CONTAMINATION ASSESSMENT REPORT ADDENDUM
PERMA-FIX OF FORT LAUDERDALE, INC.
3670 S.W. 47TH AVENUE
DAVIE, FLORIDA

Prepared For:

BROWARD COUNTY DEPARTMENT
OF NATURAL RESOURCE PROTECTION
218 S.W. 1ST AVENUE
FORT LAUDERDALE, FL 33301

Prepared By:

AQUA TERRA, INC.
3250 CORPORATE WAY
MIRAMAR, FLORIDA 33025

PROJECT # AT-1260

OCTOBER 1997

Richard K. Meyers

Richard K. Meyers
Project Scientist

10-30-97

Isidro A. Duque
Registered Geologist No. 1660
State of Florida

AQUA TERRA, INC.
ENVIRONMENTAL CONSULTANTS

October 30, 1997

Mr. Sean McFarlane
Broward County Department of
Natural Resource Protection
218 S.W. 1st Avenue
Fort Lauderdale, Florida 33301

RE: CONTAMINATION ASSESSMENT REPORT ADDENDUM FOR THE PERMA-FIX OF FORT LAUDERDALE, INC. FACILITY LOCATED AT 3670 S.W. 47TH AVENUE, DAVIE, FLORIDA.
AT-1260

Dear Mr. McFarlane:

Aqua Terra, Inc. (Aqua Terra) is providing you with the following Contamination Assessment Report Addendum (CARA) for the above referenced facility.

Should you have any questions or require additional information, please do not hesitate to contact us at (954) 433-8804.

Sincerely,

AQUA TERRA, INC.

Richard K. Meyers
Sr. Project Scientist

cc: Chris Blanton, Perma-Fix
Tom Trebonik, Mintech, Inc.
Vincent Peluzo, FDEP

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1.0 INTRODUCTION

In July 1997, Aqua Terra, Inc. (Aqua Terra) submitted a Contamination Assessment Report (CAR) to the Broward County Department of Natural Resource Protection (DNRP) for the Perma-Fix of Fort Lauderdale, Inc. ("subject site") facility located at 3670 S.W. 47th Avenue, Davie, Florida. On August 7,1997, a letter was issued by the DNRP requesting additional assessment to be performed at the subject site. Aqua Terra responded to the DNRP letter on August 22, 1997 in an effort to clarify a number of issues and request an extension of time to complete the required assessment activities. On September 15, 1997, the DNRP responded to Aqua Terra's letter and granted a 45 day time extension to submit a CAR Addendum. Copies of the above referenced correspondence letters are included in Appendix A.

This CAR Addendum summarizes the additional assessment activities and results. The assessment activities were conducted in accordance with Chapter 62-770 of the Florida Administrative Code (F.A.C.).

2.0 MONITORING WELL INSTALLATION AND SAMPLING ACTIVITIES

On October 2, 1997, a deep groundwater monitoring well (ATMW-8D) was installed between monitoring wells ATMW-2 and ATMW-6 in an effort to delineate the vertical extent of groundwater contamination. Additionally, four shallow groundwater monitoring wells (ATMW-9, ATMW-10, ATM-11 and ATMW-12) were installed around monitoring well ATMW-7 in an effort to delineate the extent of free product. On October 6, 1997, a five-inch diameter monitoring well (ATMW-13) was installed immediately north of monitoring well ATMW-7 for the purposes of recovering free product, should any exist. A site map depicting the previously and newly installed monitoring wells is provided as Figure 1. Figures 2 and 3 depict the shallow and deep well construction profiles, respectively.

On October 8, 1997, groundwater samples were collected from the following monitoring wells for analysis of the following parameters:

MONITORING WELLS AND APPLICABLE ANALYSES										
WELL/ ANALYSIS	EPA Method 601	EPA Method 602	EPA Method 8260	EPA Method 8270	FL-PRO	Arsenic	Cadmium	Chromium	Lead	Dissolved Lead
ATMW-1									✓	✓
ATMW-3									✓	✓
ATMW-4									✓	✓
ATMW-8D			✓	✓	✓	✓	✓	✓	✓	✓
ATMW-9	✓	✓								
ATMW-10	✓	✓								
ATMW-11	✓	✓								
ATMW-12	✓	✓								

The laboratory analytical results revealed that all parameters, with the exception of Methyl-Tert-Butyl-Ether (MTBE) in monitoring wells ATMW-10 and ATMW-12, were below detection limits (BDL). Concentrations of MTBE in monitoring wells ATMW-10 and ATMW-12 were 3.68 micrograms per liter (µg/l) and 1.11 µg/l, respectively. These concentrations are below the site rehabilitation levels (SRL's) established in 62-770 F.A.C. A copy of the laboratory reports and chain of custody documentation are included in Appendix B.

Additionally, it was determined on October 8, 1997 that no free product was present within monitoring wells ATMW-9, ATMW-10, ATMW-11, ATMW-12 and ATMW-13.

All wells were installed by Chem Drill, Inc. using standard well drilling techniques and decontamination procedures. All sampling was conducted in accordance with Aqua Terra's Comprehensive Quality Assurance Plan (CompQAP #940024G). Groundwater samples were collected after a minimum of five well volumes were purged to ensure representative groundwater quality conditions. All metals samples were collected using a peristaltic pump to minimize turbidity. All other samples were collected using decontaminated Teflon bailers. All samples were subsequently preserved in a ice-filled cooler during transport to Precision Environmental Laboratory, Inc. (CompQAP #920323) for analysis. Equipment blanks were collected and analyzed for quality control purposes.

3.0 ADDITIONAL INVESTIGATIVE ACTIVITIES

The United States Environmental Protection Agency (EPA), through its contractor Bechtel Environmental, collected groundwater samples from several wells located at the Perma-Fix of Fort Lauderdale, Inc. facility. The samples were split with representatives of Perma-Fix and analyzed for a variety of parameters. The results obtained by Perma-Fix were provided to DNRP in the CAR dated July 1997.

In September 1997, EPA released its Draft Remedial Investigation Report which contained the results of analyses obtained by EPA on the groundwater samples from the Perma-Fix facility. Appendix C contains selected excerpts from the EPA Draft Remedial Investigation report documenting EPAs activities and results of analyses for groundwater samples collected from the Perma-Fix facility. A full copy of the Draft Remedial Investigation Report is available from the EPA, Region IV Office. The results of groundwater analyses obtained by EPA are consistent with the data reported in the CAR.

As a result of claims made by a neighboring site (PMI) that the vandalism incident at Perma-Fix resulted in groundwater impacts on their property, a file search of DNRP records was conducted. The purpose of the search was to determine if groundwater impacts were previously known to exist at PMI. The results of the search indicated that impacts to groundwater were detected at PMI as early as September 1992, and that there are currently remedial activities required to be implemented as a result of previously discovered PMI releases.

Appendix D presents a historical summary of the dates, events and reports containing historical PMI data. All reports cited are contained in the files of DNRP. In addition, a table of groundwater laboratory analysis results copied from the May 23, 1995 PMI Tank Closure Assessment/Contamination Assessment Report is provided for review. This document appears to provide the latest information on groundwater quality at PMI. Additional groundwater samples have not been collected from the PMI site. The EPA notes in the Draft Remedial Investigation Report that the wells at PMI had been plugged with concrete or were damaged so as to preclude the collection of representative groundwater samples.

4.0 CONCLUSION AND RECOMMENDATION

Based on the results of the most recent analyses in conjunction with the previously submitted Contamination Assessment Report, Aqua Terra supports its previous recommendation of groundwater monitoring based on the following reasons:

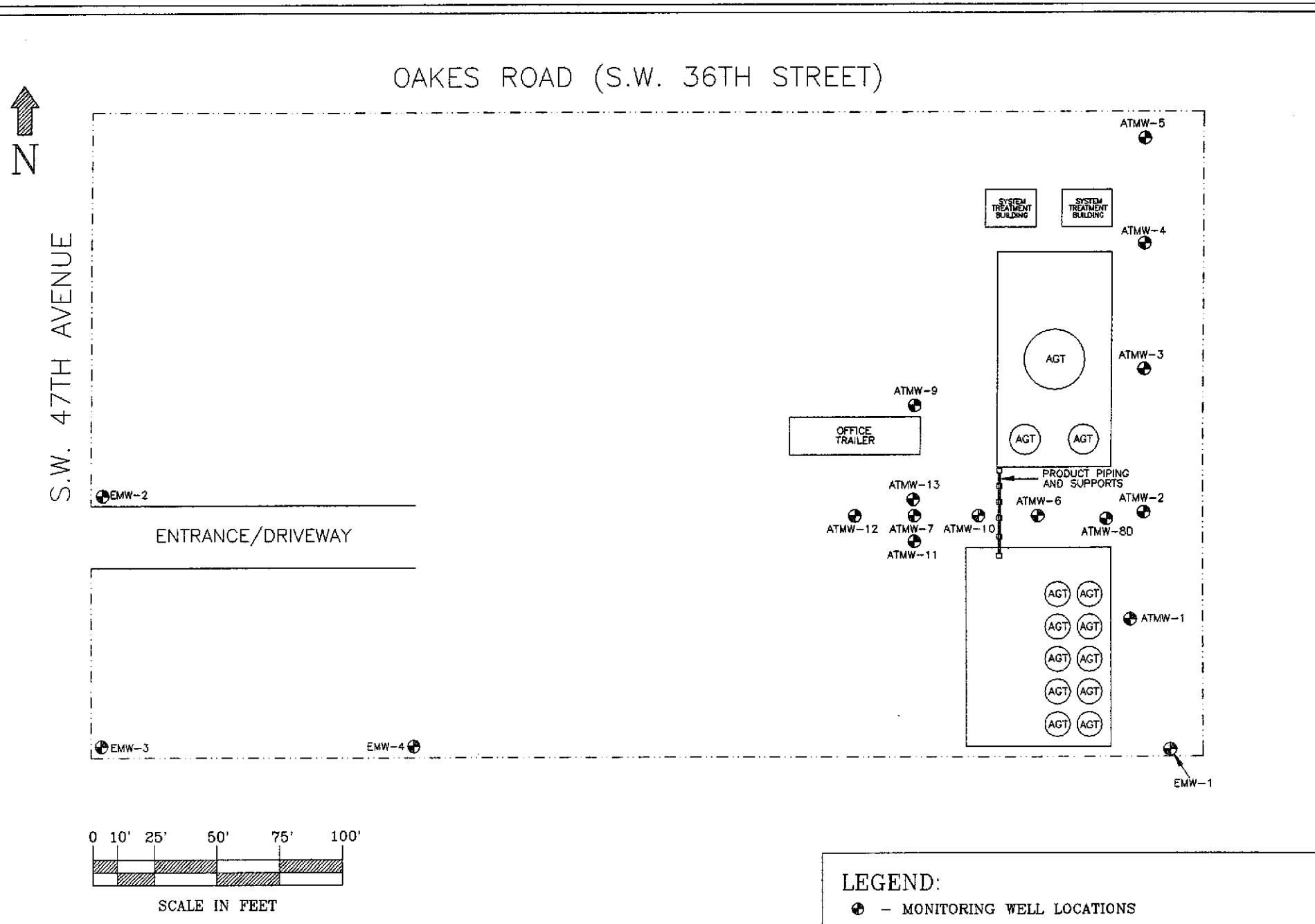
- Free product, which was previously detected in monitoring well ATMW-7, has been delineated between monitoring wells ATMW-9, ATMW-10, ATMW-11 and ATMW-12. No free product was detected in wells ATMW-9, ATMW-10, ATMW-11, ATMW-12 or ATMW-13, which either surround or are adjacent to monitoring well ATMW-7. Bailing has reduced the free product in monitoring well ATMW-7 to less than ⅛-inch.

- No free product was detected in monitoring well ATMW-13 (located approximately 18 inches north of ATMW-7), Aqua Terra recommends that monitoring well ATMW-7 be properly abandoned and monitoring well ATMW-13 be monitored for the existence of free product. Should free product exist in monitoring well ATMW-13, an automated shallow-well product recovery system will be installed within monitoring well ATMW-13 and the surrounding wells will be monitored for free product. Monitoring well ATMW-13 is a larger diameter well and will provide for better recovery of free product if it is detected.

