is	P. G	HPIOs to pH < 2	. 26 days. 6 months.
3-8, 10, 12, 13, 19, 20, 22, 26, 29, 30, 32-34, 36, 37, 45, 47, 51, 52, 56-	P. G		, to morrows.
60, 152, 63, 70-72, 74, 75. Metals, except chromium VI and mercury.		Cool 4°C	48 hours
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). Note the state of the state	P. G.		48 hours.
D. Nerte	G		. 26 days.
2. Organic carson	P. G	Cool, 4°C. HCl or H ₆ SO, to pH < 2	
Corporation	P. G		
Chypen, Descived Probe	G Bortle and top		. Analyze immediateh B hours.
7 Whiter			
Phonois	G only	Cool, 4°C. H ₂ SO ₄ to pH < 2	
Phosphorus (elemental)	- G		28 days.
). Phosphonus, total	P, G	God 4°C	7 days
). Resdue, total	P. G		48 hours
5. Rescue, Northerable (TSS)	PG		
Reschat Settleship	P.G.		48 hours.
7. Residue, volutile	P. G		
1. Since			_ 26 deys.
1. Specific conductorios			Do. Do.
5. Sufficient	P. G		7 days
5. S. H.D.		DH>9	
7. Suffice	P. G	1	Analyze immediately
Surfactarits	P.G		48 hours
Temperature	P, G	None required	Analyze.
Tubery	P. G		48 hours
CConsoir Tests *	+		1
3, 18-20, 22, 24-28, 34-37, 39-43, 45-47, 56, 66, 86, 88, 80, 82-85, 97.	G, Telffon-fined septum	Cool. 4°C, 0.006% Na ₂ S ₇ O ₃ 4	14 days.
Purpashie Helocarbons.		Cool. 4°C, 0.006% Na ₂ S ₂ O ₂ *, HC1 to pH2*	Do.
57, 90. Purgueble aromatic hydrocarbons		The state of the s	
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3, 30, 44, 49, 53, 67, 70, 71, 63, 60, 76. Prierical **	G, 1000-000 Cap		40 days after
	1		extraction.
36 Berodines 11	do		
1, 17, 49, 50-52. Philhelele autors 11		Cook 4°C	
	1		40 days after
			extraction. On
2-74. Nitrosamens 15 H	60	Coot, 4°C, store in dark, 0.008% Na ₂ S ₂ O ₂ *	
5-82, PCBs ¹¹ acrylonitrie		Coot, 4°C, 0.008% Ne ₂ S ₇ O ₂ 3 store in derk	. Do
1, 55, 65, 60 Nergerometrics and inopherone !!		C001, 4-C, 0.002 % Neg-5/C3 * 502 * 1. 002	Do.
2, 5, 8-12, 32, 33, 56, 59, 64, 68, 84, 86. Polynuclear aromatic		1	1
hydrocarbons ¹¹ 5 16, 21, 31, 75. Helcethers ¹¹	do	Cool, 4°C, 0.008% Na ₂ S ₂ O ₃ *	Do.
9. 35-37, 60-63, 91, Chlorinated hydrocarbons 11		Cool 4'C	' DO.
7. TCDD			Do.
ID—Pestodes Tests		•	
-70 Pesticides 11	do	Cool. 4°C. pH 5-9 14	Do.
IE—Radiological Tests:	P. G.	HNO ₂ to pH < 2	
-5. Alphe, beta and radium) TO THE WOOD IN .

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es of callection. For the aredisis of siddle, add 0.000%

Mr. T. Lawrence Broward County EQCB 500 S.W. 14th Court Ft. Lauderdale, FL 33315

Subject: Review of Contamination Assessment Report and Recommendations for Remedial Action, Cliff Berry, Incorporated Site Closure

Amoco Oil Company appreciates the opportunity to comment on the subject report. Following are my comments.

RESULTS

Soil Samples

- 1. Second paragraph states that no phenols were found in the soil samples, yet phenol concentrations were determined to be present in many of the soil samples collected during the initial investigation. In particular, 127 mg/kg were analyzed in the Drainfield No. 2 sample, 13.6 mg/kg were analyzed in the South Boundary 28 soil/water interface sample, and 121 mg/kg were analyzed in the South Boundary 6A soil/water interface sample. Lower concentrations in other soil samples were also reported in the initial work.
- 2. PCB concentrations were found in only two soil samples collected duirng the recent investigation. However, concentrations were present in several samples collected during the initial investigation, particularly the Drain Field No. 2 sample.
- 3. Second paragraph. A concentration of 63 ppb total xylene was reported in the 0-1 ft sample from boring 7. This is in addition to the 50.2 ppm concentration reported in the intermediate sample from the same boring.
- 4. Third paragraph. Oil abnd grease concentrations do not decrease with depth in samples from test boring nos. 1, 5, 6, 9, and 12.

6. Third paragraph. Barium concentrations do not increase with depth in borings 3, 4, and 9.

Groundwater Samples

1. Paragraph 1. In addition to the groundwater sampled from the drain field in the original work, some BTX's were found in water samples collected from trenches, namely, 19.4 mg/kg in the sample from South Boundary No. 4, and 4,180 gm/kg total xylene in the sample from West Boundary No. 3. The same comment can be made regarding several samples for other parameters, i.e., 1,3-dichlorobenzene concentration of 658 mg/kg in the water sample from South Boundary No. 4; 16 mg/kg PCB, 25 mg/kg oil and grease, and 42 mg/kg 1,4-dichlorobenzene in the sample from West Boundary No. 2.

DISCUSSION AND RECOMMENDATIONS

- 1. First paragraph. The clay layer is not present beneath the entire site as evidenced by its lack of presence in the area of TB6. Also, according to the cross section, it is only slightly in excess of 2 ft thick in TB4.
- 2. Third paragraph. It is very risky to draw conclusions concerning agreement of concentrations by comparing only two samples collected in the same area by different methods. Be that as it may, the soil sample from WB4A was collected from the same vertical range as the 4-5 ft sample from TB5. A barium concentration of 210 ppb does not "correspond fairly well" with a concentration of 646 ppb Likewise, an oil and grease concentration of 205 ppm does not compare well with a concentration of 1,419 ppm.
- 3. Fourth paragraph and Table 1. The groundwater sample analysis listed is not from trench WB4, but from SB4. Thus, no comparison can be made.
- 4. Fifth paragraph. I would agree that water samples collected from the trench would tend to exhibit higher concentrations of contaminants than samples collected from properly installed monitoring wells. what the above does exhibit, however, is that significant soil contamination is present. It remains to be seen what impact this contamination will have on groundwater in the future.
- Recommendation 1. Analysis for volatile aromatic hydrocarbons (EPA 602) and zinc should be included.
- Recommendation 2. Proposed concentration of 10,000 ppm oil and grease to trigger excavation is too high. Elevated concentrations of oil and grease are present (greater than 500 ppm) in the soil over a large area of the site. Further, some of the higher concentrations are present in the area of the water table where monitor wells are not

present (TB4, TB6, TB8, and TB9). Is landfarming allowable? If so, maybe landfarming of a major portion of the site should be considered.

Anoco feels that a minimum of four additional monitor wells should be installed along a line defined by borings TB2 through TB9. At present, there is no definition of groundwater quality except along the perimeter of the property.

Recommendation 4. What type of dig and test method is proposed? It was stated earlier that the trenching method was unsatisfactory. What is proposed for disposal of the groundwater recovered in the drainfield area?

Regarding groundwater quality monitoring as outlined in recommendation no. 1, while agreeing that long term monitoring is necessary, Amoco has a basic, underlying concern. That concern centers on the following hypothetical situation:

- 1. Cliff Berry, Incorporated, completes monitoring and other mitigation work to the satisfaction of DER and EQCB.
- 2. No development to the property occurs.
- Several years later monitoring determines that groundwater and/or soil contamination have reoccurred, or at least reappeared.

While not desiring to place unnecessary burden on Cliff Berry, Incorporated, the fact remains that that firm was responsible for original contamination of the property. Amoco's position is, that barring any new sources of contamination, Cliff Berry, Incorporated should remain liable for future evidences of groundwater and/or soil contamination.

T. Gogel Professional Hydrogeologist

TG:mph 86105ART0090

cc: R. G. Farmer, Chicago

M. P. Hubbarth, Chicago

J. A. Lamping, Chicago

J. Pickett, Chicago

C. B. Smiley, Ft. Lauderdale

S. Thomas, Chicago

G. W. Schmidt, Tulsa

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April 1, 1986

Mr. Terry Lawrence Broward County Environmental Quality Control Board 500 SW 14th Court Ft. Lauderdale, Florida 33315

Cliff Berry Site

Dear Mr. Lawrence:

Freundlich Coeff
(found in physical chen)
possibly using TOC. A discrepancy exists between the contaminant levels found in the soils and the levels found in the monitoring wells. The organic soil/water partitioning equation indicates the soil contamination should cause water concentrations to be in the 100's of parts per billion. This is assuming a 20% organic soil content. A lower, more realistic, value for the organic soil content would yield higher water concentrations.

One obvious cause of this discrepancy is the fact that 4 of the 6 wells are located in cleaner areas of the site. At least one additional well, near TB6, will be needed. Another possible cause could be the well construction, sampling, or analytical procedures. Information on these procedures needs to be examined to determine if resampling will be required. The Bureau does not currently have this information to examine.

The clay layer underneath the site is not acting as a competent confining layer. The fill in TB6 clearly breeches this layer. The oil and grease and solvents found in the soil below this layer also indicates that the downward migration has not been stopped.

Mr. Terry Lawrence April 1, 1986-Page two

The proposed excavation and landfarming should help remove the source and slow migration. The method of determining the areal extent of the excavation, as well as suggested final levels of oil and grease, need to be proposed. The benefits of fertilizing and tilling the entire site surface should be evaluated.

If you have any questions regarding these comments, please contact myself or John Gentry at (904)488-0190.

Sincerely,

Gordon Dean Bureau of Operations

GD/cs

No - File wells with steel casings could exhibt rust and/or corrogion that could galsely represent actual groundwater conditions

Furthermore, the sampling of only 2 wells

13 not representitive of groundwater in the

area.

Barium was sampled for in standing water in SB4 but not Monitoring well w-2

___ Why was application for GWMP, ___ Submitted in Apr. Of 1985 withdrawn

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EMARKS				1.00.00	ENC)		j
Job #	BL	ANK		Cerry	Nursery		PSL C	en !
AMPLE SOURCE: ROUNDWATER ONITORING WELL. GRINKING WATER WELL:	AIVE LAK	FACE WA ER/STREA E/PONO: JARY/BA		000	EFFLUENT: FIELD BLANK FIELD DUPLIC OTHER:	ATE:		
TAS # FIELD/LABID # PRESER	VATION	W	ELL .	,		UNIT	. cca€4	-
AMPLED BY: Right				SPECIFIC CONDU	JCTANCE	L STO UN		:
ELD REPORT PREPARED BY				TEMPERATURE MEASURED BY:		°c	10	
PARAMETER	TINU	CODE.	VALUE	PΑ	RAMETER	,	JNIT CODS	E * :
AS CIRCLED:				CHROM	IUM 17-30-7			
. PURGEABLES				COPPE	₹			
BASE/NEUTRAL EXT				IRON				
ACID EXTRACTABLE				LEAD				
PESTICIDE				MAGNES	SIUM		•	
HERBICIDE				MANGAN			***	
PCB'S	į			FANGAN,			- All	
100 3		<u> </u>		MERCUR	RY		Sign.	
ALUMINUM				NICKEL	,	_		
Al req'd all sediments) ANTIMONY				POTASS	IUM	3	!	 -
(ARSENIC)				SELENI	IUM CALLE	3		
BARIUM		<u> </u>		SILVER		. <u>.</u>		
BERYLLIUM				SODIUM	CHE			A S
BORON				ZINC		!		
(CADMIUM)						:		
CALCIUM				AGENCY COLL: AGENCY COLL: AGENCY ANAL	FCTING			er .

Minimum Detection Comit

EMICAL ANALYSIS REPORT FORM

WPLE TYSE: WATER - PESTICIDE EXTRACTABLES

·	TIME A	l grab sample	
ENCY COCE STORET STATION NUMBER	CATE / /		CEPTH, I
	7:/2://SC TIME 3	COMPOSITE SAMPLE	
SA LAB	COM	10 BEGIN	
		ENO	

EMARKS

PSL LAB BLANK

LCCATION

Berry Nursery

			, , , , , , , , , , , , , , , , , , , ,				
PARAMETER	UNIT	CODE	VALUE	PARAMETER	UNIT	CODE	VA
Aldrin	<u>µд/1</u>	39330	.01 U	2:4-0		39730	
a-ehC	ا /یوی/ ا	39337	.01 U	2.4,5-TP	ا <i>بود</i> ز	39760	<u> </u>
5-3HC	1 /29/1 *	39338	.01 U	, Demeton	/±;/1	39560	1
ç-8H Ç	ا رونز	39340	.01 ป	Guthion	ارون	39580	<u> 2.J</u>
a-aHC	ا/وينز (34259	.01 U	Maiathion	ا يودز - ا	39530	<u> . 2 </u>
Chlordane	ועפען	39350	.25 U	Methoxychior	hall	39480	1.0
±.41.000	<u> </u>	39310	.03 U	Mirex	ا/ونز	39755	1.0
4,4'-00E	ا روبر	39320	.03 U	Parathion	القبا	39540	<u>, C</u>
4,41-007	ابودر	39300	.03 U				<u> </u>
Dieldrin	ارونا	39380	.03 U				
Endosulfan I	ug/ l	34361	.03 U	AGENCY COLLECTING		27	ĺ
Endosulfan II	ابوير	34356	.03 U				1
Engosultan Sulfate	l µg/l	34351	.03 U	AGENCY ANALYZING		28	ŝ
<u> Endrin</u>	ן עבע ן	39390	.03 U				<u> </u>
Engrin Aldenyde		34366	1 .03 U	SAMPLE #		29	<u> </u>
deptachior	ايتيا	39410	.01 U				
Heptachior Epoxice	ا/ون/	39420	.01 U				1
Toxachene	ا روب	39400	1.25 U			1	<u> </u>
PC3-1016	ו עבען	34671	1.25 U	i	1	<u> </u>	<u> </u>
PC3-1221	الوعيا	39488	1.25 U			<u> </u>	<u> </u>
PC3-1232	ا (عنز	39492	125 U				
PC3-1242	اروعر	39496	1 .25 U			<u> </u>	<u> </u>
PC3-1243	/ <i>1</i> 1971	39500	.25 U			<u> </u>	<u> </u>
PC3-1254	иду (39504	5. U			<u> </u>	!
PC3-1260	/ <u>u</u> g/	39508	ี .5 ป				1
		}					<u> </u>
				1			<u> </u>
					<u> </u>	<u> </u>	1
					<u> </u>	<u> </u>	1

- Estimated Value
- Actual value is known to be less than value given
- Actual value is known to be greater than value given.
- Material was analyzed for but not detected. The number is the Minimum Detection Limit.

					 	
L157	i a	್ಷ	VERIFIED ,	FERCAT VERIFIED BY		± CATE
	16	5-7-85	η g-8-84		RIP	8-8-85
			₹ ¥	<u></u>		

and Classical

	247	17/
PAN LABID	241	-7 7

PARTMENT OF ENVIRONMENTAL REGULATION	
IEMICAL ANALYSIS REPORT FORM	

MICAL ANALYSIS REPORT FORM										
PLE TYPE WATER - FRESI	н <u>//</u> _	SALIN	E S	ED LMENT	TIME A - GR				_ 	
			DATEIM	1/D/Y)	1 1100 2 2 3 7 3 7 3				CEP	
WEY COOK STORET STATION NUMBER .			1	·	TIME B COMP	CEITE S	MPLE			
51	1			2485	COMP	SEC!N	4			
		,	······			ENO				
0 0 V 5				LOCATION			<u> </u>	DSL	Lat	<u> </u>
MARKS	BLAN	JK.		_	Nuise	107		<u> </u>		
APLE SOURCE: DUTONIATER OUTORING WELL.	RIVE	ACE WAT R/STREA E/PONO:	M:	000	EFFLUE FIELD B FIELD D	LANK:	ATE:			
NKING WATER WELL:		JARY/BA			OTHER		UNIT		CODEC	
TAS FIELD/LAGIDS PRESERT	VATION	w	ELL #	SPECIFIC COND	UCTANCE		MHOS/C		94	+
7)				рн.			STO UNI		400	1
APLEO BY: Creek		·		TEMPERATURE			°c		10	L
LO REPORT PREPARED BY				MEASURED BY:			•			
PARAMETER	UNIT	CODE.	VALUE		ARAMETER		U	NIT	CODE.	
S CIRCLED:				CHROM	IIUM				<u> </u>	+
		 		COPPE	מי				}	÷
PURGEABLES		 		CO111	,				 	Ť
BASE/NEUTRAL EXT				IRON						j
							·			1
ACID EXTRACTABLE		ļ		LEAD					<u> </u>	<u>!</u>
NECETATION.	 	1		MAGNE	MITES					-
PESTICIDE		<u> </u>		I I I I I I I I I I I I I I I I I I I	701011					,
HERBICIDE		 	1	MANGA	NESE				l	i
										i
PCB'S		ļ	<u> </u>	MERCU	JRY				<u> </u>	-
	1		<u> </u>	NICKI	7T.		<u>i</u>		<u>;</u>	<u> </u>
ALUMINUM	 	!	 	i Nacki					1	<u>,</u>
al req'd all sediments)	,			POTAS	SSIUM					i
ANTIMONY									<u> </u>	<u> </u>
	 	<u> </u>	 	SELE	MULM		<u>!</u>		 	÷
ARSENIC	<u> </u>		<u> </u>	SILV	ER		<u> </u>		 	<u> </u>
BARIUM	 	- 	 	JIBV.					1	1
D11114 011	1			SODI	UM					
RERYLLIUM					<u> </u>		<u> </u>		1	-:
DODON	 		 	ZINC				·····	1	-
BORON	+		-		CHAINT) F C	USTO	Y	CAM	D
CADMIUM				STORET FIE		"	5010 1	J 1		
				AGENCY CO					1 23	
CALCIUM	1	1	<u> </u>	AGENCY AN			 -	- 		
- Estimated Value (- Actual value is known to be less	than valu	ie given.		U = 23 a ter	l value is know rational variative rum Detection	ed for t	but not de	nan v Tecter	alue give g. The ni	ur:
Control of the contro	VE HIELE	3 15 1	· - · - · - ·	Ara Joh Hyph						1
					IN S APPL + T		مصار سندستان محاور و محرد ووجو	L		

_	SPAN	LAB	ID_	24754

	Water (Fresh)	GEABLES	Time A	- Grab Sample NA - Composite Sample NA	
Agency Code SA LAB-	Number	Date Sampled (M/D/Y) 07/24/85	COMP	BEGINNING NA END NA	Depth, Feet NA
Remarks Blank			Site U PSL I	_œation: .ab	

1015	FIELD ID # 51	-BLK-V		WELL #1	N A	Sample Source: Field	Blank		
MAS # 1315 PARAMET		UNIT S	STORET	VALUE	<u></u>	PARAME TER	UNIT	STORET	VALUE
			CODE			1 1 1	ug/L	77970	1 1
enzene			34030	1 U		lorotoluene	ug/L	77651	1 U
Browndichloromet	nane		32101	1 U		-Dibrompethane	ug/L	77128	1 U
Bromoform			32104	1 0		rene	ug/L	81551	1 U
Bromomethane		ug/L	34413	<u>1 U</u>		enes	ug/L_	1	1 U
Carbon tetrachlo	ride	ug/iL	32102	<u> 1 U</u>		-1.2-Dichloroethene	ug/L	 	2 J
Chlorobenzene		ug/L	34301	1 U	Oth	<u>er Purgeables</u>	<u> </u>		
Chloroethane		ug/L	34311	1 U	 			-	
2-Chloroethylvin	yl ether	ug/L	34576	10	 			+	1
Chlorofor		ug/L	32106	1 U	-			+	1
Chloromethane		ug/L	34418	1 U	 				-
1,2-Dichloroben	гепе	ug/L	34536	1 U	 			_	
1,3-Dichloroben		ug/L	34566	1 U	<u> </u>				
1.4-Dichloroben		ug/L	34571	10_	<u> </u>			- 	+
Dibrosochlorose		ug/L	32105	1 U					-
1,1-Dichloroeth		ug/L	34496	1 U					-
1,2-Dichlaroeth		ug/L	34531	10					
1,1-Dichloroeth		ug/L	34501	1 U					
trans-1,2-Dichl		ug/L	34546	1 U					
1,2-Dichloropro		ug/L	34541	1 U					
cis-1,3-Dichlor		ug/L	34561	1 U					 -
trans-1,3-Dich		ug/L_	34561	10					- -
Ethylbenzene		ug/L	34371	1 U		·		_	
Methylene chlo	ride	ug/L	34423	1 ป		<u></u>			
1,1,2,2-Tetrac		ug/L	34516	1 U				_	-}
Tetrachloroeth		ug/L	34475	1 U					
1,1,1-Trichlor		ug/L	34506	1 U					
1,1,2-Trichlor		ug/L	34511	1 U					
Trichloroether		ug/L	39180						
Toluene		ug/L	34910	1 U-					
Vinyl chlorid	9	ug/L	39175	1 1	510	DRET FIELD SAMPLE		29	
1 2 11, 2 1					AGI	ENCY COLLECTING		27	
J -Estimated	Value				U	ENCY ANALYZING -Material was analyzed for number is the Minimum De	s but not de	tected.	l fie

K -Actual value is known to be less than value given.
NA-Not analyzed for this compound.
L -Actual value is known to be greater than value grveu.

number is the Minimum Detection Limit, E-Scientific Notation (Example: 6 X 104 = 6E4)
-Confirmed by PID/Hall-Detectors

DA VERIFIED BY 8-14-85

LAB REPORT VERIFIED BY

DATE R-15-85

gency Code SA LAB	Water (Fres	1	ate Sampl	ed (M/D/Y 24/85	END NA	NA	Depth, Feet NA	
merka an k					Site Location: PSL Lab			
AS / 131	5 FIELD 10 # 51	-BLK-	М	WELL # N	A Sample Source: Field F	lank	1 1	
PARA	AME TER	דואט	STORET	VALUE	PARAMETER	TINU	STORE 1	VALU
ade iu	6 08/05/85 SL	ug/L	01027	.2 U			-	
ad	6 08/05/85 SL	ug/L	01051	5 U			+	
rsenic	G 08/06/85 SL	ug/L	01002	3 U	<u>, , , , , , , , , , , , , , , , , , , </u>		-	
ercury	M 08/05/85 JM	ug/L	71900	.1 1			╂───┤	
rosiue	F 07/30/85 LH	ug/L	01034	25 U	•		+	
				 			-	
				╁			 	
	 			 				
<u>,, </u>								
				1			-	
				+		-		
								
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	<u> </u>							
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·. · · · · · · · · · · · · · · · · · ·								
					STORET FIELD SAMPLE		29	
					AGENCY COLLECTING		27	
					AGENCY ANALYZING		2B	150
NA Not and	value is known to b alyzed for this common value is known to b	bound.			U-Material was analyzed for number is the Minimum Dete E-Scientific Notation (Examp *-Confirmed by	but not det ction Limit le: 6 % l() ^A = 684)	1183
ANALYST	8-9-87 Ss i	QA VERI	FIED BY	9-15	LAB REPORT VERIFIED BY	0	DATE 85	

THE PROPERTY OF ENVIRONMENTAL REGULATION

SPAN LAUID 24733

HEMICAL AMALYSIS REPORT FORM

					TIME A - CA	re Sampli			
ENCY JODE - STORET STATION NUMBER			DATE (N	· ·					C€
51			07	2485	TIME B COMP		IPLE		-
31 1			,		COMP	BEGIN END	·····		1
									J ——
MARKS	7211	NK		LOCATION	Α,			BL	Lc
ob #	DUA	701		Berry	Nuse	1		<u>'</u> .	
MPLE SOURCE:		ACE WA			EFFLUE!		· · · · · · · · · · · · · · · · · · ·		
OUNDWATER	LAK	E/POND:			FIELD D	UPLICAT	E :		
INKING WATER WELL.	EST	JARY/BA	r:	,	OTHER:				
	VATION	w	ŒLL #				UNIT	2006	۷
	<u>ce</u>			SPECIFIC CONDU	CTANCE		MHOS/CM	400	
MPLEO BY: NICCIT				TEMPERATURE			°C	10	
LD REPORT PREPARSO BY				MEASURED BY			-		
PARAMETER	UNIT	CODE*	VALUE	PA	RAMETER		UNI	T COC)E *
AS CIRCLED:				CHROM	TUM				
AS CERCHALL:							i		
PURGEABLES				COPPE	R				
BASE/NEUTRAL EXT		<u> </u>		IRON					
BASE/ NEOTRAL BAT			<u> </u>	1100					
ACID EXTRACTABLE				LEAD.				:	
PESTICIDE		1		MAGNE	STIM	, ,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
PESTICIDE				PAGNE	0100			<u> </u>	
HERBICIDE				MANGA	NESE			l	
POPLE		<u> </u>		 MERCU	DV				4
PCB'S	<u> </u>	<u>!</u>		PIERCO	KI			R	¥
				NICKE				Phy	
ALUMINUM	<u> </u>		1	1	CTUM				
Al req'd all sediments) ANTIMONY	!	<u> </u>		POTAS	51 UM		CO.	1	
	 			SELEN	IUM		20	<u> </u>	
ARSENIC		1					\mathbb{Z}_2		
BARIUM		!	<u> </u>	SILVE	R	<u></u> ←	<u>3 </u>	<u> </u>	
DARTON .		1	<u> </u>	SODIU	M			;	
BERYLLIUM				<u> </u>				l .	
BORON	!	1		ZINC		>	1510 ¹	;	
50.50								· · · · · · · · · · · · · · · · · · ·	
CADMIUM			1	STORET FIEL					-J
CALCIUM	:		· -	JOS YOMBOA TA			· · · · · · · · · · · · · · · · · · ·	1 2	3
$+ i \pi_1 \cdot \frac{C \Lambda \log 1}{\pi} \log \pi_1 \cdot \frac{1}{\pi} = \pi_2 \cdot \frac{1}{\pi} $ $+ i \pi_1 \cdot \text{trimated Value}$. -	malaga laga eta kata kat	value is know		enine.e		

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THE OF FIGURE OF ENVIRONMENTAL REGULATION OF THE PORT FORM

	11/70-
SPAN LABID	24737

					TIME A - CRAUSA	WHLE		
CLEVELY COCE COTORET STATION NUMBER			DATE	M/D/Y)	163			<u></u>
			, -	73.100	TIME B COMPOSITE	SAMPLE		
51		D	72485	COMP arc				
					ENI	5		
EMARKS				LOCATION				
Job #				Berry	Nursery	····		
AMPLE SOURCE:		FACE WAT			EFFLUENT:			!
ROUNDWATER ONITORING WELL.	LAK	: R/STREA E/POND: JARY/BAY			FIELD BLANK FIELD DUPLIS OTHER:	CATE D	124 E	<u> </u>
1 6 7 - 1	IVATION	T w	GLL #			UNI	7	CODE
7.	ce.			SPECIFIC CONDL	CTANCE	рмноя		94
AMPLEO BY: Kreeli / Thiel				TEMPERATURE		STO U	711	10
IELD REPORT PREPARED OF KICELY	<u> </u>			MEASUREO BY:				
PARAMETER	UNIT	CODE*	VALUE	PA	RAMETER		UNIT	CODE.
AS_CIRCLED:				CHROM	IUM			
PURGEABLES	•			COPPE	R			<u> </u>
BASE/NEUTRAL EXT				IRON				ļ -
ACID EXTRACTABLE				LEAD				
DESTIGIES				1.	CTIN	ļ		:
PESTICIDE)				MAGNE	SIUM	+		; İ
HERBICIDE				MANGA	NESE			1 4
PCB'S		<u> </u>	<u> </u>	MEDCH	f1 12			-*5 7
- (FCB 3		 		MERCU	KI	<u> </u>		44.11
				NICKE	L		E	2
ALUMINUM (Al reg'd all sediments)	<u> </u>	<u> </u>		DOM A	C T (1) (77.	!
ANTIMONY ANTIMONY	 			POTAS	210M	-115'		<u> </u>
				SELEN	RY L SIUM IUM R	60		Ì
ARSENIC		!		SILVE	7	!		1
BARIUM		 		SILVE	IALL	-		<u> </u>
				SODIU	W Cir.			1
BERYLLIUM	<u> </u>	1		GING		1		1
BORON				ZINC				i
CADMIUM			!	1 2005 T 5151) \$ \ \\D\ E =	i		
CADMIUM			i	STORET FIELD AGENCY COL				-
CALCIUM				AGENCY ANA				23
र — हित्रातmated Value ह — Actual value is nook > to be less t	han vəfoi	rgiven,		U - Mareria	value is known to to to wis analyzed for the Cetection Limit	be greater but nor d	topo va	

EMICAL ANALYSIS REPORT FORM

MPLE TYPE: WATER - PESTICIDE EXTRACTABLES

			TIME A - GR	IAB SAMPLE .	
ಸಾ-೧೪ ಯ ೧ €	STORET STATION NUMBER	CATE		1630	CEPTH, 1
61 (40		172085	TIME 3 COM	POSITE SAMPLE	
SA LAB		076705	COMP	SEGIN	
			COIVI	ENO	

EMARKS 51-1 LOCATION

Berry Nursey Dite.

