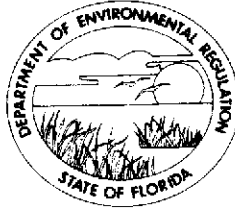


STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHEAST FLORIDA DISTRICT
1900 SOUTH CONGRESS AVENUE
WEST PALM BEACH, FLORIDA 33406



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY
J. SCOTT BENYON
DISTRICT MANAGER

MAY 10 1987

Mr. Harvey Schneider
BCEQCB
500 SW 14th Court
Fort Lauderdale, Florida 33315

Dear Harvey;

Re: Final Report / Soil Sampling and Analysis Amoco Corporation
Port Everglades

I have reviewed the above referenced report, submitted by Environmental Science and Engineering Inc., and offer you the following comments and recommendations.

1) The soil sampling grid pattern which was established for the Amoco (Cliff Berry) property consisted of 90 sample locations which covered 27,000 ft/sq. The grid was further delineated into 10 clusters with 9 sample points per cluster. However, only 1 analytical sample was composited from each cluster. That equates to one composite sample for every 2,700 ft/sq. Furthermore, soil sampling did not exceed 4 feet below land surface and should have included the soil/water interface.

2) The report states that infilling of the property occurred with limestone cuttings from nearby deep injection wells (the probable source of the high barium concentrations on-site), tank bottom residues, ship bilge wastes and asphaltic material. None of these materials are considered to be "clean fill". Consequently, the owner/operator of this facility may be in violation of FAC 17-7.040(f) and (g) and F.S. 403.161.

3) There was no sample collected from location #68 because it was in a small pond. However, sediments could have been analyzed from the pond bottom.

4) Polynuclear aromatic hydrocarbons (PNA's) were analyzed for the first time on the site. Although the analysis included only soils, the results indicate substantially high values (for diesel fuel constituents) and lend support to the statement that tank bottom residues and ship bilge waste were buried on site.

Harvey Schneider
Page 2 of 2

Phenanthrene detected in soils (composit G) exceeded 12,000 ug/Kg (ppb). Groundwater samples have never been analyzed for EPA Method 610 compounds (PNA's) and a groundwater guidance concentrations has been established for phenanthrene at .6 ppb.

5) Samples 21 through 25 in composit "C" indicate PCB concentrations which ranged from 1.3 to 13.2 ug/g (ppm). The extent of PCB contamination in this area (both soils and groundwater) needs to be determined.

6) Soil borings should be advanced to at least one (1) foot below average wet season water table elevation in areas where infilling consisted of material other than clean fill. Tank bottom reisdues, ship bilge waste, asphaltic material, etc., which were buried below this water table elevation, need to be vertically defined and removed.

Sincerely;



Ron Lane
Environmental Specialist III

RL:11b/5

cc: Mr. Larry O'Donnell, DER, WPB
Mr. Douglas Wyckoff, OGC, Tallahassee
~~Mr. Jonathan Arnan, DER, WPB~~

I agree that the composite soil samples are from too wide an area.

If the soils no longer exhibit any of the h.w characteristics (ie. EP toxic for Pb, Ch, Cd etc. and are no longer ignitable, reactive or corrosive) then the material is no longer a hazardous waste unless the discharged material was from a "listed" waste. I don't think we could sufficiently demonstrate a "listed" waste in this situation. I recommend EP toxic sampling of soils for Pb, ~~Ch~~, Cd, As, Hg, ~~Ba~~, Se without compositing over a wide area.

Fane



Amoco Corporation

April 24, 1987

Mr. Ron Lane
Florida Department of
Environmental Regulation
Southeast Florida District
P.O. Box 3858
West Palm Beach, FL 33042-3858

RECEIVED

APR 27 1987

Dept. of Environmental Reg.
West Palm Beach

Dear Ron:

Enclosed, please find a copy of ESE's report dealing with soil contamination at Amoco's Port Everglades property. Also enclosed are the results of some additional EP Toxicity tests conducted on selected samples.

Please call me at (312) 856-3618 if you have any questions regarding this material.

Sincerely,

Ralph C. Feeney

RCF/dg

Enclosures

**ENVIRONMENTAL SCIENCE
AND ENGINEERING, INC.**

April 21, 1987
ESE No. 87510-0100

Mr. Ralph Feeney
AMOCO Corporation
Mail Code 4903
200 East Randolph Drive
Chicago, Illinois 60601

Dear Mr. Feeney:

ESE is pleased to submit these EP Toxicity data from the individual samples that you selected. Please note that none of the the samples exceeded the criteria in 40 CFR 261.24, and therefore are not characteristic hazardous wastes.

ANALYTE	AMOCO PORT EVERGLADES SAMPLE STATION ID'S							
	40	36	43	45	79	80	87	88
=====	=====	=====	=====	=====	=====	=====	=====	=====
ARSENIC	3	3	40	7	7	7	3	4
BARIUM	<100	<100	<100	<100	<100	<100	<100	<100
CADMIUM	17.6	11.1	20	8.29	8.92	6.7	8.63	11.7
CHROMIUM	100	100	60	70	70	80	70	80
LEAD	1230	1030	4890	555	503	484	179	539
MERCURY	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5
SILVER	<50	<50	<50	<50	<50	<50	<50	<50
SELENIUM	<1	<1	<1	<1	<1	<1	<1	<1

ALL DATA IN ug/l
ALL ANALYSIS BY EP TOXICITY PROCEDURES

If you should have any questions regarding the data please feel free to contact me at your convenience.