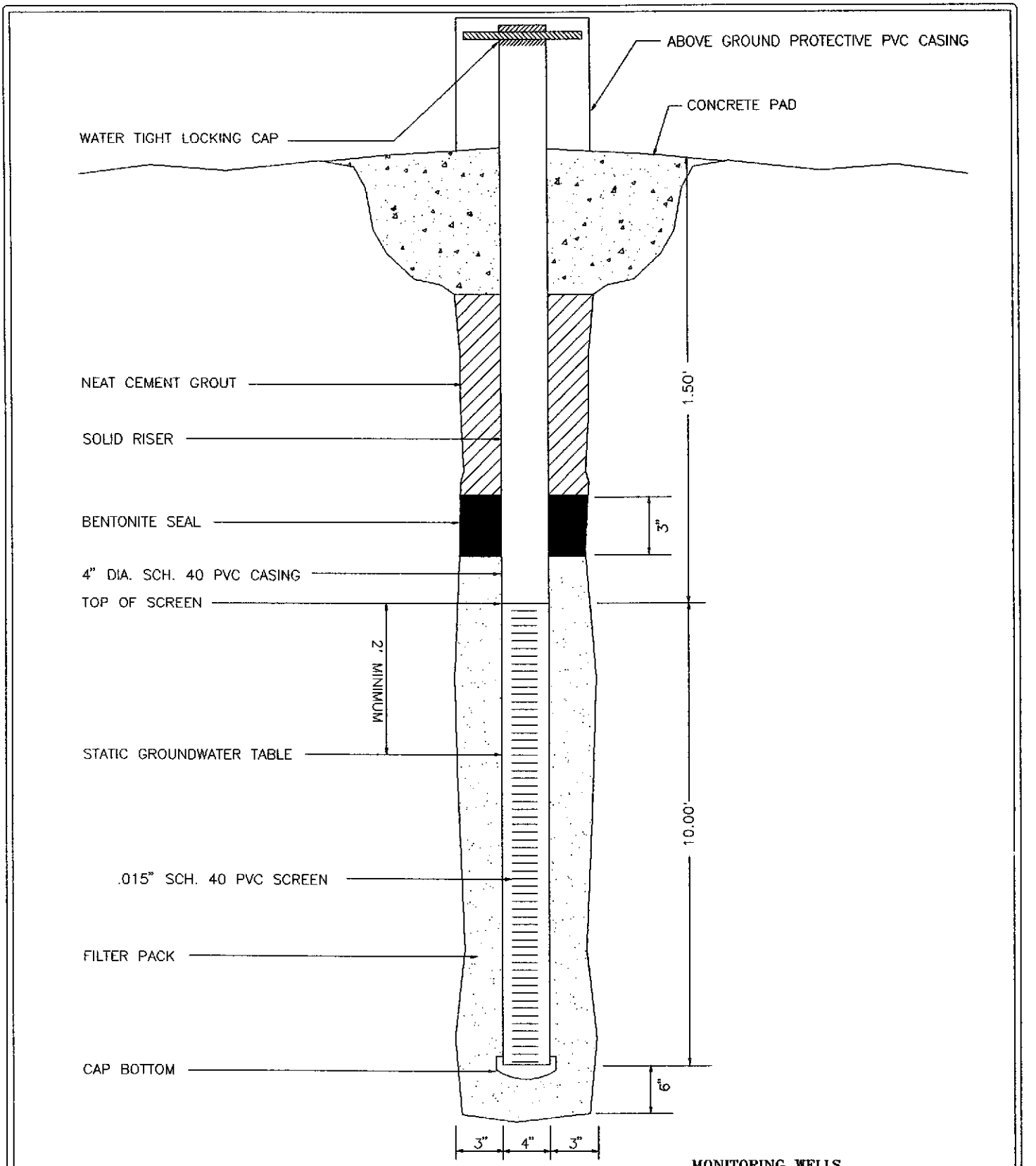
- The vertical extent of groundwater contamination has been delineated by monitoring well ATMW-8D. Based on the analytical results, all parameters tested were BDL at a total depth of 28.5' below land surface.

- During the initial CAR activities, the highest concentration of vinyl chloride and MTBE was found in monitoring well ATMW-7 at 177 µg/l and 260 µg/l, respectively. The groundwater analytical results from monitoring wells ATMW-9, ATMW-10, ATMW-11 and ATMW-12 for both of these compounds were BDL. These results indicate that the contaminants found in the vicinity of monitoring well ATMW-7 are localized and do not pose a serious threat to the groundwater at this time or are analytical "outliers" that may not be reproducible.

- Aqua Terra recommends that a "Monitoring Only Plan" be implemented on a quarterly basis for a time period of one year. Any further action (i.e. additional groundwater monitoring or necessary remediation) will be based on the groundwater analytical results through the four quarterly groundwater sampling events.



AQUA TERRA, INC. ENVIRONMENTAL CONSULTANTS	FIGURE 1: SITE MAP WITH MONITORING WELL LOCATIONS	DRAWN BY: RKM
	PROJECT NAME: PERMA-FIX OF FORT LAUDERDALE, INC.	10/6/97
	ADDRESS: 3670 S.W. 47TH AVENUE, DAVIE, FLORIDA	PROJ. #: AT-1260

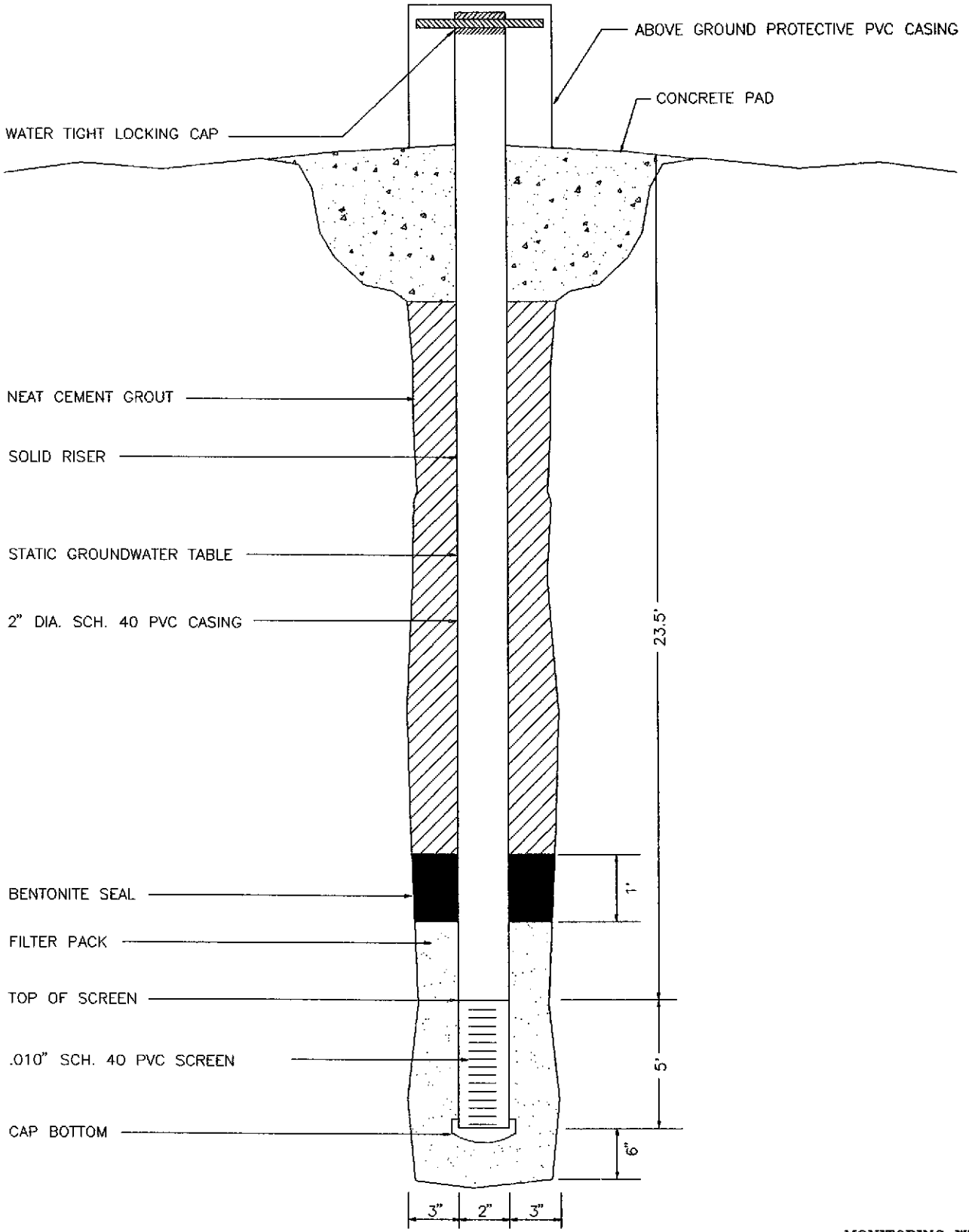


NOT TO SCALE

MONITORING WELLS
ATMW-9, ATMW-10, ATMW-11, ATMW-12

AQUA TERRA, INC.
ENVIRONMENTAL CONSULTANTS

FIGURE 2: SHALLOW WELL CONSTRUCTION PROFILE	DRAWN BY: R.K.M.
PROJECT NAME: PERMA-FIX OF FORT LAUDERDALE, INC.	DATE: 10/6/97
ADDRESS: 3670 S.W. 47TH AVENUE, DAVIE, FLORIDA	PROJ. NO. AT-1260



NOT TO SCALE

MONITORING WELL
ATMW-8D

AQUA TERRA, INC. ENVIRONMENTAL CONSULTANTS	FIGURE 3: DEEP WELL CONSTRUCTION PROFILE	DRAWN BY: R.K.M.
	PROJECT NAME: PERMA-FIX OF FORT LAUDERDALE, INC.	DATE: 10/6/97
	ADDRESS: 3670 S.W. 47TH AVENUE, DAVIE, FLORIDA	PROJ. NO. AT-1260

APPENDIX A

CORRESPONDENCE LETTERS

BROWARD COUNTY
FLORIDA

Department of Natural Resource Protection
Division of Pollution Prevention and Remediation Programs
218 S.W. 1st Avenue
Fort Lauderdale, FL 33301
(954) 519-1260 • FAX (954) 765-4804

August 7, 1997

Certified Mail
Z 117 043 432

Christopher Blanton, General Manager
Perma-Fix of Ft. Lauderdale, Inc.
3701 SW 47th Avenue, Ste. 109
Davie, FL 33314

Re: Contamination Assessment Report (CAR) prepared by Aqua Terra, Inc. for the Perma-Fix of Ft. Lauderdale, Inc. facility, located at 3670 SW 47th Avenue, Davie, FL 33314, dated on 07/07/97 and received on 07/08/97. EAR License No.: 429

Dear Mr. Blanton:

The Division of Pollution Prevention and Remediation Programs (Division) has completed a review of the above-referenced document. This review was performed in accordance with the requirements of Chapter 62-770 FAC. Based on the results of the review, it has been determined that the report is not approved. Please note the following comments:

1. The CAR did not define the areal and vertical extent of groundwater contamination for the Free Floating Product, Vinyl Chloride (VC), MTBE, or Lead. Please, determine the full extent of contamination caused by the initial incident and use isopleth maps to identify the current status of each pollutant.

2. Aquifer Characteristics were generalized and specific data will be required (i.e., on-site Pump Test or Slug Test) prior to the Division approving any groundwater remediation activities. Please provide Aquifer Characteristics derived through empirical data.

3. Please provide Well Completion Reports for all monitoring wells at this site.

4. Please provide the Environmental Protection Agency (EPA) analytical report on the VC contamination in the local area. Based on data in the above report, it appears that a pocket of VC contamination is concentrated around the groundwater in monitoring well ATMW-7. A complete site assessment for this pollutant will be required as part of the CAR addendum due in the time specified below.

5. The neighboring site (PMI) has made a claim that during the October 1996 oil spill incident contamination migrated offsite and impacted the groundwater on their property. Your 12/16/96 Initial Remedial Action (IRA) report noted that the incident caused surficial oil contamination at the PMI and adjacent facility to the south. However, groundwater sampling and testing were not included in the above CAR to confirm the full extent of contamination in these impacted areas. Please provide the Division with groundwater analyses (using the Used Oil Analytical Group) for these noted areas.

Please continue to be advised that the Division requires 72 hours advanced notice, in writing, before any field work is performed on the site.

Please submit the above requested information to this office within a Contamination Assessment Report Addendum on or before **September 5, 1997**.

If you have any questions, comments, or require any additional information, please do not hesitate to contact this office for further assistance at (954) 519-1406.