						D//	
PARAMETER	UNIT	CODE	VALUE	PARAMETER	UNIT	CODE	V۵
Aldrin 11-31121	дд/1	39330	.01 U	2;4-0	<u>ا پودن</u>	39730	
a-EHC	الروبر	39337	.01 0	2.4,5·TP	ויפגו	39760	
5-5HC	أ اروتنز	39338	.01 U i	Cemeton	اروس	39560	
ç-8HC	اروننرا	39340	.01 U	Guttian	ابود	-39580	<u>2.0</u>
a-BHC	الودر	34259	.01 U	Maiathion	ועפיין - ן	139530	.2
Chlordane 11-3.121	ועפען	39350	1.25 U	Methoxychior	ابهد	39480	.0
4,47-000	ا/قدا ا	39310	.03 U	Mirex	الهنز	39755	<u>.0</u> .
4,4'-DOE	jug/1	39320	.03 U	Paratrion	الإحدا	39540	. C
4.44-00T 11-311ZI	الهدر	39300	.03 U		1		
Dietarin 17-3.121	ا/ود:	39380	.03 U				
Endosulfan I	ا/وير	34361	.03 U	AGENCY COLLECTING		27	
Endosuifan II	1777/	34356	.03 U				
Endosultan Sulfate	ا/ونر	34351	.03 U	AGENCY ANALYZING		28	j ŝ
. Endrin (1-3.12)	ו/פַע	39390	.03 U				<u> </u>
- Gnarin Aldenvae	الإيدا	34366	.03 U	SAMPLE ≢		29	
deptachior	أنيما	39410	.01 U				
Heptachior Epoxice 17-3 121	ا/عِنز	39420	.01 U				<u> </u>
Toxabhene 12-3.1ਯ	ן עפנין	39400	1 .25 U		<u> </u>	1	
PC3-1016	الرويد	34671	i .25 Ui			1	
PC3-1221	الوند	39488	l.25 U		1	1	1
PC3-1232	ا /ولاز	39492	. 25 UI		1	1	
PC8-1242	ا/ونر آ	39496	. 25 U			<u> </u>	<u> </u>
PC3-1248	ا رونز	39500	.25 U		<u>'</u>	ł	<u> </u>
PC3-1254	ויטען	39504	.5 U			<u>i</u>	<u> </u>
PC3-1260	ايوتز	39508	.5 U			1	<u> </u>
		<u> </u>				1	<u> </u>
			<u> </u>		<u> </u>	1	<u> </u>
			!				<u> </u>
			<u> </u>				<u> </u>
7.		1	1			<u> </u>	<u> </u>
		1.				1	<u> </u>

⁻ Estimated Value

LLIST	CA VERIFIED	REPORT VERIFIED BY	CATE
13 8-7 85	\$ 8-8.85	RIP	8-8-85

Actual value is known to be less than value given.

⁻ Actual value is known to be greater than value given.

⁻ Material was analyzed for but not detected. The number is the Minimum Detection Limit,

HEMIDAL ANALYSIS REPORT FORM

	24739
SPAN LAB ID	24721

AMPLE TYPE WATER - FRESH ___ SALINE ___ SEDUMENT TIME A - GRAB SAMPLE DATE (M/D/Y) 1630 HUR WIY CODE STORET STATION NUMBER CEPT-TIME B COMPOSITE SAMPLE 072485 51 BEGIN COMP END REMARKS LOCATION Berry Job # SAMPLE SOUPCE: SURFACE WATER <u>LAGUMOWATER</u> RIVER/STREAM FIELD BLANK PIELD DUPLICATE: Dit LAKE/POND: DRINKING WATER WELL: ESTUARY/BAY: PRESERVATION WELL cope4 51-5D-PCBYP Jue SPECIFIC CONDUCTANCE MMHOS/CM AMPLED BY: Thire STO UNIT TEMPERATURE ٥Ĉ FIELD REPORT PREPARED BY MEASURED BY: PARAMETER CODE* UNIT VALUE PARAMETER UNIT CODE! AS CIRCLED: CHROMIUM **PURGEABLES** COPPER BASE/NEUTRAL EXT IRON ACID EXTRACTABLE LEAD PESTICIDE MAGNESIUM THO CHE TON SHIP HERBICIDE MANGANESE PCB'S MERCURY NICKEL ALUMINUM Al reg'd all sediments) POTASSIUM ANTIMONY SELENIUM ARSENIC SILVER BARIUM SODIUM BERYLLIUM ZINC BORON CADMIUM STUBET FIELD SAMPLE # AGENCY COLLECTING AGENCY ANALYZING CALCIUM a tutau i a me camba a mang saba - Estimated Value - Actual value is known to be greater than value given - Actual value is known to be less than value given. - Material was analyzed for but not derected. The number Minimum Detection Limit AN MORRES PAGE OF PERSONS REPORTED BY POSITE ONES ARE ETION Y SOURACE WATER TANKING IST OF FIGURES APPLY TO FIRED MEASUREMENTALS.

EMICAL ANALYSIS REPORT FORM

EMARKS

WPLE TYPE: SEDIMENT - PESTICIDE EXTRACTABLES

			TIME A - GRA	8 SAMPLE	
SENCY CODE	STORET STATION NUMBER	DATE	16	-30	DEPTH S
LAB		07748	TIME B COMPO	SITE SAMPLE	j
		1070100	COMP	BEGIN	
			- COIVII	END	

LOCATION

() () () () () () () () () ()	17/6				Berry Nursery				
PARAMETER	דומט	CODE	VAL	IJΕ	PARAMETER	UNIT	CODE	VA	
Aldrin	μg/kg	39333	4	Ų	32. Total PCB's	дд/кд	39519	100	
. a-BHC	μg/kg	39076	3	U	33. PC3-1016	ид/кд	39514	100	
. Б-ВНС	µg/kg	34257	3	U	34 PC8-1221	μg/kg	39491	100	
. d-BHC	<i>µ</i> g/kg	34262	3	U	35. PCB-1232	<i>ша/</i> ка	39495	100	
g-BHC	μ α /kg	39343	3	U	36. PCS-1242	-µg/kg	39499	100	
i. Chlordane	дај/ка	39351	100	U	37. PCS-1248	µg/kg	39503	100	
cis isomer of chlordane	µg/kg	39064	3	Ų	PC8-1254 - 11-1-04: 194 - 1	110/49	39507	37	
. trans isomer of chlordane	µg/kg	39067	3	U	39. PCB-1260	µg/kg	39511	100	
i. cis isomer of nonachlor	μα/kg	39070	4	Ü	40. Toxaphene	μg/kg	39403	100	
). trans isomer of nonachior	μαj/kg	39073	.4	U				1	
. Total COT	عمر/kg	39359	8	u					
. o,p-00E	يعر/kg	39328	8_	U	AGENCY COLLECTING		27		
i. p.p'-00E	μg/kg	39321	8	U					
. 0,0-000	μg/kg	39316	. 8	U	AGENCY ANALYZING		28	80	
i. p.p.'-000	µg/kg	39311	_8_	U					
i. o,p`-DOT	µg/kg	39306	8	Ų	SAMPLE #		29_		
7.00° a,a	µg/kg	39301	.8	U					
i. Dieldrin	µg/kg	39383	8	U					
Endosulfan I	µg/kg	34354	8	Ü					
). Endosulfan i i	µg/kg	34359	8	U		<u> </u>			
. Endosulfan Sulfate	µд/кд	34354	8	U		<u> </u>	<u> </u>		
l. Encrin	µg/kg	39393	8	Ú		<u> </u>			
l. Endrin Aldehyde	μg/kg	34369	8	Ų	·	<u> </u>			
). Guthion	μg/kg	39581	200	Ú			<u> </u>		
i. Heptachlor	μg/kg	39413	3	U		1	<u> </u>		
). Heptachior Epoxide	µg/kg	39423	4	Ü		1			
1. Hexachiorobenzene	µg/kg	39701	3	נ		1			
3. Malathion	μα/ka	39531	200	U		<u> </u>			
}. Methoxychlor	μg/kg	39481	100	U		1			
). Mirex	μg/kg	39758	20	U		l			
1. Parathion	umi/kg	39541	100	Ü		1		<u> </u>	

- Estimated Value
- Actual value is known to be less than value given.
- Actual value is known to be greater than value given.
- Material was analyzed for but not detected. The number is the Minimum Detection Limit.

WALYST	QA VERIFIED	REPORT VERIFIED BY	CATE
40B 8-2-85	1 8-3-85	1247	8-8-85

HEMICÁL ANALYSIS REPORT FORM

HIZE NOY CODE 1 STORET STATION NUMBER	<u> </u>		OATE IF	M/D/Y)	TIME A - GR	48 SAM				IC€
E 1			10-	سسيرس د د د	TIME B COMP					1
51			0	72485	COMP	35 CII				1
•		•			Com	ENO				Т
EMARKS				LOCATION						
Job #		·			Nuise	1			-	
AMPLE SOURCE: ROUNDWATER ONITORING WELL. CHARLING WATER WELL:	RIVE	FACÉ WA R/STREA E/PONO: JARY/BA	M:	. 00	EFFLUE FIELD B FIELD D OTHER:	NT: LANK: UPLICA	ATE:)itch		
TAS FIELD/LAB 10 / PRESER 51- D-V JC	VATION	\ \	18 LL #	SSECURIC COMP.			UN		CODE	<u>~</u>
	•			PH SPECIFIC CONDL	CTANCE	 -	STD		94	<u> </u>
riceeu/ mies				TEMPERATURE			3110		10	
ELD REPORT PREPAPED & Ricel	<u></u>		· · · · · · · · · · · · · · · · · · ·	MEASURED BY:						
PARAMETER	UNIT	CODE.	VALUE	PA	RAMETER			UNIT	coo	E.
AS CIRCLED:				CHROM	IUM		 11			
PURGEABLES		ļ	 -	00555						
. FUNGEABLES		ļ		COPPE					<u> </u>	
BASE/NEUTRAL EXT				IRON						
ACID EXTRACTABLE				LEAD					1	
					··				•	
PESTICIDE		1		MAGNE:	SIUM				i	
HERBICIDE				MANGAI	NESE				1	
PCB'S		<u> </u>		VERGU					,	
		1		MERCUI	XX				ı	
		<u> </u>		NICKE						
ALUMINUM						,			 -	
Al req'd all sediments) . ANTIMONY		ļ		POTAS	SIUM					
			<u> </u>	SELEN	TIM					
ARSENIC		i		SELEN.	LUM					
				SILVE	₹					
BARIUM										
BERYLLIUM				SODIUM	1					
	 ,	 		ZINC					<u>- </u>	
BORON									AL E	
CADMITTING		<u> </u>		CHAIR	OF CUS	TU	DY:	SAM	PLI	
CADMIUM				I STURET FIELL					<u>- 1- 3-</u>	·
CALCIUM				AGENCY COLL					1 23	
- Estimated Value : - Actual value is known to be less th	an value	divert.		L Actual v U Material	alue is known was analyzed n Detection L	for bu			alue gis	4.U
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State of Clonda DEPARTMENT OF ENVIRONMENTAL REGULATION

24748

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		0/	2485		BEGIN		
				COMP	END		
	•		LOCATION	Λ!			
			Derry	Nurse	<u>·Y</u>		
							
		M: ·		FIELD BY	LANK: UPLICATE	N.L.I.	h
		' :	ă	OTHER:		מוטון	
VATION	W	ELLØ				UNIT	20064
NO			SPECIFIC COND	JCTANCE	μM	HOS/CM	94
-			На		ST	DUNIT	400
			TEMPERATURE			°C	10
· .			MEASURED BY				
UNIT	CODE.	VALUE	P.	RAMETER		UNIT	CODE
			(CHROM	IUM 27-3	SO 35" Z	4	
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	UNIT	UNIT CODE	UNIT CODE VALUE	SURFACE WATER RIVER/STREAM: LAKE/PCNO: ESTUARY/BAY: UNIT CODE VALUE MEASURED BY: UNIT CODE VALUE CHROM COPPE IRON LEAD MAGNE MAGNE MERCU NICKE POTAS SELEN SILVE STORET FIEL AGENCY ALIA AGENCY ALIA LEAD STORET FIEL AGENCY ALIA LEAD STORET FIEL AGENCY ALIA LEAD STORET FIEL AGENCY ALIA LEAD LEAD STORET FIEL AGENCY ALIA LEAD AGENCY ALIA LEAD STORET FIEL AGENCY ALIA LEAD AGENCY ALIA LEAD STORET FIEL AGENCY ALIA LEAD LEAD LEAD STORET FIEL AGENCY ALIA LEAD LEAD LEAD STORET FIEL AGENCY ALIA LEAD LEAD LEAD LEAD STORET FIEL AGENCY ALIA LEAD SURFACE WATER RIVER/STREAM: LAKE/PCNO: ESTUARY/BAY: VATION WELL* SPECIFIC CONDUCTANCE PM TEMPERATURE MEASURED BY: UNIT CODE* VALUE PARAMETER CHROMIUM 77.3 COPPER. IRON MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SELENIUM SILVER SODIUM ZINC CHAN OF CUS ANGENCY ANALYZING LAGRICY ANALYZING AGENCY ANALYZING LAGRICY ANALYZI	SURFACE WATER RIVER/STREAM: LAKE/PCNO: ESTUARY/BAY: UNIT CODE* VALUE PARAMETER CHROMIUM 77-30 /5' Z/ COPPER. IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SELENIUM SILVER SODIUM ZINC CHAIN OF CUSTODY STORET FIELD SAMPLE # AGENCY AGALACYZING LACENCY AGALACYZING AGENCY AGALACYZING LACENCY AGALACY	SURFACE WATER RIVER/STREAM: LAKE/POCOD: ESTUARY/BAY: VATION WELL SPECIFIC CONDUCTANCE MACOUNT TEMPERATURE MEASURED BY UNIT CODE* VALUE PARAMETER CHROMIUM 77-30-55" Z/H COPPER. IRON IRON MAGNESIUM MAGNESIUM MAGNESIUM MAGNESIUM MARCURY NICKEL POTASSIUM SELENIUM SILVER SODIUM STOUTH OF CUSTODY SAM AND HELD SAMPLE A	

OF DEFICIONS APPLY TO SECONDANDER MEN'S

mple Type:	Water (Fresh	1)	•		LITHE W - OTHER DAMPIE	30 A		
Ngency Code SA LAB	STORET Station Num none	ber Da	te Sampl	led (M/D/) /24/85			Depth, l.	Feet 0
kemerks itch					Site Location: Berry Nursery			
MAS , 1315	FIELD ID # 51	- D - M		WELL # N	A Sample Source: Ditch			
PARAM	ETER	UNIT	STORE T	VALUE	PARAME TER	UNIT	STORE F	VALU
Cadmium	6 08/05/85 SL	ug/L	01027					
Lead (1. 6)		ug/L	01051/	30.62				
Arsenic	6 08/06/85 SL	ug/L	01002	9.5	/.			
Hercury	M 08/05/85 JM	ug/L	71900	الان				
Chromium	F 07/30/85 LH	ug/L	01034	25 U				
,,,, object	1 07/30/03 Eli	ug/L	01034			-		
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-		+		 	STORET FIELD SAMPLE #	1	29	1
		+			AGENCY COLLECTING	_	27	
			 	 	AGENCY ANALYZING		28	8.06
NA - Not analy:	Value lue is known to be zed for this compou lue is known to be	nd.			U-Material was analyzed for but number is the Minimum Detection E-Scientific Notation (Example: *-Confirmed by	not detec in Limit, 6 X 104	led. T	he .

MORCHARYPE WATER - FR	ESH	SACH	ut	SEDIMENT _U				
HIS PORTION AND STORET STATION NUMBER					FAME A - CAAL			
1	14		1	M/D/Y)	1630			C€
51				72485	TIME B COMPCE			
					COMP	al GiN ENO		
REMARKS			<u> </u>	LOCATION				
Job #		·		Berry	Nourse	7,		
SAMPLE SOURCE:	SUR	SACE WA	IEB		EFFLUENT			
RATAWORNORS MONITORING WELL		ERISTREA EIPONO.	N1		FIELD BLA	NK.		=
ORING WATER WELL.		JARYIBA	Y:		FIELD OUR OTHER: _). tch	<u> </u>
	ERVATION	W	SLL #			UN	IT	20064
7 . /	dee		· · · · · · · · · · · · · · · · · · ·	SPECIFIC CONDU	ICTANCE	ДМНО		94
				TEMPERATURE	······································	1570		400
FIELD REPORT PREPARED . Rigel	1			MEASURED BY				10
PARAMETER	UNIT	CODE.	VALUE	PA	RAMETER		UNIT	COCE.
AS CIRCLED:				CHROM	IUM 8-	لب کھ-1		
, PURGEABLES				COPPER	₹			!
BASE/NEUTRAL EXT	,			IRON				
ACID EXTRACTABLE				7-2-				!
				LEAD	8-7-8	5LW		-
PESTICIDE		1		MAGNES	SIUM			
HERBICIDE				MANGAN	NESE			i .
PCB'S				3				
FPTOYION		<u>:</u>		(MERCUI	RY			,
ALONINUM	1			NICKEI				1
(Al req'd all sediments ANTIMONY) /			POTASS	SIUM	· · · · · · · · · · · · · · · · · · ·		
		!		SELENI	TIM	,		
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BARIUM	 			SILVER	}	:		
BERYLLIUM *	<u> </u>			SODIUM				-
BORON				ZINC				
	<u> </u>			C	HAIN OF	CUST	Yat	SAMP
(CADMIUM) 8-7-85	لين		.OIK	O PRETICULO	SAMPLE			Zimiii
ÇALCIUM		1		i Albaha Ili. Tari ada aman	rottāg III. Paniki			
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CHEMICAL ANALYSIS REPORT FORM

