

SOURCE EVALUATION FOR PETROLEUM DISCHARGE:
CONTAMINATION ASSESSMENT REPORT
AND
TEST PIT EXCAVATIONS

PMI TRANSFER FACILITY
3650 SW 47 AVENUE
DAVIE, FLORIDA 33314

PROJECT NO. 145-001-01
REPORT NO. 233

January 29, 1999

Prepared by:

Global Environmental Services

"Committed to improve the quality of life, worldwide"



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Prepared by:

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January 29, 1999

Ms. Luisa Simo
Broward County Department of Natural Resources Protection
Pollution Prevention and Remediation Section
218 SW 1 Avenue
Ft. Lauderdale, FL 33301

Reference: Source Evaluation of Petroleum Discharge:
Contamination Assessment Report and Test Pit Excavations
PMI Transfer Facility
3650 SW 47 Avenue, Davie, Florida 33314
EAR License No. 342
Project No. 145-001-01
Report No. 233

Dear Ms. Simo:

On behalf of our client, Petroleum Management, Inc. (PMI), Global Environmental Services, Inc. (GES) submits the Source Evaluation of Petroleum Discharge affecting the referenced site. The report presents documentation for conducting contamination assessment activities at the PMI facility to evaluate the environmental impact from a discharge at the adjacent facility, Perma-Fix, discovered on October 14, 1996. In addition, by conducting test pit excavations, GES identified a subsurface conduit (i.e. a concrete drainpipe) allowing the discharge to migrate from the off-site Perma-Fix facility south into the PMI facility.

Finally, based on the results of this investigation, GES recommends that Broward County DNRP determine the responsible party for the petroleum discharge detected at the PMI facility since October of 1996. In addition, GES recommends submitting a modification to the Remedial Action Plan (RAP) for the PMI facility.

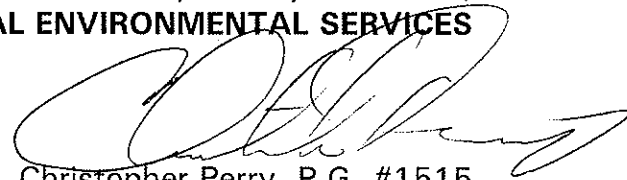
Based upon the results of this investigation, we conclude the following: 1) a large volume of waste petroleum product discharged along the eastern border of the Perma-Fix facility and flowed along the surface and through the subsurface via a concrete drain pipe to the north and south; 2) the discharge migrated south along the surface and through the subsurface via the concrete drain pipe onto the PMI property; 3) the waste petroleum product on the surface was removed by PMI, however, the subsurface waste petroleum product remains in the concrete drain pipe discovered beneath the PMI property; 4) the concrete drain pipe discovered on PMI property revealed several small leaks at the pipe joints that were discharging waste petroleum product into the ground; 5) the soil laboratory results indicate a low environmental impact to the PMI facility and 6) the groundwater laboratory results and field observations indicate a low environmental impact along the north property line of the PMI facility based on one groundwater sample testing BDL for

EPA Method 602 and FL Method PRO and the groundwater appearing clear with no floating product and 7) field observations of persistent free floating product at the PMI monitor wells since October of 1996 presents a potential range of low to high environmental impact to the interior of the PMI property depending on how the free product reacts with the groundwater.

The attached report includes a brief history of the PMI facility, a file review of the adjacent Perma-Fix facility suspected as the source of discharge, a soil assessment over the area of discharge and test pit excavations to identify the subsurface conduit for the discharge. Based on the results of this investigation, GES recommends that the responsible party should conduct IRA activities by removing and disposing of the concrete drainpipe, the waste petroleum product inside of the pipe and any free floating product encountered during the removal process. Because the soil laboratory results indicate a low environmental impact from the discharge, GES believes that extensive soil IRA activities are not warranted after the concrete pipe is removed. In addition, for the discharge from the former underground tanks, GES recommends submitting a modification to the Remedial Action Plan for the PMI facility. After completion of the recommended IRA activities, GES will coordinate a submittal of a RAP Modification that would re-evaluate the soil quality according to the target cleanup levels established in Table IV of the revised FAC 62-770. GES believes that re-sampling and testing the soils for the parameters in Table IV of the revised FAC 62-770 may preclude extensive soil IRA activities proposed in the original RAP for the PMI facility.