Sincerely,



Stephen A. Denahan, P.G.
Project Manager

SAD

Enclosures:

cc: W.A. Tucker

- Need to Construct
- Schedule for putting in tanks running ahead of closure
- need to install tanks by mid July
- Soil contamination problems.
- Jim Walker engineer / construct.
Tucker soil testing

8-12 mo project
Foundation work mid July

- excavate to hardpan (12-15')
- bring in clean fill
no dewatering
cell-off - vibra-platation
- remove soils to south end of site 28,000 cu/yds
- 14 EK / lab samples contom
25 ppm PCB in soils for cleanup
spread soil on south side of site 1' thick

worst case PMS' 600 days
of treatment

Cliff Berry Meeting

6/4/87

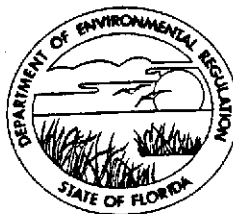
<u>Name</u>	<u>Representing</u>	<u>Telephone</u>
RON Lane	FDER/WPB	964-9668
Jim WALKER	Amoco Oil Co.	(312) 856-4920
Ralph C. Fancy	Amoco	(312) 856-3618
Inet Peterson	Envirofact/Cliff Berry	620-1700
RANDY FARMER	AMOCO OIL	312/856-3915
Bill Tucker	Environmental Science & Eng, Inc.	904/332-3318
Dean Powell	DER/WPB	964-9668

File

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
SECRETARY

J. SCOTT BENYON
DISTRICT MANAGER

December 30, 1986

Ms. Madeline Wu
Broward County Environmental Quality Control Board
500 S.W. 14th Court
Fort Lauderdale, Florida 33315

RE: Cliff Berry, Inc., CAR

Dear Ms. Wu:

I have reviewed the most recent CAR for Cliff Berry, Inc., submitted by Enviropact Inc., (dated October 10, 1986) and find it to be incomplete. The following comments and recommendations are provided for your information.

1) Under the Introduction and Background Section, the report specifically states: "The project described below was conducted according to specifications outlined in the letter from Broward County Environmental Quality Control Board to Cliff Berry, Inc., dated June 4, 1986". This letter requests that geologic logs and summary of field notes be submitted along with the well completion reports.

The geologic logs which were submitted were those of the previously submitted test borings (TB-1 through TB-12). Additionally, only one (1) well completion report was submitted for the six (6) new monitoring wells on the site. This implies that the various lithologies and their specific intervals (as submitted on the drill cuttings log) are identical for all six (6) wells. Furthermore, F.A.C. 17-20 defines a water well which includes monitoring wells under the criteria. The South Florida Water Management District requires Well Completion Reports (pursuant to 40E-3.411) to be completed with the License number of the water well contractor and the Registration number of the registered driller. These registration/certification numbers need to be submitted.

Ms. Madeline Wu
December 30, 1986
Page 2 of 5

Section 2 (Hydrogeological Parameters) of the CAR states that: "the method of well installation did not allow us to recover cuttings to indicate whether this layer was present in the monitoring wells". This is referring to the "permeable" sand below the peat and clay. If this is correct, how then were the differing lithologies (and intervals) delineated in the well completion report? Also, requirement 3.1. of the EQCB letter (dated June 4, 1986), required a discussion of the spatial distribution of the sediments and their characteristics to a depth of 12 feet below grade. This was not accomplished through the installation of these new wells, although the hollow stem auger method is the best for collecting formation samples of this type. The EQCB letter continues, in the same paragraph, and requires estimates of horizontal and vertical permeability, rate of groundwater flow and a survey of all wells within a 1 mile radius of the site. To date, none of these requirements have been fulfilled.

Site specific field permeabilities need to be determined especially for the clay, sand, peat and limestone units, so that the terms permeable, impermeable and relatively impermeable, have more meaning. When the site-specific aquifer characteristics have been better defined, groundwater velocities and contaminant transport may be better understood.

Also, in the Hydrogeological Parameters Section, the statement is made: "In other words, the most permeable units on the site are protected by at least five (5) feet of fill and clay,..." this does not correlate at all with Figure 4 which delineates only 0.5 feet of "clay" near TB-6 which is the only boring to contain "gravel(?)" designated to be approximately 7 feet thick; the permeability of which would be much greater than that of sand.

Groundwater staff does not agree with the two conclusions presented in the Discussion Section of the report.

Ms. Madeline Wu
December 30, 1986
Page 3 of 5

The concentration of benzene in soil samples from TB-2, TB-3 and TB-4, presented in the March, 1986 CAR, were as much as 23,000 times above the State MCL for benzene pursuant to F.A.C. 17-22.104 (1)(g). Concentrations of 23ppm, 13.1ppm and 17.8ppm respectively were obtained from the base (15 feet bls) of the borings. This is well below the soil/water interface in a completely saturated zone of the surficial aquifer. Additionally, this is below the "impermeable clay" units and within the more permeable limestones. Consequently, it is incorrect to assume that the "clay" acts as a confining unit preventing any vertical migration. This is further substantiated by the fact (given that groundwater flow is to the south-southwest) that MW-9, downgradient of this area, has exceeded the State MCL for benzene (2.4ppb) presented in the most recent sampling results of September, 1986. Additionally, there is no data to support the statement that groundwater flow direction, beneath the site, is influenced by tidal fluctuations. Long-term, water level monitoring on-site would be the best way of determining this.

Recommendations

1) As previously recommended, (DER letter to Terry Lawrence/EQCB-dated March 25, 1986, three additional monitoring wells need to be installed at locations TB-2, TB-3 and TB-4.). The Department requires, however, (pursuant to F.S. 373.308(4), that these wells be constructed slightly differently than those wells which are already existing:

.. The total depth of these wells should be twenty (20) feet (bls), with (five) 5 feet of .01" PVC screen, 2" in diameter. Solvent or PVC glue shall not be used in the construction of the monitoring wells. However, PVC threaded/slip couplings may be secured to PVC well casing with stainless steel screws, provided the screws do not penetrate the well casing.

.. All monitoring well components shall be decontaminated by steam cleaning and rinsed with clean clear water prior to assembly and installation.

Ms. Madeline Wu
December 30, 1986
Page 4 of 5

. The annular space between the drilled hole and the monitoring well screen shall be a minimum of two (2) inches, and shall be packed with clean, 6/20 silica filter sand to a depth of approximately two (2) feet above the top of the well screen. The filter pack should be placed using a tremie pipe lowered to the bottom of the space to be packed and slowly raised as the filter pack material fills the annular space.

. Very fine clean washed sand or bentonite slurry may be used as a seal above the filter pack material (a minimum thickness of 1 foot).

. The annular space between the drilled hole and the monitoring well casing shall be backfilled with neat cement grout from the top of the seal to ground surface.

. The monitoring well casing shall extend two (2) feet above ground surface, with a locking, protective steel casing and concrete pad installed around the well. All wells should be surveyed and referenced to NGVD.

. All monitoring wells shall be installed by a Certified Water Well Contractor.

. Department and/or Broward County EQCB personell shall be on site during installation and development of the wells.

. Parameters to be analyzed for should include individual phenolic compounds, the dissolved metals arsenic, barium, zinc and lead, oil/grease, EPA Method 602 compounds, xylene and PCB's.

. When a sampling date has been established, the Department should be notified as soon as possible so that split samples may be obtained.