EP TOXICITY TEST - METALS

Remarks Constituted Const				- 1 - 	Sample Typ	A	Depth, Feet
Remarks Contain Derry Number Contain Derry Number Comments	Agency Code	į.		i	28mb1a ,) b	•	,
Berry Number	SA LAB	072485	-	1630			
TAS # Field Lab 10 # Sampled By Field Report Prepared By 1) 15	0				Location		
Field Lab 10 # Sampled By Field Report Prepared By // 15	V Same L x 3				Berry 1	susery -f	Ao A ?
TAS # Field Lab 10 # Sampled By Field Report Prepared By // / SD - M NOTE: All results are reported in milligrams per liter rather than micrograms per liter so that a comparison be made to CPA's criteria. PARAMETER RESULTS MILLIGRAMS PER LITER (mg/l) PARAMETER RESULTS MILLIGRAMS PER LITER (mg/l) S.0 2. Barium 100.0 3. Cadmium 8.7-85 LW .01 K 1.0 4. Chromium 9-7-85 LW .025 K 5.0 5. Lead 8-7-85 LW .050 W 5.0 6. Mercury 8-7-87 JM 0.00 K 0.2 7. Selanium 1.0 8. Silver 5.0 - As per Part 261, 24/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments J-Estimated Value K-Actual value is known to be greater than value given. NALYST SEN GA VERIFIED BY MILL REPORT VERIFIED BY MILL R						. 6	
NOTE: All results are reported in milligrams per liter rather than micrograms per liter so that a comparison be made to EPA'e criteria. PARAMETER RESULTS milligrams per liter (mg/1) 1. Arsenic 8-(0-85' 55C 0.006							
NOTE: All results are reported in milligrams per liter rather than micrograms per liter so that a comparison be made to EPA's criteria. PARAMETER RESULTS milligrams per liter (mq/1) 1. Arsenic 8-(0-85' 55C	716.4		Field I	sh 10 #	L Sampled 8	By Fie	ld Report Prepared By
NOTE: All results are reported in milligrams per liter rather than micrograms per liter so that a comparison be made to EPA's criteria. PARAMETER RESULTS milligrams per liter (mg/l) 1. Arsenic 2. Barium 3. Cadmium 8.7-85 LW .OIK 4. Chronium 9-7-85 LW .OSOU 5.0 6. Mercury 8-7-85 LW .OSOU 7. Selanium 8. Silver As per Part 261,24/Federal Register/Volume 45, No. 98/Monday, Hay 19, 1980/Rules and Regulations. L-Actual value is known to be less than value given. L-Actual value is known to be greater than value of the Minimum Detection Limit. AMALYSI SET QA VERIFIED BY LAB REPORT VERIFI	IAS F	1			. [
PARAMETER RESULTS milligrams per liter (mg/l) 1. Arsenic 8-(0-85 554 0.006 5.0 2. Barium 3. Cadmium 8-7-85 LW 4. Chromium 8-7-85 LW 5.0 4. Chromium 8-7-85 LW 6. Mercury 8-7-85 LW 7. Selenium 8. Silver As per Part 261.24/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Lead Walter L-Actual value is known to be less than value given. L-Actual value is known to be greater than value of the ber is the Maintaine deposition for the thought of the bur is the Maintaine deposition of the ber is the Maintaine Deposition of the Silver ANALYST Sep. GA VERIFIED BY ANALYST LAB REPORT VERIFIED BY ANALYST LAB REPO	1315		5.1-5	D - M			*
PARAMETER RESULTS milligrams per liter (mg/l) 1. Arsenia 8-(e-85 554 0.006 5.0 2. Bariua 100.0 3. Cadmius 8-7-85 LW 4. Chronium 8-7-85 LW 5.0 5.0 6. Mercury 8-3-85 LW 7. Selenius 8. Silver Ap per Part 261,20/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Lead Value 8-3-85 LW L-Actual value is known to be less than value given. L-Actual value is known to be greater than value of the ber is the Ministra der but not detected. The ber is the Ministra der but not detected. The ber is the Ministra der of the tot detected. The ber is the Ministra der of the tot detected. The ber is the Ministra der of the tot detected. The ber is the Ministra der of the tot detected. The ber is the Ministra der of the tot detected. The ber is the Ministra deformed for but not detected. The ber is the Ministra deformed for but not detected. The ber is the Ministra deformed for but not detected. The ber is the Ministra detected.							on so that a comparison
PARAMETER RESULTS milligrams per liter (mg/1) 1. Arsenia 8-(0-85 554 0.006 5.0 2. Barium 3. Cadmium 8-7-85 LW 4. Chromium 8-7-85 LW 5.0 5.0 5.0 6. Mercury 8-7-85 LW 6. Mercury 8-7-85 LW 7. Selenium 8. Silver As per Part 261,24/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments L-Actual value is known to be less than value given. L-Actual value is known to be greater than value of the content of the selection limit. ANALYST Sen GA VERIFIED BY LAB REPORT VERIFIED BY LAB	NOTE: All r	esults are repor	ted in mil	ligrams per lite	r rather th a n	micicdiams ber 110	At 90 there contains
### ### ##############################	De ma	de to LPA's Crit	eria.			MINIMUM CONCE	NIRATION AT WHICH SAMPLE
1. Arsenic 8-(s-85 55C 0.006 1.00.0 3. Cadmium 8-7-85 LW .01 K 1.0 4. Chronium 8-7-85 LW .025 K 5.0 5. Lead 8-7-85 LW .050W 6. Mercury 8-3-37 J/n 0.200/ K 9. Selenium 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.	PA	RAMETER				EXHIBITS CHARG	rams per liter (mq/l)
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2. Barium 3. Cadmium 8.7-85 LW 4. Chromium 9.7-85 LW 5.0 5. Lead 8-7-85 LW 6. Mercury 8-5-85 JM 7. Selanium 1.0 8. Silver As per Part 261,24/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments L-Actual value is known to be leas than value given. L-Actual value is known to be greater than value of the Minimum Detection Limit. ANALYST Sep. GA VERIFIED BY A LAB REPORT VERI	1. Armanio	0.0-	= < (-	0.00%	1).u
2. Barium 3. Cadmium 8.7-85 LW 4. Chromium 8-7-85 LW 5.0 5. Lead 8-7-85 LW 6. Mercury 8-3-85 LW 7. Selenium 8. Silver 4. As per Part 261.24/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments 1.2 1.3 1.4 1.5 1.5 1.6 1.6 1.7 1.7 1.8 1.8 1.9 1.9 1.9 1.9 1.9 1.9		8-6-83	-	0.004			100.0
3. Cadmius 8.7.85 LW .O1K 4. Chromium 8.7.85 LW .O25K 5.0 5. Lead 8.7.85 LW .O50W 5.0 6. Mercury 8.5.87 J/1 0.200 J K 0.2 7. Selenium 1.3 8. Silver 5.0 • As per Part 261.2A/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments J-Estimated Value K-Actual value is known to be greater than value of U-Material was analyzed for but not detected. The ber is the Minimum Detection Limit. ANALYST SEL GA VERIFIED BY LAB REPORT VERIFIED BY DATE S.9	2. Sarium				٠	Į	100.0
3. Cadmium 8.7.85 LW .O1K 4. Chromium 9.7.85 LW .O25K 5.0 5. Lead 8.7.85 LW .O50W 5.0 6. Mercury 8.5.87 J/m 0.2001 K 0.2 7. Selenium 1.0 8. Silver 5.0 As per Part 261.2A/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments L-Actual value is known to be greater than value given. L-Actual value is known to be greater than value of U-Material was analyzed for but not detected. The ber is the Minimum Detection Limit. ANALYST SET GA VERIFIED BY LAB REPORT VERIFIED BY DATE GATE GATE GATE GATE GATE GATE GATE G				-			1.0
4. Chromium 8-7-85 LW .025 K 5. Lead 8-7-85 LW .050 W 6. Mercury 8-3-85 JM .0.201 K 7. Selenium 1.0 8. Silver 5.0 • As per Part 261.24/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments J-Estimated Value K-Actual value is known to be greater than value given. U-Material was analyzed for but not detected. The bar is the Minimum Detection Limit. ANALYST SET QA VERIFIED BY LAB REPORT VERIFIED BY DATE 9-9-	3. Cadmium	8-7-85 LV	J	.01K			1.0
4. Chromium 8-7-85 LW .025 K 5. Lead 8-7-85 LW .050 W 6. Mercury 8-3-85 JM .0.201 K 7. Selenium 1.0 8. Silver 5.0 • As per Part 261.24/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments J-Estimated Value K-Actual value is known to be greater than value given. U-Material was analyzed for but not detected. The bar is the Minimum Detection Limit. ANALYST SET QA VERIFIED BY LAB REPORT VERIFIED BY DATE 9-9-							
5. Leed 8-7-85 LW .050W 6. Mercury 8-3-87 Jin .0.2001 K	4. Chromius	■8-7-85 LU	J	.025 K			7.0
5. Leed 8-7-85 LW .050W 6. Mercury 8-3-87 Jin .0.2001 K							5.0
6. Hercury 2-3-37 JM 7. Selenium 1.0 8. Silver 5.0 • As per Part 261.24/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments L-Actual value is known to be less than value given. W-Material was analyzed for but not detected. The ber is the Minimum Detection Limit. ANALYST SER GA VERIFIED BY LAB REPORT VERIFIED BY DATE 9-9-	5. Lead	8-7-85 LW		.050U			
6. Hercury 7-3-3-7M 7. Selenium 1.0 8. Silver 5.0 • As per Part 261.24/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments L-Actual value is known to be less than value given. W-Material was analyzed for but not detected. The ber is the Minimum Detection Limit. ANALYST SER GA VERIFIED BY LAB REPORT VERIFIED BY DATE 9-9-	······································		′		, _		0.2
8. Silver 5.0 As per Part 261.24/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments L-Actual value is known to be greater than value given. K-Actual value is known to be less than value given. D-Material was analyzed for but not detected. The ber is the Minimum Detection Limit. ANALYST SST QA VERIFIED BY LAB REPORT VERIFIED BY DATE 99	6. Mercury	8-5-85 11	1	0.2001	K		
8. Silver 5.0 As per Part 261.24/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments L-Actual value is known to be greater than value given. K-Actual value is known to be less than value given. D-Material was analyzed for but not detected. The ber is the Minimum Detection Limit. ANALYST SST QA VERIFIED BY LAB REPORT VERIFIED BY DATE 99							1.0
*As per Part 261.24/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments L-Actual value is known to be greater than value of the Value is known to be greater than value of the Value is known to be greater than value of the Value is known to be greater than value of the Value is known to be greater than value of the Value is known to be greater than value of the Value is known to be leas than value given. ANALYST SST GA VERIFIED BY LAB REPORT VERIFIED BY DATE 8.9	7. Seleniu	. 139					
*As per Part 261.24/Federal Register/Volume 45, No. 98/Monday, May 19, 1980/Rules and Regulations. Comments L-Actual value is known to be greater than value given. K-Actual value is known to be less than value given. U-Material was analyzed for but not detected. The ber is the Minimum Detection Limit. ANALYST SST GA VERIFIED BY LAB REPORT VERIFIED BY DATE 8-9							5.0
L-Actual value is known to be greater than value of the control of the Minimum Detection Limit. ANALYST SST GA VERIFIED BY LAB REPORT VERIFIED BY DATE 8-9-							
L-Actual value is known to be greater than value of the K-Actual value is known to be greater than value of the K-Actual value is known to be less than value given. U-Material was analyzed for but not detected. The ber is the Minimum Detection Limit. ANALYST SST QA VERIFIED BY LAB REPORT VERIFIED BY DATE 8-9	• As per Par	rt 261.24/Feders	Register.	Molum a 45, Na. 9	8/Monday, May	19, 1980/Rules and	d Regulations.
L-Actual value is known to be greater than value of the Minimum Detection Limit. ANALYST SET GA VERIFIED BY LAB REPORT VERIFIED BY OATE 8-9-							
J-Estimated Value K-Actual value is known to be less than value given. U-Material was analyzed for but not detected. The ber is the Minimum Detection Limit. ANALYST SST GA VERIFIED BY LAB REPORT VERIFIED BY OATE 8-9-	COMMENCS						
X-Actual value is known to be less than value given. U-Material was analyzed for but not detected. ber is the Minimum Detection Limit. OATE 8-9-		3		,			
K-Actual value is known to be less than value given. U-Material was analyzed for but not detected. ber is the Minimum Detection Limit. ANALYST GA VERIFIED BY LAB REPORT VERIFIED BY OATE 9-						tur in lunca ba	he greater than value di
ANALYST SEE GA VERIFIED BY LAB REPORT VERIFIED BY DATE 8-9-	_J-Estimated	d Value	he less t	han value niven.	U-Meteria	al was analyzed fo	t par not decerred:
	K-VCfABT A	SING IS KNOWN CO			ber is	the Minimum Detec	tien Limit.
	ANALYST	28-8:8	GA VE	RIFIED BY	LAB REPOR	KI AFKILIFD RA	161811 8-4-0

ARTMENT OF ENVIRONMENTAL REGULATION

THE TOOKS WITH A THOMAS SON ACE WALLER WASHELS ...

SPAN LAB 10 _ 24759

HCAL AMALYSIS REPORT FORM									
LE TYPE WEST		SALINE	ss	EDIMENT	<u></u>				
					TIME A - SHAU	SAMPLE		:C€ P	 -
CY CODE STORET STATION NUMBER			DATE (M.		TIME B COMPOSI				ì
51			07	2485		FGIN			1
-		. <u></u>			COMP	ND			_
			-	LOCATION			····		
IARKS					Nurser	ч	. -		
b #					EFFLUENT		Ē]	
PLE SOUFICE:	RIVE	ACE WAT RISTREA	M:		FIELD BLA	NK:		<u>.</u>	
ITORING WELL:		E/POND: HARY/BAY	' :	ä	OTHER: _		4724		
	VATION	T w	ELL!			UN	IIT	CODE	``.
	بعد	-		SPECIFIC COND	UCTANCE		OS/CM	94	<u> </u>
PLED BY: RELL! This!				рн			UNIT	10	!
	7		· · · · · · · · · · · · · · · · · · ·	MEASURED BY			<u>-</u> -		<u>:</u>
O REPORT PREPAPED BY KIECK							T	Jeons:	
PARAMETER	UNIT	CODE.	VALUE		ARAMETER		UNIT	CODE.	<u> </u>
S CIRCLED:				CHRON	MIUM	. — — —		-	:
		 -		COPPI	ER		1	1	<u> </u>
PÜRGEABLES		 							
BASE/NEUTRAL EXT				IRON			1	1	!
			<u> </u>	LEAD		<u> </u>	 		
ACID EXTRACTABLE		<u> </u>	<u> </u>	i DERD			1	!	
PESTICIDE	<u> </u>			MAGN	ESIUM		 	<u>i</u>	<u>.</u>
				MANG	ANESE		_		-
HERBICIDE	<u> </u>	 		1 MANG	ANESD				
PCB'S	 		 	MERC	URY		İ		
100 5									
	ļ	<u> </u>		NICK	<u> </u>	,			:
ALUMINUM		,		POTA	SSIUM				
1 req'd all sediments ANTIMONY	4			1					- : -
				SELE	NIUM		<u> </u>		
ARSENIC	1	1	<u> </u>	SILV	ER				
BARIUM			_	2211					:
PARTON				SODI	UM			<u> </u>	•
RERYLLIUM			-	Atta	IN OF ALL	CTAN	VCAL	UDIT	,
BORON				CH!	IN OF CU	2100	1 2HI	NLTE	
DONON				574345T 514	ELD SAMPLE #			ب جست	 -
CADMIUM				AGENCY CO	DELECTING				
CATCTUM				ACENCY A	VALYZING				
CALCIUM - Estimated Value - Actual value is known to be less	than val	on given		L – Acto U – Mate	ul value is knowi rial was analyze: mum Detection	s to beigned Lifes hut no	ater than	value gole ed. The re	۰۵ ۱۳۳۵
Prince (1981)	Z of pokak	() 15 (programme of entrief (1991)	_			ا المارية المارية

1947 SHE TREETING APPEAL TO LITTLE MEAN AS HE MENTS

Chemics: Analysis Report Form - PURGEABLES

• '		/m 1.5	
Sample Tunes	Sediment	(Fresh)	

STORET Station Number Date Sampled (M/D/Y) Agency Code 07/24/85 SA LAB none

Time A - Grab Sample 1630 Time B - Composite Sample BEGINNING Depth, Feet COMP END

PMAS # 1315 FIELD ID #	51-SD-V		WELL #	NA Sample Source: Ditch	Sample Source: Ditch				
PARAME TER	UNIT	STORE T	VALUE	PARAMETER	TINU	STORE T	VALU		
Benzene			50 U	o-Chlorotoluene			50 U		
Bromodichloromethane			50 U	1,2-Dibromoethane			50 U		
Brosofors			50 U	Styrene			50 U		
Bromomethane			50 U	Xylenes			50 K		
Carbon tetrachloride			50 U	cis-1,2-Dichloroethene			50 U		
Chlorobenzene			50 U	Other Purgeables	₹		200		
Chloroethane			50 U						
2-Chloroethylvinyl ether			50 U						
Chlorofore			50 U						
Chloromethane			50 U						
1,2-Dichlorobenzene		1	50 U						
1,3-Dichlorobenzene			50 U						
1,4-Dichlorobenzene			50 U						
Dibromochloromethane			50 U						
1,1-Dichloroethane			50 U	•					
1,2-Dichloroethane			50 U						
1,1-Dichloroethene			50 U						
trans-1,2-Dichloroethene			50 U						
1,2-Dichloropropane			50 U						
cis-1,3-Dichloropropene			50 U						
trans-1,3-Dichloropropene			50 U						
Ethylbenzene			50 U						
Methylene chloride			50 U						
1,1,2,2-Tetrachloroethane			50 U						
Tetrachloroethene .			50 U						
1,1,1-Trichloroethane			50 U						
1,1,2-Trichloroethane			50 U						
Trichloroethene			50 U						
Toluene			50 K						
Vinyl chloride			50 U	STORET FIELD SAMPLE #		29			
				AGENCY COLLECTING		27			
J -Estimated Value				AGENCY ANALYZING U-Haterial was analyzed for b		28	806		

K -Actual value is known to be less than value given.

NA-Not analyzed for this compound.

t -Actual value is known to be greater than value given.

DA VERIFIED BY

number is the Minimum Detection Limit, E-Scientific Notation (Example: $6 \times 10^4 = 6E4$)

*-Confirmed by PID/Hall-Detectors

LAB REPORT VERIFIED BY

24760 ate of Florida PARTMENT OF ENVIRONMENTAL REGULATION SPAN LAB ID ... IEMICAL'ANALYSIS REPORT FORM MPLE TYPE SEDIMENT SALINE SEDIMENT TIME A - GRAB SAMPLE 1430 CIE PTH OATE (M/D/Y) GENCY CODE STORET STATION NUMBER TIME 8 COMPOSITE SAMPLE 6 072485 51 **a≡** ÇIN COMP LOCATION EMARKS Berry Job # SURFACE WATER AMPLE SOURCE: FIELD BLANK RIVER/STREAM: ROUNDWAILB FIELD DUPLICATE: LAKE/POND: RINKING WATER WELL: ONITORING WELL: OTHER: -ESTUARY/BAY: CODE UNIT WELL # PRESERVATION FIELD/LAS ID # MMHOS/CM 51- SLN-V Tre SPECIFIC CONDUCTANCE STO UNIT 400 TEMPERATURE IEND REPORT PREPARED BY MEASURED BY: UNIT CODE* PARAMETER CODE VALUE PARAMETER UNIT CHROMIUM AS CIRCLED: COPPER PÜRGEABLES IRON BASE/NEUTRAL EXT LEAD ACID EXTRACTABLE MAGNESIUM . PESTICIDE MANGANESE HERBICIDE MERCURY PCB'S NICKEL **ALUMINUM** POTASSIUM reg'd all sediments) ANTIMONY SELENIUM ARSENIC SILVER BARIUM SODIUM BERYLLIUM CHAIN OF CUSTODY SAMPI **BORON** 20 I STORET FIELD SAMPLE # CADMIUM AGENCY COLLECTING I AGENCY ANALYZING CALCIUM Actual value is known to be greater than value given

> SAN CAR REPORT VERTIFIED BY UN VERIFIED BY

TORET CODES APPLY TO ONLY SURFACE WATER SAMPLES

- Actual value is known to be less than value given.

- Estimated Value

35.31.75

PSTORET CODES APPLY TO FIELD MEASUREMENTS

Minimum Detection Limit.

Material was analyzed for but not detected. The number is

Chemistry Laboratory, Tallahasses

emical Analysis Report Form -	PURGEABLE	s				
Cadimont (Y			TIME A - Gran Sampro	430		
-pre Type.			Time B - Composite Sample	NA,	Depth,	Feet
Agency Code STORET Station No none	umber Date Sam	mpled (M/D/) 7/24/85	COMP BEGINNING NA END NA		6	<u> </u>
Remarks			Site Location: Berry Nursery			
PMAS # 1315 FIELD ID # 5	1-SLN-V	HELL # 1	A Sample Source: Lake/Po	nd		
PARAME TER	UNIT STORE	1 1	PARAMETER	UNIT	STORE T CODE	VALLE
Benzene		50 U	o-Chlorotoluene			50 U
Bromodichloromethane		50 U	1,2-Dibromoethane			50 U
Broncfore		50 U	Styrene			50 U
Bromomethane		50 U	Xylenes			50 U
Carbon tetrachloride		50 U	cis-1,2-Dichloroethene			50 U
Chlorobenzene		50 U	Other Purgeables			50 U
Chloroethane		50 U				
2-Chloroethylvinyl ether		50 U				<u></u> .
Chloroform		50 U				
Chloromethane		50 U		-		<u> </u>
1,2-Dichlorobenzene		50 U ·				<u></u> .
1,3-Dichlorobenzene		50 U				<u> </u>
1,4-Dichlorobenzene		50 U				
Dibrosochloromethane		50 U				
1,1-Dichloroethane		50 U				<u> -</u>
1,2-Dichloroethane		50 U				Ι
1,1-Dichloroethene		50 U				
trans-1,2-Dichloroethene		50 U				
1,2-Dichloropropane		50 U				
cis-1,3-Dichloropropene		50 U				
trans-1,3-Dichloropropene	- - - - - - - - - - 	50 U				
Ethylbenzene	- -	50 U				
Methylene chloride		50 U	<u> </u>			1
1,1,2,2-Tetrachloroethane		50 U				
Tetrachloroethene		50 U				1
1,1,1-Trichloroethane		50 U		·		1
1,1,2-Trichloroethane		50 U				1
richloroethene		50 U				
Toluene		50 U			1	1
Vinyl chloride		50 U	CYONET EISI D CAMPI E &		29	
ATHLE GREAT FAC			STORET FIELD SAMPLE		27	1
			AGENCY COLLECTING		28	806
J -Estimated Value K -Actual value is known to NA-Not analyzed for this com L -Actual value is known to given.	nound.		AGENCY ANALYZING U-Material was analyzed for be number in the Minimum Detection (Example #-Confirmed by PID/Hall-Detection)	etion Limit e: 6 X 10	ecled.	The
ANALYST MIN SINGS	QA VERTETED B	Y	LAB REPORT VERIFIED BY	1) }	DATE	5-

tate of Florida 24738 EPARTMENT OF ENVIRONMENTAL REGULATION SPAN LABID __ HEMICAL ANALYSIS REPORT FORM AMPLE TYPE: WATER - FRESH ___ SALINE ___ SEDIMENT TIME A - GRAB SAMPLE DATE IM/D/Y) AGENCY CODE STORET STATION NUMBER TIME B COMPOSITE SAMPLE 072485 51 **BEGIN** COMP END REMARKS LOCATION Job # SAMPLE SOURCE: SURFACE WATER FIELD BLANK: PROUNDWATER RIVER/STREAM: MONITORING WELL: LAKE/POND: FIELD DUPLICATE: OTHER: . ESTUARY/BAY: coneப FIELD/LAB ID PRESERVATION UNIT LIMHOS/CM 94 SPECIFIC CONDUCTANCE STO UNIT 400 рH SAMPLED BY: 10 TEMPERATURE FIELD REPORT PREPARED BY MEASURED BY PARAMETER UNIT CODE* VALUE PARAMETER UNIT CODE! CHROMIUM AS CIRCLED: PURGEABLES COPPER IRON BASE/NEUTRAL EXT LEAD ACID EXTRACTABLE MAGNESIUM PESTICIDE MANGANESE HERBICIDE MERCURY PCB'S NICKEL ALUMINUM POTASSIUM (Al reg'd all sediments) ANTIMONY SELENIUM ARSENIC SILVER BARIUM SODIUM BERYLLIUM ZINC. BORON STORET FIELD SAMPLE # CADMIUM AGENCY COLLECTING AGENCY ANALYZING CALCIUM - Actual value is known to be greater than value given -- Estimated Value - Material was analyzed for but not defected. The number Actual value is known to be less than value given. Minimum Detection Limit PAN DAN REPORT VERIFIED BY ON VEHIFIED BY

CHEMICAL ANALYSIS REPORT FORM

AGENCY CODE	STORET STATION	NUMBER	ER			DATE		TIME A - GRAB SAMPLE			DEPTH
						072485		TIME B COMPOSITE SAMPLE			
	A COLOR	172405				-	BEGIN	-E		(0)	
			ii de t			 -	COMP	END	<u> </u>		
		(N (X	U~					CIVE			
REMARKS											
						LOCATION		^ *			
	•					1 1/2	Su a	Steer	New	<u>ب</u>	
						1	,	,	(1	
			,							<u> </u>	
PA	RAMETER	UNIT	CODE	VA	LUE	PA	RAMETER	•	UNIT	CODE	VA
1. Aldrin	· · · · · · · · · · · · · · · · · · ·	µg/kg	39333	4	11	22 72-1 0001			1	1	
2. a-3HC		дд/kg	39075	3	U	32. Total PCB' 33. PCB-1016	\$		μ <u>α</u> /kg	39519	
3. b-8HC		<u>µ</u> д/kg	34257	3	<u></u>	34_ PC8-1221		•	μg/kg	39514	
'4. d-BHC	**************************************	µg/kg	34262	3	- Ü	35. PCB-1232			μg/kg	39491 39495	
5. g-BHC	· · · · · · · · · · · · · · · · · · ·	/ww/kg	39343	3	Ū	36. PC8-1242			ug/kg	39499	
6. Chlordane		<i>µ</i> g/kg	39351	100	Ū	37. PC8-1248		· · · · · · · · · · · · · · · · · · ·	-μg/kg μg/kg	39503	
7. cis isomer o		µg/kg	39064	3	Ū	38. PC8-1254			μg/kg	39507	1 +
8. trans isomer		µg/kg	39067	3	U	39. PCB-1260		·	µg/kg	39511	
9. cis isomer o		µg/kg	39070	4	Ū	40. Toxaphene			µg/kg	39403	
trans isomer	r of nonachior	µg/kg	39073	4	U				1	-	<u> </u>
11. Total DOT		Jug/kg	39359	8	Ü	<u> </u>			 		
12. 0,p-DDE		µg/kg	39328	8	U	AGENCY COLI	ECTING		 	27	
13. p.p'-00E		јид/kg	39321	8	Ü						
14. o,p-000		µg/kg	39316	8	U	AGENCY ANAI	YZING	·		28	80
15. p.p'-000		μg/kg	39311	8	U	_					1
16. o.p'-DOT 17. p.p'-DOT		µg/kg	39306	8	U	SAMPLE #				29	
18. Dieldrin		µg/kg	39301	8	U						
19. Endosulfan	ī .	μg/kg	39383	8	U						
20. Endosultan	<u></u>	<i>µ</i> д/kg	34364	8	U				<u> </u>		
21. Endosulfan		<u>μη/kg</u>	34359 34354	8	U .					·	1
22. Endrin		µg/kg µg/kg	39393	<u>8</u>	U				ļ		-
23. Endrin Alde	hyde	µg/kg	34369	8	U				<u> </u>	 _]
24. Guthion	·····	Дq/kq		200	Ü				<u> </u>		}
25. Heptachior		μg/kg	39413	3	Ü				1		
26. Heptachior	Epoxide	μg/kg	39423	4	Ü						-
27. Hexachlorot	benzene	ид/kg	39701	3	Ü						 -
28. Maiathion		/±g/kg	39531	200	U						
29. Methoxychl	or	µŋ/kg	39481	100	U			 -	<u> </u>		-
30. Mirex		<i>µ</i> g/kg	39758	20	U			····	i i	· · · · · · · · · · · · · · · · · · ·	
31. Parathion		Lug/kg ∫	39541	100	U				i		1
J – Estimated	Value				ı						
	ue is known to be	less than value of	iven								
L — Actual val	ue is known to be	greater than valu	ie given.	•							
U — Material w	ras analyzed for bu	t not detected.	The numi	per is :	ne l						
<u> «ពេយាម្នាកា</u>	Detection Limit.										
MALYST	2,2'85	QA VERIFIED				DEPOST VECTOR					
10 6	2, V VS	и и	8.8.8	, 5	- 1	REPORT VERIFIED (ev Llst	1	*	CAT	É
<u>ال ال</u>		1111	S 677.15				1/ /)	<i>i 1</i>	9-8-8		

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ISTORET CODES APPLY TO ONLY SUITEACE WATER SAMPLES.