Sincerely,

DIVISION OF POLLUTION PREVENTION AND REMEDIATION PROGRAMS

Sean McFarlane
Engineer II

SAM/sam

cc: Richard Meyers, Aqua Terra, Inc.
Gary Stephens, Deputy Director, DNRP

h:\wpltrs\permafx.car

FILE

AQUA TERRA, INC.
ENVIRONMENTAL CONSULTANTS

August 22, 1997

Mr. Sean McFarlane
Broward County Department of
Natural Resource Protection
218 S.W. 1st Avenue
Fort Lauderdale, Florida 33301

RE: PERMA- FIX OF FORT LAUDERDALE, INC.
3670 S.W. 47TH AVENUE, DAVIE, FLORIDA.
EAR LICENSE NO. 429
AT-1260

Dear Mr. McFarlane:

Per your letter dated August 7, 1997 regarding the above referenced facility, Aqua Terra, Inc. (Aqua Terra) has addressed each item in the in the order in which they appear as follows:

Item #1

In an effort to define the extent of free product existing in monitoring well ATMW-7, a total of four (4) shallow wells will be installed in the vicinity of ATMW-7. These wells will be gauged to determine if free product exists, and if so, to what degree. Should more wells be necessary to delineate the free product plume, they will be installed accordingly. Additionally, a new 5-inch free product recovery well will be installed adjacent to ATMW-7 to house an automatic free product recovery system.

As stated in the Contamination Assessment Report of July 7, 1997, Aqua Terra is awaiting information regarding a United States Environmental Protection Agency (EPA) study of vinyl chloride in the general vicinity of the subject site. It is Aqua Terra's understanding that the EPA information , in all probability, will not be available until the end of September 1997. Aqua Terra requests that vinyl chloride not be considered an issue until the EPA information is available.

The only location that exceeded the allowed MTBE concentration of 50 micrograms per liter (µg/l) was monitoring well ATMW-7. Upon completing the recovery of free product using the newly installed 5-inch recovery well, ATMW-7 will be resampled for analysis of MTBE. Additionally, the wells used to delineate the free product plume can be sampled for MTBE, if necessary.

Due to that fact that some of the wells installed as part of the assessment were drying out during the development stage, these wells were not developed thoroughly. Although a low rate peristaltic pump was used when collecting groundwater samples for lead analysis, some groundwater samples collected were quite turbid. The three wells exceeding 0.05 µg/l lead concentration (ATMW-1, ATMW-3 and ATMW-4) will be resampled for total and dissolved (filtered) lead to provide a truer representation of lead concentrations.

A deeper monitoring well (screened from 25-30 feet below land surface) will be installed between wells ATMW-2 and ATMW-6 to delineate the vertical extent of on-site contamination. The groundwater sample collected from this well will be analyzed for the Used Oil Group (EPA Methods 624 and 625, TRPH by FL-PRO, arsenic, cadmium, chromium and lead) per 62-770 of the Florida Administrative Code (FAC).

Item #2

Aquifer characteristic testing will be performed as part of a Remedial Action Plan, if warranted.

Item #3

Well completion reports for all monitoring wells installed as part of this assessment have been attached.

Item #4

As mentioned previously, Aqua Terra is awaiting information regarding the EPA study involving vinyl chloride in the general vicinity of the subject site. Once available, a copy of this report will be provided to you.

Item #5

Your letter states that PMI has made a claim that the October 1996 oil spill incident, which was caused by vandalism and sabotage, migrated off-site to the PMI property and impacted their groundwater. Based on the groundwater analytical results from monitoring well EMW-1, which is located immediately north of the property boundary between the Perma-Fix and PMI properties, it is very unlikely that the spill has caused any adverse impact to PMI's groundwater. Additionally, it is Aqua Terra's understanding that groundwater contamination existed at the PMI facility prior to the spill incident. Aqua Terra will conduct research to include interpretation of groundwater analyses prior to and subsequent to the spill. Aqua Terra will prepare and submit a summary of the research conducted.

Aqua Terra hopes that this response addresses the concerns in your letter. However, based on the relatively short time frame allotted to complete the additional work, Aqua Terra requests that 45 days be granted, from the date of your response letter, to implement any requirements deemed appropriate by your department. We will wait on your reply prior to commencing any additional work. Should you have any questions or require additional information, please do not hesitate to contact me at (954) 433-8804.

Sincerely,
AQUA TERRA, INC.

Richard K. Meyers
Senior Project Scientist

cc: Chris Blanton, Perma-Fix
Tom Trebonik, Mintech, Inc.
Lorenzo Fernandez, DNRP

BROWARD COUNTY
FLORIDA

Department of Natural Resource Protection
Division of Pollution Prevention and Remediation Programs
218 S.W. 1st Avenue
Fort Lauderdale, FL 33301
(954) 519-1260 • FAX (954) 765-4804

September 15, 1997

Certified Mail
Z 421 631 473

Christopher Blanton, General Manager
Perma-Fix of Ft. Lauderdale, Inc.
3701 SW 47th Avenue, Ste. 109
Davie, FL 33314

Re: Contamination Assessment Report (CAR) response letter prepared by Aqua Terra, Inc. for the Perma-Fix of Ft. Lauderdale, Inc. facility, located at 3670 SW 47th Avenue, Davie, FL 33314, dated on 08/22/97 and faxed on 08/22/97. EAR License No.: 429

Dear Mr. Blanton:

The Division of Pollution Prevention and Remediation Programs (Division) has completed a review of the above-referenced document. This review was performed in accordance with the requirements of Chapter 62-770 FAC. Based on the results of the review, it has been determined that the report is not approved; however, your request for a forty-five (45) day extension to complete the CAR Addendum is granted. Please note the following comments:

1. Upon completion of the field activities described in the above response letter, please define the areal and vertical extent of contamination for Free Floating Product, Vinyl Chloride (VC), MTBE and Lead. Please use isopleth maps to delineate each pollutant.

2. Aquifer Characteristics will be required prior to the Division approving any groundwater remediation activity.

3. Please provide the Environmental Protection Agency (EPA) analytical report on the VC contamination when it becomes available.

4. Please be explicit about the research conducted to interpret groundwater analysis prior and subsequent to the spill at the PMI and adjacent facilities.

Please submit the above requested information to this office within a Contamination Assessment Report Addendum on or before **October 30, 1997**.

If you have any questions, comments, or require any additional information, please do not hesitate to contact this office for further assistance at (954) 519-1406.

Sincerely,

DIVISION OF POLLUTION PREVENTION AND REMEDIATION PROGRAMS

Sean McFarlane
Engineer II

SAM/sam
cc: Richard Meyers, Aqua Terra, Inc.
Steve Somerville, Director, DNRP

h:\wpltrs\permafx2.car

APPENDIX B

LABORATORY REPORTS AND CHAIN OF CUSTODY DOCUMENTATION

PRECISION ENVIRONMENTAL LABORATORY, INC.

first in quality • first in service

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252322
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-1
Collected: 10/08/97 12:10
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Lead	BDL	mg/L	SM3113B (239.2)	0.005	10/09/97	10/09/97	MB
Lead, Dissolved	BDL	mg/L	SM3113B (239.2)	0.005	10/09/97	10/09/97	MB

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effected Dilution Factor***
Work Subcontracted to Outside Labs Denoted by HRS Cert ID in Analyst Field
Qualifier following result conforms to FAC 62-160 Table 7***Unless otherwise noted, mg/Kg denotes wet weight***
***62-770: If the MDL using the most sensitive and currently available technology is higher than a specific criterion, the PQL shall be used.

Michael A. Spitzer, Laboratory Director

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

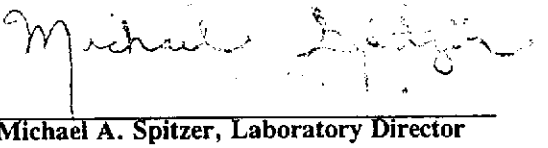
October 23, 1997
Submission # 9710000313
Order # 252323
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-3
Collected: 10/08/97 12:20
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Lead	BDL	mg/L	SM3113B (239.2)	0.005	10/09/97	10/09/97	MB
Lead, Dissolved	BDL	mg/L	SM3113B (239.2)	0.005	10/09/97	10/09/97	MB

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effected Dilution Factor***
Work Subcontracted to Outside Labs Denoted by HRS Cert ID in Analyst Field
Qualifier following result conforms to FAC 62-160 Table 7***Unless otherwise noted, mg/Kg denotes wet weight***
***62-770: If the MDL using the most sensitive and currently available technology is higher than a specific criterion, the PQL shall be used.



Michael A. Spitzer, Laboratory Director

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252324
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-4
Collected: 10/08/97 13:05
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Lead	BDL	mg/L	SM3113B (239.2)	0.005	10/09/97	10/09/97	MB
Lead, Dissolved	BDL	mg/L	SM3113B (239.2)	0.005	10/09/97	10/09/97	MB

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effected Dilution Factor***
Work Subcontracted to Outside Labs Denoted by HRS Cert ID in Analyst Field
Qualifier following result conforms to FAC 62-160 Table 7***Unless otherwise noted, mg/Kg denotes wet weight***
***62-770: If the MDL using the most sensitive and currently available technology is higher than a specific criterion, the PQL shall be used.

Michael A. Spitzer, Laboratory Director

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252329
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-8D
Collected: 10/08/97 14:25
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Arsenic	BDL	mg/L	SM3114B (206.3)	0.010	10/09/97	10/09/97	MB
Cadmium	BDL	mg/L	SM3113B (213.2)	0.005	10/09/97	10/09/97	CDP
Chromium	BDL	mg/L	SM3113B (218.2)	0.005	10/09/97	10/09/97	MB
Lead	BDL	mg/L	SM3113B (239.2)	0.005	10/09/97	10/09/97	MB
Lead, Dissolved	BDL	mg/L	SM3113B (239.2)	0.005	10/09/97	10/09/97	MB
8260.B Volatile Organics in Water by GC-MS			MEDF	1			
Dichlorodifluoromethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Chloromethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Vinyl Chloride	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Bromomethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Chloroethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Trichlorofluoromethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,1-Dichloroethene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Methylene Chloride	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Trans-1,2-Dichloroethene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Methyl-Tert-Butyl Ether	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,1-Dichloroethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
2,2-Dichloropropane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252329
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-8D
Collected: 10/08/97 14:25
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Cis-1,2-Dichloroethene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Chloroform	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Bromochloromethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,1,1-Trichloroethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,1-Dichloropropene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Carbon Tetrachloride	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Benzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,2-Dichloroethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Trichloroethene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,2-Dichloropropane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Bromodichloromethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
2-Chloroethylvinyl Ether	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Dibromomethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Cis-1,3-Dichloropropene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Toluene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Trans-1,3-Dichloropropene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,1,2-Trichloroethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,3-Dichloropropane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252329
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-8D
Collected: 10/08/97 14:25
Received: 10/08/97 16:15
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PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Tetrachloroethene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Dibromochloromethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,2-Dibromoethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Chlorobenzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Ethylbenzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,1,1,2-Tetrachloroethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
m & p-Xylene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
o-Xylene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Styrene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Isopropylbenzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Bromoform	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,1,2,2-Tetrachloroethane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,2,3-Trichloropropane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,3,5-Trimethylbenzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
2-Chlorotoluene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
4-Chlorotoluene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Tert-Butylbenzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,2,4-Trimethylbenzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD

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Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

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PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Sec-Butylbenzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
P-Isopropyltoluene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,3-Dichlorobenzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,4-Dichlorobenzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
n-Butylbenzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,2-Dichlorobenzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,2-Dibromo-3-Chloropropane	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,2,4-Trichlorobenzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Hexachlorobutadiene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
Naphthalene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
1,2,3-Trichlorobenzene	BDL	ug/L	5030/8260B	1.000	10/09/97	10/09/97	PMD
8270.C Semivolatile Organics in Water by GC-MS			MEDF	1			
N-Nitrosodimethylamine	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Phenol	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
Bis (2-Chloroethyl) Ether	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
2-Chlorophenol	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
1,3-Dichlorobenzene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
1,4-Dichlorobenzene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC

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PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Benzyl Alcohol	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
1,2-Dichlorobenzene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Bis (2-Chloroisopropyl) Ether	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
N-Nitrosodi-N-Propylamine	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Hexachloroethane	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Nitrobenzene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Isophorone	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
2-Nitrophenol	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
2,4-Dimethylphenol	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
Bis (2-Chloroethoxy)methane	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
2,4-Dichlorophenol	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
1,2,3-Trichlorobenzene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
1,2,4-Trichlorobenzene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Naphthalene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Hexachlorobutadiene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
4-Chloro-3-Methylphenol	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
1-Methylnaphthalene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
2-Methylnaphthalene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC

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PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
2-Methylphenol (o-cresol)	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
Hexachlorocyclopentadiene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
3-Methyl-Phenol (m-cresol)	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
4-Methylphenol (p-cresol)	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
2,3,6-Trichlorophenol	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
2,4,5-Trichlorophenol	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
2,4,6-Trichlorophenol	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
2-Chloronaphthalene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Dimethyl Phthalate	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Acenaphthylene	BDL	ug/L	3510/8270C	3.000	10/09/97	10/10/97	MEC
2,6-Dinitrotoluene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Acenaphthene	BDL	ug/L	3510/8270C	3.000	10/09/97	10/10/97	MEC
2,4-Dinitrophenol	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
2,4-Dinitrotoluene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
4-Nitrophenol	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
Diethyl Phthalate	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Fluorene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
4-Chlorophenyl Phenyl Ether	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC

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4,6-Dinitro-2-Methylphenol	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
N-Nitrosodiphenylamine	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
4-Bromophenyl Phenyl Ether	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Hexachlorobenzene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Pentachlorophenol	BDL	ug/L	3510/8270C	2.000	10/09/97	10/10/97	MEC
Phenanthrene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Anthracene	BDL	ug/L	3510/8270C	0.300	10/09/97	10/10/97	MEC
Di-N-Butyl Phthalate	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Fluoranthene	BDL	ug/L	3510/8270C	0.300	10/09/97	10/10/97	MEC
Benzidine	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Pyrene	BDL	ug/L	3510/8270C	0.300	10/09/97	10/10/97	MEC
Butyl Benzyl Phthalate	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Benzo(A)Anthracene	BDL	ug/L	3510/8270C	0.200	10/09/97	10/10/97	MEC
3,3-Dichlorobenzidine	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Chrysene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Bis (2 Ethylhexyl) Phthalate	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Di-N-Octyl Phthalate	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Benzo(B)Fluoranthene	BDL	ug/L	3510/8270C	0.200	10/09/97	10/10/97	MEC

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Benzo(K)Fluoranthene	BDL	ug/L	3510/8270C	0.500	10/09/97	10/10/97	MEC
Benzo(A)Pyrene	BDL	ug/L	3510/8270C	0.200	10/09/97	10/10/97	MEC
Indeno(1,2,3-CD)Pyrene	BDL	ug/L	3510/8270C	0.200	10/09/97	10/10/97	MEC
Dibenzo(A,H,)Anthracene	BDL	ug/L	3510/8270C	0.200	10/09/97	10/10/97	MEC
Benzo(G,H,I)Perylene	BDL	ug/L	3510/8270C	0.200	10/09/97	10/10/97	MEC
Bis-2-ethylhexyl Adipate	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Aldrin	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
α-BHC	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
ß-BHC	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
δ-BHC	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
γ-BHC	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Chlordane	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
4,4'-DDD	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
4,4'-DDE	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
4,4'-DDT	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Dieldrin	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Endosulfan I	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Endosulfan II	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC

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Endosulfan Sulfate	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Endrin	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Endrin Aldehyde	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Heptachlor	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Heptachlor Epoxide	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Toxaphene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
PCB-1016	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
PCB-1221	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
PCB-1232	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
PCB-1242	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
PCB-1248	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
PCB-1254	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
PCB-1260	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Dioxin (screen)	BDL	ug/L	3510/8270C	10.000	10/09/97	10/10/97	MEC
Azobenzene	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Methoxychlor	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Benzoic Acid	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Aniline	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC

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AT-1260

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Collected: 10/08/97 14:25
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Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
4-Chloroaniline	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Dibenzofuran	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
2-Nitroaniline	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
3-Nitroaniline	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
4-Nitroaniline	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Carbazole	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
2,6-Dichlorophenol	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
2,3,4,6-Tetrachlorophenol	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
Pyridine	BDL	ug/L	3510/8270C	5.000	10/09/97	10/10/97	MEC
FL-PRO (Petroleum Residual Organic)-{WATER}			MEDF	1			
Petroleum Range Organics (C8-C40)	0.3	mg/L	FL-PRO (DEP UST)	0.100	10/09/97	10/10/97	JT

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effected Dilution Factor***
Work Subcontracted to Outside Labs Denoted by HRS Cert ID in Analyst Field
Qualifier following result conforms to FAC 62-160 Table 7***Unless otherwise noted, mg/Kg denotes wet weight***
***62-770: If the MDL using the most sensitive and currently available technology is higher than a specific criterion, the PQL shall be used.

Michael A. Spitzer, Laboratory Director

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252330
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-9
Collected: 10/08/97 13:40
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
8021.B VOA {602} Compounds in Water by GC			MEDF	1			
Methyl-tert-butyl-ether	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Benzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Toluene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Ethylbenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
m & p Xylene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
o- Xylene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,3-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,4-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
8021.B VOH {601} Compounds in Water by GC			MEDF	1			
Dichlorodifluoromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Vinyl Chloride	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromomethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Trichlorofluoromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

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FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-9
Collected: 10/08/97 13:40
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
1,1-Dichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Methylene Chloride	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Trans-1,2-Dichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1-Dichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
2,2-Dichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Cis-1,2-Dichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chloroform	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromochloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,1-Trichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1-Dichloropropene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Carbon Tetrachloride	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Trichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromodichloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
2-Chloroethylvinyl Ether	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Dibromomethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Cis-1,3-Dichloropropene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

PERMAF000571
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October 23, 1997
Submission # 9710000313
Order # 252330
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-9
Collected: 10/08/97 13:40
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Trans-1,3-Dichloropropene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,2-Trichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,3-Dichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Tetrachloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Dibromochloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dibromoethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,1,2-Tetrachloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromoform	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,2,2-Tetrachloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2,3-Trichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
2-Chlorotoluene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
4-Chlorotoluene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,3-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,4-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dibromo-3-Chloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

PERMAF000571
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October 23, 1997
Submission # 9710000313
Order # 252330
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-9
Collected: 10/08/97 13:40
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
1,2,4-Trichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Hexachlorobutadiene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2,3-Trichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effected Dilution Factor***
Work Subcontracted to Outside Labs Denoted by HRS Cert ID in Analyst Field
Qualifier following result conforms to FAC 62-160 Table 7***Unless otherwise noted, mg/Kg denotes wet weight***
***62-770: If the MDL using the most sensitive and currently available technology is higher than a specific criterion, the PQL shall be used.

Michael A. Spitzer, Laboratory Director

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252331
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-10
Collected: 10/08/97 12:45
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
8021.B VOA {602} Compounds in Water by GC			MEDF	1			
Methyl-tert-butyl-ether	3.68	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Benzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Toluene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Ethylbenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
m & p Xylene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
o- Xylene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,3-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,4-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
8021.B VOH {601} Compounds in Water by GC			MEDF	1			
Dichlorodifluoromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Vinyl Chloride	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromomethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Trichlorofluoromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

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Site Location/Project
3670 SW 47 Ave.,Davie
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Sample I.D.: ATMW-10
Collected: 10/08/97 12:45
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
1,1-Dichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Methylene Chloride	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Trans-1,2-Dichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1-Dichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
2,2-Dichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Cis-1,2-Dichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chloroform	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromochloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,1-Trichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1-Dichloropropene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Carbon Tetrachloride	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Trichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromodichloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
2-Chloroethylvinyl Ether	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Dibromomethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Cis-1,3-Dichloropropene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

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FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-10
Collected: 10/08/97 12:45
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Trans-1,3-Dichloropropene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,2-Trichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,3-Dichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Tetrachloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Dibromochloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dibromoethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,1,2-Tetrachloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromoform	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,2,2-Tetrachloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2,3-Trichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
2-Chlorotoluene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
4-Chlorotoluene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,3-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,4-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dibromo-3-Chloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

PERMAF000571
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October 23, 1997
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Order # 252331
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-10
Collected: 10/08/97 12:45
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
1,2,4-Trichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Hexachlorobutadiene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2,3-Trichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effected Dilution Factor***
Work Subcontracted to Outside Labs Denoted by HRS Cert ID in Analyst Field
Qualifier following result conforms to FAC 62-160 Table 7***Unless otherwise noted, mg/Kg denotes wet weight***
***62-770: If the MDL using the most sensitive and currently available technology is higher than a specific criterion, the PQL shall be used.

Michael A. Spitzer, Laboratory Director

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October 23, 1997
Submission # 9710000313
Order # 252332
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-11
Collected: 10/08/97 14:30
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
8021.B VOA {602} Compounds in Water by GC			MEDF	1			
Methyl-tert-butyl-ether	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Benzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Toluene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Ethylbenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
m & p Xylene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
o- Xylene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,3-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,4-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
8021.B VOH {601} Compounds in Water by GC			MEDF	1			
Dichlorodifluoromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Vinyl Chloride	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromomethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Trichlorofluoromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

PERMAF000571
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October 23, 1997
Submission # 9710000313
Order # 252332
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-11
Collected: 10/08/97 14:30
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
1,1-Dichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Methylene Chloride	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Trans-1,2-Dichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1-Dichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
2,2-Dichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Cis-1,2-Dichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chloroform	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromochloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,1-Trichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1-Dichloropropene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Carbon Tetrachloride	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Trichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromodichloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
2-Chloroethylvinyl Ether	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Dibromomethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Cis-1,3-Dichloropropene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252332
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-11
Collected: 10/08/97 14:30
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Trans-1,3-Dichloropropene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,2-Trichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,3-Dichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Tetrachloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Dibromochloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dibromoethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,1,2-Tetrachloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromoform	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,2,2-Tetrachloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2,3-Trichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
2-Chlorotoluene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
4-Chlorotoluene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,3-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,4-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dibromo-3-Chloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252332
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-11
Collected: 10/08/97 14:30
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
1,2,4-Trichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Hexachlorobutadiene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2,3-Trichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effected Dilution Factor***
Work Subcontracted to Outside Labs Denoted by HRS Cert ID in Analyst Field
Qualifier following result conforms to FAC 62-160 Table 7***Unless otherwise noted, mg/Kg denotes wet weight***
***62-770: If the MDL using the most sensitive and currently available technology is higher than a specific criterion, the PQL shall be used.

Michael A. Spitzer, Laboratory Director

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252333
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-12
Collected: 10/08/97 15:20
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
8021.B VOA {602} Compounds in Water by GC			MEDF	1			
Methyl-tert-butyl-ether	1.11	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Benzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Toluene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Ethylbenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
m & p Xylene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
o- Xylene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,3-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,4-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
8021.B VOH {601} Compounds in Water by GC			MEDF	1			
Dichlorodifluoromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Vinyl Chloride	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromomethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Trichlorofluoromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

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Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252333
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-12
Collected: 10/08/97 15:20
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
1,1-Dichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Methylene Chloride	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Trans-1,2-Dichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1-Dichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
2,2-Dichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Cis-1,2-Dichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chloroform	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromochloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,1-Trichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1-Dichloropropene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Carbon Tetrachloride	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Trichloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromodichloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
2-Chloroethylvinyl Ether	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Dibromomethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Cis-1,3-Dichloropropene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252333
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-12
Collected: 10/08/97 15:20
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Trans-1,3-Dichloropropene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,2-Trichloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,3-Dichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Tetrachloroethene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Dibromochloromethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dibromoethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Chlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,1,2-Tetrachloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Bromoform	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,1,2,2-Tetrachloroethane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2,3-Trichloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
2-Chlorotoluene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
4-Chlorotoluene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,3-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,4-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2-Dibromo-3-Chloropropane	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252333
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: ATMW-12
Collected: 10/08/97 15:20
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
1,2,4-Trichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
Hexachlorobutadiene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD
1,2,3-Trichlorobenzene	BDL	ug/L	5030/8021B	1.000	10/09/97	10/09/97	PMD

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effected Dilution Factor***
Work Subcontracted to Outside Labs Denoted by HRS Cert ID in Analyst Field
Qualifier following result conforms to FAC 62-160 Table 7***Unless otherwise noted, mg/Kg denotes wet weight***
***62-770: If the MDL using the most sensitive and currently available technology is higher than a specific criterion, the PQL shall be used.