Ms. Madeline Wu
December 30, 1986
Page 5 of 5

- 2) A completed well completion form will be required for each new monitoring well. The well completion reports should be submitted to SFWMD within thirty (30) days of completion pursuant to 40E-3.411(1). Copies should be furnished to Broward County EQCB and DER.
- 3) Site-specific aquifer characteristics (including horizontal and vertical permeabilities) need to be determined and results submitted to the Department.
- 4) An area of review incorporating an inventory of all wells within a one (1) mile radius of the site needs to be submitted.
- 5) A site-specific QA/QC (QAPP) needs to be submitted and approved.
- 6) Rate and direction of groundwater flow and the interface of groundwater with adjacent surface water bodies needs to be delineated on a site map and submitted to the Department.

If you have any questions, please feel free to contact me at 305/689-5800.

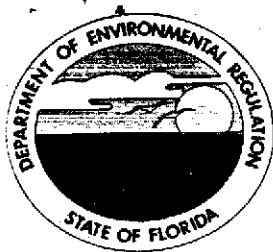
Sincerely,

Ron Lane

Ron Lane
Environmental Specialist III

RL/km

cc: Douglas Wyckoff, Office of General Counsel, DER, Tallahassee
Richard Walesky, Enforcement Section, DER, West Palm Beach



Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

RECEIVED
MAY 23 1990

Dept. of Environmental Reg.
West Palm Beach

May 18, 1990

John R. Herbert, P.G.
ESE
P.O. Box 1703
Gainesville, Florida 32602-1703

Dear Mr. Herbert:

The Bureau of Waste Cleanup has reviewed the file documents dated 1986, 1987, 1990 (received in March-May 1990) submitted for the Diversified Oil (Cliff Berry) site located at 1000 SE 28th Street, Port Everglades, Broward County, Florida. In order to meet the requirements of Chapter 17-770, Florida Administrative Code (F.A.C.), the following comments need to be addressed:

- (1) A supplemental shallow monitoring well should be installed approximately 100 ft. north of MW-6A, near the previous location of former MW-1. If the existing wells are not constructed with the screens overlapping the water table, supplemental shallow monitoring wells should be installed to properly evaluate groundwater contamination.
- (2) Soil (four representative composite samples from treatment areas) and groundwater (all existing and new monitoring wells) should be sampled pursuant to Section 17-770.600(8)(c), F.A.C., to aid in establishing whether supplemental assessment and/or remediation is necessary at the subject site.

The DER Facility Number for this site is 068501856. Please use this identification on all future correspondence with the Department.

Please provide the results of the supplemental assessment to me within sixty (60) days of receipt of this request. If you have any questions concerning this review, please contact me at (904) 488-0190.



John R. Herbert
May 18, 1990
Page Two

Please note, all supplemental contamination assessment related documents should be signed and sealed by a registered professional in accordance with Section 17-770.500, F.A.C. The certification should be made by a registered professional who is able to demonstrate competence in the subject area(s) addressed within the sealed document.

Sincerely,

Ligia Mora-Applegate
Ligia Mora-Applegate
Technical Review Section
Bureau of Waste Cleanup

LMA/sr

cc: Charles R. Greco
Amoco Corporation
Mail Code 4902
200 E. Randolph Drive
Chicago, Ill 606601

Charles Walther
BCEQCB
500 Southwest 14th Court
Ft. Lauderdale, Florida 33315

bcc: ~~L~~Paul Wierzbicki, Southeast District

RECEIVED

MAY 23 1990

Dept. of Environmental Reg.
West Palm Beach

RECEIVED

MAY 23 1990

Dept. of Environmental Reg.
West Palm Beach



BROWARD COUNTY ENVIRONMENTAL QUALITY CONTROL BOARD

500 S.W. 14th Court
Fort Lauderdale, FL 33315
(305) 765-4900

Bureau of Waste Cleanup

JAN 22 1990

Technical Review Section

January 16, 1990

James Crane
Department of Environmental Regulation
Bureau of Waste Cleanup
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, Fl. 32399-2400

Re: Cliff Berry (Amoco)
Port Everglades

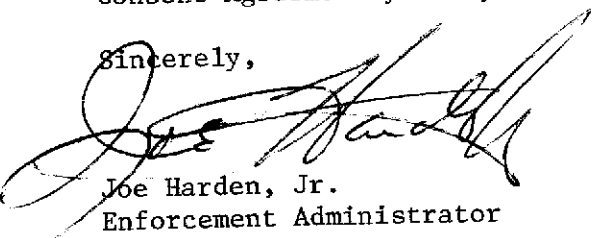
Dear Mr. Crane:

As post correspondence to our letter of November 29, 1989 recognizing DER as lead agency, I am hereby advising you that any Consent Agreement should be three party.

We the Department have exhausted many man hours and incurred great expense. As a result of those man hours, I as Enforcement Administrator also has levied fines against this Respondent as mandated under our administrative code.

I thereby request all these monies to be collected under any type of Consent Agreement you may wish to enter into.

Sincerely,



Joe Harden, Jr.
Enforcement Administrator

JH/jm

cc: Robert Riggio, Staff Counsel
Harvey Schneider, EQCB

Amoco Corporation

200 East Randolph Drive
Chicago, Illinois 60601
Environmental Affairs & Safety Department

Philip C. Morris
Superfund Coordinator

October 23, 1991

CERTIFIED MAIL

RETURN RECEIPT REQUESTED NO. P 554 891 446

Ms. Ligia Mora-Applegate
Bureau of Waste Clean-up
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Diversified Oil (Cliff Berry) Site
FDER Facility No. 068501856

RECEIVED
OCT 28 1991
DEPT. OF ENVIRONMENTAL REG.
WEST PALM BEACH

This letter is intended to satisfy the stipulation requirements of Item 1 of the April 16, 1991, correspondence from Mr. Tim Bahr of your office to Mr. John Herbert of Environmental Science and Engineering (ESE) regarding the subject site. A copy of this correspondence is attached.

Item 1 states "... the soil remediation program can be considered complete as long as Amoco stipulates that the soils will remain on-site." On behalf of Amoco Oil Company, Amoco Corporation hereby stipulates that the soils which were treated for PAH contamination during this project will not be removed from the site. The Soil Treatment Area will be fenced and appropriate signs will be posted to ensure that this stipulation is observed. Descriptions of the site and the soil treatment procedures are contained in ESE's March, 1991, Supplemental Contamination Assessment Report (CAR).