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SPAN LABID .____

DISTURBET COOKS APPLY TO FRICO MEASUREMENTS

CHEMICAL ANALYSIS REPORT FORM SAMPLE TYPE: WATER - FRESH V SALINE ___ SEDIMENT TIME A - GRAB SAMPLE سيح €0ا 7430 DATE IM/D/YI STORET STATION NUMBER AGENCY CODE TIME B COMPOSITE SAMPLE 072485 51 BEGIN COMP END LOCATION REMARKS Job # FFFLUENT: SURFACE WATER SAMPLE SOURCE: RIVER/STREAM: FIELD BLANK: CHOUNDWATER FIELD DUPLICATE: LAKE/POND: MONITORING WELL: DRINKING WATER WELL: OTHER: . ESTUARY/BAY: UNIT CODEC TAS # FIELD/LAB ID # PRESERVATION WELL 51-LN-V MMHOS/CM SPECIFIC CONDUCTANCE Jce STO UNIT 400 SAMPLED BY: TEMPERATURE FIELD REPORT PREPARED BY MEASURED BY: UNIT CODE ! PARAMETER UNIT CODE VALUE PARAMETER CHROMIUM AS CIRCLED: COPPER PURGEABLES IRON BASE/NEUTRAL EXT LEAD ACID EXTRACTABLE MAGNESIUM PESTICIDE MANGANESE HERBICIDE MERCURY PCB'S NICKEL ALUMINUM POTASSIUM (Al reg'd all sediments) ANTIMONY SELENIUM ARSENIC SILVER BARIUM SODIUM BERYLLIUM BORON STORET FIELD SAMPLE # CADMIUM AGENCY COLLECTING 23 LAGENCY ANALYZING CALCIUM - Actual value is known to be greater than value given - Estimated Value - Material was analyzed for but not detected. The number - Actual value is known to be less than value given. Minimum Detection Limit PAGE THE PORCE STREET IN

•	Report Form - PI		ABLES					
ample Type: 🧗 🦮	vater (Fresh)			Time A - Grab Sample 1430				
Agency Code S SA LAB	TORET Station Numb none	er Da		led (M/D, /24/85	Time B - Composite Sample NA COMP BEGINNING NA END NA	Depth, Feet		
Remarks					Site Location: Berry Nursery			
PMAS # 1315	FIELD ID # 51-	LN-V		WELL #	A Sample Source: Lake/Pond			
PARAMETER		UNIT	STORE T	VALUE	PARAMETER UNIT STOR			
Benzene		ug/L	34030	ન ૫	o-Chlorotoluene ug/L 7797	0 1 0		
Bromodichloromethane		ug/L	32101	1 U	1,2-Dibromoethane ug/L 7765			
Bronofore		ug/L	32104	10	Styrene ug/L 7712			
Bromomethane		ug/L	34413	1 U	Xylenes			
Carbon tetrachloride		ug/L	32102	1 U	cis-1,2-Dichloroethene ug/L	1 U		
Chlorobenzene		ug/L	34301	1 U	Other Purgeables ug/L	2 J		
Chloroethane		ug/L	34311	1 U	93/4	1		
2-Chioroethylviny	l ether	ug/L	34576	1 0				
Chloroform		ug/L	32106	1 U				
Chloromethane		ug/L	34418	1 U				
1,2-Dichlorobenze		ug/L	34536	1 0				
1,3-Dichlorobenze		ug/L	34566	1 0				
1,4-Dichlorobenze		ug/L	34571	1 0		 		
Dibromochlorometh		ug/L	32105	10				
1,1-Dichloroethan		ug/L	34496	1 0				
1,2-Dichloroetham		ug/L	34531	1 0				
I,1-Dichloroethen		ug/L	34501	1 0				
trans-1,2-Dichlor		ug/L	34546	1 0				
1,2-Dichloropropa		ug/L	34541	10		_		
cis-1,3-Dichlorop		ug/L	34561	1 0				
trans-1,3-Dichlor		ug/L	34561	1 0				
Ethylbenzene	орг орсис	ug/L	34371	1 U		_		
Methylene chloric	ia	ug/L	34423	1 U				
1,1,2,2-Tetrachic		ug/L	34516	1 U				
Tetrachloroethens		ug/L	34475	1 U				
1,1,1-Trichloroet		ug/L	34506	1 U				
1,1,2-Trichloroet		ug/L	34511	1 0				
Trichloroethene		ug/L	39180	1 0				
Toluene		ug/L	34910	1 0				
Vinyl chloride		ug/L	39175	1 0				
		49/1	37173	 	TORET FIELD SAMPLE # 29	-		
	1		-	 	GENCY COLLECTING 27			
J -Estimated Va	ilue		<u></u>	<u> </u>	GENCY ANALYZING 28 U-Material was analyzed for but not detected.	8066		
K -Actual value NA-Not analyzed	is known to be le for this compound is known to be gr			•	number is the Minimum Detection Limit, E-Scientific Notation (Example: 6 X 104 = 6E4 *-Confirmed by PID/Hall~Detectors			
ANALYS !	8/14/C DA V	ERIFIE	P BY 8-14	-45	LAB REPORT VERIFIED BY DATE			

State of Florida DEPARTMENT OF ENVIRONMENTAL REGULATION

- SPAN LABID

24736

CHEMICAL ANALYSIS REPORT FORM

					TIME A - SPAUS.			
MCENCY CODE STORET STATION NUMBER	M/D/Y)		1430					
51				2485	TIME 8 COMPOSITE SAMPLE COMP BEGIN			
					EN	0		i -
REMARKS				LOCATION				
Job #		·		Berry	Nursen	· ·		
AMPLE SOURCE: ROUNDWATER IONITORING WELL: RINKING WATER WELL:	AIVE LAK	FACE WATER ER/STREA E/POND: JARY/BATER	M:	C 0	EFFLUENT: FIELD BLANK: FIELD DUPLICATE OTHER:		GC GC	
	NOITAVE	~	ELL.			UNIT		0064
AMPLED BY: Riecy/ thie/	ce			SPECIFIC CONDUCTANCE		STO UNIT		94
IELO SESSORY ASSESSORS IN IN		TEMPERATURE 0			 	10		
Kiech			·	MEASURED 8Y				
PARAMETER	TINU	CODE*	VALUE	РА	RAMETER	Úľ	JIT C	ODE.
AS_CIRCLED:				CHROM:	CHROMIUM			
PURGEABLES				COPPE	COPPER			
BASE/NEUTRAL EXT				IRON				
ACID EXTRACTABLE				LEAD				
PESTICIDE				MAGNES	SIUM		- :	•
HERBICIDE		-		MANGAN	NESE		1	
PCB'S				MERCUI	RY			18
							C	110.
ALUMINUM	·		 -	NICKEI	J		73	
Al req'd all sediments) ANTIMONY	7			POTASS	SIUM	CUSTO	2	
ARSENIC		<u> </u>		SELENI	UM	Ch		
BARIUM				SILVER	121	3	- !	
BERYLLIUM				SODIUM	CHIA			
BORON				ZINC			İ	
						j		·
CADMIUM				AGENCY COLL			- 	
CALCIUM				AUENCY ANAL		<u> </u>	·	23
Estimated Value Actual value is known to be less the	an value e	givea.		. U — Material v	lue is known to bi vas analyzed for b i Detection Limit	greater than lut not detect	rvalue led Th	nt com Grand Eac com
201 (A) V	Pare Law of Cont. At His & D. R.							

SPAN LARID

24736

THEMICAL ANALYSIS REPORT FORM

REMARKS

SAMPLE TYPE: WATER - PESTICIDE EXTRACTABLES

			TIME A - GR	3A8 SAMP =	
AGENCY COOR	STORET STATION NUMBER	CATE	1	7430	56.7°
SA LAB		0722485	TIME 3 COM	POSITE SAMPLE	
		OF 6.703	COMP	BEGIN	
			1 00.11	ENO	

51-LN

LCCATION

Berry Nursery

PARAMETER	UNIT	CODE	VALUE	PARAMETER	1	
1. Aldrin					UNIT	CODE
2. a-8HC	ارودر	39330	.01 U	2;4-0	الوننا	39730
3. 5-5HC	μg/l	39337	.01 U	2,4,5-TP	ا بوير	39760
4. g-8HC	اليصا	39338	.01 U	_ Demeton	ابضيا	39560
3. d-8HC	انوير	39340	.01 U	Guthion	ايونن	39580 2
6. Chlordane	ועפין	34259	.01 U	Maiathion	ا بوئے	39530
7. 4,4'-000	μ α j)	39350	.25 UI	Methoxychior	ارود	39480
8. 4,4100E	1 /19/1	39310	.03 U	Mirex	ايونز	39755
9. 4,4:00T	<u> </u>	39320	.03 U	Paratrion	ارجز	39540
9. 0,4.001 0. Dieldrin	ו/פַנון	39300	.03 01			<u></u>
Dielonn Endosulfan I	الرودنا	39380	.03 .01		i i	
Endosulfan II Endosulfan II	<u> </u>	34361	.03 U	AGENCY COLLECTING		27
	µg/1	34356	.03 U			1
 Endosuiran Sulfate Endrin 	<u> </u> 2g/l	34351	.03 UI	AGENCY ANALYZING		28
	ا پویر	39390	.03 Ui	**************************************	<u> </u>	
5. Engrin Aldenyda	<u> </u>	34366	.03 UT	SAMPLE #	-	
6. deptachior	ועפיגן ו	39410	.01 Ui	· · · · · · · · · · · · · · · · · · ·		
7. Heptachior Époxice	ا ارونا	39420	.01 U		i	
3. Taxabhene	ן ועפטן	39400	.25 Ul	**************************************		
9. PCS-1016	ו עפגו	34671	.25 U		· · · · · · · · · · · · · · · · · · ·	<u> </u>
D. PC3-1221	ابوب	39488	.25 UI		1	1
1. PC3-1232	ו/מע	39492	25 U			······································
2. PCB-1242	1/24	39496	_,25 U	···		
3. PC3-1248	1/27/	39500	.25 U			
I. PC8-1254	ועמע	39504	.5 111			
5. PC3-1260	<i>11</i> 9/1	39568	.5 ()			
						<u> </u>
						[
					!	
						
					<u> </u>	
			<u>-</u>			<u> </u>

- Estimated Value

- ζ $\stackrel{\bullet}{-}$ Actual value is known to be less than value given.
- Actual value is known to be greater than value given.
- Material was analyzed for but not detected. The number is the Minimum Detection Limit.

WALTST	CA VERIFIED	REPORT VERIFIED BY	
B 8-7-15	1 8-8-85	PAP	8-8-85 8-8-85

STATE OF CLOUDS

OBPARTMENT OF ENVIRONMENTAL REGULATION

SPAN LABID 2475-/

CHEMICAL ANALYSIS REPORT FORM

						TIME A - GE	Att Same			
AGE VCY CQDE	STORET STATION NUMBER			OA FE IN	4/O/Y)	147				
51					771101	OSITE SAA	APLE			
				-	72485	COMP	SECIN			
	•						END			
REMARKS			<u> </u>		LOCATION		2			
Job #					Berry	Nucles	ry			
AMPLE SOURCE		SURE	ACE WA	TEA		EFFLUEN	- /	<u>-</u>		
POUNDWATER W DNIROTINON			A/STAEA	·M:		FIELD BE	ANK:		CICICI	
RINKING WATE	R WELL:		ARY/BA	Y :	ā	FIELD DI OTHER:		E:	<u> </u>	
TAS #	FIELD/LABID / PRESER	VATION		ELL		-				
5		VO,			SPECIFIC CONDI	JCTANCE	11	MHOS/CM	200€	
AMPLED BY:	Riecell thiel	7.	·····		рн			TO UNIT	400	
IELD AEPOAT P	A: A/				TEMPERATURE			°C	10	
	Rech Rech				MEASURED BY					
PA	RAMETER	UNIT	CODE*	VALUE	2.0	RAMETER		UNI	T CODE	
AS CIRCL	ED:			·	CHROM		. >			
					CIRON	1011 //- 3	35 4	-//		
PU	RGEABLES				COPPE	R		1	-	
D 70	CE (NEUGDAL DIG					•		i		
DA.	SE/NEUTRAL EXT				IRON					
AC	ID EXTRACTABLE			· _	LEAD	·		<u> </u>	<u> </u>	
										
PE;	STICIDE				MAGNE	SIUM			;	
не	RBICIDE		·		<u> </u>			j	1	
	.WICIDE				MANGA	NESE				
PC	B'S				MERCU	RY)				
							··-	:	<u> </u>	
AT.I	OMINUM				NICKE	Ĺ			1	
	all sediments)	-			DOM 1.0				!	
AN	PIMONY			1	POTAS	SIUM				
					SELEN	TIM				
ARS	SENIC									
BA:	RIUM				SILVE	₹		1		
	KIOM			·	CODIU			<u> </u>	1	
BEJ	RYLLIUM				SODIU	1			-!	
					ZINC			- 	1	
BOI	RON					AIN OF	CHC	עתמז	CUMP	
CAI	DMIUM		<u>-</u> - -	_ 	STORET FIELD			יועטו	JAHH	
					AGENCY COLL			;		
<u>C</u> VI	LCIUM				AGENCY ANAL	YZING		1		
– Estimate	d Value		erene tur et		L - Adjual v.	one is known	tu be are	ater than v	ratue orden	
< - Actually	afue is known to be fess tha	in value q	pveo.		Terestati - U	was analyzed I	for but n	ot derected	d. The niye	
	L. D. VA		- ,	· — - · 		n Detection Li	mit.			
	1 100	711F IE D 47	•		PAGE LAGE PRICHE	SEPTEMBER STORY	•			

Chambers Applyers Report Form - METALS

mple Type:	Water (Fre	sh)				30 [A	<u> </u>			
Agency Code SA LAB	STORET Station	Number De		led (M/D/Y) 124/85	COMP BEGINNING NA END NA		Depth,			
Remarks					Site Location: Berry Nursery					
PMAS # 1315	FIELD ID # 5	51-LN-M	<u></u>	WELL #NA	Sample Source: Lake/Por	ıd				
PARA	€ TER	UNIT	STORET	VALUE	PARAME TER	JINU	STORE T	VAL		
Cadeius	6 08/05/85 SL	ug/L	01027	.4 U						
Lead	6 08/05/85 SL		01051	5 U						
Arsenic	6 08/06/85 SL		01002	3 0						
Hercury	H 08/05/85 JH		71900	.1 K			<u> </u>			
Chromium	F 07/30/85 LH		01034	25_U	.		 			
	<u>.</u>					-				
								<u> </u>		
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	······································		 							
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				1						
								—		
	 						- 	-		
								 		
				 						
				s	TORET FIELD SAMPLE #		29			
				I A	GENCY COLLECTING		27	 		
NA -Not enel:	d Value alue is known to yzed for this com alue is known to	pound.		e given.	GENCY ANALYZING U-Material was analyzed for but number is the Minimum Detecti E-Scientific Notation (Example: *-Confirmed by	ion Limit.	1	80 he		
ANALYST	8-9-85 S&-	DA VERIF	IED BY	-85	LAB REPORT VERIFIED BY NO.	P DF	9-85	,		

SPAN Lab ID 24752

CHEMICAL ANALYSIS REPORT FORM

EP TOXICITY TEST - METALS

Agency Code	Date Collec	ted (M/D/Y)	Time / 47 v	Sample Typ	ø	y	Depth, Fest
SA LAB	07248	<u>-</u>	072485				6
Ramarks				Location . Berry N	oursery		
TAS 4 /3 /5		field Le	•	Sampled 8	iy	Field Repor	t Prepared By
			igrams per liter	rather than m	icrograms	per liter so th	nat a comparison c
be made to EPA's criteria. PARAMETER			RESULTS	er (mq/l)	MINIM. TIBIHX3	LS CHARACTERIST	NAT WHICH SAMPLE IC OF EP TOXICITY® : liter (mg/l)
l. Arsenic	8-6-85 5		0.005			5.1)
2. Serium						100.	
3. Cedmium	8.7.85 LW		.01U			1.0	
4. Chromium	8-7.85 LW		,025 U			5.	3
5. Lead	8.7.85 Li	٠,	.05 U			5.	3
6. Mercury	2-5-85	M	0.2001	и		0.	2
7. Selenium			:			1.	0
8. Silver						5.	0
* As per Part Comments	261.24/Federa	L Register/Vo	luma 45, Na. 98/	Monday, Mav 1	9, 1980/Ru	les and Requiat	ione.
	ue is known to			U-Material ber is t	was analy he Minimum	zed for but not Detection Limi	
ANALYST	8-8-85°	DA VERIA	1ED 8Y	LAB REPORT	AEKILIST)	KINI'	8-19-85

tate of Florida 24734 DEPARTMENT OF ENVIRONMENTAL REGULATION SPAN LABID ____ CHEMICÁL ANALYSIS REPORT FORM AMPLE TYPE: WATER - FRESH ___ SALINE ___ SEDIMENT TIME A - GRAB SAMPLE 1330 CEPT DATE (M/D/Y) AGENCY CODE STORET STATION NUMBER TIME B COMPOSITE SAMPLE 072485 51 SE GIN COMP ENO LOCATION REMARKS Berry Job # SAMPLE SOURCE: SURFACE WATER RIVER/STREAM: GROUNDWATER FIELD DUPLICATE: MONITORING WELL: LAKE/PONO: ORINKING WATER WELL: OTHER: . ESTUARY/BAY: CODE4 UNIT FIELD/LABID# PRESERVATION WELL G1LIMHOS/CM 94 51- G1-PCB MP SPECIFIC CONDUCTANCE Tce. STO UNIT 400 SAMPLED BY: 10 TEMPERATURE FIELD REPORT PREPARED BY MEASURED BY PARAMETER UNIT CODE" UNIT CODE* VALUE PARAMETER CHROMIUM AS CIRCLED: COPPER PURGEABLES TRON BASE/NEUTRAL EXT LEAD ACID EXTRACTABLE MAGNESIUM PESTICIDE MANGANESE HERBICIDE MERCURY PCB'S NICKEL ALUMINUM POTASSIUM (Al req'd all sediments) ANTIMONY SELENIUM ARSENIC SILVER BARIUM SODIUM BERYLLIUM ZINC BORON STORET FIELD SAMPLE # CADMIUM AGENCY COLLECTING AGENCY ANALYZING CALCIUM - Actual value is known to be greater than value given - Estimated Value - Material was analyzed for but not detected. The number - Actual value is known to be less than value given. Minimum Detection Limit SAM THE BENNET PERIFIED BY OA VERIFIED 91 DISTORET CODES APPLY TO FIELD MEASUREMENTS STORET CODES APPLY TO ONLY SURFACE WATER SAMPLES.

HEMICAL ANALYSIS REPORT FORM

AMPLE TYRE: WATER - PESTICIDE EXTRACTABLES

			TIME A - GRAB SAMP =	
AGENCY CODE	STORET STATION NUMBER	CATE	TIME 8 COMPOSITE SAMPLE	C€. ²⁷⁷ ∺.
SA LAB		7/4/83	COMP ZEGIN	
			ENO	

LCCATION REMARKS Berry Nursery 51-G1

PARAMETER	UNIT	CODE	VALUE	PARAMETER	UNIT	CODE	V,
1. Aldrin	ارويز	39330	.01 U	2:4-0	الحتا	39730	<u> </u>
2. a-8HC	ועפע	39337	.01 U	2,4,5-TP	ا/پیتر	39760	!
3. 5-BHC	; <u>;;;</u> ;[39338	.01 UI	_ Demeton	<u> 149/1</u>	39560	!
14. ¢8HC	الوسن	19340	.01 U	Guthian	ابود	39580	<u>e.</u> [
5. a-8HC	ارودر	34259	.01 U	Maiathign	ועפיגן ד	39530	1 . 2
6. Chlordane	μg/l	39350	.25 U	Methoxychior	اروب ا	139480	
7. 4,41,000	<u> </u>	39310	.03 U	Mirex	ا بونر	39755	
8. 4,41-DOE	ا روس	39320	.03 U	Parathion	ابعد ا	39540	<u>].</u> [
9. 4,4'-00T	ועפגון	39300	.03 U		<u> </u>	<u> </u>	1
10. Dieldrin	الونز	39380	.03 U				<u> </u>
11. Endosulfan I	ازوير	34361	.03 U	AGENCY COLLECTING	<u> </u>	27	<u> </u>
12. Endosulfan II	<u> </u>	34356	.03 U				<u> </u>
13. Endosulran Sulfate	<u> μ</u> α/	34351	.03_U	AGENCY ANALYZING		28	 :
14. Endrin	<u> /</u> pu/	39390	.03 U		<u> </u>		<u> </u>
15. Enarin Aldehyda	1.55.1	34366	.03 U	SAMPLE #		29	
6. Heptachior	µgy	39410	.01 U			ļ	! _
7. Heptachior Epoxide	<u> </u>	39420	.01 U			<u> </u>	1
9, Toxephene	ارتصا	39400	15		. !	<u> </u>	
9. PC3-1016	الوددا	34671	.25 U				
:0. PC3-1221	ועפע	39488	.25 U		1	<u> </u>	:
21. PC3-1232	ا ارودن	39492	.25 U				!
2. PCS-1242	الوبر	39496	.25 U		<u> </u>	<u> </u>	+
23. PC3-1248	ارودر	39500	_25_U			1	 -
24. PC3-1254	الولا	39504	<u> </u>			<u> </u>	
25. PC3-1260	l µg/l	39508	.5 U			1	- -
1.		ļ				1	<u>!</u>
		<u> </u>				1	1
			<u> </u>			i	<u></u>
	<u> </u>				<u> </u>	1	1
						<u>i</u>	1
	<u> </u>				<u> </u>	Ţ	

⁻ Estimated Value

-NALTST /	CA VERIFIED	REPORT VERIFIED BY	ت من الله الله الله الله الله الله الله الل
Blove	f-785 1 -8-8-8	12111	8-8-85

⁻ Actual value is known to be less than value given.

⁻ Actual value is known to be greater than value given.

⁻ Material was analyzed for but not detected. The number is the Minimum Detection Limit.

State of Florida

DEPARTMENT OF ENVIRONMENTAL REGULATION

	2 V	756
SPAN LABID.	<u> </u>	150

	VATER - FRESI	•				TIME A - GR	AB SAMP	LE		
CENTRA CODE	STORET STATION NUMBER			DATE (M.	/D/Y)	1	33 <u>0</u>			
GE NCY CODE	210HE1 31XHOLLHOMETH	N-7-7		2485	TIME 8 COMP	7				
51		07-			~~ 33	COMP	BEGIN	<u> </u>		
							ENO			
EMARKS					LOCATION		۰			
Job #					Bern	Nuise	102			
		SILBS	ACE WAT	ER		EFFLUE	NT:			
AMPLE SOURCE: <u>ROUNDWAIEB</u>		RIVE	R/STREAM			FIELD C	LANK: SUPLICA	TE: Su-	٦, ٦	+
ONITORING WE RINKING WATE	LL: A WELL:		ARY/BAY	:		OTHER:		/u-	Con	<u> </u>
TAS# F	IELD/LAB ID# PRESER	VATION	WE	144				UNIT		CODE
	1- G1-V Ic		G	1	SPECIFIC COND	UCTANCE		ДМНО5/		94
AMPLED BY:	Crock / Thiel	•			PEMPERATURE			STO UN	17	10
IELO AEPOAT P	REPAPED BY: (See)	/			MEASURED BY					
	- recarre		<u> </u>						JNIT	CODE
PA	RAMETER	UNIT	CODE.	VALUE		ARAMETER		. '		
AS CIRCL				CHROM	ITUM				-	
	26272726				COPPE	ER	•			
(PO.	RGEABLES					`				ļ
BA	SE/NEUTRAL EXT				IRON					
	,				LEAD					
AC_	ID EXTRACTABLE				LEAD			1		1 .
PE	STICIDE		`		MAGNI	ESIUM				ļ
			·		MANG	ANESE				,
HE	RBICIDE				MANG	ANESE				<u></u>
P.C.	B'S	-			MERC	URY				1
10	, <u>D D</u>									<u> </u>
					NICK	EL		1		<u> </u>
	.UMINUM	 	 		POTA	SSIUM				<u> </u>
AN AN	l all sediments NTIMONY	4	+	1						1
					SELE	NIUM				
AF	RSENIC		<u> </u>	<u> </u>	SILV	ER		<u>_</u>		
	ARIUM			<u>. </u>	DID.	<u> </u>				
	11/1011				SODI	UM				<u> </u>
BI	ERYLLIUM		_	 	Z TNO					1
	ORON	 		 	ZINC	IN OF O	UCT	ODY	CAR	DLI
	<u>JKON</u>	-			CHA	INUFL	<u> </u>	ODY	Onli	, 29
C.	ADMIUM				STORET FLE	LD SAMPLE	-#			1 27
	NIGIUM		- 	 	AGENCY AN	IALYZING				28
J — Estima	ALCIUM ated Value I value is known to be less	than valu	ue given.	<u> </u>	L - Actua	al value is kno ial was analy num Detectio	zed for	but not o	than letecte	value gr d. The
						CHIT VERIFIED				

SPAN LAB 1D 24756

	is Report Form - <u>F</u> Water (Fresh				Time A		1330			
Agency Code SA LAB	STORET Station Num			ed (M/D/Y		THE D - COMP			Depth, Feet 10	
Remerks andpoint		· · · · · · · · · · · · · · · · · · ·			Site l Berry	cation: Nursery				
PMAS # 1315	FIELD ID # 51	-G1-V		WELL #G	1 Same	ole Source: Sandpo	oint			
PARAM	ETER	UNIT	STORE T	VALUE		PARAMETER	UNIT	STORET CODE	VAL	
Benzene		ug/L	34030	1 0	o-Chlorot	oluene	ug/L	77970	1.11	
Bronodichloro	ethane	ug/L	32101	1 U	1.2-Dibro	noethane	uq/L_	77651	11	
Brosofors	ic on an a	ug/L	32104	i U	Styrene		ug/L	77128	14	
Bronomethane		ug/L	34413	1 U	Xylenes		ug/L	81551	1 1	
Carbon tetracl	nloride	ug/L	32102	1 U	cis-1,2-D	ichloroethene	ug/L	ļ	1 0	
Chlorobenzene	.10.100	ug/L	34301	10	Other Pur		ug/L		10 J	
Chloroethane		ug/L	34311	1 U				ļ	ļ	
2-Chloroethyl	vinvl ether	ug/L	34576	1 1				 	 	
Chlorofor .		ug/L	32106	1 U					 	
Chloromethane		ug/L	34418	1 U				_	 	
1,2-Dichlorob		ug/L	34536	10				 	 	
1,3-Dichlorob		ug/L	34566	1 U					 	
1,4-Dichlerob		ug/L	34571	1 U					├ ─	
Dibromochloro		ug/L	32105	1 U				 	 -	
1.1-Dichloroe		ug/L	34496	1 U					 	
1,2-Dichloroe		ug/L	34531	1 U					 	
1,1-Dichloroe		ug/L	34501	1 8					ļ	
trans-1,2-Dic		ug/L	34546	1 U						
1.2-Dichloro		ug/L	34541	1 U					 	
cis-1,3-Dich		ug/L	34561	1 U					—	
	chloropropene	ug/L	34561	1 U						
Ethylbenzene		ug/L	34371	1 0						
Hethylene ch	loride	ug/L	34423	1 U						
1,1,2,2-Tetr	achloroethane	ug/L	34516	1 U						
Tetrachloroe		ug/L	34475	1 0				_	- 	
1,1,1-Trichl	oroethane	ug/L	34506	1 U					—	
1,1,2-Trichl	oroethane	ug/L	34511	1 U					 	
Trichloroeth	ene	ug/L	39180	1 U						
Toluene		ug/L								
Vinyl chlori	de	ug/L	39175	1 U	STORET F	IELD SAMPLE #		29		
\ <u></u>					AGENCY CO	OLLECTING		27		
					AGENCY A	NAL YZ ING	1 = 1 dat	28	80	
NA-Not ana. L -Actual	ed Value value is known to be lyzed for this compo value is known to be	ound.			numbe F-Scient	ral was analyzed for is the Minimum Det tific Notation (Examumed by PID/Hall-Be	ection Limit ple: 6 X 10			
L -Actual given	value is known to be	e greate		···	*-Confi	ORT VERIFIED BY	tectors		(

S]ate of Florida DEPARTMENT OF ENVIRONMENTAL REGULATION SPANLABIO 24749 CHEMICAL ANALYSIS REPORT FORM SAMPLE TYPE: WATER - FRESH ___ SALINE ___ SEDIMENT TIME A - GRAS SAMPLE AGENCY CODE STORET STATION NUMBER 1330 DATE IM/D/YI D€ = 7-TIME B COMPOSITE SAMPLE 51 072485 BEGIN COMP END REMARKS LOCATION Job # Berry SAMPLE SOURCE: SURFACE WATER GROUNOWATER AIVER/STREAM: FIELO BLANK: MONITORING WELL: FIELD BLANN.
FIELD OUPLICATE: Sund ORINKING WATER WELL: LAKE/PONO: ESTUARY/BAY: TAS# FIELD/LAB ID # PRESERVATION WELL UNIT cobe4 51- G1-M HNO. 51 SPECIFIC CONDUCTANCE MHOS/CM 94 SAMPLED BY: STO UNIT 400 TEMPERATURE °C 10 FIELD REPORT PREPARED BY MEASURED BY: PARAMETER UNIT CODE 1 VALUE PARAMETER UNIT CODE AS CIRCLED: CHROMIUM **PURGEABLES** COPPER BASE/NEUTRAL EXT IRON ACID EXTRACTABLE LEAD PESTICIDE MAGNESIUM HERBICIDE MANGANESE PCB'S MERCURY NICKEL ALUMINUM (Al req'd all sediments) POTASSIUM ANTIMONY SELENIUM ARSENIC SILVER BARIUM SODIUM BERYLLIUM BORON CHAIN OF CUSTOD CADMIUM ું લે AGENCY COLLECTING CALCIUM AGENCY ANALYZING Estimated Value - Actual value is known to be greater than value given - Actual value is known to be less than value given. - Material was analyzed for but not detected. The number Minimum Detection Limit. 32.4E 757 TH OBININA VEL PAN LAR HEPIDHT VENIFIED BY STORET CODES APPLY TO ONLY SURFACE WATCH SAMPLES ESTORET CODES APPLY TO FIELD MEASUREMENTS

¹ .