Michael A. Spitzer, Laboratory Director

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252338
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: Bailer Equip. Blank
Collected: 10/08/97 12:10
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
8260.B Volatile Organics in Water by GC-MS			MEDF	1			
Dichlorodifluoromethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Chloromethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Vinyl Chloride	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Bromomethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Chloroethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Trichlorofluoromethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,1-Dichloroethene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Methylene Chloride	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Trans-1,2-Dichloroethene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Methyl-Tert-Butyl Ether	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,1-Dichloroethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
2,2-Dichloropropane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Cis-1,2-Dichloroethene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Chloroform	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Bromochloromethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,1,1-Trichloroethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,1-Dichloropropene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252338
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: Bailer Equip. Blank
Collected: 10/08/97 12:10
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Carbon Tetrachloride	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Benzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,2-Dichloroethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Trichloroethene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,2-Dichloropropane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Bromodichloromethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
2-Chloroethylvinyl Ether	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Dibromomethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Cis-1,3-Dichloropropene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Toluene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Trans-1,3-Dichloropropene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,1,2-Trichloroethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,3-Dichloropropane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Tetrachloroethene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Dibromochloromethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,2-Dibromoethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Chlorobenzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Ethylbenzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252338
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: Bailer Equip. Blank
Collected: 10/08/97 12:10
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
1,1,1,2-Tetrachloroethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
m & p-Xylene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
o-Xylene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Styrene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Isopropylbenzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Bromoform	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,1,2,2-Tetrachloroethane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,2,3-Trichloropropane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,3,5-Trimethylbenzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
2-Chlorotoluene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
4-Chlorotoluene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Tert-Butylbenzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,2,4-Trimethylbenzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Sec-Butylbenzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
P-Isopropyltoluene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,3-Dichlorobenzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,4-Dichlorobenzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
n-Butylbenzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252338
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: Bailer Equip. Blank
Collected: 10/08/97 12:10
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
1,2-Dichlorobenzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,2-Dibromo-3-Chloropropane	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,2,4-Trichlorobenzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Hexachlorobutadiene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
Naphthalene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
1,2,3-Trichlorobenzene	BDL	ug/L	5030/8260B	1.000	10/10/97	10/10/97	MD
8270.C Semivolatile Organics in Water by GC-MS			MEDF	1			
N-Nitrosodimethylamine	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Phenol	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD
Bis (2-Chloroethyl) Ether	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
2-Chlorophenol	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD
1,3-Dichlorobenzene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
1,4-Dichlorobenzene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Benzyl Alcohol	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
1,2-Dichlorobenzene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Bis (2-Chloroisopropyl) Ether	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
N-Nitrosodi-N-Propylamine	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Hexachloroethane	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252338
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: Bailer Equip. Blank
Collected: 10/08/97 12:10
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Nitrobenzene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Isophorone	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
2-Nitrophenol	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD
2,4-Dimethylphenol	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD
Bis (2-Chloroethoxy)methane	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
2,4-Dichlorophenol	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD
1,2,3-Trichlorobenzene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
1,2,4-Trichlorobenzene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Naphthalene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Hexachlorobutadiene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
4-Chloro-3-Methylphenol	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD
1-Methylnaphthalene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
2-Methylnaphthalene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
2-Methylphenol (o-cresol)	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD
Hexachlorocyclopentadiene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
3-Methyl-Phenol (m-cresol)	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
4-Methylphenol (p-cresol)	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD
2,3,6-Trichlorophenol	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD

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October 23, 1997
Submission # 9710000313
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FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: Bailer Equip. Blank
Collected: 10/08/97 12:10
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
2,4,5-Trichlorophenol	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD
2,4,6-Trichlorophenol	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD
2-Chloronaphthalene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Dimethyl Phthalate	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Acenaphthylene	BDL	ug/L	3510/8270C	3.000	10/10/97	10/10/97	PMD
2,6-Dinitrotoluene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Acenaphthene	BDL	ug/L	3510/8270C	3.000	10/10/97	10/10/97	PMD
2,4-Dinitrophenol	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD
2,4-Dinitrotoluene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
4-Nitrophenol	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD
Diethyl Phthalate	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Fluorene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
4-Chlorophenyl Phenyl Ether	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
4,6-Dinitro-2-Methylphenol	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD
N-Nitrosodiphenylamine	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
4-Bromophenyl Phenyl Ether	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Hexachlorobenzene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Pentachlorophenol	BDL	ug/L	3510/8270C	2.000	10/10/97	10/10/97	PMD

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October 23, 1997
Submission # 9710000313
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FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: Bailer Equip. Blank
Collected: 10/08/97 12:10
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Phenanthrene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Anthracene	BDL	ug/L	3510/8270C	0.300	10/10/97	10/10/97	PMD
Di-N-Butyl Phthalate	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Fluoranthene	BDL	ug/L	3510/8270C	0.300	10/10/97	10/10/97	PMD
Benzidine	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Pyrene	BDL	ug/L	3510/8270C	0.300	10/10/97	10/10/97	PMD
Butyl Benzyl Phthalate	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Benzo(A)Anthracene	BDL	ug/L	3510/8270C	0.200	10/10/97	10/10/97	PMD
3,3-Dichlorobenzidine	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Chrysene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Bis (2 Ethylhexyl) Phthalate	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Di-N-Octyl Phthalate	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Benzo(B)Fluoranthene	BDL	ug/L	3510/8270C	0.200	10/10/97	10/10/97	PMD
Benzo(K)Fluoranthene	BDL	ug/L	3510/8270C	0.500	10/10/97	10/10/97	PMD
Benzo(A)Pyrene	BDL	ug/L	3510/8270C	0.200	10/10/97	10/10/97	PMD
Indeno(1,2,3-CD)Pyrene	BDL	ug/L	3510/8270C	0.200	10/10/97	10/10/97	PMD
Dibenzo(A,H,)Anthracene	BDL	ug/L	3510/8270C	0.200	10/10/97	10/10/97	PMD
Benzo(G,H,I)Perylene	BDL	ug/L	3510/8270C	0.200	10/10/97	10/10/97	PMD

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Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252338
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: Bailer Equip. Blank
Collected: 10/08/97 12:10
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Bis-2-ethylhexyl Adipate	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Aldrin	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
α-BHC	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
ß-BHC	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
δ-BHC	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
r-BHC	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Chlordane	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
4,4'-DDD	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
4,4'-DDE	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
4,4'-DDT	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Dieldrin	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Endosulfan I	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Endosulfan II	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Endosulfan Sulfate	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Endrin	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Endrin Aldehyde	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Heptachlor	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Heptachlor Epoxide	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD

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October 23, 1997
Submission # 9710000313
Order # 252338
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: Bailer Equip. Blank
Collected: 10/08/97 12:10
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Toxaphene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
PCB-1016	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
PCB-1221	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
PCB-1232	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
PCB-1242	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
PCB-1248	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
PCB-1254	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
PCB-1260	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Dioxin (screen)	BDL	ug/L	3510/8270C	10.000	10/10/97	10/10/97	PMD
Azobenzene	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Methoxychlor	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Benzoic Acid	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Aniline	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
4-Chloroaniline	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Dibenzofuran	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
2-Nitroaniline	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
3-Nitroaniline	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
4-Nitroaniline	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD

PERMAF000571
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Perma-Fix of Florida (Davie)
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Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252338
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: Bailer Equip. Blank
Collected: 10/08/97 12:10
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Carbazole	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
2,6-Dichlorophenol	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
2,3,4,6-Tetrachlorophenol	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
Pyridine	BDL	ug/L	3510/8270C	5.000	10/10/97	10/10/97	PMD
FL-PRO (Petroleum Residual Organic)-{WATER}			MEDF	1			
Petroleum Range Organics (C8-C40)	BDL	mg/L	FL-PRO (DEP UST)	0.100	10/11/97	10/12/97	JT

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effected Dilution Factor***
Work Subcontracted to Outside Labs Denoted by HRS Cert ID in Analyst Field
Qualifier following result conforms to FAC 62-160 Table 7***Unless otherwise noted, mg/Kg denotes wet weight***
***62-770: If the MDL using the most sensitive and currently available technology is higher than a specific criterion, the PQL shall be used.

Michael A. Spitzer, Laboratory Director

PERMAF000571
Chris Blanton
Perma-Fix of Florida (Davie)
3701 S.W. 47th Avenue, #109
Davie, FL 33314

October 23, 1997
Submission # 9710000313
Order # 252339
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
3670 SW 47 Ave.,Davie
AT-1260

Sample I.D.: Tubing Equip. Blank
Collected: 10/08/97 12:40
Received: 10/08/97 16:15
Collected by: Client

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Arsenic	BDL	mg/L	SM3114B (206.3)	0.010	10/09/97	10/09/97	MB
Cadmium	BDL	mg/L	SM3113B (213.2)	0.005	10/09/97	10/09/97	CDP
Chromium	BDL	mg/L	SM3113B (218.2)	0.005	10/09/97	10/09/97	MB
Lead	BDL	mg/L	SM3113B (239.2)	0.005	10/09/97	10/09/97	MB

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effected Dilution Factor***
Work Subcontracted to Outside Labs Denoted by HRS Cert ID in Analyst Field
Qualifier following result conforms to FAC 62-160 Table 7***Unless otherwise noted, mg/Kg denotes wet weight***
***62-770: If the MDL using the most sensitive and currently available technology is higher than a specific criterion, the PQL shall be used.

Michael A. Spitzer, Laboratory Director

Submission Code:
Orders:
Entered to lims:

PRECISION ENVIRONMENTAL LABORATORY

CHAIN OF CUSTODY RECORD (DEP 62-770.900 (modified form))

10200 USA TODAY WAY, MIRAMAR, FLORIDA 33025
(954) 431-4550 • NATL WATS (800) LAB-8550 • FAX (954) 431-1959

Original - Return w/Report | Yellow - Lab Copy | Pink - Sampler Copy

FDEP Facility No.
Page 1 of 1
Sampling CompQAP NO.
Approval Date:

Report To: Perma-Fix Env. Services / Fax to Aqua Terra, Inc
Report To Address: 3701 S.W. 47th Ave, Ste. 109, Davie, FL 3331[illegible]
Bill To: Perma-Fix Env. Services
Billing Address: 3701 S.W. 47th Ave., Ste. 109, Davie, FL 3331[illegible]
Project Number/Name: AT-1260
Site Location: 3670 SW 47th Ave Davie, FL 33314
Project Contact: Richard Meyers (Aqua Terra) Phone: (954) 433-8804 FAX: (954) 433-8913
Alternate Contact: Chris Blanton (Perma-Fix) Phone: (954) 583-3795 FAX: (954) 583-8017
Sampled By (print):
Sampler's Signature:

ANALYSIS REQUIRED — PLACE NAME OR METHOD NUMBER OF TESTS NEEDED IN LARGE BOXES BELOW. (✓) CHECK OFF WHICH SAMPLE ITEMS NEED EACH TEST PERFORMED

ITEM	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	pH FLD	TEMP °C FLD	COND FLD	MATRIX (DW SW GW SED S EFF HW BIO SA)	SAMPLE LOCATION/ JOB DESCRIPTION (optional if needed when samples are from different site locations)	# CONTAINERS	8260/ 8270	FL-PRO	Total As, Cd, Cr.	Total (Pb)	Dissolved Lead (Pb)	MTBE and Vinyl chloride	Lot Number of Sampling Containers Used
1	ATMW-1	10/8/97	12:10				GW		2				X	X		[illegible]
2	ATMW-3	↓	12:20				GW		2				X	X		[illegible]
3	ATMW-4	↓	13:05				GW		2				X	X		[illegible] 9-16-97
4	ATMW-8D	↓	14:25 14:40				GW		6	X	X	X	X	X		
5	ATMW-9	↓	13:40				GW		2						X	
6	ATMW-10	↓	12:45				GW		2						X	
7	ATMW-11	↓	14:30				GW		2						X	
8	ATMW-12	↓	15:20				GW		2						X	
9	Bailer Equip. Blank	↓	12:10				Blank		4	X	X					
10	Tubing Equip. Blank	↓	12:40				Blank		1			X	X			

Sample Condition as Received: Temp ____ C Sealed Yes No

Special Comments:

Total # of Containers: 25

QA/QC Report Needed?: Yes (No) (See price guide for applicable fees)
Report Format: (Standard) Other (specify)

(1) Relinquished by Signature: [signature]	Date: 10-6-97	(2) Relinquished by Signature: [signature]	Date: 10/3/97
Company: PEL	Time: 18:00	Company: Aqua Terra, Inc.	Time: 16:15
(1) Received by Signature: [signature]	Date: 10/7/97	(2) Received by Signature: [signature]	Date: 10-8-97
Company: Aqua Terra, Inc	Time: 18:00	Company: PEL	Time: 16:15

DUE DATE REQUESTED:
Confirmation #
Costing Code: ______ Q/L/D
Misc. Charges
SHADED AREAS ARE FOR LAB USE ONLY

APPENDIX C

EXCERPTS FROM THE UNITED STATES EPA DRAFT REMEDIAL INVESTIGATION REPORT FOR THE FLORIDA PETROLEUM REPROCESSORS SITE

ARCS IV
Contract Number 68-W9-0058
Bechtel Job Number 20385-053

Draft

Remedial Investigation Report

for the

Florida Petroleum Reprocessors Site

Davie, Broward County, Florida

Prepared for
United States Environmental Protection Agency

September 1997

Z8.10 1331.2

FASP Mobile Laboratory

Based on the screening results, select samples were analyzed by the FASP mobile laboratory for tetrachloroethene, trans-1,2-dichloroethene, trichloroethene, 1,1-dichloroethane, cis-1,2-dichloroethene, 1,1,1-trichloroethane, and vinyl chloride. Mobile laboratory data helped determine future sampling locations and confirm screening GC results.