It is our understanding that your office has reviewed the data submitted in ESE's Second Supplemental CAR, dated August, 1991, and is in agreement that the site has been effectively remediated. We further understand that upon receipt of the stipulation contained herein, your office will issue a Site Rehabilitation Order stating that no further action is necessary for the Diversified Oil (Cliff Berry) Site.

Please address any future correspondence on this site to the undersigned as follows.

Amoco Corporation
200 East Randolph Drive
Mail Code 4901
Chicago, Illinois 60601

Phone: (312) 856-3618
Fax: (312) 856-7584

Ms. Ligia Mora-Applegate
Page 2

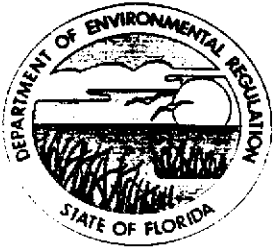
Sincerely,

Philip C. Morris
Superfund Coordinator
Amoco Corporation

Attachment

cc:

Mr. Tim Bahr, FDER-Tallahassee
Mr. John Herbert, ESE-Gainesville
J. J. Kuruc, Mail Code 1102
C. B. Smiley, AOC-Port Everglades Terminal
J. D. Pickett, Mail Code 2003A
Mr. Charles Walther, ONRP-Ft. Lauderdale
Mr. Paul Wierzbicki, FDER-West Palm Beach



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

April 16, 1991

Mr. John R. Herbert
ESE, Inc.
P.O. Box 1703
Gainesville, FL 32602-1703

Dear Mr. Herbert:

The Bureau of Waste Cleanup has reviewed the Contamination Assessment Report (CAR) addendum/No Further Action Proposal (NFAP) dated March 12, 1991 (received March 13, 1991), submitted for the Diversified Oil (Cliff Berry) site located at 1000 SE 28th Street, Port Everglades, Broward County, Florida. In order to meet the requirements of Chapter 17-770, Florida Administrative Code (F.A.C.), the following comments need to be addressed:

- 1) Based on the results of the confirmatory soil sampling program, it appears that the soils have been effectively remediated to levels below the criteria established in the Site Specific Risk Assessment and/or those agreed to at the July 25, 1990 meeting. Therefore, the soil remediation program can be considered complete as long as Amoco stipulates that the soils will remain on-site.
- 2) Due to the detection of contamination in the surficial aquifer during the drilling of MW-7A, a supplemental shallow water table monitoring well should be installed at the former oil/water separator drainfield location. Following installation, the well should be sampled for the site parameters, so that worst case groundwater contamination is established for the evaluation of the NFAP.

The DER Facility Number for this site is 068501856. Please provide this identification on all future correspondence with the Department.

Please provide the results of the supplemental assessment to me within sixty (60) days of receipt of this request. If additional time is needed, a time extension request should be submitted, in accordance with Section 17-770.800(6), F.A.C. If you should have any questions concerning this review, please contact me at (904) 488-0190.

Please note, all supplemental contamination assessment related documents should be signed and sealed by a registered professional in accordance with Section 17-770.500, F.A.C. The certification should be made by a registered professional who is able to demonstrate competence in the subject area(s) addressed within the sealed document.


Mr. John Herbert
April 16, 1991
Page Two

Sincerely,



Tim J. Bahr
Technical Review Section
Bureau of Waste Cleanup

tjb

c:  Mr. Phillip Morris
Amoco Corporation
Mail Code 4901
200 East Randolph Drive
Chicago, Illinois 60601

Charles Walther
BCEQCB
500 Southwest 14th Court
Ft. Lauderdale, FL 33315

bc: Paul Wierzbicki, Southeast District Office
Ligia Mora-Applegate, TRS/BWC

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

Gene W. Schmidt
Director, Groundwater Management

April 25, 1985

GMS 85-220

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.

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, pre-threaded 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.

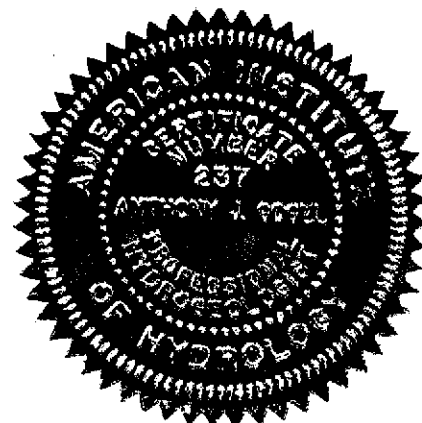
Sincerely,

T. Gogel

T. Gogel, P.G., P.HG.
Certificate Number 237
Certified by American Institute of Hydrology

TG:mph
85115ART0034

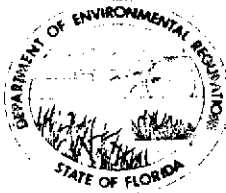
cc: J. A. Lamping, Chicago
G. W. Schmidt, Tulsa



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

ROY DUKE
DISTRICT MANAGER

**APPLICATION FOR MONITORING PLAN APPROVAL
(Existing Sources)**

INSTRUCTIONS: 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

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:

<u>Amoco Oil Company</u>				<u>Permit No.</u>	
Corporation or Owner's Name				5171	
<u>Port Everglades Terminal</u>				<u>SIC Code</u>	
Installation Name				26-05-00-N 80-07-30-W	
<u>Spangler Blvd.</u>	<u>Hollywood</u>	<u>33316</u>	<u>Broward</u>	<u>26-05-00</u>	<u>80-07-30</u>
Street Address	City	Zip	County	Latitude	Longitude
___ 1/4 ___ 1/4 ___ 1/4 of				<u>Section, Township, Range</u>	

OWNER OR AUTHORIZED REPRESENTATIVE (If representative, attach letter of authorization.)