24749 SPAN LAB ID _-Chamistry, Laboratory, Tallahassee Chemical Analysis Report Form - METALS 1330 Water (Fresh) Time A - Grab Sample Sample Type: NA Time B - Composite Sample Depth, Feet Date Sampled (M/D/Y) Agency Code STORET Station Number COMP **BEGINNING** 10.0 SA LAB 07/24/85 END NA none Remarka Sandpoint Site Location: Berry Nursery Sample Source: Sandpoint PMAS # 1315 FIELD ID # 51-G1-M WELL NA PARAMETER STORE I VALUE. UNIT STORET PARAMETER I INU VALUE CODE CODE Cadeium 6 08/05/85 SL ug/L 01027 4 K Lead G_08/05/85 SL ug/L 01051 11.3 47 Arsenic ... 130 6 08/06/85 SL ug/L 01002 Hercury M 08/05/85 JH ug/L 71900 .1 % Chromium F 07/30/85 LH 01034 ug/L 25 K STORET FIELD SAMPLE # 29 AGENCY COLLECTING 27 AGENCY ANALYZING 28 8066 J -Estimated Value U-Material was analyzed for but not detected. The K -Actual value is known to be less than value given. $M\!-\!N\!ot$ analyzed for this compound. number is the Minimum Detection Limit, E-Scientific Notation (Example: $6 \times 10^4 = 6E4$) L -Actual value is known to be greater than value *-Confirmed by _ given. جعد Pan 8-9-85 **ANALYST** LAB REPORT VERIFIED BY

8-9-85

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CHEMICAL ANALYSIS REPORT FORM

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### STD UNIT 460 **ELD REPORT PREPAGED ON RESULT PARAMETER UNIT CODE* VALUE PARAMETER UNIT CODE* AS CIRCLED: CHROMIUM PURGEABLES COPPER BASE/NEUTRAL EXT IRON ACID EXTRACTABLE LEAD PESTICIDE MAGNESIUM HERBICIDE MAGNESIUM HERBICIDE MARGANESE PCB'S MERCURY ALUMINUM NICKEL ALUMINUM NICKEL ALUMINUM SELENIUM ARSENIC SELENIUM BERYLLIUM SODIUM BERYLLIUM SODIUM BORON ZINC CADMIUM STONEY COLLECTING CALCIUM ACID EXTRACT SELENIUM STONEY TO BE GREATE than value given **Action value is known to be greater than value given **Action value is known to be greater than value given **Action value is known to be greater than value given **Action value is known to be greater than value given **Action value is known to be greater than value given **Action value is known to be greater than value given **Action value is known to be greater than value given **Action value is known to be greater than value given **Action value is known to be greater than value given **Action value is known to be greater than value given **Action value is known to be greater than value given ***Action value is known to pergreated Tale ***Action value is known to pergreated Tale ****Action value is known to pergreated Tale ****Action value is known to pergreated Tale *****Action value is known to pergreated Tale ******Action value is known to pergreated Tale ***********************************	TAS # F	TELD/LAS ID # PRESE						UNIT	CODE
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			an value	given.	The state of the s	U – Material	was analyzed for	but not defected	alue gram I The mus

CHEMICAL ANALYSIS REPORT FORM

SAMPLE TYPE: WATER - PESTICIDE EXTRACTABLES

			TME A - 08	IAB SAMPLE	
AGENCY COCE	STORET STATION NUMBER	CATE		//30	CEFTH
CA 1 40		67210	TIME 8 COM	TIME & COMPOSITE SAMPLE	
SA LAB		U + 2403	COMP	BEGIN	
				ENO	

LOCATION REMARKS Berry Nursery 51-62

PARAMETER	UNIT	CODE	VALUE	PARAMETER	UNIT	CODE
1. Aldrin	µg/l	39330	.01 U	2:4-0	ايصا	39730
2. a-BHC	ا/وير	39337	.01 U	2.4,5+72	ا بوید	39760
3. 5-5HC	<u> g/</u> t	39338	.01 UI	Demeton	ا/يعدا	39560
.4. ç-8HC	انويز	39340	.01 U	Guttion	ابوبا	39580 <u>2.</u>
5. a-8HC	Ligy	34259	.01 U	Maiathion	ا ہونے ۔	39530
6. Chlordane	اروس	39350	.25 U	Methoxychlor	ا بهتا	39480 .
7. 4,41-000	[/פין	39310	.03 U	Mirex	ابوبا	39755
8. 4,4'-DOE	μ σ μ i	39320	.03 U	Parathion	ايوعنا	39540
9. 4,41-007	ا/ونا	39300	.03 U			
10. Dieldrin	انودز	39380	.03 · U			
11. Endosuifan I	انوبير	34361	.03 U	AGENCY COLLECTING		27
12. Endosulfan II	µg/1	34356	.03 ·U			1
13. Endosultan Sulfate	انونر	34351	1 .03 U	AGENCY ANALYZING	<u> </u>	28
14. Endrin	انوبر	39390	1.03 U			
15. Enarin Aldenyde	<u> </u>	34366	.03 U	SAMPLE		29-
16. Heptachior	ו עפיין	39410	.01 U		1	<u> </u>
17. Heptachior Spaxice	ايويز	39420	.01 U		<u> </u>	<u> </u>
18. Toxabhene	ا برصر ا	39400	1.25 UI		<u> </u>	1
19. PCS-1016	ו עפצו	34671	.25 UI		<u> </u>	<u> </u>
20. PC3-1221	ועפעו	39488	.25 U			
21. PC3-1232	<u> 449/1</u>	39492	.25 ·U			<u> </u>
22. PC3-1242	اروس	39496	i 25 U			
23. PC3-1248	اروبر	39500	.25 U		<u> </u>	1
24. PC3-1254	ا/رونز	39504	5 U		J	1
25. PC3-1260	ا/پونز	39508	1 .5 U			
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⁻ Estimated Value

-NALTST	CA VERIFIED	REPORT VERIFIED BY	CATE
JB 8-75)	\$ 8.87	RIN	8-8-85

⁻ Actual value is known to be less than value given.

⁻ Actual value is known to be greater than value given.

⁻ Material was analyzed for but not detected. The number is the Minimum Detection Limit.

State of Flyings

* DEPARTMENT OF ENVIRONMENTAL REGULATION

SPAN LABIO 2 475 7

CROUNDWATER MONITORING WELL: DRINKING WATER WATER	TIME A - GRAB SWAPLE	1
REMARKS JOD COMP MEGN SAMPLE SOURCE: SURFACE WATER FIELD BLANK: FIELD DUPLICATE SAMPLE SOURCE: SURFACE WATER FIELD BLANK: FIELD DUPLICATE SAMPLE SOURCE: SURFACE WATER FIELD BLANK: FIELD DUPLICATE STUDIAN/183 FIELD ALANGE FIELD BLANK: FIELD DUPLICATE SAMPLED BY: STUDIAN/184 FIELD BLANK: FIELD DUPLICATE FIELD ARPOAT PREPARED BY: STUDIAN/184 FIELD ARPOAT PREPARED BY: SPECIFIC CONDUCTANCE JUMICS FIELD ARPOAT PREPARED BY: STUDIAN/184 FIELD ARPOAT PREPARED BY: SPECIFIC CONDUCTANCE JUMICS FIELD ARPOAT PREPARED BY: STUDIAN/184 FIELD ARPOAT PREPARED BY: SPECIFIC CONDUCTANCE JUMICS FIELD ARPOAT PREPARED BY: SPECIFIC CONDUCTANCE JUMICS FIELD ARPOAT PREPARED BY: SPECIFIC CONDUCTANCE JUMICS FIELD BLANK: FIELD BLANK: FIELD BLANK: FIELD BUPPLICATE FIELD BLANK: SPECIFIC CONDUCTANCE JUMICS FIELD BLANK: FIELD BLANK: FIELD BLANK: FIELD BUPPLICATE FIELD BLANK: SPECIFIC CONDUCTANCE JUMICS FIELD BLANK: FIELD BLANK: FIELD BUPPLICATE FIELD BLANK: FIELD BLANK: FIELD BLANK: FIELD BUPPLICATE FIELD BLANK: FIELD BLANK: FIELD BLANK: FIELD BLANK: FIELD BLANK: FIELD BLANK: FIELD BL		
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8rosofors		g/L	32104	1 U		ene	oc endire	ug/L	77128	1 U
Bromomethane		9/L	34413	1 U		enes		ug/L	81551	1 U
Carbon tetrachloride		9/L	32102	1 U			chloroethene	ug/L	01001	1 0
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1,1-Dichloroethane		g/L	34496	1 U	 				ļ	<u> </u>
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1,1-Dichloroethene		g/L	34501	1 U			 		ļ	ļ
trans-1,2-Dichloroeth		g/L	34546	1 U					ļ	
1,2-Dichloropropane		g/L	34541	1 U					<u> </u>	ļ
cis-1,3-Dichloropropi		g/L	34561	1 U	ļ					
trans-1,3-Dichloropro	·	g/L	34561	1 U						
Ethylbenzene		g/L	34371	1 U			····			<u> </u>
Methylene chloride		g/L	34423	10						
1,1,2,2-Tetrachloroe		g/L	34516	1 U						
Tetrachloroethene		g/L	34475	1 0						
1,1,1-Trichloroethan	1	g/L	34506	1 U						
1,1,2-Trichloroethan		g/L	34511	1 U					1	
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ទីlate of Florida DEPARTMENT OF ENVIRONMENTAL REGULATION SPAN LAB 10 _ 2 4750 CHEMICAL ANALYSIS REPORT FORM SAMPLE TYPE WATER - FRESH ___ SALINE ___ SEDIMENT TIME A - GRAU SAMPLE 1530 AGENCY CODE STORET STATION NUMBER DATE IM/D/YI **⊆€** ≥ TIME B COMPOSITE SAMPLE 51 072485 SECIN COMP CNO REMARKS LOCATION Berry Job # SAMPLE SOURCE: SURFACE WATER GROUNDWATER FIELD BLANK MONITORING WELL: DRINKING WATER WELL: LAKE/POND: FIELD DUPLICATE: ESTUARY/BAY: OTHER PRESERVATION FIELO/LAS 10 # WELL CODE4 51- 62-M 60 SPECIFIC CONDUCTANCE HMHOS/CM SAMPLED BY: STO UNIT 400 TEMPERATURE FIELD REPORT PREPARED BY MEASURED BY **PARAMETER** UNIT CODE* VALUE _PARAMETER UNIT CODE AS CIRCLED: CHROMIUM 17-30-35 41+ PURGEABLES COPPER BASE/NEUTRAL EXT TRON ACID EXTRACTABLE LEAD PESTICIDE MAGNESIUM HERBICIDE MANGANESE PCB'S MERCURY NICKEL ALUMINUM (Al req'd all sediments)
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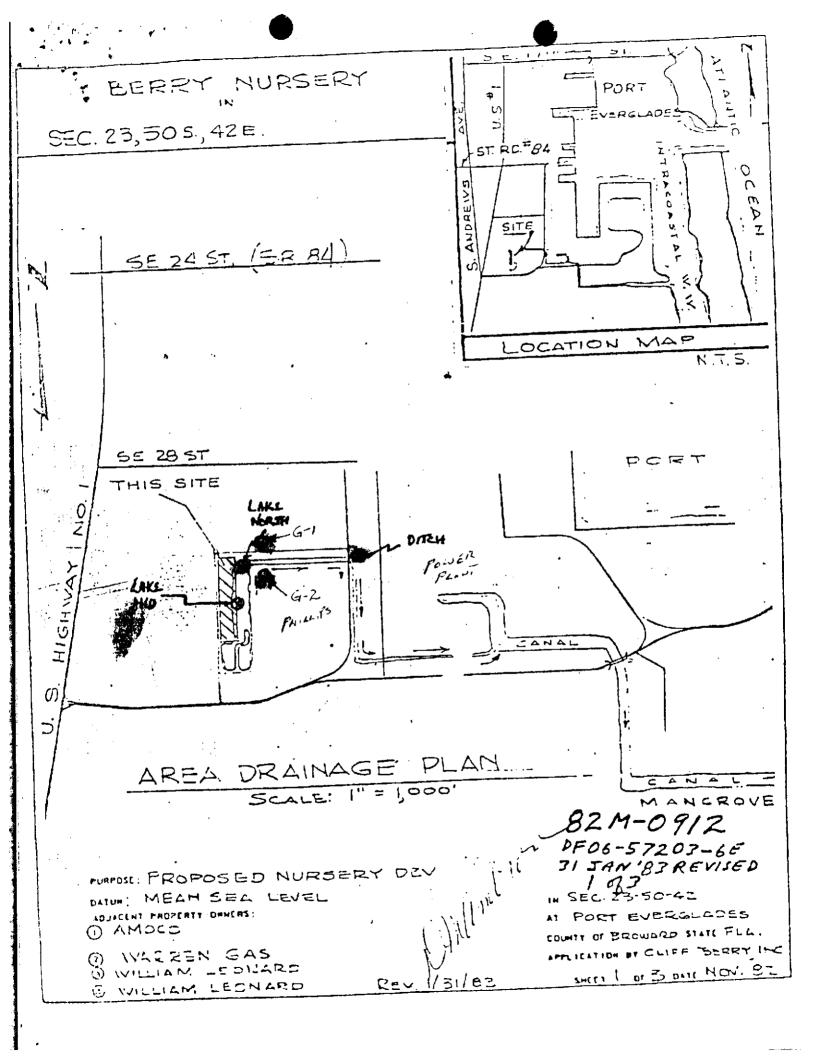
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RIO PALENQUE RESEARCH CORPORATION

4212 LAGUNA • CORAL GABLES, FLORIDA 33146 • TEL (305) 444-5822



August 3, 1984

Mr. Robert J. Compton Compton, Jacobson, and Pierce 617 SE 4th Ave. Fort Lauderdale, FL 33101

re: Cliff Berry Permit Application

Dear Bob,

I have put together the attached report that summarizes my findings. My position on alternative plans is clearly set forth and I believe that the argument for Alternative 1 could be presented to DER. Deliberation on the various alternatives should involve Mr. Berry and Jim Bauch of course.

I am leaving town the 5th and will return Sept. 9. Should you need to consult with ms call my colleague

Dr. Leonard Greenfield

Although Lennie has not visited the site he is somewhat familiar with the project and can review the file.

I wish you well in pursuit of the permits.

Yours truly,

Earl R. Rich

ERR:dr encl

cc: Cliff Berry

Jim Bauch

Len Greenfield

RIO PALENQUE RESEARCH CORPORATION

4212 LAGUNA • CORAL GABLES, FLORIDA 33146 • TEL. (305) 444-5822



Berry Nursery

The water quality conditions in the borrow pit, in the ditch between the borrow pit and the FPL cooling canal, and in the drainage system from the importance not good. The levels of pesticides and herbicides in the bottom sediments are high. They were high the recolumn and in the bottom sediments are high. They were high in both the dry and the rainy season. The sediment hydrocarbons were extremely high, worse than in the Miami River. The PCB level at the ditch station was much higher than in the borrow pit, an indication of a downstream source. In all, there is a set of bad conditions which are not being alleviated by the white mangrove area adjacent to the borrow pit. (See attached analytical data from samples collected 4/26/84)

Following our consultation with the DER staff May 21, 1984, we followed up with water sampling in a "worst case" situation. We took samples for nutrient, pesticide, and herbicide analysis at a time of heavy rainfall, runoff, and pumping from Mr. Berry's agricultural land into the waterway by way of the white mangrove area. In the preceding days there had been extremely heavy rains and the drainage from the airport to the waterway was maximal. The leaching and washing of fertilizers and pesticides had to be extreme. Our observations of nutrients, and pesticides are reported on the enclosed table summarizing the results of the water samples collected on 5/30/84.

It is relevant to the matter of the utility of the overland water flow that at the time of the collection, the water level was high in the borrow pit, the white mangroves were inundated, and the flow of the pumped water across the white mangrove area was rapid, essentially unimpeded, and could not possibly be effective at "cleansing" the water that was being pumped from the upland ditches. Further, it is to be noted that the only time that the upland drainage is pumped across the white mangrove area is when the water is high due to rainfall and therefore, the flow across the mangrove area is rapid.

The wetlands to the east and south of the borrow pit may have some function as a retention area. It is my understanding that part of the wetlands will be filled for a traffic interchange. The only functional drainage of that wetland area seems to be by way of the borrow pit and the ditch to FPL cooling canal and hence the Intracoastal Waterway at the ditch station indicates that the ditch system contaminates rather than cleanses the water from the ditch system contaminates rather than cleanses the water from the ditch system contaminates rather than cleanses the water from the ditch system contaminates rather than cleanses the water from the ditch system contaminates rather than cleanses the water from the ditch system contaminates rather than cleanses the water from the ditch station in the ditch station in the ditch system contaminates rather than cleanses the water from the ditch system.

If we are to be concerned with improving the quality of water drainage to the FPL cooling canal, there are several approaches we might pose. The first and most obvious approach is to clean up the entire industrial area which has served as a major source of pollution for decades. Even this would still leave need for storm drainage. To this end I would

suggest that the entire ditch system be properly maintained with vegetated banks where possible. Storm runoff from the area between the borrow pit and US1 which presently crosses the Cliff Berry Nursery and is pumped to the borrow pit could be handled better in any of three possible ways: it could be impeded in flow across the white mangrove vegetated marl soil upland, it could be diverted to the south and transported to the soil upland, it could be diverted to the south and transported to the present ditch system by way of a new, long, shallow, vegetated ditch, present ditch system by way of a new, long, shallow, vegetated ditch, area south and east of the borrow pit and hence to the FPL cooling canal by passing the most polluted portion of the existing ditch network.

The attached sketches illustrate the present pattern and proposed alternative patterns. None of these proposals will solve all of the obvious pollution problems. These problems arise from decades of accumulation in the network of ditches downstream from the bottow pit.

Alternative Proposals

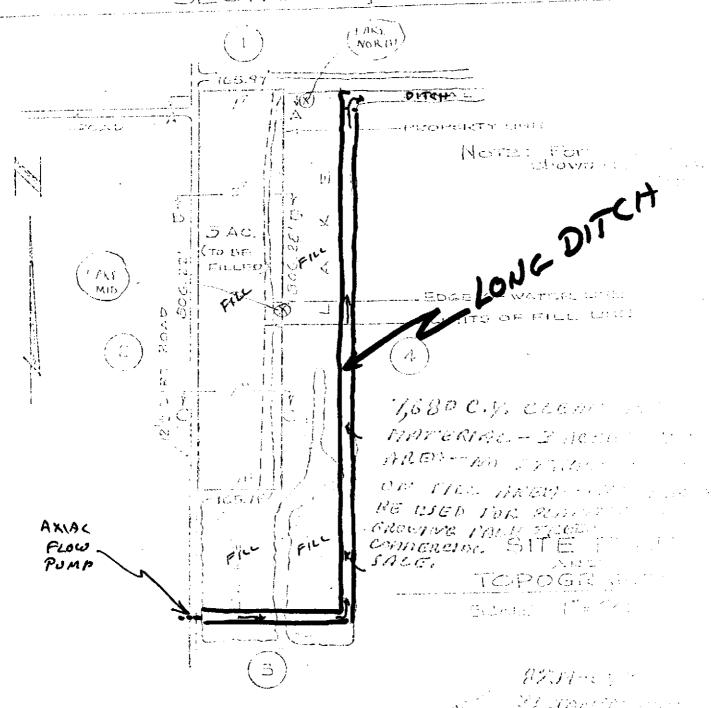
- 1. Overland Flow The existing axial flow pump at the north end of the fill area remains in place. All of the 3.07 acres is filled except for the northernmost 110 feet. This area is partially impounded by placement of two rock rubble dikes. The dikes are north-south in orientation and designed to impede the overland flow. The present overland flow during pumping operations uses only a small portion of the land area and flow pumping operations uses only a small portion of the land area and flow is extremely rapid. This pattern of impeded flow will improve the possisextremely rapid. This pattern of impeded flow will improve the bility of nutrient and pollutant uptake by the vegetation. However, there will be little percolation of water into the low porosity marl soil of the present grade.
 - 2. Long Ditch Flow The axial flow pump would be moved to a point near the south end of the borrow pit. The entire borrow pit would be filled except for a shallow ditch around the south and east sides. The flow except for a shallow ditch around the south and east during pumping operations would be directed around the south and east sides. There would be interaction and exchange with the wetland retention area to the southeast of the present borrow pit. The wetland retention area would utilize the ditch on the east side as its overflow to the east-draining ditch system. This design would increase the exposure of drainage water from the west to emergent vegetation.
 - 3. Trans-wetland Flow The axial flow pump would be moved to the south end of the borrow pit and a shallow vegetated ditch would cross to the east. This ditch would transport from the Cliff Berry Nursery and the drainage basin between the nursery and US1 to the existing wetland south and east of the borrow pit. This wetland would serve as storm water retention area for the new traffic interchange. The drainage from the wetland would utilize the ditch that parallels Eller Drive and loads into wetland would utilize the ditch that parallels Eller Drive and loads into the FPL cooling canal. All of the borrow pit would be filled with clean, the FPL cooling canal. All of the borrow pit would be fenced porous fill, the sides of the ditch would be bermed, and should be fenced to prevent dumping. This pattern has the significant advantage of byto prevent dumping. This pattern has the significant advantage of byto prevent dumping the most heavily polluted portion of the drainage system and would passing the most heavily polluted portion of water entering the State waters at the Intracoastal Waterway.

If the primary concern is the quality of water entering State waters then the third alternative is preferred. Both alternatives 2 and 3 have the disadvantage of involving property that is not under control of these who are party to these deliberations. Alternative 1 is practical, those who are party to these deliberations. Alternative 1 is practical, will improve conditions, and allow filling a major part of Mr. Berry's will improve conditions, and allow filling a major part of the that it would 3.07 acres. Another important merit of alternative 1 is that it would be economical, could be done expeditiously, and would not preclude the future implementation of either of the other two alternatives.

It is my opinion that we should seek immediate approval of alternative 1, and that efforts should be continued to get permitting for alternative 3, with alternative 2 a stand-by possibility.