In response to the recent letter to PMI from Broward County DNRP dated January 5, 1999, GES requests a time extension to submit the RAP modification contingent upon the completion of the recommended IRA activities by the off-site responsible party, the owner of the Perma-Fix facility. If you have any questions, please contact our office.

Respectfully submitted,
GLOBAL ENVIRONMENTAL SERVICES



Christopher Perry, P.G. #1515
President

CP:cal

cc: Addressee (1)
Broward County DNRP (1) - Lorenzo Fernandez EAR Section Manager
PMI (1) - Judd Gilbert

1-29-99

TABLE OF CONTENTS

SECTION	PAGE
I. INTRODUCTION	4
SITE LOCATION	4
SITE DESCRIPTION	4
SITE HISTORY	4
II. FILE REVIEW OF ADJACENT FACILITY	6
III. CONTAMINATION ASSESSMENT ACTIVITIES	12
SUMMARY	12
SOIL ASSESSMENT	13
LIMITED GROUNDWATER ASSESSMENT	15
IV. TEST PIT EXCAVATIONS	18
V. CONCLUSIONS AND RECOMMENDATIONS	19
CONCLUSIONS	19
RECOMMENDATIONS	19

APPENDICES

APPENDIX A	
SITE LOCATION MAP	A-1
OVERALL SITE PLAN	A-2
SITE DETAIL: SOIL BORING AND MONITOR WELL LOCATIONS	A-3
SITE DETAIL: TEST PIT EXCAVATION	A-4
SITE DETAIL: PRO CONCENTRATIONS	A-5
APPENDIX B	
PHOTOGRAPHS OF SITE CONDITIONS	B-1 THROUGH B-3
APPENDIX C	
BROWARD COUNTY DNRP FILE REVIEW	C-1 THROUGH C-59
CORRESPONDENCE	
APPENDIX D	
SOIL BORING LOGS	D-1 THROUGH D-11
APPENDIX E	
LABORATORY RESULTS	E-1 THROUGH E-23
APPENDIX F	
PMI GROUNDWATER QUALITY, PRE AND POST SPILL	F-1 THROUGH F-12

I. INTRODUCTION

SITE LOCATION

The subject site is located in Broward County, Township 50 South, Range 41 East, Section 25, approximately at the intersection of Oakes Road and Southwest 47th Avenue within the city limits of Davie, Florida. See Appendix A-1 for site location map.

SITE DESCRIPTION

The site is located on a rectangular property having an area of approximately 46,350 square feet (1.06 acres). Improvements at the site include a bermed drum storage area, an aboveground storage tank (AST) area, within secondary containment, a concrete parking area, an office trailer, and various equipment storage or waste storage areas. The western three quarters of the property is covered with concrete pavement. The eastern quarter of the site is unpaved. During storm events, this low lying eastern quarter of the site becomes temporarily flooded. The eastern portion of the site also became temporarily flooded with waste petroleum product from an accidental discharge at the adjacent facility to the north on October 14, 1996. With the exception of the recently discovered concrete drainpipe on the eastern portion of the site, there are no underground utilities located on the subject property. See Appendix A-2 for an overall site plan.

The site is located in an industrial area. The properties to the east and south are used for storage and recycling of automobiles and their parts. The site is bordered on the west by SW 47 Avenue, with industrial warehouses located further to the west. Perma-Fix, a used oil and petroleum waste water recycling facility, is located to the north where an approximate 53,000 gallon discharge of waste petroleum product occurred during October of 1996.

SITE HISTORY

The site has been utilized as a transfer facility for used oil and petroleum waste water storage and separation since 1983. Company vehicles are stored onsite, and light mechanical repair work has been performed at the site. All used oil and petroleum waste water is stored in an AST system within secondary containment structures at the site. Prior to 1983, the site was utilized by a trucking company.