CLP

Following analysis by the mobile laboratory, a select group of samples was shipped offsite for full-scan analysis by a CLP laboratory. Samples that were suspected to contain high concentrations of contaminants were also shipped offsite for analyses. A comprehensive list of all soil samples, analyses, and methods is presented in Appendices G and H.

2.3 GROUNDWATER INVESTIGATION

The primary focus of the groundwater investigation was to:

- Determine the areal and vertical extent of DNAPLs in site groundwater.
- Characterize the chemical composition of DNAPLs in the groundwater.
- Identify and evaluate release and transport mechanisms controlling the migration of dissolved phase contaminants from site source materials.
- Determine the areal extent, thickness, and composition of the LNAPL plume floating on the water table in the shallow subsurface beneath the site.
- Evaluate impacts of petroleum-related constituents on shallow groundwater quality.
- Support the development of a comprehensive BRA that evaluates human health and ecological risks.

2.3.1 Onsite Well Installation and Sampling

Twenty-nine temporary piezometers were installed (Figure 2-1) to depths ranging from 6 to 10 ft BLS. Each piezometer was developed, and most were sampled for analysis by the field GC and mobile laboratory. Based on the screening results, 2-in. piezometers were installed in five soil borings (SB07–SB11) in the source area and used to collect product from the shallow groundwater zone. Appendix I presents construction summaries for piezometers and new monitoring wells.

Three multiport wells, each with four separate completion zones, were installed near the source area (Figure 2-2). Groundwater samples were collected and shipped offsite for analysis of organic and inorganic parameters, and the resultant data were used to determine the vertical contaminant profile for the FPR site. Appendix J includes a summary of all groundwater samples obtained from the temporary piezometers and new multiport wells.

Existing FPR monitoring wells (Figure 2-2) were sampled to support the determination of the vertical contaminant profile and indicate contaminant migration when compared to historical data. A summary of samples collected from existing onsite wells is presented in Appendix K.

All of the onsite monitoring wells, with the exception of the piezometers, were purged and sampled using a peristaltic pump. Upon completion of purging, samples were collected using disposable Teflon® bailers.

2.3.2 Offsite Well Installation and Sampling

Eight new monitoring wells were installed at four offsite locations (Figure 2-4) to delineate the southern boundary of the plume and identify other possible contributors to the VOC contamination south of the site. Each well pair consists of a shallow well completed at 60 ft BLS and a deep well completed at 140 ft BLS. These depths were found to contain zones of contamination identified during earlier investigations (Bechtel 1996). Groundwater samples from each new well were shipped offsite for organic and inorganic analyses.

Groundwater samples were also collected from 50 existing Peele-Dixie monitoring wells to indicate contaminant migration when compared to historical data and delineate the groundwater chemistry in the area. A comprehensive list of samples obtained from existing wells is presented in Appendix J.

Sixteen additional groundwater samples were collected from existing wells on the properties of Wheelabrator South Broward, Inc., Perma-Fix Environmental Services, Inc., and Davie Concrete (Appendix K) to determine the presence of VOC sources in areas south of the site.

2.3.3 Groundwater Sample Analyses

All groundwater samples, with the exception of samples collected from the onsite piezometers, were field-screened for alkalinity, ferrous iron, hydrogen sulfide, and total chloride. These analyses, in conjunction with the laboratory analyses for anions/cations, provided data used in assessing the natural attenuation of the chlorinated ethenes at the site. Parameters measured during purging included pH, oxidation/reduction potential, temperature, turbidity, dissolved oxygen, and specific conductivity. These parameters indicated the general groundwater quality in the area and determined the representativeness of the groundwater to be sampled.

Groundwater samples collected from onsite piezometers and newly installed multiport well clusters were screened by the field GC and mobile laboratory. Based on the results, samples were selected for additional CLP laboratory analyses including semivolatile compounds (SVOCs), pesticides, PCBs, and total metals.

2.3.4 Water Level Measurements

Water levels were measured twice during the investigation (Appendix L), first before investigative activities at the site began and again after installation of all new monitoring wells and piezometers. The water level data will be used to determine the area hydraulic gradient and flow direction. Potentiometric maps for the shallow and deep groundwater zones at the site are presented in Section 3.0.

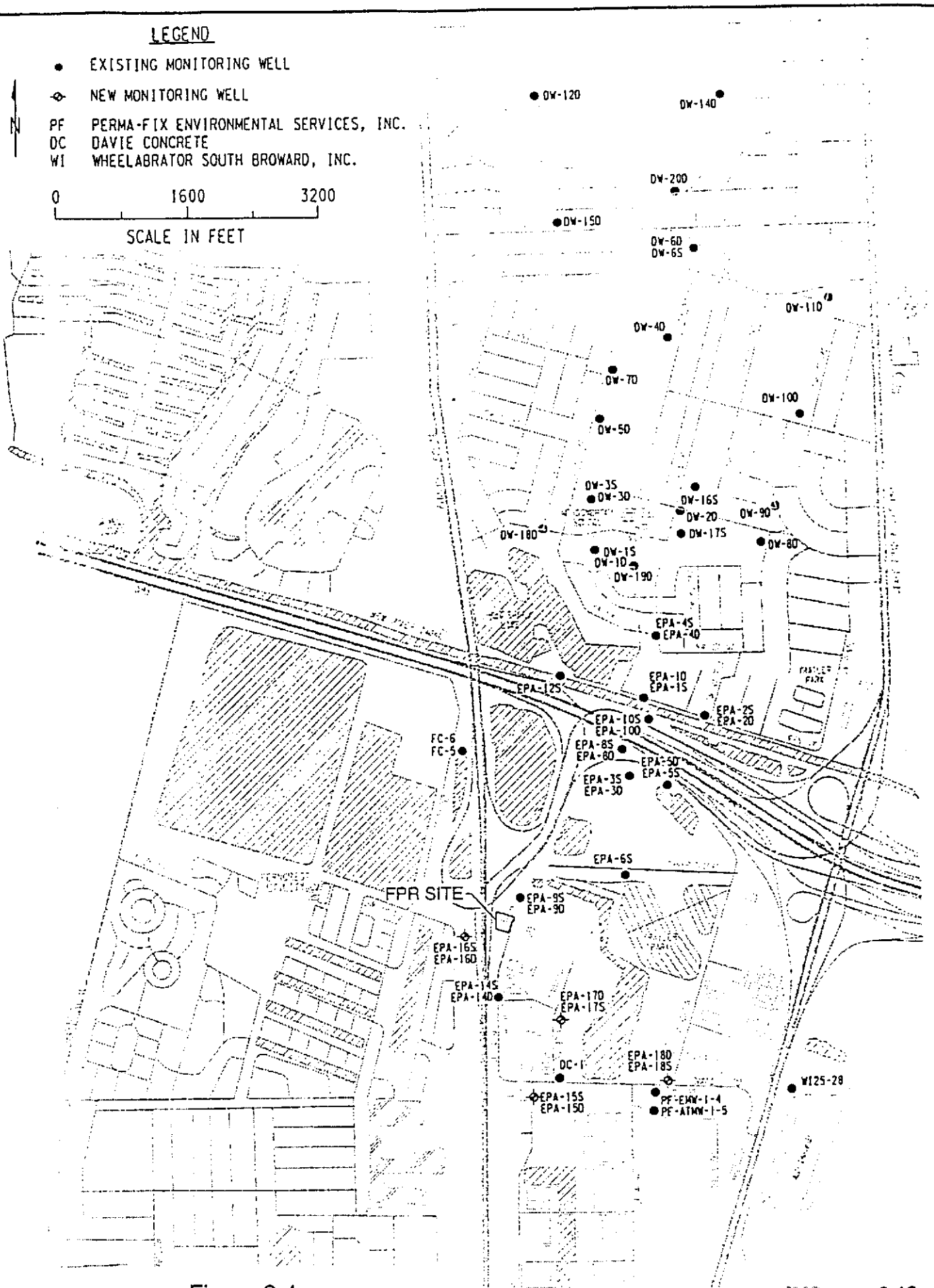

Figure 2-4
Offsite Monitoring Well Locations
Florida Petroleum Reprocessors RI

PDFIG44.DGN

- Several secondary preferential flow pathways associated with geologic contacts have been identified, at about elevation -25 ft MSL and between elevation -50 and -60 ft MSL. However, these pathways are interpreted to be discontinuous at the study area scale, at least in part because of erosional truncation of geologic formations. The pathway at -50 to -60 ft MSL corresponds to the shallow monitoring zone and the zone at -25 ft MSL corresponds to the very shallow monitoring zone.

- Surface water interaction with the shallow and deep monitoring zones appears to be insignificant.

- Groundwater flow directions in the shallow and deep monitoring zone have been found to vary seasonally and historically with changes in pumping at the Peele-Dixie wellfield.

- Vertical flow potentials vary spatially within the study area, with persistent downward flow potentials at the Peele-Dixie wellfield and near the FPR site, while persistent upward flow potentials have been observed at the areas in between.

Figure 3-29 summarizes these key elements of the conceptual model.

3.7 DEMOGRAPHY AND LAND USE

Broward County is in southeast Florida and has a total land area of 1,197 square miles—787 square miles are within the Conservation Area and 410 square miles are developable.

Broward County has experienced rapid resident population growth. The population was 620,100 in 1970, 1,018,200 in 1980, and 1,255,488 in 1990. The County Planning Division projects that the population will increase to 1,482,345 by the year 2000, 1,660,877 by 2010, and 1,822,995 by 2020.

3.7.1 Current Land Use

The area surrounding the FPR site is urban and heavily populated, and much of the land is used for industrial and residential purposes. Approximately 165,234 people live within 4 miles of the site (Black and Veatch 1997). The nearest school is Meadowbrook School, 1 mile north of the site.

Among the many industries in the immediate area are several which either currently or have previously managed and/or stored waste material. For that reason alone, the following industrial facilities were included in the remedial investigation: Atlas Waste Magic Facility, Wheelabrator South Broward, Inc., Perma-Fix Environmental Services, Inc., Petroleum Management, Inc., and Davie Concrete. The locations of these facilities are shown on Figure 3-30.

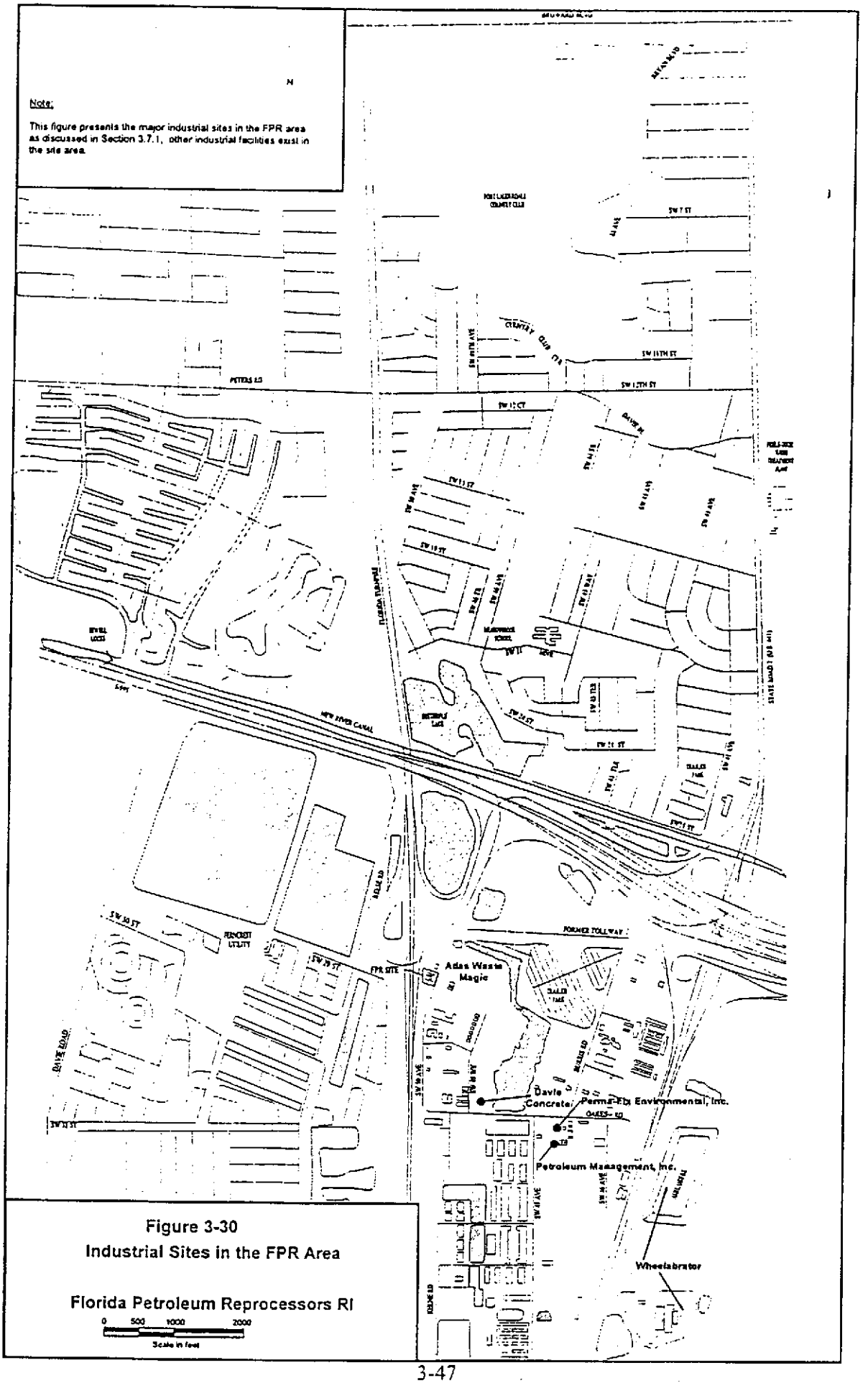

Figure 3-30
Industrial Sites in the FPR Area

Florida Petroleum Reprocessors RI

Atlas Waste Magic Facility

The National Resource Recovery facility at 3250 Fields Road in Davie is currently occupied by Atlas Waste Magic, a recycling and construction/demolition debris disposal company. Approximately 20 acres of the property are used for recycling, and the remaining 11 acres consist of a lake which is currently being filled in with construction debris. The lake borders the northern and eastern portions of the property. These portions of the site contain large berms at the perimeter of the lake surface; the tops of the berms are approximately 20 ft above the lake surface. Twin Lake Trailer Park is east of the site across the lake. The site layout is shown in Figure 3-31.