<u>C.B. Smiley, Distribution Center Manager</u>			
Name and Official Title (Print or Type)			
<u>Spangler Blvd.</u>	<u>Hollywood</u>	<u>Fla. 33316</u>	<u>(305) 523-0571</u>
Street	City	State Zip	Telephone Number
Signature: <u>C.B. Smiley</u>			Date: <u>5/20/85</u>

PART II - Content of Monitoring Plan

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:

1. Location(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.

The following information is the type generally required for detailed assessment of the most complex plans, with less complex cases not needing this degree of evaluation:

1. Hydrogeological, physical and chemical data for the site, including:
 - a. Direction and rate of ground water flow, and background ground water quality;
 - b. Porosity, horizontal and vertical permeability for the aquifer(s) and the depth to, and lithology of, the first confining bed(s);
 - c. Vertical permeability, thickness, and extent of any confining beds;
 - d. Topography, soil information and surface water drainage systems surrounding the site;
2. Waste disposal rate and frequency, chemical composition, method of discharge, pond volume, spray-field dimension, or other applicable site specific information;
3. Toxicity of waste;
4. Present and anticipated wastewater volume, seepage rate to the receiving ground water, physical, chemical, microbiological (whichever is applicable) characteristics of the leachate;
5. Disposal system water balance;
6. Present and reasonably expected future pollution sources located within one mile radius of the site;
7. Inventory depth, construction details, and cones of depression of water supply wells and monitor wells located within one mile radius of the site or potentially affected by the discharge;
8. Site specific economic and feasibility considerations;
9. Chronological information on water levels in the monitor wells and water quality data on water supplies collected from the water supply and monitor wells;
10. Type and number of waste disposal facilities within the installation;
11. Chronological information on surface water flows and water quality upstream and downstream from the site;
12. Construction and operation details of disposal facilities;
13. History of construction and land development in the vicinity of the site.

A monitoring program instituted under some other state, federal, or local government regulation or permit may be substituted (or referenced if contained in an existing department permit) if such program is in substantial compliance with Part II.



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

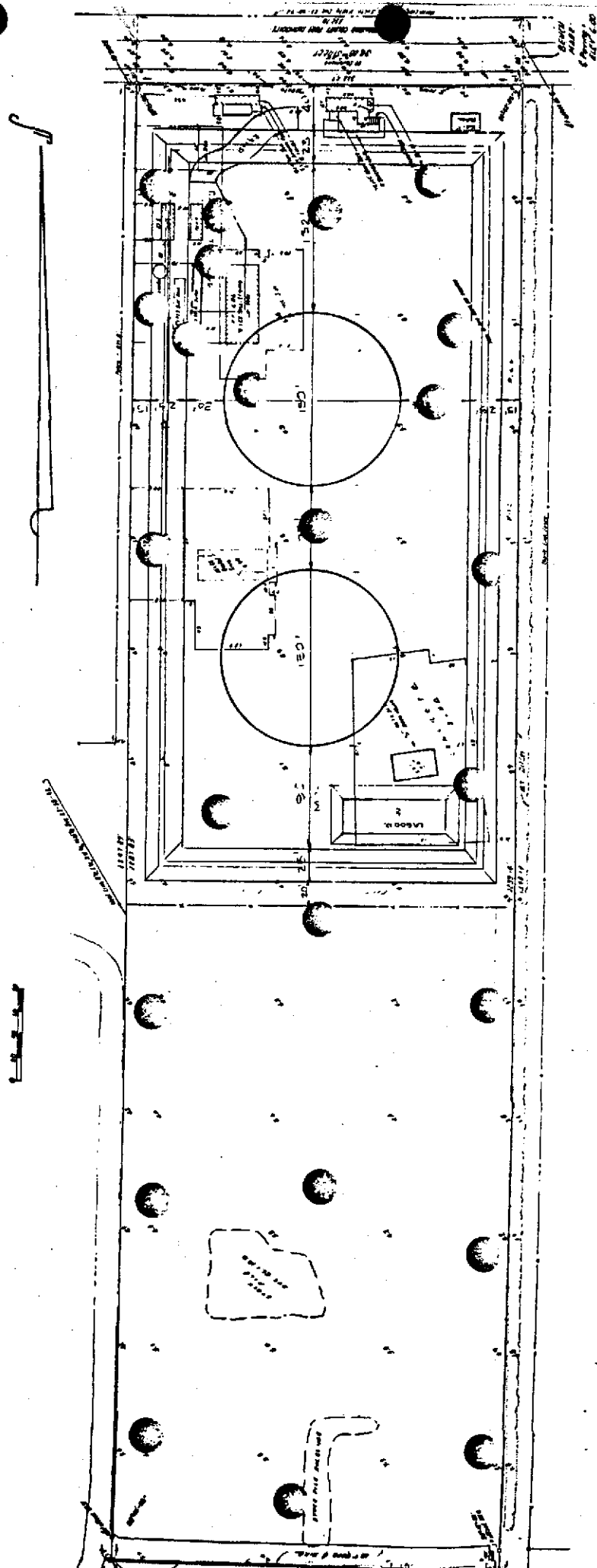
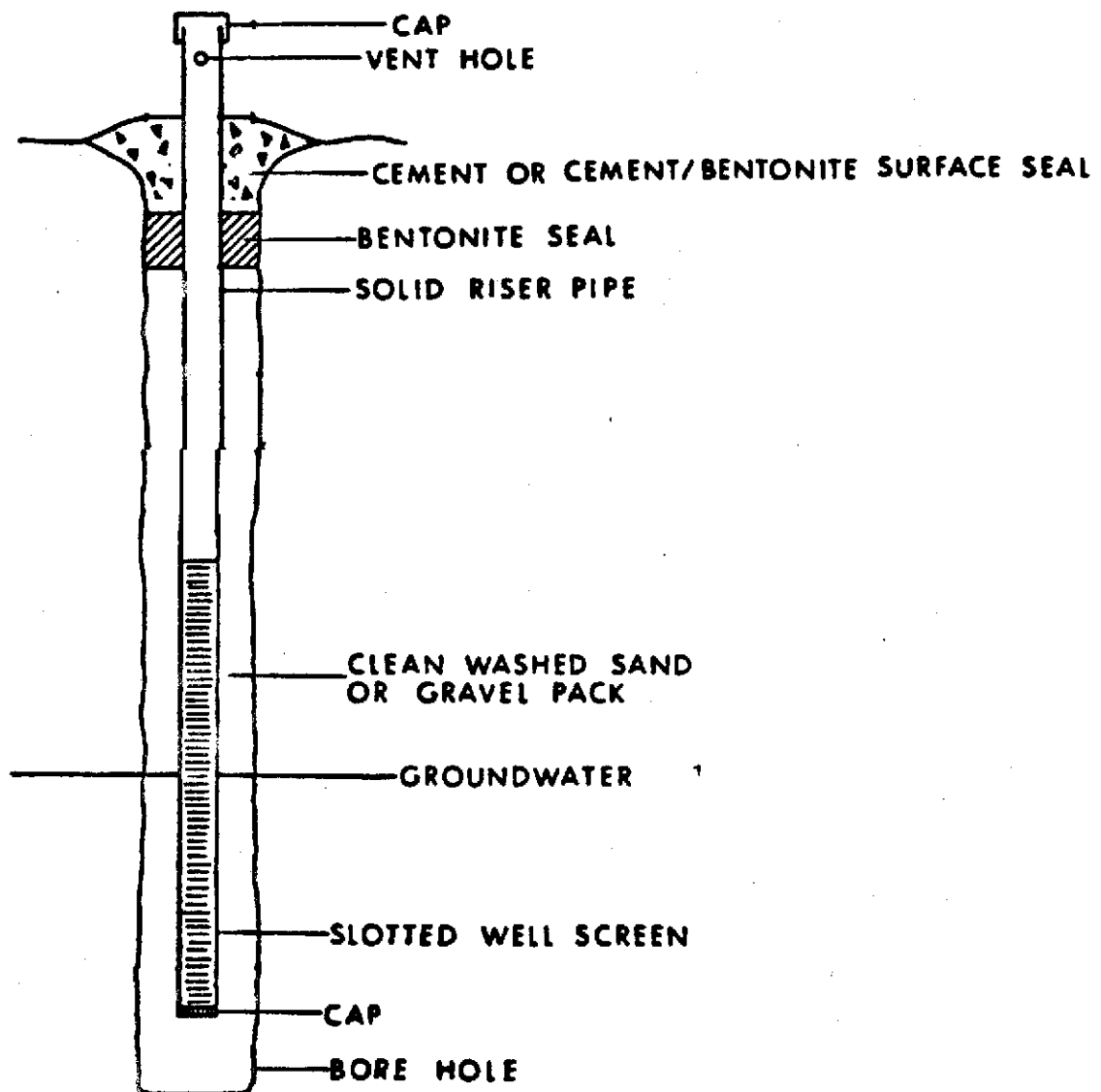