A water sample collected from an onsite monitoring well on September 4, 1992 by Broward County Department of Natural Resource Protection personnel was found to contain levels of soluble hydrocarbons above state target levels. Geo Science and Engineering, a previous consultant, submitted a Contamination Assessment Plan (CAP) to the DNRP on November 25, 1992. The CAP contained resampling results below target levels and recommended a quarterly monitoring program. The CAP was approved and monitoring was performed at the site on a quarterly basis.

Another sampling event of an onsite well was conducted by DNRP personnel on April 22, 1994. The groundwater sample was found to contain levels of soluble hydrocarbons above state target levels. Based on these findings, the Broward County DNRP required the preparation of a CAR as a condition of an Environmental Assessment and Remediation License issued on July 15, 1994.

During September through December of 1994, U.S. Environmental Group (USEG), another consultant, coordinated the removal of two, 4,000 gallon underground storage tanks containing mixed petroleum products. In addition, approximately 374 tons of contaminated soil was removed and disposed from the site. The contaminated soils were excavated over the eastern portion of the site where the later discharge from the Permafix facility flowed across the PMI facility.

During September 1994 through March of 1995, USEG conducted contamination assessment activities related to the discharge from the removed underground storage tanks. The results of the soil assessment indicated that contaminated soils (approximately 875 cubic yards) remained on site to the south and west of the former UST area. The contaminated soil to the east and north of the former UST area (i.e. location of the 1996 offsite discharge from the Permafix facility on to the PMI facility) was excavated and backfilled. The results of groundwater assessment indicated that the contaminated groundwater was limited to the former UST area over a 40-foot diameter area. The groundwater contamination was confined to one well location (MW-3) with moderate concentrations of benzene (69.9 ug/L), total volatile organic aromatics (205.9 ug/L) and total naphthalenes (119.1 ug/L). These concentrations were well within monitoring only guidelines and free floating product was never observed in any of the eight PMI well locations.

U.S. Environmental Group then compiled all tank closure, initial remedial action and contamination assessment activities into a report submitted to Broward County DNRP on May 17, 1995. Based on the results of their report, USEG recommended submittal of a Remedial Action Plan to address the remaining contaminated soil on the site. On May 23, 1995, Broward County DNRP approved the report and requested that a RAP be submitted for the PMI facility.

U.S. Environmental Group submitted a Remedial Action Plan to Broward County DNRP on November 17, 1995. USEG submitted an Addendum to the RAP Broward County DNRP on April 29, 1996. On May 1, 1996, Broward County DNRP approved the RAP for the PMI facility.

On October 14, 1996, the adjacent Perma-Fix facility experienced a large volume discharge (i.e. approximately 53,000-gallons) of waste petroleum product that migrated south onto the PMI facility from both the surface and the subsurface via a concrete drainpipe (see Appendix C for preliminary discharge sketch by regulatory agencies). During IRA activities at the Perma-Fix facility, a concrete drainpipe was discovered with waste petroleum product inside. This drainpipe was removed up to

the north PMI property line and capped off. Shortly thereafter, free floating waste petroleum product appeared in PMI monitor wells MW-1 and MW-3.

The free floating waste petroleum product detected at the MW-1 and MW-3 locations appeared to be from an offsite source (i.e. Perma-Fix). In addition, Broward County DNRP, in several correspondences, requested Perma-Fix to investigate this concrete drainpipe and its potential for impact to the PMI property. However, the investigation of this concrete drainpipe was never conducted. Subsequently, the owner of PMI contracted the services of GES to perform a source evaluation of the petroleum discharge detected at the MW-1 and MW-3 locations.

On December 18, 1998, GES discovered through test pit excavations that the concrete drainpipe traverses the eastern quarter of the site, the pipe is filled with waste petroleum product and the pipe is leaking this waste into PMI property. A Broward County DNRP representative was on site at the time of our discovery of this subsurface conduit for the off-site discharge from the Perma-Fix facility.