LONG DITCH FLOW

MURSERLY TION 23, TWP 50 S. PGE 449



POSPECS PROPOSED HURSERY DEV

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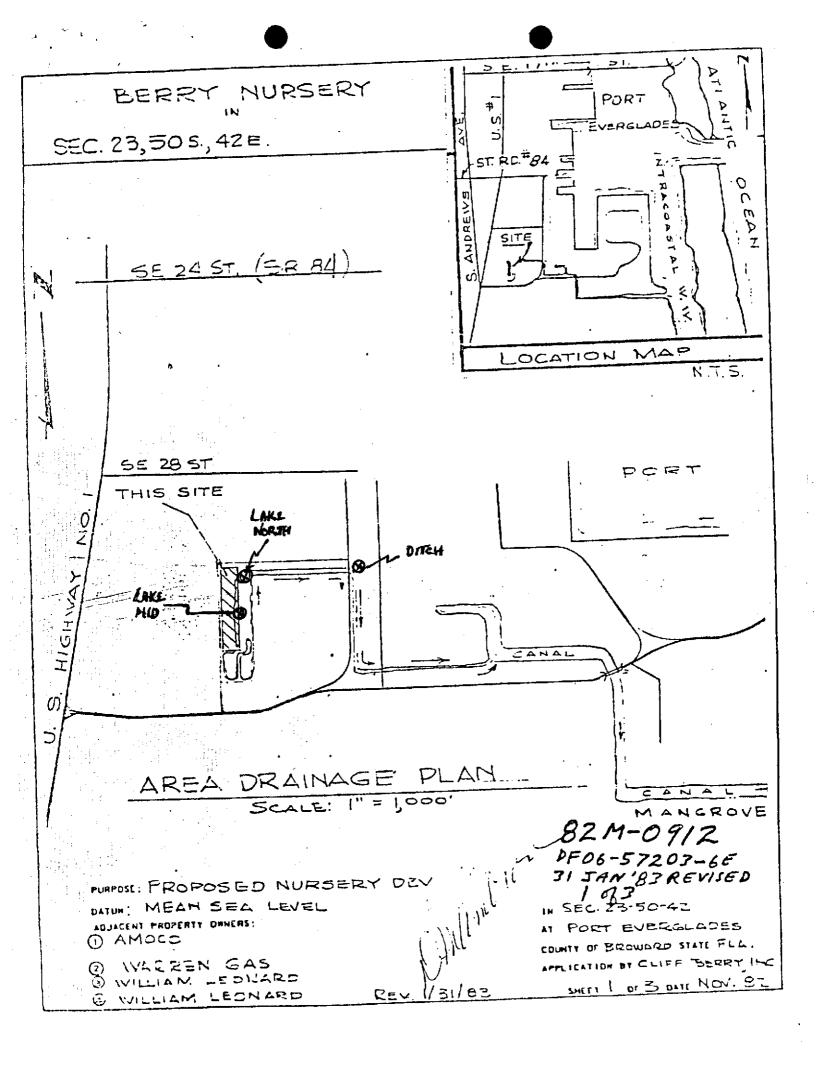
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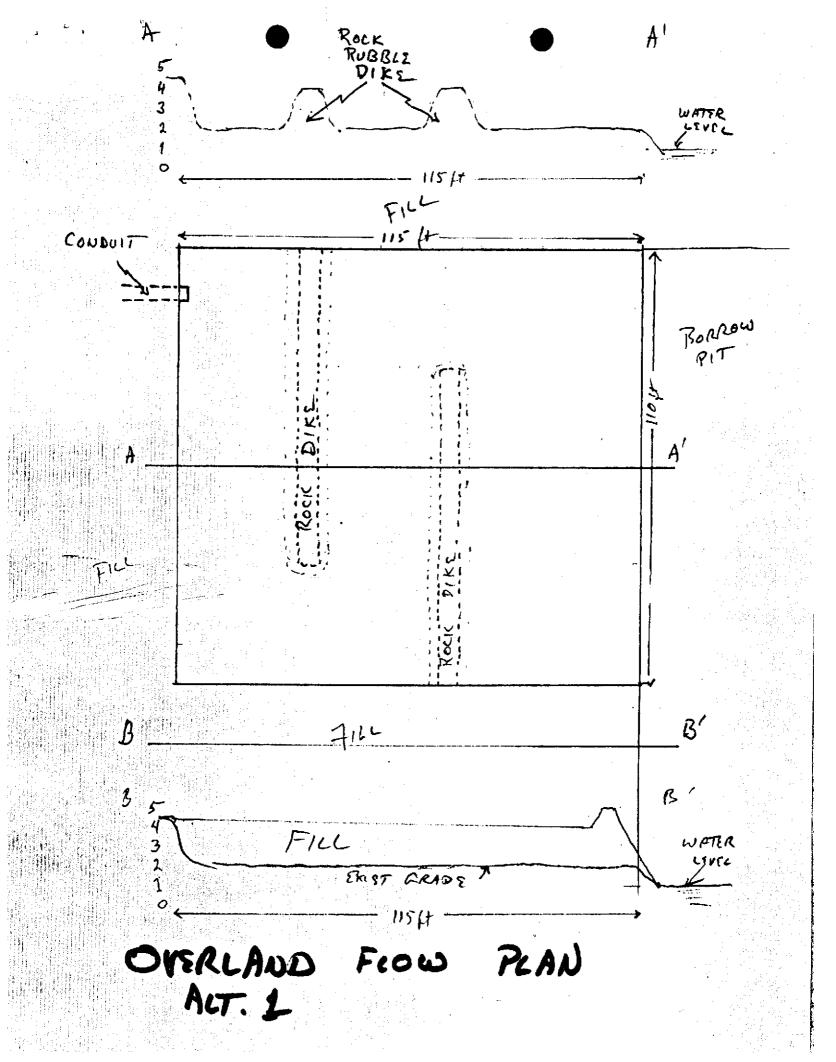
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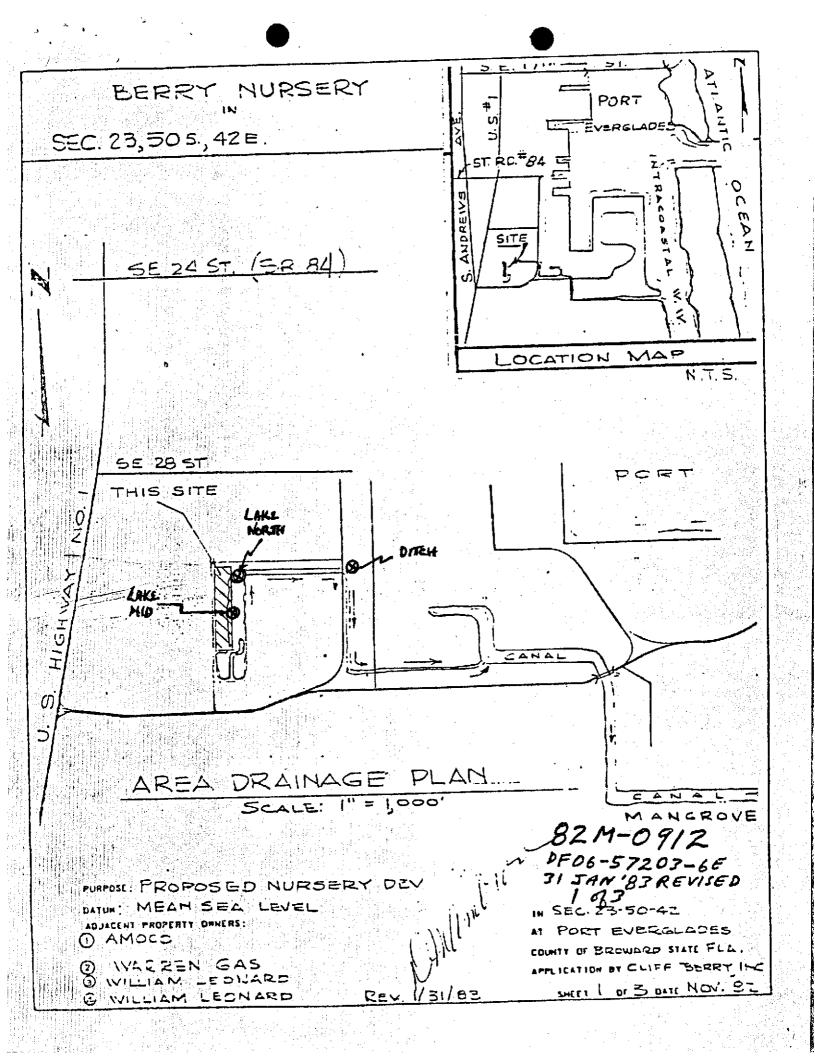
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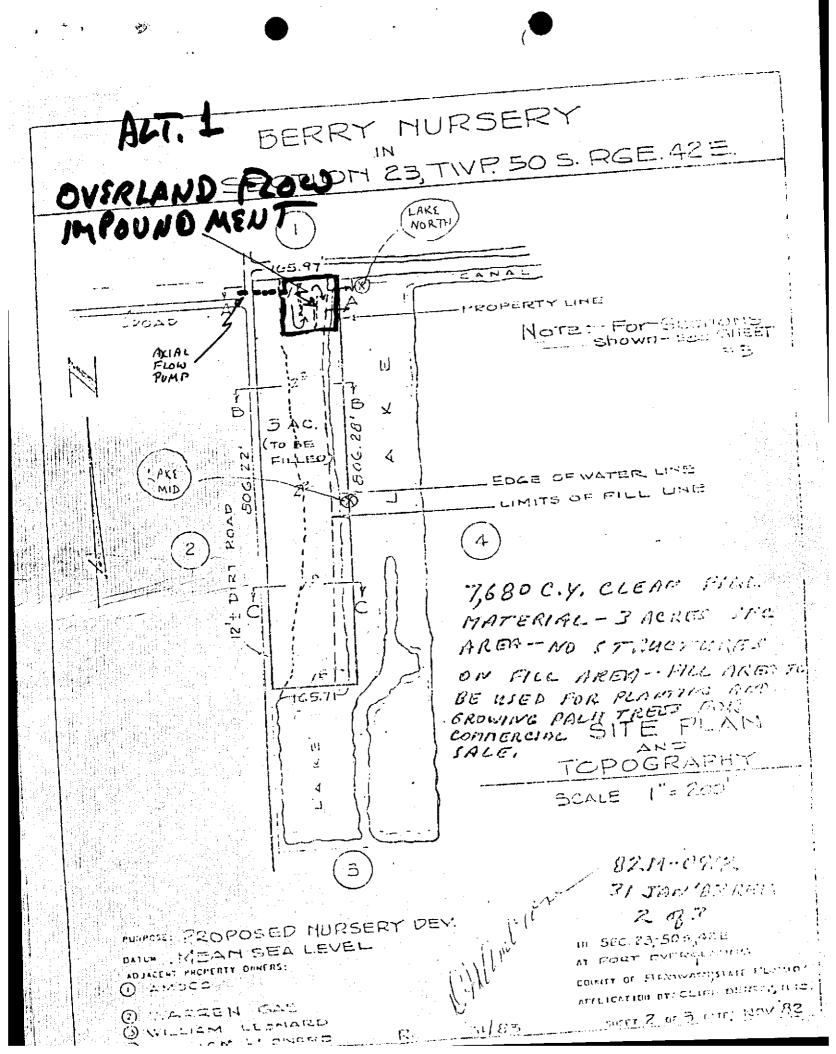
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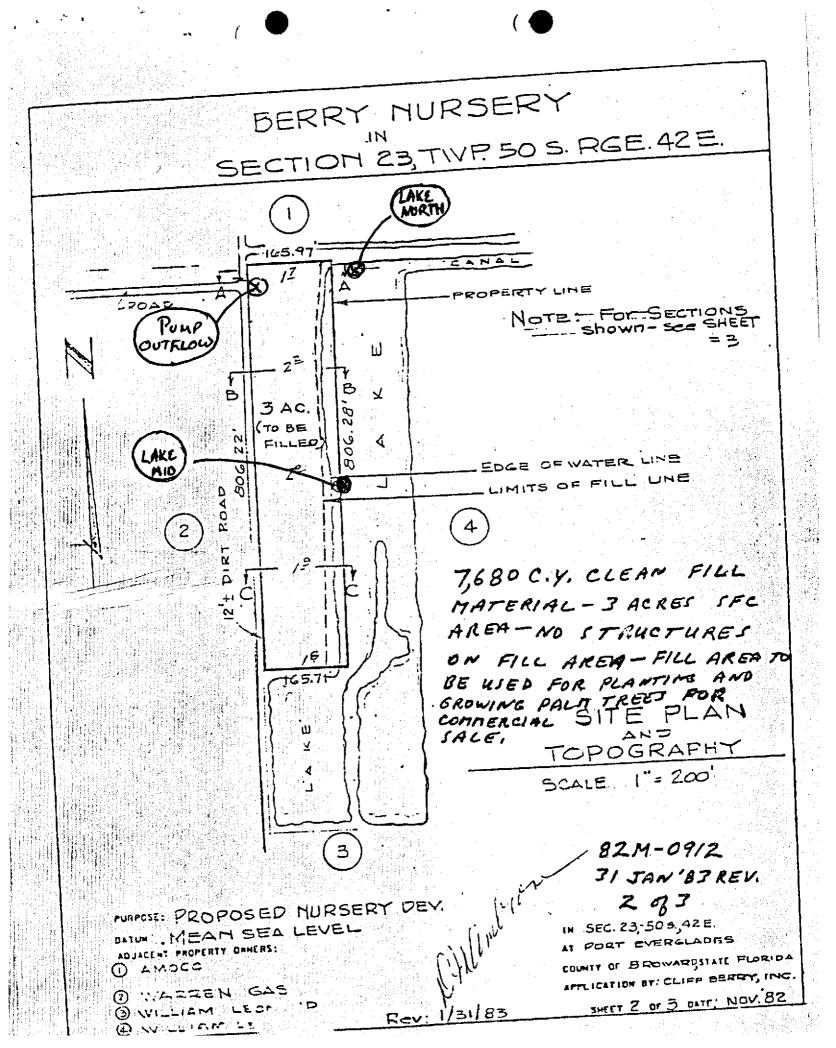
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ALIPHATIC HYDROCARBONS

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C21	【集集工作》:"我们都不能说,这个时间不到了这些,这么一种意识,一样,也有意识自己更是更多的,我们没有	12R	.000489		8	9	
C22 14R .000401 6573 2.635773 .5376359673 C23 15R .000438 3056 1.338520 .2730283663 C24 16R .000572 4104 2.347488 .4780325784 C25 17R .000784 3857 3.023808 .6160023384 2.8ecovery 46. C26 18R .001197 0 0 0 C27 19R .002792 5799 16.190808 3.392545675 C28 20R .002353 3760 8.84728 1.804637934 C29 21R .0035 7162 25.067 5.113080979	15 集立	13R	.000359	7091	2,545669	.5192568614	CPI 2.514
C23 15R .800438 3056 1.338528 .2730283663 C24 16R .800572 4184 2.347488 .4788325784 C25 17R .000784 3857 3.823888 .6168023384 % Recovery 46. C26 18R .001197 0 0 0 C27 19R .002792 5799 16.190808 3.302545675 C28 20R .002353 3760 8.84728 1.804637934 C29 21R .0035 7162 25.067 5.113080979	1.375 1	14R	.086481	6573			
C24 16R .000572 4104 2.347488 .4788325784 C25 17R .000784 3857 3.823888 .6168023384 1 Recovery 46. C26 18R .001197 0 0 0 C27 19R .002792 5799 16.190808 3.302545675 C28 20R .002353 3760 8.84728 1.804637934 C29 21R .0035 7162 25.067 5.113080979	[建] 1、17、17、17、17、18、17、18、18、18、18、18、18、18、18、18、18、18、18、18、	15R	.800438	3056			
18R .001197 0 0 0 0 0 1 1 C27 19R .002792 5799 16.190808 3.302545675 20R .002353 3760 8.84728 1.804637934 C29 21R .0035 7162 25.067 5.113080979	"我小女",一个人,只要要要要看到一家有老板,一点一下一号了老人多数更高进起的心力, 法坚持 经财务公司	16R	.060572	4184			
18R .001197 0 0 1 C27 19R .002792 5799 16.190808 3.392545675 C28 20R .002353 3760 8.84728 1.804637934 C29 21R .0035 7162 25.067 5.113080979	是C25分别。	17R	.000784	3857		.6168023384	1 Recovery 46.30
C28 20R .002353 3760 8.84728 1.804637934 C29 21R .0035 7162 25.067 5.113080979	表表表 : "我们还是说过,"李马的",我们是是强烈","是我们的 没有的现在 的。"	188			_	8	
C29 21R .8035 7162 25.067 5.113080979	[C27] [] [] [] [] [] [] [] [] []						
# <mark>本學學</mark> 學的學習的學習的學習的學習的學習的學習的學習的學習的學習的學習的學習的學習的學習	C28						
建产文6. 1200年代表,2015年2月2日2日2日2日2日2日2日2日2日2日2日2日2日2日2日2日2日2日2	型 C29 。指由于1万元,设有1万元的是第三元。						
AS MM NA NA NA NA NA NA NA NA NA NA NA NA NA	C30	22R	.014608	C	. 6	6	

TOTALS

Resolved for all peaks Resolved-known peaks Resolved-unknown peaks Unresolved (UCM)

Total aliphatic hydrocarbons 344940 93399 16.20244246 171629 22.826657 4.656103472

888563 118.17888 24.10572388

AROMATIC HYDROCARBONS

Sample:	LAKE N (Sediment)
Date analyzed:	JUL 9, 1984
Int. Std. (ug):	101
Dry weight (g):	46.58836
inject. volume (ul):	2 2
Sample volume (ml):	6.6

Compound	Received the second sec	ef. #	Response Factor	Area	ng	ug/g (corrected)	Ratios
Naphthalene		18	.001294	. 8	8	2	
Dibenzothiophrene		28	.881649	1993	3.286457	1.922809336	Resol./Unres.ERROR
Phenanthrene		3R	.001317	8	8	0	
o-Terphenyl (int. std		4R	.001321	2805	3.705405	INT. STD.	
1-Methylphenanthrene		5R	.001384		8		
Pyrene		6R	.001655		8	•	% Recovery 12.11

TOTALS

Resolved for all peaks Resolved-known peaks Resolved-unknown peaks Unresolved (UCM)

Total aromatic hydrocarbons 107550 1993 199350 475 3757

102752 135.73539 79.41478589 0 8 0

81.33759523

ALIPHATIC HYDROCARBONS

Date analyzed: JUL 9, 19		it)				·	
INT. Sto. lugi.	101 2538						
DEA METALIC 14.	1 1						
Sample volume (ml):	24	Response			ug/g	Ratios	
Coapounds		Factor	Area	ng (corrected)	Katios	
Conhomics .	18 - 18 - 18 - 18 - 18 - 18 - 18 - 18 -	.889322		9	9		. 77
. C125 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2R	980314	0	•	9	Resol./Unres. 3.0 Prist./Phyt. 1.1	
C13 (1) (1) (1) (1) (1) (1) (1)	3R	.808296	9	8	0	C17/Prist. 2.	147
- C14	4R	.080311	911	. 283321	8429177233	C1B/Phyt. 3.	118
- C15	5R	.090316	18022	5.694952	16.94324897	Clow where or	
C16	6R	.080339	49184	23,454054	69.77893555		
- C17	7R	.000323	33824	18.925152	32.58378281		14
Pristane	BR	.880353	88826	31.355578	93.28702221		
	9R	.000339	29663	10.055/5/	29.91721685	n-Alkanes	
Phytane	19R	.000349			85.02007930 INT. STD.	,	
C19 Androstang (int. std.)	118	. 200133	17217	_	Mir Pin.	Homol. Ser.	
C20	12R	986099		ט לפזדד הו	31.93324151	CPI i	.192
C21	13R	000359			29.65609419		
C22 (14R	.888491	1731 4 7829	1 0.774/47 1 1 479167	10.28203533		
11 023	15R		4267		7.261479898		, ,
11 624	16R	.000572	2137	:	4.984562023	% Recovery 5	14.41
C25	178			2 8			
<u>0.26</u>	188			8 8	. 9	Same to the second	
£27	196			e i	. 6		
C28	2BF 21F		1 1) · 9		
C29	21t 22i	·		9	3		
C38		, ,,,,,,,,,					2

TOTALS

Resolved for all peaks Resolved-known peaks Resolved-unknown peaks Unresolved (UCM)

Total aliphatic hydrocarbons 584060 583760 483.3314876 183883 24.350039 72.44461030 326979 43.488207 129.3832100

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HATER CHEMISTRY & FIELD DATA

Project: Cliff Berry Nursery

Date:

DO measured with YSI meter by E.Ricn.
Meter calibrated before each reading.
Nutrients samples were frozen and run
on 5/1/84 by D.Rich according to standard
methods.

H ₂ S	,	ortho PO4	Total Org. N	NH ₄ -N	1	NO3-N	Turbidity		Dissolved O2		Sample depth	Tide	mph	% Cover		station. Di
	u v	<u> </u>		.015	.01	.015			5.0	28.0	,		6-8E	0	1100	Ditch
						<u> </u>			4	30.0			0-4E	0	1230	Lake Mid
	6				•	.005			4.9 4.0	0 29.0	υ		(*)	<u>-</u>	0	
-	6	.03		.015	.005	05			0	0			 .		·	1
	5			.015	.01	.005			5.2	30.0			6-8E	0	1330	Lake North
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A Company of the Comp	2 1 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3														<u> </u>	
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RIO PALENQUE RESEARCH CORPORATION

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LABORATORY ANALYSIS

PROJECT: Cliff Berry Nursery	DATE COLLECTED & METHOD USED: 4/26/84 at
ANALYSIS: Herbicides, Pesticides, etc.	mid-depth by E.Rich DATE RECEIVED: 4/26/84
METHOD: GLC	DATE ANALYZED:
	STORAGE: ANALYST: E.F.Corcoran, Univ. of Miami-RSMAS

parts per trillion

Herbicides (water) ng/1

Station	2,4-D	Silvex	2,4,5-T
Ditch	300.2	ND*	319.2°
Lake-N	658.2	ND	5 0.7
Lake-Mid	118.5	50.5	149.7

Pesticides (water) ng/1

Aldrin	pp/DDE		Dieldrin	
Ditch 134.0	875.0	my/9	1486.0	mg/9
Lake-N Lake-Mid ND	ND 697.0	· 11	1216.7 494.2	, in

Herbicides (sediment) ng/g

2,4-D	Silvex	2,4,5-T
Ditch 7.2	ND	ND
Lake-N 10.3	2.6	ND
Lake-Mid ND	 ND	4,3

Pesticides, PAEs, PCBs (sediment) ng/g

Aroclor 1248

619 2 19 Ditch 116.6 Lake-N 113.99 Lake-Mid

*none detected

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LABORATORY ANALYSIS

PROJECT: Cliff Berry Nursery ANALYSIS: Metals	DATE COLLECTED & METHOD USED: 4/26/84 at mid-depth by E.Rich DATE RECEIVED: DATE ANALYZED:
METHOD: Atomic Absorption	STORAGE: ANALYST: E.F. Corcoran - Univ. of Miami, RSMAS

Station	Hg Cd Cr	Cu	<u>Ni</u>	Pb	Zn
Ditch Lake-N	<0.5 <5 <10 "	<10	<10 "	<10 "	410 "
Lake-Mid					

Metals (sediment) ug/8

He As Cd Cr	the state of the s	Ag		14 miles	Zn <u>Fe</u>
Ditch <0.1 <1 <3 15 15 22		د 5 اا	35 60	_ 11	51 1120 44 3200
Lake-N " 16		H	20	5	151 3040

ALIPHATIC HYDROCARBONS

Sample: Date analyzed: Int. Std. (ug): Dry weight (g): Inject. volume (ul): Sample volume (ml): Compounds	1 7 1 8	Response Factor	Area	u ng (correct	g/q ed)	Ratios
C12 C13 C14 C15 C16 C17 Pristane C18 Phytane C19 Androstane (int. std.) C20 C21 C22 C23 C24 C25 C25 C26 C27 C28 C29 C38	1R 2R 3R 4R 5R 6R 7R 9R 10R 11R 12R 13F 14F 151 161 17 18 19 20	.890339 .000349 .000133 .000489 .000359 .0004401 R .000436 R .000572 R .000784 R .001197 R .002792 in .002353	8 8 2315 1769 2549 6349 2045 2760 2015 33196 5030 4584 6815 4955 4183 2079 13077	3.46567 2.1512 1.681556 1.8437 2.732815 1.6963 2.17829 1.3471 2.392676 1.4851 1.629936 1.8111	7383 0351 1634 35157 70172 39375 STD. 34968 87224 32977 157617 198613 745296	Resol./Unres7985 Prist./Phyt. 2.192 C17/Prist4214 C18/Phyt7715 n-Alkanes Homol. Ser. CPI .3273

PIATAL

Resolved for all peaks Resolved-known peaks Resolved-unknown peaks Unresolved (UCM)

Total aliphatic hydrocarbons 325400 63503 220701 30.417233 18.00079001 836070 111.19731 69.02317347

AROMATIC HYDROCARBONS

Sample:	DITCH (Sediment)
Date analyzed:	JUL 9, 1984
Int. Std. (ug):	101
Dry weight (g):	36.85389
inject. volume (ul):	2
Sample volume (ml):	20

Compound	Ref. #	Response Factor	Area	ng	ug/g (carrected)	Ratios
Naphthalene	. 1R	.001294	9	8	8	
Dibenzothiophrene	2R	.001649	2057	3.391993	2.785514198	Resol./Unres.ERROR
Phenanthrene	3R	.091317	5694	7.380468	5.884793075	
o-Terphenyl (int. std.)	4R	.001321	2601	3.435921	INT. STD.	
1-Nethylphenanthrene	5R	.001384	3385	4.68484	3.736712044	
Pyrene	6R	.001655	2169	3.498395	2.784001382	% Recovery 34.02

TOTALS

Resolved for all peaks
Resolved-known peaks
Resolved-unknown peaks
Unresolved (UCM)

Total aromatic hydrocarbons 187249 13155 15.11382869 171484 226.53836 188.6845636

ARONATIC HYDROCARBONS

Sample: LAKE MID (Sediment)
Date analyzed: JUL 9, 1984
Int. Std. (ug): 101
Dry weight (g): 14.82538
Inject. volume (ul): 2
Sample volume (nl): 8

Compound		Response Factor	Area	· ng	uq/q (corrected)	Ratios
Naphthalene	1R	.001294	9		9	
Dibenzothiophrene	2R	.001649	1601	2.648049	4.096035337	Resol./Unres7686
Phenanthrene	3R	.001317	1702	2.241534	3.477739418	
o-Terphenyl (int. std.)	4R	.001321	3324	4.391004	INT. STD.	
1-Kethyl phen anthrene	5R	.001384	8	. 9	. 6	
Pyrene	6R	.001655	9	. 8	.	% Recovery 17.39

TOTALS

Resolved for all peaks Resolved-known peaks Resolved-unknown peaks Unresolved (UCM)

Total aromatic hydrocarbons

82843 3383 7.573774756 75416 99.624536 154.5674417 182932 135.97317 218.9623418

373.1035575

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LABORATORY ANALYSIS

PROJECT: Cliff Berry Nursery ANALYSIS: Oil & Grease	DATE COLLECTED & METHOD USED: 4/26/84 by Earl Rich from the surface DATE RECEIVED: 4/27/84 DATE ANALYZED: 5/9/84
METHOD: Freon extraction STANDARD TESTS FROM "STANDARD METHODS FOR THE EXAMINATION OF WATER & WASTE- WATER." 14th ED., 1975.	STORAGE: acidified & refrigerated ANALYST: D.Rich

Station	mg/1
Lake mid	<0.01
Ditches	H
Lake N	11

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LABORATORY ANALYSIS

	DATE COLLECTED & METHOD USED: 5/30/84 from
PROJECT: Cliff Berry Nursery	mid-depth by Earl Rich.
Posticides Herbicides	DATE RECEIVED: 5/30/84

ANALYSIS: Nutrients, Pesticides, Herbicides

STANDARD TESTS FROM "STANDARD METHODS

WATER." 14th ED., 1975.