FIG. 1 -LOCATIONS OF OBSERVATION WELLS

FIGURE 2
TYPICAL OBSERVATION WELL
FOR MONITORING ONE AQUIFER



RECEIVED

'84 MAY 25 AM 9 57

100 Westward Drive
Miami Springs, Fla. 33166
Telephone: (305) 885-1869
Fla. Wats: (800) 432-9706

Envirofact, Inc.

Environmental Consulting and Analysis

ENVIRONMENTAL REG.
WEST PALM BEACH

May 11, 1984

Mr. John Guidry
Department of Environmental Regulation
3301 Gun Club Road
P.O. Box 3858
West Palm Beach, Florida 33402-3858

Re: Cliff Berry Industries, Inc. Monitoring Plan

Dear Mr. Guidry:

The original Envirofact, Incorporated monitoring plan has been modified to include the results of our April 23, 1984 meeting with you and your staff.

Pending your comment, two wells will be located in the proximity of the drainfield. The attached aerial of the Cliff Berry Site includes the location of the drainfield and the approximate location of the proposed wells.

The shallow well (DFS) Screen will be set at two feet above the groundwater level. The screen will be a total of ten feet in length.

The deep well (DFD), will be drilled to a depth of thirty feet and screened from twenty-five feet to thirty feet.

A split spoon will be used to collect soil samples from the shallow well to a depth of fifteen feet. These samples will be separated into one foot intervals and used for developing the geologic logs. All wells will be surveyed for location and elevation.

The wells will be located Southeast of the existing on-site drainfield and will be sampled for lead, pH, chlorides, methylene blue active substances and oil and grease. Depth to water data will also be provided in the final report. Our permit application will provide for performing analyses on a quarterly basis with reports mailed to your office and to the Broward County Environmental Quality Control Board.

DER-WEB	Copy <input checked="" type="checkbox"/>	Route #
	Action A	
DM	PER.	PADE
SDN	ENF.	BLOW.
FT.P.	T/A	F.BCH.
AA	EAG	B. BD.
REMARKS:		

Jacksonville

Sebring

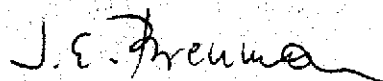
Melbourne

Key Largo

A final effluent grab sample will be collected once per month and tested for lead, chlorides, pH, methylene blue active substances and oil and grease. This report will be submitted to you and the Broward County Environmental Quality Control Board.

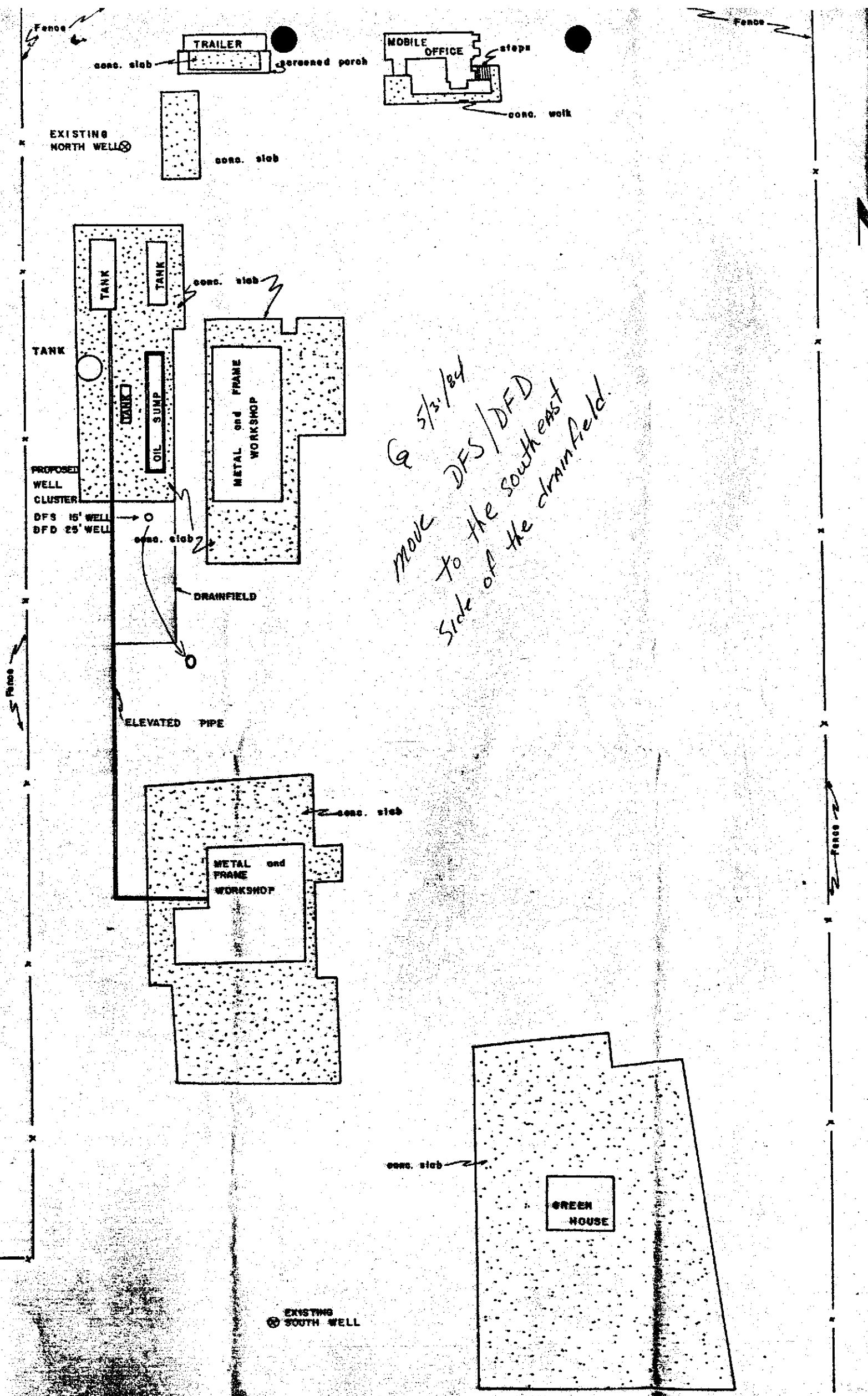
Should you have any questions regarding this proposal, please address them to the writer's attention. Upon your acceptance of this proposal, we will commence with the project.