II. FILE REVIEW OF ADJACENT FACILITY

SUMMARY

In order to support our argument that the waste petroleum discharge detected at the MW-1 and MW-3 locations was from an offsite source, GES conducted an extensive file review of the adjacent facility to the north, Perma-Fix, located at 3670 SW 47 Avenue, Davie (DNRP EAR No. 00429). The used oil recycling facility began operations as Ross Resource Recovery in the late 1980s. Perma-Fix assumed operations at the site from Integrated Resource Recovery in June of 1994. From October 1996 to present day, the 53,000 gallon discharge at Perma-Fix has been the focal point of DNRP correspondence and consultants have concentrated their plans and work at this area of discharge. Because the waste petroleum product that migrated across the surface was removed quickly from the PMI property after the discharge, our primary concern was the potential subsurface migration of the waste petroleum product via the concrete drainpipe removed from the Perma-Fix property. Numerous photographs taken by Aqua Terra, Inc. personnel of the facility during IRA activities clearly show that the concrete drainpipe extended south past the Perma-Fix property line onto the PMI property. For reasons unknown to GES and the PMI property owner, the excavation of the pipe and surrounding contaminated soils terminated at the PMI property line.

As the Perma-Fix facility proceeded through the conditions of their EAR license (i.e. IRA, CAR and MOP proposal), Broward County DNRP repeatedly informed Perma-Fix to investigate the concrete pipe extending off their property south onto the PMI property. The length of the pipe, its integrity and potential to contain waste petroleum product was never investigated on the PMI property by Perma-Fix. From October 1996 to present, the following highlights were researched pertaining to the

discharge at the Perma-Fix property and the subsequent effects on the PMI property (see Appendix C for copies of correspondence from DNRP file).

FILE REVIEW HIGHLIGHTS

From October 1996 to present day, the discharge at Perma-Fix has figured prominently in the course of events at the facility. Our file review highlights of the discharge include:

- 10-14-96 Discharge at Perma-Fix facility discovered by personnel. The U.S. EPA, Florida DEP, Broward County DNRP, and other local and state agencies are notified and respond to site. Initial estimates indicate 40,000-gallons of waste oil product were discharged from Perma-Fix facility. Soil samples obtained by DNRP personnel indicate elevated concentrations of TPHs in soil. Preliminary sketch of discharge area by DNRP shows flow of waste oil over PMI property. Initial Remedial Action activities begin.
- 10-15-96 Water samples obtained by DNRP personnel indicate elevated concentrations of VOAs (benzene, trimethylbenzene, toluene, xylenes and tetrachloroethene) PAHs (naphthalene) and TPHs in groundwater, stormdrains and canals. IRA activities continue.
- 10-21-96 Broward County DNRP submits Pollution Incident Report for Perma-Fix facility. Perma-Fix submits Notification of Release of Hazardous Materials to Broward County DNRP. IRA activities continue
- 10-25-96 Broward County DNRP requests application for Environmental Assessment and Remediation license from Perma-Fix. Perma-Fix submits IRA progress report and soil sampling program to Broward County DNRP. IRA activities are expanded along east side of property.
- 10-29-96 Broward County DNRP inspects Perma-Fix facility and notes floating product still present. Concrete drainpipe identified, removed and capped off at property boundaries. Concrete pipe contained waste oil product. Broward County DNRP issues letter to Perma-Fix summarizing IRA activities, requesting additional cleanup, soil testing and groundwater testing. Of particular interest is DNRP's request to Perma-Fix to investigate the routing of the concrete drainpipe and to "explore the possibility that the reinforced concrete pipe (RCP) conveyed the spilled material off the property."
- 10-30-96 Perma-Fix submits application for Environmental Assessment and Remediation license to Broward County DNRP.
- 11-7-96 Broward County DNRP issues Environmental Assessment and Remediation license to Perma-Fix.
- 12-16-96 Aqua Terra, Inc., the consultants for Perma-Fix, submit IRA report to Broward County DNRP. The report documented a total of 1,958 tons of contaminated soil and an unknown volume of waste product

and water was recovered and removed from the site. Approximately 53,000-gallons of waste petroleum product was discharged from the site. Of particular interest in the IRA report is the discussion of the concrete drainpipe that was observed to be leaking oil from holes in the concrete. DNRP granted permission to remove this pipe with waste oil product inside yet the removal terminated at the Perma-Fix south property line adjacent to the PMI facility. Aqua Terra gives no explanation why the entire concrete pipe was not removed south of the Perma-Fix property.