FOR THE EXAMINATION OF WATER & WASTE-

STORAGE:

ANALYST: Nutrients - D. Rich Pest & Herb. - E.F. Corcoran, Univ. of Miami-RSMA:

DATE ANALYZED: Nutrients - 5/30/84

RESULTS:

Herbicides ng/l

Station 2,4-D Silvex	2,4,5-T
Pump outflow 475.9 152.3	69.4

Pesticides ng/1

Station	Endrin C	p DDT	pp'DDT	DDE
Pump outflow	33.2	10.6	26.5	Trace

Nutrients

Station NO ₃ -N NO ₂ -N ortho PO ₄	NH3-N
Pump outflow .04 .055 .54	.31

٠.; is Br LEGEND MONITORING WELL INSTALLED 1/8-9/86 TRENCH SAMPLED 4/85 A SCIL BORING TAKEN 12/20/85 5.8.1 5.18. 2 و 19 OO OATB 12 197 283 884 | | | | BORROW CANAL JAN. 86 LOCATIONS CLIEF BERRY, INC. Savingpact. Sinc. 20 20 20 ₽ TD 6 SAMPLING APPROK : PRANIN BY -A TB9 - A' **→** 78 10 POINTS OIL/WATER FIGURE 1 At heved THNKS **●** ₹ JMP



APPENDIX II

GEOLOGIC LOGS

GEOLOGIC LOG

BORE HOLE NUMBER: TB 1

CLIENT: Cliff Berry, Inc.

DRILLING CONTRACTOR: J.M. Hensley Drilling, Inc.

DATE: 12/20/85

LOGGED AND SAMPLED BY: J. Peterson

FORMATION	DEPTH	ROCK TYPE	DESCRIPTION
Recent	0-2 ft	Limestone	Soil and light gray- brown clayey limestone
	2-4	Sand	Black fine-grained quartz sand, very organic
	4-5	Sand	Light gray fine- grained quartz sand, some limestone fragments
	5-10.5	Clay	Dark brown-gray clay
	10.5-10.9	Sand	Various colors of fine-grained quartz sand, varies from medium gray at top to black to medium brown
	10.9-15	Limestone	Cream-colored colitic lime sand, unconsolidated

Sample(s) $\frac{0-1,6-7,14-15ft}{archived}$ were analyzed (log #15824), all other samples archived. Standard sampling and equipment decontamination procedures were used.

The above boring was conducted in accordance with A.S.T.M. Di586 drilling and sampling procedures using penetration drilling equipment with a 140-1b pile driven hammer and 1 " ID 24" long split-spoon coring device.

Boring was abandoned immediately upon completion.

GEOLOGIC LOC

BORE HOLE NUMBER: ____ TB 2

CLIENT: Cliff Berry, Inc.

DRILLING CONTRACTOR: J. M. Hensley Drilling, Inc.

DATE: 12/20/85

LOGGED AND SAMPLED BY: J. Peterson

FORMATION	DEPTH	ROCK TYPE	DESCRIPTION
Recent	0-1,5 ft.	Soil	Dark brown organic sand
	1.5-3.0	Sand	Dark brown oolitic (calcareous) sand and rotting wood
	3.0-7.0	Clay	Medium brown-gray clay
·	7.0-7.7	Sand	Dark brown-black fine-grained organic quartz sand
	7.7-8.7	Sand	Medium brown medium- grained quartz sand
	8.7-15	Limestone	Cream-colored oolitic lime sand, unconsolidated, compact and hard

Sumple(s)0-1.4-5.14-15 ft were analyzed (log # 15824), all other samples archived. Standard sampling and equipment decontamination procedures were used.

The above boring was conducted in accordance with A.S.T.M. D1586 drilling and sampling procedures using penetration drilling equipment with a 140-1b pile driven hammer and 1 $^{\prime\prime}$ ID 24 $^{\prime\prime}$ long split-spoon coring device.

Boring was abandoned immediately upon completion.

GEOLOGIC LOG

BORE HOLE NUMBER: TB 3

CLIENT: Cliff Berry

DRILLING CONTRACTOR: J. M. Hensley Drilling Inc.

DATE: 12/20/85

LOGGED AND SAMPLED BY: J. Peterson

FORMATION	DEFTH	ROCK TYPE	DESCRIPTION
Recent	0-5.0 ft:	Sand	Dark-brown-black organic sand, very fine-grained, silty, organic, wood fragment
	5.0-9.5	Clay	Dark brown clay and peat
	9.5-11.8	Sand	Medium gray medium- grained quartz sand
	11.8-13.5	Sand	Light brown fine- grained quartz sand
	13.5-15	Limestone	Cream-colored oolitic lime sand, unconsolidated, compact and hard

Sample(s)0-1,4-5,14-15 ft.were analyzed (log # 15824), all other samples archive. Standard sampling and equipment decontamination procedures were used.

The above boring was conducted in accordance with A.S.T.M. D1586 drilling and sampling procedures using penetration drilling equipment with a 140 pile driven hammer and 1 " ID 24" long split-spoon cording device.

Eoring was abandoned immediately upon completion.

GEOLOGIC LOG

BORE HOLE NUMBER: TB 5

CLIENT: Cliff Berry, Inc.

DRILLING CONTRACTOR: J.M. Hensley Drilling Inc.

DATE: 12/20/85

LOGGED AND SAMPLED BY: J. Peterson

FORMATION	DEPTH	ROCK TYPE	DESCRIPTION
Recent	0-2.5 ft	Soi1	Dark brown sandy organic soil
	2.5-3	Concrete	
	3-8		Dark brown-gray clay, peat and wood, one-inch of peat at base
	8-11	Sand	Medium gray-brown medium-grained quartz sand
	11-15	Limestone	Cream-colored colitic calcareous sand, unconsolidated

Sample(s) 0-1,4-5,14-15 ft were analyzed (log # 15824), all other samples archive. Standard sampling and equipment decontamination Procedures were used.

The above boring was conducted in accordance with A.S.T.M. D1586 drilling and sampling procedures using penetration drilling equipment with a 140-1b pile driven hammer and 1 " ID 24" long split-spoon cording device.

Boring was abandoned immediately upon completion.

EOLOGIC LUG

BORE HOLE NUMBER: TB 1

CLIENT: Cliff Berry, Inc.

PRILLING CONTRACTOR: J.M. Hensley Drilling, Inc.

DATE: 12/ 20/85

LOGGED AND SAMPLED BY: J. PHISON

HATION	DEPTH R	OCK TYPE	DESCRIPTION
Recent	0-2+	Limestone	Soil and light gray-brown clayey limestone
	2-4	Sand	Black time-grained quartz sand,
	4-5	Sand	Light gray fine grain quartz sand some limestone fragments Dark brown - gray day
	5-10.5	Clay	Dark brown - gray May
	10.5-10.9	,	Various colors of fine-grained quartz sand, varies from medium gray at log to black to medium brown
	10.9 - 15	Limestone	medium brown Cream - colored politic lime sond, unconsolidated, cuttings from injection will

INJECTION WILL V

AMPLE(5) 0-1,6-1,14-15 FT WERE ANALYZED (LOG" 15824), ALL OTHER SAMPLES

RCHIVED. STANDARD SAMPLING AND EQUIPMENT DECONTAMINATION

RECEDURES WERE USED.
HE ABOVE BORING WAS CONDUCTED IN ACCORDANCE WITH A.S.T.M.

1-1586 DRILLING AND SAMPLING PROCEDURE USING PENETRATION RILLING EQUIPMENT WITH A 140 PILE DRIVEN HAMMER AND 12" ID

24" LONG SPLIT - SPOON CORING DEVICE

ORING WAS ABANDONED IMMEDIATELY UPON COMPLETION AND BACKFILLED

DEOLOGIC LOG

BORE HOLE NUMBER: TB 2

CLIENT: Cliff Berry, Inc.

DRILLING CONTRACTOR: J.M. Hensley Drilling, Inc.

12/20/85

LOGGED AND SAMPLED BY: I Peterson

HATION	DEPTH ROC	K TYPE	DESCRIPTION
Recent	0-1.5f+		Dark brown - black organic sand
	1.5-3.0		Dark brown oblitic (calcareous) send, and rolling wood
	3.0 - 7.0	Clay	Medium brown - gray clay
	7.0 - 7.7	_ ′	Dark brown - black fine-grained
	7.7-8.7		Dark brown - black fine-grained ganic quartz sand Medium brown medium-grained quartz sand
	8.7- 15		Cream - colored oblitic lime send, un consolidated, compact and have ulting & from injection well
			uttings from injection

AMPLE(5) D-1, 4.5, 14-15 + WERE ANALYZED (LOG " 15824), ALL OTHER SAMPLES ARCHIVED. STANDARD SAMPLING AND EQUIPMENT DECONTAMINATION PROCEDURES WERE USED.

THE ABOVE BORING WAS CONDUCTED IN ACCORDANCE WITH A.S.T.M.

0-1586 DRILLING AND SAMPLING PROCEDURE USING PENETRATION PRILLING EQUIPMENT WITH A 140 PILE DRIVEN HAMMER AND 12"ID

24" LONG SPLIT - SPOON CORING DEVICE

BORING WAS ABANDONED IMMEDIATELY UPON COMPLETION AND BACKFILLED

BORE HOLE NUMBER: TB 3

: LIENT: Cliff Berry, Inc.

PRILLING CONTRACTOR: J.M. Hensley Drilling, Inc.

DATE: 12/20/85

LOGGED AND SAMPLED BY: J. Peterson

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PROPERTIONS WERE MALVED (LOG" 15824), ALL OTHER SAMPLES

ROCEDURES WERE USED.

HE ABOVE BORING WAS CONDUCTED IN ACCORDANCE WITH A.S.T.M.

1-1586 DRILLING AND SAMPLING PROCEDURE USING PENETRATION

RILLING EQUIPMENT WITH A 140 PILE DRIVEN HAMMER AND 12" ID

24" LONG SPLIT - SPOON CORING DEVICE

PORING WAS ABANDONED IMMEDIATELY UPON COMPLETION AND BACKFILLED

LEDLOGIC LUG

BORE HOLE NUMBER: TB 4

CLIENT: Cliff Berry, Inc.

DRILLING CONTRACTOR: J. M. Hensley Drilling, Inc.

DATE: 12/20/85

OGGED AND SAMPLED BY: J. Peterson

HATION Recent	DEPTH RO 0-1 ft 1-3 3- 5.5	Soil Sond Clay	Brown sandy organic soil Brown sandy organic soil Black medium-grained and, undergrained odor Dark brown clay and peat, peat more predominant toward base
	5.5-6.2	Sand	Medium gray- Drown
	6.2-15	Limestone	Cream-colored notific line some unconsolidated, cuttings from injection well

AMPLE(S) D-1.45,14-15 + WERE ANALYZED (LOG = 15824), ALL OTHER SAMPLES ARCHINED. STANDARD SAMPLING AND EQUIPMENT DECONTAMINATION

HE ABOVE BORING WAS CONDUCTED IN ACCORDANCE WITH A.S.T.M.

>-1586 DRILLING AND SAMPLING PROCEDURE USING PENETRATION

PRILLING EQUIPMENT WITH A 140 PILE DRIVEN HAMMER AND 12" ID

24" LONG SPLIT - SPOON CORING DEVICE

BORING WAS ABANDONED IMMEDIATELY UPON COMPLETION AND BACKFILLED

BORE HOLE NUMBER: TB 5

CHENT: Cliff Berry, Inc.

DRILLING CONTRACTOR: J.M. Hensley Drilling, Inc.

DATE: 12/20/85

LOGGED AND SAMPLED BY: J. Peterson

EHATION	DEPTH	POCK TYPE	DESCRIPTION
Recent	0-2.54	Soil	Dark brown sandy organic soil
	Z.5-3	Concrete	
AND THE STREET	3 - 8		Dark brown - gray clay, peat, and
		/	Dark brown - gray clay, peat, and wood, one Inch of peat at base
	8-11	Sand	Medium graf - brown medium - grained quartz sand
•			
	11 - 15	Limestone	Cream - colored nolitic calcareous sand, unconsolidate cuttings from injection well
			cuttings from injection well
			v

HPLE (5) Q-1.45 HISHWERE ANALYZED (LOG * 15824), ALL OTHER SAMPLES RCHIVED. STANDARD SAMPLING AND EQUIPMENT DECONTAMINATION ROCEDURES WERE USED.

LE ABOVE BORING WAS CONDUCTED IN ACCORDANCE WITH A.S.T.M.

-1586 DRILLING AND SAMPLING PROCEDURE USING PENETRATION RILLING EQUIPMENT WITH A 140 PILE DRIVEN HAMMER AND 12 1D

ORING WAS ABANDONED HAMEDIATELY UPON COMPLETION AND BACKFILLED

GEOLOGIC -

BORE HOLE NUMBER: TB 6

CLIENT: Cliff Berry, Inc.

DRILLING CONTRACTOR: JM. Hensley Drilling, Inc.

DATE: 12/20/85

LOGGED AND SAMPLED BY: J. Peterson

CHATION	DEPTH RO	OCK TYPE D	ESCRIPTION 1. LE MILE SOIL
Recent	0-0.5-1+	Soil	Dark brown smill rigaric soil
	0.5 - 2	Sand	Medium brown aral fine-grained Sand, tem limestone tragments
	2- 9	Gravel (?)	Black sand, clay, gravel,
			silt and asphalt. Poor recovery throughout interval
	9- 9.5	Peat	Dark brown Tray pear
	9- 9.5 9.5-10.5	Sand	Medium brown gray medium
	10.5 15	Limestone	Cream - colored solitice calcaresus sand, unconsolidat autings from injection well

HPLE(5) 0-1,45,1415 WERE ANALYZED (LOG = 15824), ALL OTHER SAMPLES
RCHIVED. STANDARD SAMPLING AND EQUIPMENT DECONTAMINATION
ZOCEDURES WERE USED.

LE ABOVE BORING WAS CONDUCTED IN ACCORDANCE WITH A.S.T.M.
- 1586 DRILLING AND SAMPLING PROCEDURE USING PENETRATION
ZILLING EQUIPMENT WITH A 140 PILE DRIVEN HAMMER AND 12" ID
24" LONG SPLIT - SPOON CORING DEVICE

PRING WAS ABANDONED IMMEDIATELY UPON COMPLETION AND BACKFILLED

BORE HOLE NUMBER: TB7

CHENT: Cliff Berry, Inc.

DRILLING CONTRACTOR: J.M. Hensley Drilling, Inc.

DATE: 12/20 /85

LOGGED AND SAMPLED BY: J. Peterson

EHATION	DEPTH	ROCK TYPE	DESCRIPTION
Recent	o-0.5fr	Limestone	Lime rock fill
	0.5-1.5		Dark brown organic clay, compact, I inch of asphalt within layer?, hydrocarbon octor
	1.5 - 2.5	Peat	Brown - gray stayey
	2.5 - 5		Light gray, time grained said
	5 - 12	Clay and Peat	Dark brown - gray organic, clayer peat, becomes lant brown last few inches Medium gray medium-grainet sand
	12-13	Sand	Medium gray medium-grainee
		Limestone	Dolitic sand, unconsolidated, not compacted
	_		

MPLE (5) 0-1, 6-7, 14-15 WERE ANALYZED (LOG" 15824), ALL OTHER SAMPLES RCHINED. STANDARD SAMPLING AND EQUIPMENT DECONTAMINATION COLEDURES WERE USED.

LE ABOVE BORING WAS CONDUCTED IN ACCORDANCE WITH A.S.T.M. - 1586 DRILLING AND SAMPLING PROCEDURE USING PENETRATION RILLING EQUIPMENT WITH A 140 PILE DRIVEN HAMMER AND 12" ID 4" LONG SPLIT - SPOON CORING DEVICE

PRING WAS ABANDONED IMMEDIATELY UPON COMPLETION AND BACKFILLED

BORE HOLE NUMBER: TB8

CLIENT: Cliff Berry, Inc.

DRILLING CONTRACTOR: J.M. Hensley Drilling, Inc.

DATE: 12/20/85

LOGGED AND SAMPLED BY: J. Peterson

MATION	DEPTH	ROCK TYPE	DESCRIPTION
Recent	0-21+	501	Tark prown sundy soil, looks only and smells likediesel, outside of spoon only
	2-8	Clay and Peat	Dark brown - gray clay, grading into peat toward base, saturated with fuel Dark gray medium grained sand
	8-8.5	Sand	Dark gray medium grained
	8.5 - 15	5 Limeston	

SAMPLE (5) 0-1, 45, 1415 H WERE ANALYZED (LOG" 15824), ALL OTHER SAMPLES ARCHIVED. STANDARD SAMPLING AND EQUIPMENT DECONTAMINATION

THE ABOVE BORING WAS CONDUCTED IN ACCORDANCE WITH A.S.T.M. D-1586 DRILLING AND SAMPLING PROCEDURE USING PENETRATION DRILLING EQUIPMENT WITH A 140 PILE DRIVEN HAMMER AND 12"ID 24" LONG SPLIT - SPOON CORING DEVICE

BORING WAS ABANDONED IMMEDIATELY UPON COMPLETION AND BACKFILLED

LEOLOGIC LUG

BORE HOLE NUMBER: TB 9

CLIENT: Cliff Berry, Inc.
DRILLING CONTRACTOR: J.M. Hensley Drilling, Inc.

DATE: 12/20/85

LOGGED AND SAMPLED BY: J. Peterson

HATION	DEPTH ROCK TYPE	DESCRIPTION
Recent	0-1.2 Soil	Medium brown sandy soil, limestone tragments
	1.2-12 Clay	Medium gray brown clay, silty at top, contains organic material at base, becomes
		material at base, becomes darker colored with greater organic portion, odor at 5 ft
		organic portion, and
	12-12.5 Send	Medium brown medium-grained Sand
	12.5 - 15 Limeston	
		injection well; slightly sinds

MPLE(S) 0-1,4-5, H-15 TWERE ANALYZED (LOG" 15824), ALL OTHER SAMPLES RCHINED. STANDARD SAMPLING AND EQUIPMENT DECONTAMINATION POCEDURES WERE USED.

LE ABOVE BORING WAS CONDUCTED IN ACCORDANCE WITH A.S.T.M. - 1586 DRILLING AND SAMPLING PROCEDURE USING PENETRATION RILLING EQUIPMENT WITH A 140 PILE DRIVEN HAMMER AND 12"ID 4" LONG SPLIT - SPOON CORING DEVICE

ORING WAS ABANDONED IMMEDIATELY UPON COMPLETION AND BACKFILLED

BORE HOLE NUMBER: TB 10

: LIENT: Cliff Berry, Inc.

PRILLING CONTRACTOR: J.M. Hensley Drilling . Inc.

PATE: 12/20/85

OGGED AND SAMPLED BY: J. Pelesson

MATION	DEPTH ROLL	K TYPE I	DESCRIPTION
Recent	0-1ft	Soil	Dark brown, syaris woil
	1-85	Clay and Pest	Dark brown 2 11, Slightly Silty from 5 to 6 teet, organic (part) - rich at base
·	3.5 - 15	Limestone	Cream - color contra daled Lineshore or mode, solice, loosely packed, from theclon well

MPLE(S) 0-1, 4-5, 14-15 + WERE ANALYZED (LOG" 15824), ALL OTHER SAMPLES ECHIVED. STANDARD SAMPLING AND EQUIPMENT DECONTAMINATION ROCEDURES WERE USED.

HE ABOVE BORING WAS CONDUCTED IN ACCORDANCE WITH A.S.T.M.
1-1586 DRILLING AND SAMPLING PROCEDURE USING PENETRATION
RILLING EQUIPMENT WITH A 140 PILE DRIVEN HAMMER AND 12" ID
24" LONG SPLIT - SPOON CORING DEVICE

PRING WAS ABANDONED IMMEDIATELY UPON COMPLETION AND BACKFILLED

BORE HOLE NUMBER: TB // A

(TB 11 failed, hit large piece CLIENT: Cliff Berry, Inc.

DRILLING CONTRACTOR: J.M. Hensley Drilling, Inc.

DATE: 12/20/85

LOGGED AND SAMPLED BY: J. Peterson

MATION	DEPTH RO	UK TYPE	DESCRIPTION
	0-1ft	Soil	Light brown-gray liney (?) Soil
gger"	1-2.5	Clay	Medium brown compact clay, occasional limestone tragment
•	2.5-3	Sand	Medium brown uncompacted medium grained Sand
Hit	word again	i, no fo	ther penetration

ANALYZED (LOS 15824), ALL OTHER SAMPLES BENEFLING AND EQUIPMENT DECONTAMINATION

THE ABOVE BORING WAS CONDUCTED IN ACCORDANCE WITH A.S.T.M. ING AND SAMPLING PROCEDURE USING PENETRATION WITH A 140 PILE DRIVEN HAMMER AND 12" ID PRILLING EQUIPMENT 24" LONG SPLIT - SPOON CORING DEVICE

SORING WAS ABANDONED IMMEDIATELY UPON COMPLETION AND BACKFILLED

DEOLOGIC LUG

BORE HOLE NUMBER: TB 12

CHENT: Cliff Berry, Inc.

DRILLING CONTRACTOR: J.M. Hensley Drilling, Inc.

DATE: 12/20/85

LOGGED AND SAMPLED BY:

RHATION	DEPTH	ROCK TYPE	DESCRIPTION
Recent	0-1 ft	Soil	Dark brown Sandy organic Soil
i god	1-3	Concrete	
·	3-9	~	Poor recovery, wood, concrete, dark brown silty clay Dark brown gray clay and pear
	9-10	Clay	Dark brown - gray clay and pear
	10-10.5	Sand	Medium gray medium grained Sand
	10.5-15	Limestone	

AMPLE (5) D-1, 16-1, 14-154-WERE ANALYZED (LOG 15824), ALL OTHER SAMPLES
ARCHIVED. STANDARD SAMPLING AND EQUIPMENT DECONTAMINATION
PROCEDURES WERE USED.

THE ABOVE BORING WAS CONDUCTED IN ACCORDANCE WITH A.S.T.M.

3-1586 DRILLING AND SAMPLING PROCEDURE USING PENETRATION

PRILLING EQUIPMENT WITH A 140 PILE DRIVEN HAMMER AND 12" ID

24" LONG SPLIT - SPOON CORING DEVICE

BORING WAS ABANDONED IMMEDIATELY UPON COMPLETION AND BACKFILLED

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHEAST FLORIDA DISTRICT

P.O. BOX 3858 3301 GUN CLUB ROAD WEST PALM BEACH, FLORIDA 33402-3858



BOB GRAHAM GOVERNOR

VICTORIA J. TSCHINKEL

ROY M. DUKE DISTRICT MANAGER

March 25, 1986

Mr. Terry Lawrence
Broward County Environmental
Quality Control Board
500 S.W. 14 Court
Ft. Lauderdale, Florida 33315

Dear Mr. Lawrence:

RE: C.A.R. and Recommendations for Remedial Action/Cliff Berry,
Inc. Site Closure

I have reviewed the above referenced material submitted by Enviropact, Inc., and in view of the data presented, find the Contamination Assessment Report ("CAR") incomplete and inadequate.

The following incompleteness items are provided for your information.

- (1) Pursuant to paragraph 1.A., for Corrective Action for Groundwater Contamination Cases, the following objectives of the C.A.P. have not been met.
 - The areal and vertical extent of soil and groundwater contamination has not been adequately defined. The PCB contamination in drainfields 1 & 2, has not been delineated on any site map. Secondly, soil borings.

 The 15 foot depth (at 23.0 ppm, 13.1 ppm, and 17.8 ppm respectively). This is well below the soil/water interface, and in a completely saturated zone. However, no sandpoint or monitoring wells were installed in (or near) any of these borings to determine the concentrations of Benzene and/or other 601 & 602 compounds in the groundwater at these locations.
 - Sources of the various contaminants have not been determined. Additionally, the rate and direction of groundwater flow has not been submitted with the C.A.R.

Mr. Lawrence Page 2 of 4 March 25, 1986 In review of the data submitted with the C.A.R., no 3. contaminant plumes have been delineated. Barium has been found in virtually every test boring (in concentrations from 23 ppm to 1,190 ppm) both in the unsaturated and saturated soil zones, no groundwater samples have been analyzed for Barium. The only groundwater violation reported in the C.A.R. 4. has been for phenols, but no interim remedial measures, other than monitoring, have been proposed to remedy the situation. Pursuant to paragraph 1B, pertaining to the tasks the C.A.P. shall contain, the following items of incompleteness are noted. No groundwater flow directions have been submitted to 1. show local flow paths. Placement of monitoring wells along the perimeter of the 2. property does not adequately trace the extent of groundwater contamination. No sandpoint or monitoring wells have been sampled in 3. the vicinity of drainfields 1 and 2 to determine the extent of PCB's in the groundwater. The proposed well locations submitted in a May 11, 1984 letter to John Guidry/D.E.R., do not appear in the C.A.R. submitted March 7, 1986. Locations of any private (or public) potable supply 4. wells within a 1 mile radius of the site need to be delineated and, if present, their locations submitted on a site map. Pursuant to paragraph 1C, and adequate QA/QC Plan has not been submitted. The QA/Qc Plan shall be prepared in accordance with the requirements set forth in the document titled "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, QAMS-005/80, December, 1980" prepared for the U.S. E.P.A. COMMENTS/RECOMMEDATIONS Due to the extent and type of contamination at this site in proximity to the existing lakes in the immediate vicinity, a groundwater monitoring plan should be implemented. plant should include, but not be limited to the following criteria. Location of existing or proposed monitoring well(s) to (a) sample natural, background water quality.

Mr. Lawrence Page 3 of 4 March 25, 1986 Location of intermediate and compliance wells in the downgradient direction. Construction details of the monitoring wells (existing (c) and proposed). Hydrogeological, physical and chemical data for the site (d) including: Direction and rate of groundwater flow. Vertical permeability of confining bed(s). Cones of depressions, water supply wells and monitoring wells located within a 1 mile radius of the site. Additional groundwater data is needed in several areas to better define the extent of contamination. Analyze for 601 and 602 compounds and Barium by installing wells at locations 78-2, TB-3 and TB-4 in addition to the six monitoring wells previously Analyze for PCBs by installing a well(s) at or near TB-6 (b) and in the vicinity of drainfields 1 and 2. Detection limits for PCB's in groundwater should be less than 1 ppb. Additional data is needed concerning the recommended (3) excavation/reclamation plan. Specific items of concern include: A QA/QC Plan for the sampling and analysis of PCB's in the soil, surface waters and groundwaters in the drainfield vincinity. Will dewatering be necessary prior to excavation of the (b) drainfields? How will PCB contaminated soil and water be treated and/or disposed? How will infiltration and runoff from the stockpiled (d) soils be controlled to prevent off-site discharge? What is the source of the bacteria to be utilized in the (e) soil reclamation plan. In view of the questions set forth in item 3, the Department feels that a Feasibility Study Plan ("FSP") is necessary for both the drainfield excavation and the soil excavation/reclamation plan. The FSP shall provide a detailed description of the technical approach Respondent shall use to address each task to be conducted during the F.S. At a minimum, the FSP shall address the following task elements:

Mr. Lawrence Page 4 of 4 March 25, 1986 The objectives of the remedial action, as required by Department rules and state and federal statutes: prevent groundwater contamination; to remove, contain or render harmless the contamination source; to cleanup to the water quality criteria and minimum standards in Florida Administrative Code Chapter 17-3; etc.: Risk assessment, which shall include consideration of the toxicity, transport mechanisms, persistence in the environment, and impacts on human health and the environment of the substances associated with the site; Methods to quantify contaminant movement off-site, to identify impact zones, and to identify and quantify hazardous zones; Please feel free to contact me if you have any questions prior to the scheduled meeting date of April 16, 1986. Sincerely, Ronald Lane Ronald Lane Environmental Specialist RL:ahy:h cc: Richard Walesky/DER - WPB Doug Wyckoff/OGC - Tallahassee



Florida Dept of Environmental Regulation 3301 Gun Club Road

Ron Lane 689-5800

West Palm Beach, FL

Ordered by:

Tel:

33402

Real Estate Data, Inc.