Very truly yours,



J.E. Brenman, P.E.
Vice President

cc: Rudy DeBenedictis, B.C.E.Q.C.B.
Mr. Cliff Berry



RECEIVED

100 Westward Drive
Miami Springs, Fla. 33166
Telephone: (305) 885-1869
Fla. Watts: (800) 432-9706

February 6, 1984

'84 FEB 9 AM 11 10

Mr. Vivek Kamath
Department of Environmental
Regulations
P.O. Box 3858
West Palm Beach, Fl. 33402

FLA. DEPARTMENT OF
ENVIRONMENTAL REG.
WEST PALM BEACH

RE: Cliff Berry application for Monitoring Plan Approval.

DER-WF#	Copy <input checked="" type="checkbox"/> Action A	Route #
EM <input checked="" type="checkbox"/>	PER. <input checked="" type="checkbox"/>	DADE
SEN	ENF.	BROW.
FL.F.	T/A	P.BCH.
AA	BAG	B. SD.
REMARKS:		

Dear Mr. Kamath:

I am presenting the Cliff Berry Industries Monitoring Plan Application for your approval. The application is accompanied with a diagram of the northwest corner of the property, recent well data, and a description of the monitoring wells.

The two wells are already located on the property and their exact locations are on the diagram. The north well is located up-gradient of the drain field and is monitored for background data. The south well is located down gradient of the drain field for monitoring the drainfield.

These two wells are constructed of two inch P.V.C. and are drilled to a depth of twenty-three feet. The wells are screened from eighteen to twenty-three feet.

Envirofact proposes to sample both of these wells on a monthly basis. The wells will be sampled with a 12 volt bladder pump (rated at 2 g.p.m.), after proper development. The samples will be collected in containers that are properly preserved. The samples will be tested for M.B.A.S., pH. Lead, Copper, and ether extractables.

The second part of the monthly sample will be an effluent sample taken after the final stage of treatment before discharged to the drainfield. This sample will also be analyzed for M.B.A.S., pH, Lead, Copper and ether extractables.

February 6, 1984

Page Two

This presentation also includes results from samples collected on January 25, 1984. These results are included for your review. Please note that the Ether Extractables on the effluent sample is above the established legal limit. The unusual situation is the result of maintenance problem. This has been remedied.

Envirofact, Inc. has up until approximately one year ago performed this program for Cliff Berry. This program that I am proposing is identical to the former plan.

If you have any questions regarding this application, please do not hesitate to call me at Envirofact.

Sincerely,

ENVIROPACT, INC.

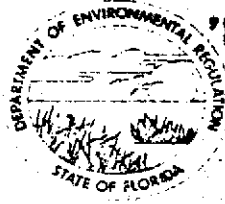
R.S. Libera

R. S. Libera

RSL/ams

cc: Cliff Berry

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHEAST FLORIDA
DISTRICT3301 GUN CLUB ROAD
P.O. BOX 3858
WEST PALM BEACH, FLORIDA 33402

1984 FEB 9 AM 11 10

BOB GRAHAM
GOVERNORVICTORIA J. TSCHINKEL
SECRETARYROY DUKE
DISTRICT MANAGERFLA. DEPARTMENT OF
ENVIRONMENTAL REG.
WEST PALM BEACHAPPLICATION FOR MONITORING PLAN APPROVAL
(Existing Sources)

INSTRUCTIONS: 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

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:

CLIFF BERRY

Corporation or Owner's Name

Permit No.

CLIFF BERRY INDUSTRIES

Installation Name

SIC Code

1000 SE 28 STREET FT. LAUDERDALE33316

Street Address

City

Zip County

26°05'18"N 80°08'00"E

Latitude Longitude

1/4 1/4 1/4 of

Section, Township, Range

OWNER OR AUTHORIZED REPRESENTATIVE (If representative, attach letter of authorization.)

R.S. LIBERA OF ENVIROPACT, INC.