- 01-07-97 Broward County DNRP issues approval letter for Aqua Terra IRA report. However, Broward County DNRP requested information on extent of concrete pipe past southern boundary:

"In the above report a pipe containing pollutants was found running north to south on the eastern portion of the property. It appears from the report that the length of pipe from the north to the southern boundary was removed; however, it is unclear on the extent of the pipe past the southern boundary and what has or will be done to prevent this pipe from becoming a conduit for contaminated material in the future. Please specify the pipe length past the southern boundary of the property and the action to be taken to remove or seal its remaining length."
- 02-18-97 Perma-Fix requests first time extension for submittal of CAR to Broward County DNRP.
- 04-08-97 Perma-Fix requests second time extension for submittal of CAR to Broward County DNRP.
- 07-07-97 Aqua Terra submits CAR to Broward County DNRP. The report documented low to moderate concentrations of VOAs (benzene, xylenes, vinyl chloride, MTBE), PAHs (naphthalenes) and lead. The monitor well adjacent to the PMI property (EMW-1) indicated benzene at a low concentration of 1.19 ug/L. No information could be found in the CAR that addressed the DNRP comments in their review letter of the IRA report requesting additional information on the concrete drainpipe that was capped off at the PMI property line.
- 08-07-97 Broward County DNRP issues disapproval letter for Aqua Terra CAR, requesting an addendum report. Primarily, the CAR did not define the extent of the groundwater contamination. Of particular interest is the DNRP comment in the review letter regarding potential groundwater contamination at the PMI facility:

"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."

- 08-22-97 Aqua Terra submits response letter to Broward County DNRP to conduct an addendum to the CAR. Aqua Terra also states that they will conduct research of groundwater analyses prior to and after the spill to ascertain if any impact was made on the groundwater on the PMI property.
- 09-15-97 Broward County DNRP issues a letter to Perma-Fix to be more explicit about the research conducted to interpret groundwater analyses prior to and after the spill at the PMI and adjacent facilities.
- 10-30-97 Aqua Terra submits CAR Addendum to Broward County DNRP. Aqua Terra documents the groundwater quality at PMI facility prior to the spill, but not after the spill. Aqua Terra claims that representative samples could not be obtained from the PMI wells due to obstructions.
- 12-02-97 Broward County DNRP issues disapproval letter for CAR Addendum and MOP proposal. The disapproval was due to continued floating product in one monitor well, lack of maps showing extent of contamination, lack of groundwater elevation data and failure to conclusively exclude the spill as a compounding source of offsite groundwater contamination at the PMI facility. Of particular interest are the DNRP comments made regarding the presence of floating product in PMI monitor wells:

"Research performed by Aqua Terra failed to conclusively exclude the October 1996 spill incident as a compounding source of groundwater contamination on the PMI facility. PMI's May 23, 1995 contamination assessment report (CAR) noted extensive soil contamination; however, FFP was not found on this site. In fact, FFP was reported in monitoring wells at the PMI facility soon after the spill occurred on your site. Please provide the Division with analytical and graphical data to support your argument."
- 12-24-97 Aqua Terra submits letter to Broward County DNRP requesting a meeting with Perma-Fix to discuss additional assessment requirements and requests a time extension to submit the additional information.
- 02-10-98 PMI grants permission to Aqua Terra, Inc. to install monitor wells on PMI property (ATMW-14 and ATMW-15).
- 02-16-98 Aqua Terra submits letter to Broward County DNRP informing them they will provide maps for extent of contamination and groundwater elevation maps. Aqua Terra does not discuss the presence of free floating product in PMI's monitor wells.
- 04-17-98 Aqua Terra submits second CAR Addendum to Broward County DNRP. Of particular interest is the two wells installed on the PMI property. One well, ATMW-15, indicated concentrations of TPHs exceeding site rehabilitation levels. Aqua Terra goes on to state that they see no point in continuing to monitor the groundwater at the PMI facility and requests abandonment of the offsite wells.