During the week of June 24, 1996, EPA conducted a site inspection at the facility (Black and Veatch 1997). Results of surface soil sampling revealed elevated concentrations of numerous inorganics and organics indicating surficial contamination onsite. Analyses of groundwater samples revealed the presence of the following contaminants that can be attributed to facility operations: arsenic, antimony, barium, chromium, cobalt, manganese, mercury, nickel, vanadium, acenapthene, phenanthrene, and carbazole. Analyses of sediment samples indicated concentrations of cobalt, manganese, cadmium, lead, selenium, benzo(b and/or k)fluoranthene, benzo(a)pyrene, indeno (1,2,3-cd)pyrene, 4,4'-DDT, and bis(2-ethylhexyl)phthalate. Air samples were not collected, though an odor control system (perfume pump) had earlier been installed in response to complaints from nearby residents concerning the strong odors emanating from the site.

Wheelabrator South Broward, Inc.

In the late 1980s, Broward County contracted with subsidiaries of Wheelabrator Environmental Systems, Inc., to design, construct, and operate two waste-to-energy plants. The primary functions of each plant are to provide an environmentally safe and cost-effective solid waste disposal solution; recover energy and recyclable ferrous metals; and reduce the quantity of waste subject to landfilling. The South plant opened in 1991 at 4400 South State Road 7, 1.4 miles southeast of the FPR site.

According to the Broward County Office of Integrated Waste Management, the South plant is capable of processing 2,250 tons/day. Although the facility is expandable by 33 percent, there are no current plans for expansion. The plant utilizes processes and technologies that are relatively simple and straightforward. The waste is trucked into the facility and loaded into furnace hoppers, where it is burned at a minimum temperature of 1,800°F. The hot gases are passed from the boiler through a scrubber and mixed with lime to neutralize any acids and produce particles that are collected in the baghouse. The cooled and cleaned gases are vented through a stack flue topping out at 200 ft above the ground. All processing activities take place indoors to control dust and odors, and to prevent rain from coming in contact with either waste or ash. Metals in the ash are removed and recycled, and the remaining ash is landfilled in an area adjacent to the facility. The monofill was constructed with multiple liners to prevent groundwater contamination. The leachate collected by the liner system is either used in the plant to produce electricity or sent to a sewage treatment plant for disposal.

Perma-Fix Environmental Services, Inc.

Perma-Fix Environmental Services is located at 3701 SW 47th Avenue, approximately 0.4 mile from the FPR site. The facility receives, filters, separates, blends, and temporarily stores used oils for subsequent resale, primarily as a fuel. Perma-Fix also has a plant for treatment of various types of nonhazardous wastewaters. The facility has an extensive network of shallow monitoring wells, all of which were sampled during the FPR RI field investigation. Results from this sampling are presented in Section 4.2.

Petroleum Management, Inc.

Petroleum Management, Inc. (PMI) is located at 4700 Oakes Road, 0.3 mile from the FPR site. PMI also handles used oil and reportedly conducts or supports a variety of environmental cleanup activities, such as the removal of underground tanks and contaminated soils. During the FPR field investigation, an attempt was made to sample PMI monitoring wells; however, the wells were not functioning properly (e.g., many had been plugged with concrete), or they were otherwise damaged so as to preclude the collection of representative groundwater samples.

Davie Concrete

Davie Concrete, Inc. operates a large concrete batch plant at 3570 SW 49th Way, less than 0.5 mile from the site. The facility has stockpiles of aggregate and sand, cement storage silos, and the physical plant used for mixing and transferring concrete to trucks. The facility has a water supply well that provides the water used for preparation of concrete. This well was sampled during the FPR RI field investigation.

3.7.2 Future Land Use

The FPR site is in an industrial park that does not appear to be under much development pressure. Recent development in the area, along Oakes Road south of the site, has consisted of light industry/warehouse/commercial office parks. There are undeveloped parcels nearby (to the south) and new land areas are being created through the filling of borrow pit lakes. Neither the City of Davie nor Broward County has publicized any specific plans regarding future development of the areas surrounding the site. It was assumed that the area would remain industrial for the foreseeable future.

3.7.3 Water Supply in Vicinity of Site

Nine municipal water supply systems have wells near (defined as within 4 miles) the FPR site. The City of Fort Lauderdale obtains potable water from the Prospect wellfield and the North Peele-Dixie wellfield, the latter of which is located within 4 miles of the site. Groundwater production in the southern portion of the Peele-Dixie wellfield ceased in 1987 due to the presence of VOCs at levels that exceeded federal and state maximum contaminant levels (production wells P-17 and -18 resumed pumping in 1995). Water in the North Peele-Dixie wellfield is mixed with groundwater obtained from the Prospect wellfield north of Fort Lauderdale and is distributed to 55,000 connections in the city (Black and Veatch 1997). Multiplying the number of connections by the 1990 U.S. Bureau of the Census average "persons-per-household" value of 2.35 for Broward County,

Wellfield and changes in groundwater flow patterns following shutdown of the southern wellfield that have led to a significant shift in contaminant migration vectors, from north-northeast to south-southeast.

Equally important were hydrogeologic considerations, most significantly the absence of any apparent horizontal flow boundaries for groundwater in the Biscayne Aquifer. As stated in Section 3.0, the hydraulic influence of the North New River Canal and assorted borrow pit lakes lying between FPR and the Peele-Dixie wellfield does not appear to extend to the depths where FPR-derived contamination is migrating through the aquifer. Underflow beneath the canals and lakes is obviously occurring, based on the spatial distribution of contamination historically observed in monitoring wells bordering offsite surface water features. For these reasons, all of the offsite areas were assumed to be contiguous from a groundwater circulation perspective.

4.2.1 Offsite Groundwater

Evaluation of offsite groundwater contamination was based primarily on results from analyses of samples from 72 offsite monitoring wells and 1 nearby production well during the FPR RI field investigation. Table 4-13 presents information concerning installation and construction details for the wells that were sampled.

Table 4-13
Offsite Monitoring Wells Sampled for FPR RI

Group	No. and Type Wells	Completion Depths	Comments
DW Wells	17 Deep 5 Shallow	Deep: 130-140 ft Shallow: 50-60 ft	Installed by JMM in 1992 for P-D wellfield contamination assessment
EPA Wells	16 Deep 15 Shallow 2 Misc. depth	Deep: 130 ft Shallow: 50-60 ft Very Deep (VD): 190-200 ft Very Shallow (VS): 10-20 ft	25 wells were installed for Peele-Dixie RI in 1994 and 1995; 8 additional wells installed in 1997 for FPR RI
Ferncrest Wells	1 Deep 1 Shallow	Deep: 160 ft Shallow: 80 ft	Installed by Ferncrest Utilities
Wheelabrator	One 4-well cluster monitoring 4 separate zones	Deep: 95-105 ft Deep/Intermediate: 55-65 ft Shallow/Intermediate: 35-45 ft Shallow: 15-25 ft	Part of the monitoring well network for the ash monofill associated with the Broward County waste-to-energy facility on US 441
Perma-Fix	11 Water table wells	Various depths (10-14 ft)	Monitoring well network for the Perma-Fix facility on Oakes Rd
Davie Concrete	1 Water supply well	Depth unknown; reported to be approximately 90 ft	Water supply well for Davie Concrete batch plant on Oakes Rd

The groundwater analysis also incorporates relevant historical data from previous sampling activities conducted as part of investigations into contamination at the Peele-Dixie wellfield. These activities were part of the following studies.

- Site Screening Investigation for the Meadowbrook Elementary School Dump, conducted by NUS for EPA in September 1988

- Peele-Dixie Wellfield Contamination, Groundwater Investigation Report No. 88-12, by FDER, December 1988

- Contamination Assessment for the Continued Use of the Peele-Dixie Wellfield, completed for the City of Fort Lauderdale by James M. Montgomery Consulting Engineers, December 1992

- Site Characterization Report and Site Characterization Report Addendum, conducted for EPA's Peele-Dixie RI by Bechtel in 1994–1996 (Bechtel 1995 and 1996)

The following discussion focuses on analytical results for chlorinated VOCs, the principal contaminants of interest for both the FPR site and the Peele-Dixie wellfield contamination problem. With few exceptions, these were the contaminants most commonly detected in groundwater. A complete set of analytical results for all of the offsite samples is presented in Appendix R. This section is organized into separate subsections for the Peele-Dixie plume and the FPR plume. The Peele-Dixie plume includes offsite areas generally to the north of the FPR site; the FPR plume includes areas to the east, west, and south of the FPR site.

Peele-Dixie Plume (Areas North of FPR Site)

Groundwater contamination north of the FPR site has been extensively characterized as part of the various Peele-Dixie plume studies described in Section 1. Contamination was originally detected in the wellfield in December 1986, when a sample from production well PW-18 was found to contain about 300 mg/L of 1,2-DCE. Linkage with the FPR site was not apparent until monitoring well EPA9S/D was installed in 1995, which led to the initial investigation of the FPR property and subsequent identification of a DNAPL source at the site.

Deep Aquifer Zone

RI sampling results from deep monitoring wells north of the FPR site identified a number of VOCs (Table 4-14). A summary of the chlorinated VOCs detected during the RI sampling is presented in Table 4-15. In contrast to the onsite groundwater, TCE and 1,1,1-TCA were either rarely detected or not detected at all. The composition of contaminants in the deep groundwater was instead dominated by the TCE/TCA degradation products, including 1,1-DCA, 1,2-DCE, 1,1-DCE, and vinyl chloride. Contamination levels in the deep zone (130–140 ft) of the Biscayne Aquifer north of the FPR site have continued to decline since the last comprehensive sampling event completed in 1995 (conducted for the Peele-Dixie RI), but a distinct plume can still be mapped extending from the FPR site northward into the Peele-Dixie wellfield (Figure 4-26). The long axis of the plume is approximately 8,000 ft; the width decreases from 2,800 ft just north of FPR to about 1,300 ft over most of the wellfield. Higher levels of contamination (>100 mg/L) were generally detected in wells south of the North New River Canal. With the exception of EPA-1D, located on the northern bank of the canal, chlorinated VOC concentrations were 10 mg/L or less.