Name and Official Title (Print or Type)

100 WESTWARD DRIVE MIAMI SPRINGS, FL.33166

Street

City

State Zip

(305)-885-1869

Telephone Number

Signature: R.S. LiberaDate: FEB. 2, 1984

PART II - Content of Monitoring Plan

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:

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The following information is the type generally required for detailed assessment of the most complex plans, with less complex cases not needing this degree of evaluation:

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 - a. Direction and rate of ground water flow, and background ground water quality;
 - b. Porosity, horizontal and vertical permeability for the aquifer(s) and the depth to, and lithology of, the first confining bed(s);
 - c. Vertical permeability, thickness, and extent of any confining beds;
 - d. Topography, soil information and surface water drainage systems surrounding the site;
2. Waste disposal rate and frequency, chemical composition, method of discharge, pond volume, spray-field dimension, or other applicable site specific information;
3. Toxicity of waste;
4. Present and anticipated wastewater volume, seepage rate to the receiving ground water, physical, chemical, microbiological (whichever is applicable) characteristics of the leachate;
5. Disposal system water balance;
6. Present and reasonably expected future pollution sources located within one mile radius of the site;
7. Inventory depth, construction details, and cones of depression of water supply wells and monitor wells located within one mile radius of the site or potentially affected by the discharge;
8. Site specific economic and feasibility considerations;
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13. History of construction and land development in the vicinity of the site.

A monitoring program instituted under some other state, federal, or local government regulation or permit may be substituted (or referenced if contained in an existing department permit) if such program is in substantial compliance with Part II.

847 p. 10. 11. 12. 13.

001143

Page 1 of 3

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

February 3, 1984
Report 9944
Lab I.D. 86119

Sample Received: 01/25/84

Collected by: A. PARRISH

Sample Designation: CLIFF BERRY IND. ROUTINE ANALYSIS; AS NOTED.

REPORT OF ANALYSIS

EFFLUENT

COPPER
ETHER EXTRACTABLES
LEAD
M.B.A.S
pH


0.16		mg/l
76		mg/l
0.20	.05	mg/l
3.15		mg/l
7.5		

FLA. DEPARTMENT OF
ENVIRONMENTAL REG.
WEST PALM BEACH

RECEIVED
84 FEB 9 AM 11 11

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

Respectfully submitted,


John E. Tostanoski
Laboratory Supervisor

001143

Page 2 of 3

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

February 3, 1984
Report 9944
Lab I.D. 86119

Sample Received: 01/25/84

Collected by: A. PARRISH

Sample Designation: CLIFF BERRY IND. ROUTINE ANALYSIS; AS NOTED.

REPORT OF ANALYSIS

NORTH WELL

COPPER
ETHER EXTRACTABLES
LEAD
M.B.A.S
pH

0.05
< 1
0.11
0.13
7.0

17-22
0.05
mg/l
mg/l
mg/l ✓
mg/l

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

Respectfully submitted,


John E. Tostanoski
Laboratory Supervisor

001143

Page 3 of 3

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

February 3, 1984
Report 9944
Lab I.D. 86119

Sample Received: 01/25/84

Collected by: A. PARRISH

Sample Designation: CLIFF BERRY IND. ROUTINE ANALYSIS; AS NOTED.

REPORT OF ANALYSIS


SOUTH WELL

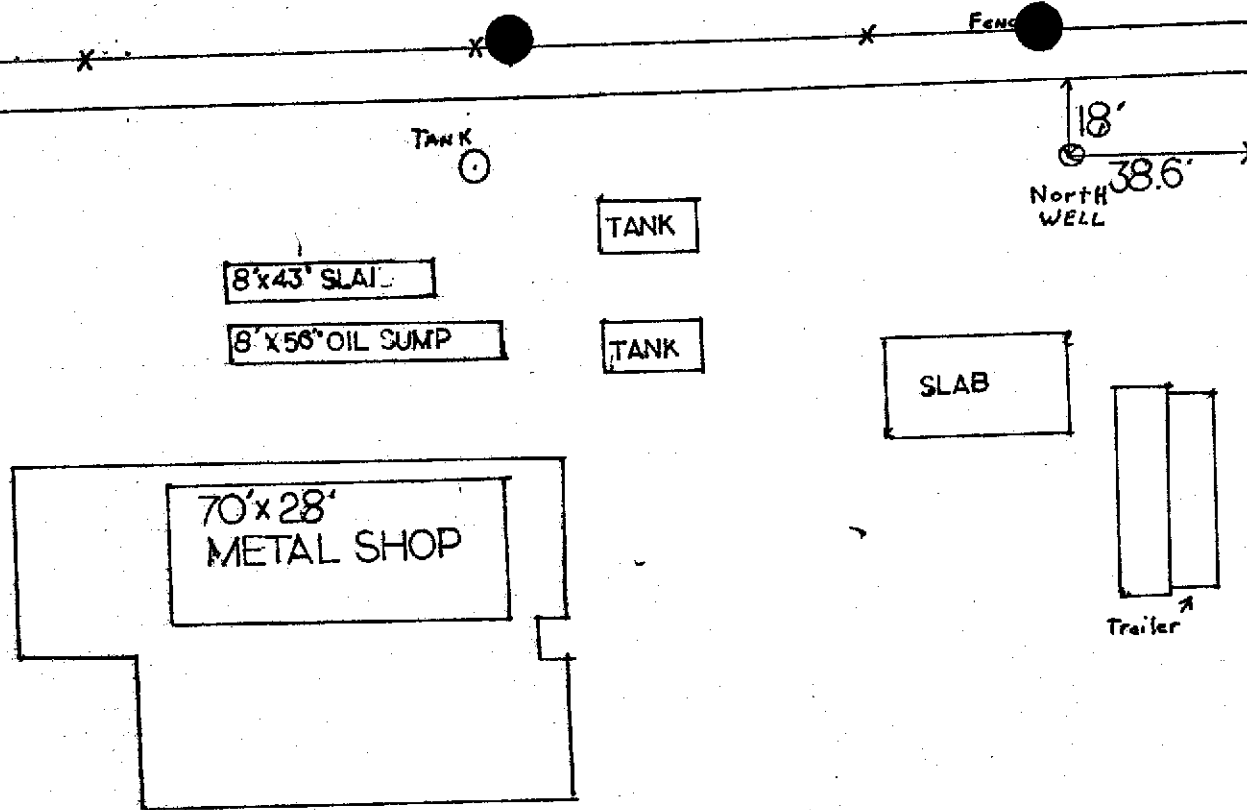
COPPER
ETHER EXTRACTABLES
LEAD
M.B.A.S
pH

0.05	17.22	mg/l
< 1		mg/l
0.12	0.05	mg/l ✓
0.44	0.5	mg/l ✓
6.9		

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

Respectfully submitted,


John E. Tostanoski
Laboratory Supervisor



N →

CLIFF BERRY IND.		
	SCALE 1:40	DRAWN BY R.S. LIBERA
		REVISED
NORTHWEST CORNER		
DATE 2/1/84	APPROVED BY <i>R.S. Libera</i>	DRAWING NUMBER