- 05-05-98 Broward County DNRP issues an approval letter for the CAR and the two Addendums and requests a proposal for remedial action.
- 06-09-98 Aqua Terra proposes Monitoring Only Plan (MOP) for the Perma-Fix facility.
- 07-25-98 Broward County DNRP issues a disapproval letter for the MOP proposal.
- 09-17-98 Aqua Terra proposes MOP again for the Perma-Fix facility after obtaining additional analytical data and groundwater flow direction. In addition, Aqua Terra requests abandonment of the two off-site monitor wells on the PMI property.
- 10-19-98 Broward County DNRP issues an approval letter for the MOP at the Perma-Fix facility. The MOP does not include any sampling and testing of the off-site wells at the PMI property. No comment is made to the request by Aqua Terra to abandon the monitor wells on the PMI property.

After completing this file review, GES offers the following comments regarding the review and approval process by Broward County DNRP in reference to the off-site impact from the Perma-Fix spill on the PMI property. First, Aqua Terra failed to comply with the comment in the IRA letter to determine the concrete pipe length past the southern boundary and the action to be taken to remove or seal its remaining length, yet Broward County DNRP issued an approval letter for the IRA. Second, Aqua Terra failed to show the groundwater quality in PMI's monitor wells (DNRP personnel confirmed there are no obstructions in the wells) **after** the spill and could not reconcile the presence of floating product in PMI's monitor wells **after** the spill, yet Broward County DNRP issued an approval letter for the CAR. Third, the offsite monitor well ATMW-15 indicated TPHs concentrations in excess of site rehabilitation levels and the southern extent of this groundwater contamination was not evaluated, yet Broward County DNRP issued an approval letter for the CAR. Fourth, the southern extent of the free floating product identified in PMI's monitor wells MW-1 and MW-3 was never evaluated, yet DNRP issued an approval letter for the MOP.

In this investigator's experience with dozens of environmental projects completed through the Broward County DNRP review process, I have never seen approvals granted for projects when the review comments were not addressed. GES requests an explanation from Broward County DNRP why the offsite concerns at the PMI property were never enforced when repeated county correspondence required an investigation on PMI's property since October of 1996.

On December 3, 1998, GES started to evaluate the source of petroleum discharge detected at the PMI facility. A Broward County DNRP representative met with GES on the site and informed us that the off-site monitor wells (ATMW-14 and ATMW-15) were clean, had undergone quarterly monitoring and should be abandoned.

Based on our file review, the off-site monitor wells (ATMW-14 and ATMW-15) were only sampled and tested once in March of 1998 and were never included in the MOP approval letter issued by Broward County DNRP. In addition, one of the wells (ATMW-15) was not clean with TPHs slightly exceeding site rehabilitation levels.

On December 15, 1998, GES spoke with two Broward County DNRP representatives when we learned that approval was granted to abandon the off-site monitor wells on the PMI property only one week after we started our investigation. GES questioned why wells would be allowed to be abandoned without a FDEP No Further Action letter. The DNRP representatives responded that "unnecessary wells" are often granted approval for abandonment without a FDEP No Further Action letter.

Again, GES must question why DNRP would grant approval to abandon wells when they had only been tested once, were not included in the MOP approval and one well tested above site rehabilitation levels for TPHs.