The plume still extends over much of the southern wellfield, with low levels of contamination (10 mg/L of 1,2-DCE) detected as far north as PW-14. Based on the March–May 1997 sampling

Appendix R

Analytical Results of the 1997 Florida Petroleum Reprocessors RI Investigation

Group	SubGroup	Name	Analyte	Result		Units
		EPA-4SD				
			1 UNIDENTIFIED COMPOUND	400	J	UG/L
		EPA-5D				
			1 UNIDENTIFIED COMPOUND	20	J	UG/L
		EPA-5S				
			1 UNIDENTIFIED COMPOUND	10	J	UG/L
		EPA-7D				
			1 UNIDENTIFIED COMPOUND	70	J	UG/L
		EPA-8S				
			2 UNIDENTIFIED COMPOUNDS	30	J	UG/L
		EPA-8VS				
			2 UNIDENTIFIED COMPOUNDS	60	J	UG/L
		EPA-9D				
			TRICHLOROPROPENE	20	JN	UG/L
		EPA-9S				
			1 UNIDENTIFIED COMPOUND	20	J	UG/L
		FC-5				
			1 UNIDENTIFIED COMPOUND	20	J	UG/L
	Miscellaneous Compounds					
		EPA-15S				
			METHYL(METHYLETHYL)BENZ	6	JN	UG/L
		EPA-17S				
			LINALYL PROPANOATE	4	JN	UG/L
			METHYLHYDROXYPROPANOI	2	JN	UG/L
	Miscellaneous Compounds					
		DC-1				
			1 UNIDENTIFIED COMPOUND	200	J	UG/L
		PF-ATMW-3				
			1 UNIDENTIFIED COMPOUND	40	J	UG/L
		PF-ATMW-6				
			1 UNIDENTIFIED COMPOUND	30	J	UG/L
Existing Wells						
	VOLATILES					
		DW-11D				
			CARBON DISULFIDE	2	J	UG/L
		DW-19D				
			1,2-DICHLOROETHENE (TOTA	10	J	UG/L
			1,1-DICHLOROETHANE	2	J	UG/L
			1,1-DICHLOROETHENE (1,1-DI	1	J	UG/L
		DW-2D				
			CARBON DISULFIDE	2	J	UG/L
			1,2-DICHLOROETHENE (TOTA	7	J	UG/L
		DW-3D				
			ACETONE	140		UG/L
		DW-4D				
			CHLOROMETHANE	4	J	UG/L
			ACETONE	93		UG/L
			1,2-DICHLOROETHENE (TOTA	9	J	UG/L
		DW-6D				
			CHLOROFORM	10	J	UG/L

Group	SubGroup	Name	Analyte	Result		Units
		EPA-17S				
			BROMODICHLOROMETHANE	2	J	UG/L
			CHLOROFORM	13		UG/L
		EPA-18D				
			1,1-DICHLOROETHANE	5	J	UG/L
			1,1-DICHLOROETHANE	10		UG/L
			1,1-DICHLOROETHENE (1,1-DI	3	J	UG/L
			1,2-DICHLOROETHENE (TOTA	17		UG/L
			CHLOROFORM	3	J	UG/L
			VINYL CHLORIDE	32		UG/L
			CIS-1,2-DICHLOROETHENE	14		UG/L
		EPA-18S				
			CHLOROFORM	3	J	UG/L
	VOLATILES					
		PF-ATMW-1				
			1,2-DICHLOROETHENE (TOTA	3	J	UG/L
			BENZENE	3	J	UG/L
			ETHYL BENZENE	3	J	UG/L
			TOLUENE	3	J	UG/L
			TOTAL XYLENES	8	J	UG/L
			VINYL CHLORIDE	6	J	UG/L
		PF-ATMW-1D				
			1,2-DICHLOROETHENE (TOTA	2	J	UG/L
			VINYL CHLORIDE	5	J	UG/L
			TOTAL XYLENES	8	J	UG/L
			TOLUENE	3	J	UG/L
			BENZENE	3	J	UG/L
			ETHYL BENZENE	2	J	UG/L
		PF-ATMW-2				
			ETHYL BENZENE	1	J	UG/L
			1,2-DICHLOROETHENE (TOTA	3	J	UG/L
			BENZENE	2	J	UG/L
			VINYL CHLORIDE	3	J	UG/L
			TOTAL XYLENES	3	J	UG/L
		PF-ATMW-3				
			BENZENE	2	J	UG/L
			ETHYL BENZENE	2	J	UG/L
			TOTAL XYLENES	1	J	UG/L
			VINYL CHLORIDE	2	J	UG/L
		PF-ATMW-6				
			BENZENE	10		UG/L
			ETHYL BENZENE	3	J	UG/L
			TOLUENE	4	J	UG/L
			TOTAL XYLENES	3	J	UG/L
			TRICHLOROETHENE (TRICHL	1	J	UG/L
			VINYL CHLORIDE	20		UG/L
			CIS-1,2-DICHLOROETHENE	3	J	UG/L
			1,2-DICHLOROETHENE (TOTA	5	J	UG/L
		PF-EMW-3				
			CHLOROBENZENE	2	J	UG/L
		WI-28				
			1,2-DICHLOROETHENE (TOTA	2	J	UG/L
Offsite Soil Investigation						
New Well Borings						
	EXTRACTABLES					

APPENDIX D

HISTORICAL SUMMARY OF PMI DATA DOCUMENTING SOIL AND GROUNDWATER IMPACTS PRIOR TO THE PERMA-FIX VANDALISM INCIDENT

List of Dates and Events - Petroleum Management Inc, Davie, Florida

I. September 4, 1992 [2]:
Broward County Department of Natural Resources Protection personnel collected a water sample from an onsite monitoring well (MW-1). This sample was found to have levels of soluble hydrocarbons above state target levels (concentration not specified in report).

II. September 30, 1992 [1]:
Discharge was reported to the EQCB on this date, but the problem was first discovered September 28, 1992. **Contamination Assessment Plan (CAP)** reports that no discharge could be found and no contaminated soil detected by OVA / FID. However, a surface discharge occurred (no date reported) along the southeast containment area. An area 4 feet x 4 feet x 3 inches was excavated and placed in 5 - 55 gallon drums on January 27, 1993, and transported on February 11, 1993 to Clark Environmental, Inc. in Mulberry, Florida for disposal.

III. October 23, 1992 [1]:
Samples taken from monitoring well MW-1 were found to contain the following concentrations:

2.0 ug/L Benzene
3.0 ug/L Ethylbenzene
.010 mg/L Lead

IV. November 25, 1992 [2]:
Contamination Assessment Plan (CAP) prepared by Geo Science & Engineering, Inc. was submitted to the DNRP. The CAP recommended a quarterly ground-water monitoring program.

V. Aprill 22, 1994 [2]:
DNRP conducted a sampling event in which levels of soluble hydrocarbons were found above state target levels (concentrations not specified in report).

VI. September 13, 1994 [2]:
DNRP performed an inspection of the Pollutant Storage Tank System during a **Tank Closure Assessment** conducted by U.S. Environmental Group, Inc..

a) Two 4,000 gallon mixed product (gasoline, diesel, and used oil) underground storage tanks were removed.

b) Visual inspection by USEG revealed that soil in the vicinity of the tanks exhibited staining and hydrocarbon odors.

VII. September 2, 1994 - February 23, 1995 [2]:
USEG collected soil samples (0-2') from 66 locations at the site during the tank closure and the CAR assessment.

a) The FDEP diesel (≥ 50 ppm) classification of "excessively impacted" soil was used to assess the soil quality at the subject site.

b) OVA FID-PID results for the soil samples collected from the 66 locations ranged from 0 to 1,980 ppm.

c) The total volume of "excessively impacted soil" soil was 872 cubic yards (1,220 tons). Soil screening results indicated that the impacted soil extends beneath the above ground storage tanks.

d) "Excessively impacted" soil within the former tank farm area was excavated and refilled with clean soil.

VIII. February 22, 23 and March 20, 1995 [2]:
USEG supervised the installation of six permanent shallow monitoring wells, MW-2 through MW-7 to determine the horizontal extent of VOC's in the ground water at the site. An existing monitoring well (MW-1) was installed at the facility in 1984. On March 20, 1995, USEG installed one deep monitoring well, MW-8D, at the site.

IX. March 3, and March 31, 1995 [2]:
USEG field personnel collected ground-water samples from the newly installed monitoring wells. Results of the laboratory analyses of the ground water collected from these wells are as follows:

a) MTBE was the most widespread constituent detected, with a range from BDL to 71 ug/L.

b) Ethylbenzene (43.1 ug/L), benzene (69.9 ug/L), xylene (90.1 ug/L), toluene (2.82 ug/L), 1,3,5-trimethylbenzene (26.4 ug/L), and 1,2,4-trimethylbenzene (95.6 ug/L) were detected in MW-3 (considered as source well).

c) Total BTEX (205.95 ug/L) and Total naphthalene (119.1 ug/L) were detected in concentrations above the FDEP target levels in the MW-3 ground-water sample.

d) Trimethylbenzene detected in MW-3 ground-water sample exceeded the FDEP guidance concentration of 10 ug/L.

e) Monitoring well MW-8D screened from 25 to 30 feet BLS had a MTBE concentration of 224 ug/L during a March 31, 1995 sampling event. Ethylbenzene (1.09 ug/L) and m & p xylene (1.56 ug/L)were also detected during this sampling event.

f) Horizontal extent of MTBE ground-water impact encompasses a total area of approximately 800 square feet.

g) Horizontal extent of BTEX ground-water impact encompasses a total area of approximately 1,000 square feet.

h) Horizontal extent of Total naphthalene ground-water impact encompasses approximately 600 square feet.

X. May 23, 1995 [3]:
Contamination Assessment Report (CAR) was prepared for the faciity by USEG and approved by the DNRP in order to satisfy a requirement for an Environmental Assessment and Remediation License issued on July 15, 1994.

XI. November 17, 1995 [3]:
Remedial Action Plan (RAP) was prepared for the facility by USEG and submitted to the DNRP for approval.

XII. September 1997 - Remedial Investigation Report [4]:
A **Remedial Investigation (RI)** report for the Florida Petroleum Reprocessors Site was prepared for the USEPA by Bechtel Environmental, Inc.

a) During the FPR field investigation, an attempt was made to sample PMI monitoring wells; however, the wells were not functioning properly (e.g., many had been plugged with concrete), or they were otherwise damaged so as to preclude the collection of representative ground-water samples.

Sources:

1) Contaminant Assessment Plan - Petroleum Management Inc. Facility Submitted to Broward County Office of Natural Resource Protection by Geo Science & Engineering, Inc. November 25, 1992.

2) Tank Closure Assessment / Contamination Assessment Report - Petroleum Management Inc. Submitted to Broward County Department of Natural Resource Protection by U.S. Environmental Group. May 23, 1995.

3) Remedial Action Plan - Petroleum Management Inc. Submitted to Broward County Department of Natural Protection by U.S. Environmental Group. November 17, 1995.

4) Remedial Investigation Report (Draft) - Florida Petroleum Reprocessors Site. Prepared for USEPA by Bechtel Environmental, Inc. September 1997.

TABLE 4
GROUNDWATER LABORATORY ANALYSIS RESULTS

PARAMETER	MCL	MW-1	MW-2	MW-3	MW-13	MW-4	MW-5	MW-6	MW-7	MW-8D	MW-8D
SAMPLING DATE		3/3/95	3/3/95	3/3/95	3/3/95	3/3/95	3/3/95	3/3/95	3/31/95	3/31/95	4/14/95
MTBE (ug/L)	50	20.7	BDL	**56.6**	**71.7**	42.5	13.7	29.5	20.5	224	BDL
BENZENE (ug/L)	1	BDL	BDL	**69.9**	**78.8**	BDL	BDL	BDL	BDL	BDL	BDL
TOLUENE (ug/L)		BDL	BDL	2.82	3.17	BDL	BDL	BDL	BDL	BDL	BDL
ETHLYBENZENE (ug/L)		BDL	BDL	43.1	46.7	BDL	BDL	BDL	BDL	1.09	BDL
TOTAL XYLENES (ug/L)		BDL	BDL	90.13	95.86	BDL	BDL	BDL	1.03	1.56	BDL
BTEX (ug/L)	50	BDL	BDL	**205.95**	**224.5**	BDL	BDL	BDL	1.03	2.65	BDL
HYDROCARBONS, TOTAL PETROLEUM (mg/L)	5	BDL	0.70	0.54	1.2	BDL	0.77	BDL	N/A	N/A	BDL
TOTAL NAPTHALENES (ug/L)	100	BDL	BDL	**119.1**	**117.3**	BDL	BDL	BDL	BDL	BDL	BDL
LEAD (mg/L)	0.05	BDL	BDL	BDL	0.007	BDL	BDL	0.017	N/A	N/A	N/A
CHROMIUM (ug/L)	0.1	BDL	BDL	BDL	0.019	0.008	BDL	0.006	N/A	N/A	N/A
TOTAL TRIMETHYLBENZENES (ug/L)	10	BDL	BDL	**122.0**	**126.4**	BDL	BDL	BDL	N/A	N/A	N/A
4-CHLORO-3-METHYLPHENOL (ug/L)	3000	BDL	BDL	2.8	BDL	BDL	BDL	BDL	N/A	N/A	N/A
CHLOROFORM (ug/L)	6	BDL	BDL	BDL	BDL	BDL	2.12	BDL	N/A	N/A	N/A

NOTES:
BDL = Below Detection Limit.
MCL = Maximum Concentration Limit per FDEP chapter 17-770.730(5)(a) or FDEP June, 1994 Groundwater Guidance Concentrations
N/A = Parameter not analyzed.

Source: **Tank Closure Assessment / Contamination Assessment Report May 23, 1995**