P.O. BOX 019156 . MIAMI, FLA 33101 . TELEPHONE (305) 685-5731

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Customer	Number NON

Date 4/21/86

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0421860011	1	Broward, Fl	233	•		10.00
		Face	28 773			SUB TOTAL 10.00
101-8						SHIP CHGS. 1.85 TOTAL \$ 12.35
NOV-7	 				:	BALANCE DUE \$ 12.35

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2-263A R8/8

TO:

Douglas Wyckoff

FROM:

Ronald Lane, GW, Southeast District

DATE:

March 26, 1986

SUBJECT: Berry's Warehouses

I have been asked to review the existing data pertaining to the property (and proposed warehouse facility) owned by Mr. Cliff Berry, and to evaluate the potential for contamination of this parcel from a northern parcel leased by Mr. Berry from the Amoco Oil Corporation. For clarification purposes, I will refer to these properties as the southern and northern parcels, respectively.

In a Contamination Assessment Report ("C.A.R.") submitted on March 7, 1986 for site closure of the northern parcel, the available data suggests that there may be more groundwater contamination present at the site than previously delineated. I have addressed these concerns in a March 25, 1986 letter to Terry Lawrence with the BCEQCB. The C.A.R. also delineates a clay layer present in the northern parcel which progressively thins in a southernly direction. Results submitted with the C.A.R. suggest that "The clay layer present throughout the site at Cliff Berry, Inc. seems clay layer present throughout the site at Cliff Berry, Inc. seems to prevent the majority of the contamination found in the soil from reaching the groundwater."

There have been no test borings in the southern parcel (similar to those done in the northern parcel) which would help define the lithology and extent of the clay layer in the proposed stormwater lake area. Additional data is needed to further define the extent of the clay layer in this area, and what the potential impact on groundwater flow and contaminant transport from the northern parcel to the southern parcel would be if a stormwater detention pond were to be dug to 12 feet (below land surface) with the clay layer being removed. To this date, no groundwater flow directions have been delineated for either parcel.

Additionally, the fate of existing contaminants in lake sediments (and drainage ditch sediments) needs to be more clearly defined prior to any dredging and/or filling of the existing lake.

Mr. Douglas Wyckoff Page 2 March 26, 1986

Consequently, until existing and additional data from both parcels can be correlated there is a definite possibility that dredge and fill activities in the southern parcel could induce groundwater flow with subsequent contaminant migration from the northern parcel.

RL:cb8

Standard Oil Company (Indiana)

Box 3385 (Research Center) 4502 East 41st Street Tulsa, Oklahoma 74102

Environmental and Energy Conservation Division of Environmental Affairs and Safety Department 918-660-3218

·4007

GMS 85-220

Gene W. Schmidt Director, Groundwater Management

April 25, 1985



Dept. of Environmental Reg. West Palm Beach

Mr. S. Seyfried
Florida Dept. of Environmental Regulation
Southeast Florida District
3301 Gun Club Road
P. O. Box 3858
West Palm Beach, FL 33402-3858

Dear Mr. Seyfried:

The purpose of this letter is to supply informational material which can be used in consideration of the enclosed Application for Monitoring Plan Approval.

Amoco Oil Company owns approximately 10 acres of property at Port Everglades, Florida, which, until recently, has been leased to a Mr. C. Berry. Mr. Berry is presently performing a geohydrological investigation in cooperation with the Broward County Environmental Quality Control Board (EQCB) to determine if his business activities have caused contamination of the soil and/or groundwater. This investigation is apparently emphasizing three principal areas of the property; those being the south boundary, the west boundary, and the area in the vicinity of the separator and the associated discharge water drainfield.

Amoco Oil Company agrees that the above mentioned areas are of considerable concern and appreciates the efforts of Mr. Berry and EQCB in addressing the problem. However, Amoco is also concerned about possible contamination of surficial soils and the groundwater throughout the remainder of the property, and desires to perform its own geohydrological investigation concurrent with the work being supervised by EQCB. This investigation will be supervised by the Groundwater Management Section (GMS), Amoco Corporation.

The initial work will consist of installation of as many as 24 observation wells (Figure 1). Of course, the number and locations of the wells will probably be altered depending upon conditions observed by the GMS upon arrival at the site. For example, it may not be deemed necessary to install as many wells as indicated in Figure 1 in the three areas mentioned previously. As can be seen, installation of the wells in the locations indicated will provide a good spatial distribution and should provide for upgradient and downgradient monitoring once the direction of groundwater flow is determined.

Application withdrawn

The wells will be installed by first augering a 10-inch diameter borehole using hollow-stem augers to depths determined by the on-site geohydrologist. It is anticipated that the water table is present at a depth of about 3 ft below grade; thus, total depth of the completed well will be about 13 ft. PVC casing and machine-slotted 0.010 inch screen will be used. To preclude contamination of the groundwater no solvents or glues will be used to join the sections of casing and screen. Instead, prethreaded casing and screen will be implemented or the sections will be joined using self-tapping steel screws. In lieu of a 5-ft screen interval and a 2-ft sump at the lower end of the well as specified in the construction guidelines issued by the Broward County Environmental Quality Control Board (EQCB), a 10-ft section of screen will be installed. This will insure maintenance of the fluctuating water table within the screened portion of the well. Also, powdered bentonite may be used in lieu of the fine sand in the interval immediately above the gravel pack. These changes have been agreed to by Mr. T. Lawrence of the EQCB. Other construction details will be as outlined in the EQCB document, "Minimum Requirements for Monitoring Wells." Figure 2 shows a typical observation well installation.

Subsequent to installation, the wells will be developed by overpumping and surveyed. After allowing for stabilization of the fluid levels, measurements will be taken of groundwater and liquid hydrocarbon levels, if any. Wells will then be sampled for liquid hydrocarbons, volatile organics, metals, phenols, PCB's, and base neutrals using EPA and/or EQCB approved sampling methods and analyses.

Subsequent to sampling of the wells, a report will be prepared which will discuss the site geohydrology and water quality. Included in the report will be maps depicting the configuration of the water table and, if present, the definition of any liquid or dissolved hydrocarbon plumes. Also, if pertinent, recommendations for recovery of liquid hydrocarbons and contaminated groundwater will be made.

Your early attention to this matter would be appreciated as arrangements are underway to install the observation wells in mid-May 1985. If you have any questions, please call me at 918-660-4007.

Sincerely,

T. Gogel, P.G., P.HG. Certificate Number 237

Certified by American Institute of Hydrology

TG:mph 85115ART0034

cc: J. A. Lamping, Chicago

G. W. Schmidt, Tulsa



STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHEAST FLORIDA DISTRICT

3301 GUN CLUB ROAD P.O. BOX 3858 WEST PALM BEACH, FLORIDA 33402



BOB GRAHAM GOVERNOR VICTORIA J. TSCHINKEL SECRETARY

Permit No.

BOY DUKE DISTRICT MANAGER

APPLICATION FOR MONITORING PLAN APPROVAL (Existing Sources)

Submit four copies of this application and four copies of supporting information such as laboratory reports, maps and other documents to the appropriate District Office.

PART I - General Information

Amoco Oil Company

In compliance with Florida Administrative Code Rule 17-4.245(6)(c)2., the undersigned installation owner applies for approval from the Department for the monitoring criteria on the following property owned by:

Miloco ott		
Corporation or Owner's Name		5171
Port Everglades Terminal		SIC Code
Installation Name	Duawand	26 °05 ·00 "N 80 ° 07 30 W
Spangler Blvd. Hottyhou	33316 Broward Zip County	Latitude Longitude
ct F Address	1/41/41/4 of	Section, Township, Range
OWNER OR AUTHORIZED REPRESENTATIVE (If rep	resentative, attach le	tter of authorization.)
C.B. Smiley, Distribution Center M	anager	
Name and Official Title (Print or Type) Spangler Blvd. Hollywood	Fla. 33316 State Zip	(305) 523-0571 Telephane Number
Street Signature: B. Augley		Date: 5/20/85
PART II - Content of Monitoring Plan		odofings and

Pursuant to Rule 17-4.245(6)(d), the plan shall contain findings, recommendations and plans for ground water monitoring derived from site specific information. For the type of information to be considered in the development and assessment of the plan, see page two of this form. In any case, the following items must be included:

- 'ocation(s) of proposed well(s) to sample natural unaffected background water quality and the intermediate and compliance well(s) in the down gradient direction.
- 2. Construction details of the monitor well(s), including type of casing material, diameter of casing, depth of casing and location of screens.
- 3. A water sampling and chemical analysis procedure which can determine the natural unaffected background quality of the ground water, and the quality of the receiving ground water in the downgradient intermediate and compliance wells.

DER Form 17-1.216(1) Effective January 1, 1983

Page 1 of 2



Amoco Oil Company

East/South Region P. O. Box 507 Baltimore, Maryland 21203 301-625-7891

R. D. McMullen Regional Vice President

May 17, 1985

Mr. Roy M. Duke
District Manager
Department of Environmental Regulations
Southeast District
P. O. Box 3858
West Palm Beach, Fla. 33402-3858

Dear Mr. Duke:

This is in reference to the operation of our Industrial Waste Water Treatment equipment, located at our terminal facility in Port Everglades, Florida.

Please consider the Terminal Manager as the authorized representative, on behalf of Amoco Oil Company, to sign and submit applications and required reports and to maintain and operate the pollution control facilities in such a manner as to comply with the provisions stipulated in the permit limitations.

Yours truly,

R. D. McMullen

Regional Vice President

/aw

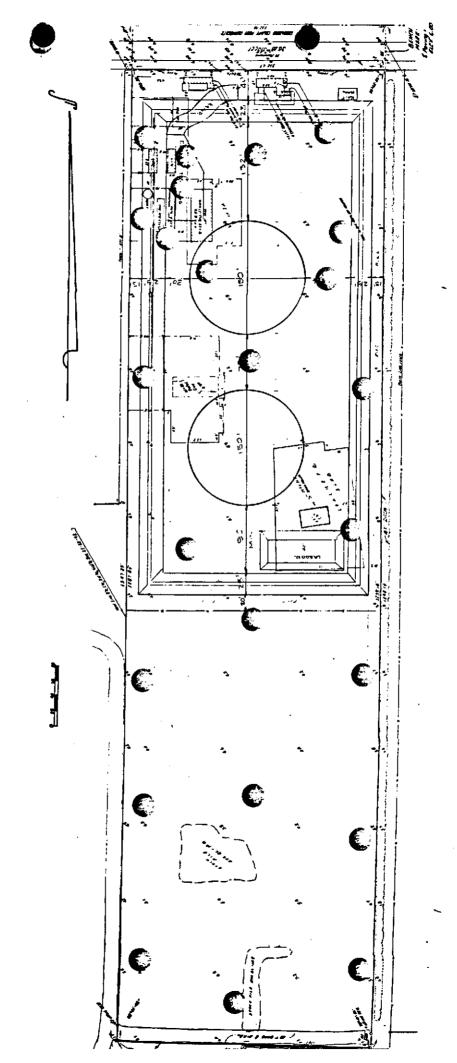
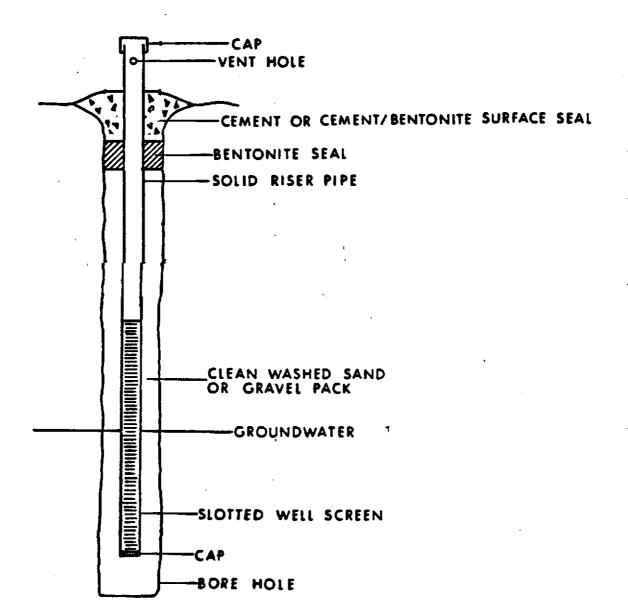


FIG. 1 -LOCATIONS OF OBSERVATION WELLS

FIGURE 2

TYPICAL OBSERVATION WELL
FOR MONITORING ONE AQUIFER



LAW OFFICES

COMPTON & ASSOCIATES, P.A.

POST OFFICE BOX 14124 1715 SOUTHEAST 4TH AVENUE FORT LAUDERDALE, FLORIDA 33302-4124 Dept. of Environmental Reg. Office of General Counsel

(305) 763-4747 DADE 949-0420

FORT PIERCE/VERO BEACH OFFICE UNIVEST BUILDING + SUITE 300 8770 NORTH INDIAN RIVER BOULEVARD VERO BEACH, FLORIDA 32960 (305) 569-9300

REPLY TO

ROBERT J. COMPTON ADMIRALTY PERSONAL INJURY & WRONGFUL DEATH CORPORATION & BUSINESS LAW JOHN T. DAVID GENERAL TRIAL PRACTICE CORPORATION & BUSINESS LAW ADMIRALTY

SCOTT M. ROSEN GENERAL TRIAL PRACTICE

March 5, 1986

Douglas M. Wyckoff, Asst. General Counsel State of Florida Department of Environmental Regulation Twin Towers Office Building 2600 Blair Stone Road Tallahassee, Florida 32301

Re: Berry v. DER

Dear Mr. Wyckoff:

Enclosed herewith please find reports of water quality samples taken from the property on the northern boundary of the Berrys' property which is currently the subject matter of the above styled litigation. This data clearly reflects that the northern property which was of major concern to Dr. Charles Ouseph and Mr. Richard Walesky, does not reflect contamination in excess of DER standards.

As you recall from the depositions taken on December 11, 1985, Dr. Ouseph requested the denial of the subject Permit based upon contamination problems identified on properties surrounding the subject site. Dr. Ouseph's position was that nothing should be permitted until these "surrounding" problems are addressed to his The enclosed data certainly raises the question satisfaction. whether or not there are any "surrounding" problems. event, the basis of Dr. Ouseph's opinion does not reasonably justify the legal denial of the Permit on the subject property.

Indeed it appears that from Mr. O'Donnel's deposition, that the Permit was ready to be approved until Mr. Walesky involved Dr. Ouseph in "re-evaluating" the site. In all honestly, it would appear that Mr. Walesky has directed a personal vendetta in the name of the DER to prevent the issuance of this Permit.

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New York

Another important factor of which you should be aware, is that it appears from discussions and public meetings of the Broward County Environmental Control Board, that the County has no objection and indeed is completely astonished, by the DER's refusal to issue the Permit in the above referenced matter. Both Terry Lawrence, whom you have listed as an expert witness, and Fran Henderson, have clearly indicated that they have no opposition to the Permit's approval. Indeed, the position of the Broward County Environmental Control Board is that based upon the current development of the Port, and the areas directly surrounding the Berrys' property, the DER's position as to the improvement of the water quality is not only unrealistic but also unwarranted. is evident from the surrounding circumstances currently existing at the Port, Mr. Berry's planned development of the site would act to enhance the environment instead of damaging the environment as indicated by the Department. In fact, the Broward County Environmental Control Board has acknowledged that if any unacceptable levels of arsenic exist at the site, that they were put there by the DNR in order to fight land crabs many years ago.

It is further evident through aerial photographs dating back to 1956, that this "lake" is a man-made barrow pit created some twenty (20) years ago and has nothing to do with the natural Undoubtedly, under these cirhydrological system of the area. cumstances, it is questionable whether the DER even has jurisdiction to regulate the development of this site. It appears that under these and other circumstances, this Permit falls squarely within the exceptions enumerated within the Warren Henderson Wetlands Protection Act of 1984 which in effect, obviates the requirement of the Permit for this site. This position is abundantly evident when considered in light of Mary F. Smallwood's article, The Warren S. Henderson Wetlands Protection Act of 1984: A Primer, 1 J. of Land Use & Environmental Law 211 (1985). As I understand, Ms. Smallwood is the Chief Legal Counsel for the Department of Environmental Regulation. cerned whether Ms. Smallwood knows of and would support, the Department's further prosecution of this matter.

The time has come to set aside the personal differences between the parties and to take a hard look at the factual and legal issues presented in this matter. This matter does not have to, and should not, be litigated further. However, it appears that this is the only action that will satisfy the Department of Environmental Regulation. We have arrived at the point where to continue further with this action will subject some persons in the Department of Environmental Regulation to civil rights actions under 42 USC \$1983, for the deprivation of the Berrys' actions under 42 USC \$1983, for the deprivation of the Berrys' property rights in regard to the subject parcel. I also believe property rights in regard to the subject parcel. I also believe that there is a substantial possibility that the Department may well be liable for attorneys' fees and costs under the Florida Statute Chapter 120.57(1)(b)(9).

Therefore, in an effort to circumvent this type of action, I herein request that the Department of Environmental Regulation reconsider its prior decision and issue the Permit for Mr. & Mrs. Berry to develop their property. In any event, I respectfully request that you contact this office so that we can discuss this matter further. If you do not believe this is feasible, then we will need to discuss such matters in order that we may prepare and resubmit this matter to the Administrative Law Judge.

Thank you for your courtesy and cooperation.

Very truly yours,

John T. David, Esq.

JTD/lw
cc: Mr. & Mrs. Berry

Environmental Consulting and Analysis

4790 N.W. 157 Street Hislesh, Florida 33014 Telephone (305) 620-1700 Fig. Watts. (600) 432-9706

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CLIFF BERRY INDUSTRIES P.O. BOX 13079 FT.LAUDERDALE, FL 33316

6 1 of Page

January 24, 1986 Report 15962 LAB I.D. 86119

ATT : CLIFF BERRY

Sample Received: 1/13/86

Sample Designation: ANALYSIS AS NOTED

Collected By: M. MONFRIES

DEPOND OF ANALYSIS - WELL - WI	·	UNITS
REPORT OF ANALYSIS: WELL - W1 ARSENIC CADMIUM CHROMIUM, TOTAL LEAD MERCURY NICKEL POLYCHLORINATED BIPHENYLS TOLUENE XYLENE, TOTAL ZINC CHLOROBENZENE 1,3-DICHLOROBENZENE 1,2-DICHLOROBENZENE 1,4-DICHLOROBENZENE BENZENE ETHYL BENZENE OIL & GREASE PHENOLS, TOTAL	<pre>< 0.005 < 0.005 < 0.005 < 0.005 < 1 < 0.005 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1</pre>	mg/l mg/l mg/l mg/l μg/l μg/l μg/l μg/l μg/l μg/l μg/l μ
·		,

Analyses performed in accordance with E.P.A., A.S.T.M., Standard Methods or other approved methods.

Respectfully submitted,

Lawrence J. Korn

Laboratory Supervisor

Enviropact, Inc.
Melbourne Key Largo Tampa

Sebring Jacksonville

1143

CLIFF BERRY INDUSTRIES P.O. BOX 13079 FT.LAUDERDALE, FL 33316 Page 2 of

January 24, 1986 Report 15962 LAB I.D. 86119

ATT : CLIFF BERRY

Sample Received: 1/13/86

Sample Designation: ANALYSIS AS NOTED

Collected By: M. MONFRIES

WELL - W2		UNITS	
ARSENIC CADMIUM CHROMIUM, TOTAL LEAD MERCURY NICKEL POLYCHLORINATED BIPHENYLS TOLUENE XYLENE, TOTAL ZINC CHLOROBENZENE 1,3-DICHLOROBENZENE 1,2-DICHLOROBENZENE 1,4-DICHLOROBENZENE BENZENE ETHYL BENZENE OIL & GREASE PHENOLS, TOTAL	< 0.005 < 0.005 < 0.005 < 0.005 < 1 < 0.005 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 ug/1 ug/1 ug/1 ug/1 ug/1 ug/1 ug/1 u	

Analyses performed in accordance with E.P.A., A.S.T.M., Standard Methods or other approved methods.

Respectfully Submitted,

Lawrence J / Korn

Laboratory Supervisor

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CLIFF BERRY INDUSTRIES P.O. BOX 13079 FT.LAUDERDALE, FL 33316

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January 24, 1986 Report 15962 LAB I.D. 86119

ATT : CLIFF BERRY

Sample Received: 1/13/86

Sample Designation: ANALYSIS AS NOTED

Collected By: M. MONFRIES

was a second with a W2		UNITS
ARSENIC CADMIUM CHROMIUM, TOTAL LEAD MERCURY NICKEL POLYCHLORINATED BIPHENYLS TOLUENE XYLENE, TOTAL ZINC CHLOROBENZENE 1,3-DICHLOROBENZENE 1,2-DICHLOROBENZENE 1,4-DICHLOROBENZENE BENZENE ETHYL BENZENE OIL & GREASE PHENOLS, TOTAL	< 0.005 < 0.005 < 0.005 < 0.005 < 1 < 0.005 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1	mg/l mg/l mg/l mg/l μg/l μg/l μg/l μg/l μg/l μg/l μg/l μ

Analyses performed in accordance with E.P.A., A.S.T.M., Standard Methods or other approved methods.

Respectfully Submitted,

Lawrence J / Korn

Laboratory Supervisor

1143

Page 4 of 6

CLIFF BERRY INDUSTRIES P.O. BOX 13079 FT.LAUDERDALE, FL 33316 January 24, 1986 Report 15962 LAB I.D. 86119

ATT : CLIFF BERRY

Sample Received: 1/13/86

Sample Designation: ANALYSIS AS NOTED

Collected By: M. MONFRIES

PRODUCE ANALYSIS - WELL - W4		UNITS	
REPORT OF ANALYSIS : WELL - W4 ARSENIC CADMIUM CHROMIUM, TOTAL LEAD	< 0.005 < 0.005 < 0.005 < 0.005 < 1	mg/l mg/l mg/l mg/l µg/l	
MERCURY NICKEL POLYCHLORINATED BIPHENYLS TOLUENE XYLENE, TOTAL ZINC	0.17 < 1 < 1 < 1 < 1 0.11	mg/l μg/l μg/l μg/l mg/l	
CHLOROBENZENE 1,3-DICHLOROBENZENE 1,2-DICHLOROBENZENE 1,4-DICHLOROBENZENE BENZENE	< 1 < 1 < 1 < 1	μg/l μg/l μg/l μg/l μg/l μg/l	
ETHYL BENZENE OIL & GREASE PHENOLS, TOTAL	< 1 1 0.11	mg/l mg/l	

Analyses performed in accordance with E.P.A., A.S.T.M., Standard Methods or other approved methods.

Respectfully Submitted,

Lawrence J Rorn

Laboratory Supervisor

1143

Page 5 · of 6

CLIFF BERRY INDUSTRIES P.O. BOX 13079 FT.LAUDERDALE, FL 33316 January 24, 1986 Report 15962 LAB I.D. 86119

ATT : CLIFF BERRY

Sample Received: 1/13/86

Sample Designation: ANALYSIS AS NOTED

Collected By: M. MONFRIES

DEDODE OF ANALYSIS . WELL - W5		UNITS	
REPORT OF ANALYSIS: WELL - W5 ARSENIC CADMIUM CHROMIUM, TOTAL LEAD MERCURY NICKEL POLYCHLORINATED BIPHENYLS TOLUENE XYLENE, TOTAL ZINC CHLOROBENZENE 1,3-DICHLOROBENZENE 1,2-DICHLOROBENZENE 1,4-DICHLOROBENZENE BENZENE ETHYL BENZENE	< 0.005 < 0.005 < 0.005 < 0.005 < 1 < 0.005 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1	mg/l mg/l mg/l mg/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l u	
OIL & GREASE PHENOLS, TOTAL	< 1 0.05	mg/l mg/l	

Analyses performed in accordance with E.P.A., A.S.T.M., Standard Methods or other approved methods.

Respectfully Submitted,

Lawrence J. Rorn

Laboratory Supervisor

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Page 6 of 6

CLIFF BERRY INDUSTRIES P.O. BOX 13079 FT.LAUDERDALE, FL 33316 January 24, 1986 Report 15962 LAB I.D. 86119

ATT : CLIFF BERRY

Sample Received: 1/13/86

Sample Designation: ANALYSIS AS NOTED

Collected By: M. MONFRIES

DEDORM OF ANALYSIS - WELL - WE		UNITS	
REPORT OF ANALYSIS: WELL - W6 ARSENIC CADMIUM CHROMIUM, TOTAL LEAD MERCURY NICKEL POLYCHLORINATED BIPHENYLS TOLUENE XYLENE, TOTAL ZINC	<pre>< 0.005 < 0.005 < 0.005 < 0.005 < 1 < 0.005 < 1 < 0.016</pre>	UNITS mg/l mg/l mg/l mg/l µg/l µg/l µg/l µg/l µg/l µg/l	
CHLOROBENZENE 1,3-DICHLOROBENZENE 1,2-DICHLOROBENZENE 1,4-DICHLOROBENZENE BENZENE ETHYL BENZENE OIL & GREASE PHENOLS, TOTAL	< 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1	μg/l μg/l μg/l μg/l μg/l mg/l mg/l	

Analyses performed in accordance with E.P.A., A.S.T.M., Standard Methods or other approved methods.

Respectfully Submitted,

Lawrence J / Korn

Laboratory Supervisor