To summarize our file review, GES believes the entire length of the concrete drainpipe should have been excavated during IRA activities instead of capping it at the PMI property line. Because this pipe was never removed, GES believes that the floating product detected at the MW-1 and MW-3 locations on the PMI property was the result of a significant discharge of petroleum waste product through the subsurface via the concrete drainpipe onto PMI property. This off-site, subsurface source affecting the PMI property is supported by both the lengthy history of documented discharge from the Perma-Fix facility and the following:

- PMI removed their subsurface source of contamination (i.e. former USTs) and a large volume of contaminated soil over the eastern portion of the site (i.e. area of the Perma-Fix discharge) in 1994;
- Before October of 1996, free floating product has never appeared in the PMI monitor wells; since October of 1996, free floating product has persistently appeared in the PMI monitor wells;
- Before October of 1996, the groundwater contamination at the PMI facility was confined to the former UST area (i.e. MW-3) and consisted of dissolved concentrations of VOAs and PAHs at monitoring only levels;
- On October 3, 1996, (10 days before the spill), the quarterly groundwater testing at the MW-1 location indicated all VOA compounds and almost all PAH compounds tested below detection limits; weeks later, free floating product appeared at the MW-1 location; and
- On January 9, 1997, after pumping out the floating product from MW-1, the groundwater sample tested above site rehabilitation levels for benzene at 50 ug/L, toluene at 193 ug/L, xylenes at 149 ug/L, phenanthrene at 223 ug/L and naphthalene at 298 ug/L (see Appendix F for groundwater laboratory results).

Based on the histories of the two facilities, GES believes that two separate discharges have been generated from two separate source areas: 1) the former USTs on PMI property at the MW-3 location discovered during 1994 and 2) the existing ASTs on the Perma-Fix property that discharged 53,000-gallons of waste petroleum products of which some entered a concrete drainpipe that extended south across the PMI property adjacent to the MW-1 location during late 1996.

To evaluate potential soil and groundwater contamination from the off-site discharge onto PMI property, we proceeded to conduct a soil assessment and a limited groundwater assessment on the eastern portion of the site. In addition, to identify the subsurface conduit for the discharge, we conducted test pit excavations to locate the concrete drainpipe.

The following field investigation (which should have been conducted by the consultant for Perma-Fix) will show that the concrete drainpipe does extend across the PMI property, the concrete drainpipe is filled with waste petroleum product and the pipe is leaking waste petroleum product into the PMI property.

III. CONTAMINATION ASSESSMENT ACTIVITIES

SUMMARY

During December of 1998, GES conducted contamination assessment activities on the eastern portion of the site. GES conducted eleven soil borings, sampling and laboratory testing to evaluate the soil quality over the area of discharge. Also, GES conducted soil sampling and laboratory testing along the test pit walls to evaluate the soil quality adjacent to the concrete drainpipe. In addition, GES installed one temporary monitor well near the north property line to evaluate the groundwater quality adjacent to the Perma-Fix facility. Also, the groundwater was observed with a bailer on the four permanent wells located on the eastern portion of the site (see Appendix A-3 for soil boring and well locations).

Based on laboratory results obtained on 24 soil samples from eleven soil borings and two test pit samples, GES concludes that the environmental impact to the soil on the PMI property is low. Only three of the twenty-four soil samples tested above the target cleanup level, exposure level #1 at 350 mg/kg for FL Method PRO compounds. None of the twenty-four soil samples tested above the target cleanup level, exposure level #2 at 2500 mg/kg for FL Method PRO compounds.

Based on the laboratory results from one groundwater sample obtained from the temporary monitor well, we found no evidence for EPA Method 602 and FL Method PRO compounds along the north property line. The groundwater sample tested BDL for all EPA Method 602 and FL Method PRO compounds. In addition, the groundwater in the two permanent wells installed by Aqua Terra along the north property line appeared clear with no visible floating product or odors. However, the

groundwater in the two permanent wells within the interior of the site displayed free-floating product.

Based on these field observations, GES concludes that the environmental impact to the groundwater on the PMI property can range from low to high depending on how the floating product reacts with the groundwater. If the floating product does not dissolve into the groundwater, then the environmental impact will be low. However, laboratory test results at the MW-1 location in January of 1997, three months after the spill, suggest otherwise (see Appendix F for pre-spill and post spill laboratory results at the MW-1 location). If the floating product does dissolve into the groundwater, then the environmental impact will not only be high but will compound the previously existing groundwater contamination at the former UST area.

GES believes the best course of action is to remove the free-floating product when the concrete drainpipe is removed by the responsible party.

SOIL ASSESSMENT

On December 3 and 18, 1998, a Lemenze Environmental drilling rig crew, GES project geologist and a Precision Lab field technician were on site to conduct soil borings and sampling to evaluate the soil quality on the eastern portion of the site. The Lemenze Environmental drilling crew advanced a hand auger sampler at 1-foot depth intervals to a total of 4 feet at 5 soil boring locations on December 3, 1998. The Lemenze Environmental drilling crew advanced a geo probe sampler to a total depth of four feet at 6 soil boring locations on December 18, 1998. In addition, two soil samples were obtained from the test pit walls adjacent to the discovered concrete drainpipe. Refer to Appendix A-3 for soil boring and sampling locations. Refer to Appendix D for the soil boring logs.

The following procedure was conducted at each hand auger soil boring:

- advance stainless steel hand auger sampler to 1-foot depth intervals;
- lift hand auger from the borehole every foot in depth to 4 feet in depth;
- observe soils for any used oil staining or odors;
- composite soil samples collected from 0-2 foot depth interval and 2-4 foot depth interval into clean, glass jars (two total samples per boring);
- seal soil samples, pack in ice within cooler and deliver to laboratory.

The following procedure was conducted at each geo probe soil boring:

- insert geo probe sampler to 4-foot depth;
- retract geo probe sampler from the borehole and remove and open sampling tube;
- observe soils for any used oil staining or odors;
- composite soil samples collected from 0-2 foot depth interval and 2-4 foot depth interval into clean, glass jars (two total samples per boring);
- seal soil samples, pack in ice within cooler and deliver to laboratory.

SOIL SAMPLING AND TESTING

The Precision Lab technician collected all soil samples from the eleven soil boring locations and the two test pit wall locations to evaluate the soil quality over the eastern portion of the site. Precision Environmental Laboratory is a FDEP approved (CQAP #920323) and HRS certified (Cert. #E86349, 86413) laboratory to conduct soil sampling and testing. Each soil sample was described in terms of any visual waste oil staining and/or odors. A total of 22 soil samples (two samples per soil boring) were obtained for laboratory testing for FL Method PRO. Also, two soil samples from the test pit walls were obtained for laboratory testing of FL Method PRO. See Table 1 for a summary of the soil quality on the site. Refer to Appendix A-5 for a PRO concentration map. Refer to Appendix E for the laboratory results.

Table 1 PMI Transfer Facility Soil Quality: December 3 and 18, 1998				
	PRO Concentration (mg/kg)		Target Cleanup Level, Table IV	
Boring Location	0' - 2'	2' - 4'	Expo. Level #1	Expo. Level #2
SB-1	110	587	350	2500
SB-2	151	BDL	"	"
SB-3	163	BDL	"	"
SB-4	313	193	"	"
SB-5	515	1.6	"	"
SB-6	1.6	130	"	"
SB-7	4.8	152	"	"
SB-8	8.1	176	"	"
SB-9	7.1	1770	"	"
SB-10	2.3	BDL	"	"
SB-11	2.4	1.5	"	"
Sample Location				
SS-A	28.4	---	350	2500
SS-B	18.7	---	"	"
Note: SB-1, SB-6, SB-7, SB-8 and SB-9 conducted on December 3, 1998 SB-2, SB-3, SB-4, SB-5, SB-10 and SB-11 conducted on December 18, 1998 Target Cleanup Levels per revised FAC 62-770, Table IV				

The 16 soil samples from eight soil borings (SB-2, SB-3, SB-4, SB-6, SB-7, SB-8, SB-10 and SB-11) tested below the target cleanup level, exposure level #1, set at 350 mg/kg according to the revised FAC 62-770, Table IV. Also, three of six soil samples from three soil borings (SB-1, SB-5 and SB-9) tested below the target cleanup level, exposure level #1, set at 350 mg/kg according to the revised FAC 62-770, Table IV. Only three of 22 soil samples tested above 350 mg/kg. Also, the two soil samples from the test pit walls (SS-A and SS-B) tested well below 350

mg/kg. None of the twenty four soil samples tested above the target cleanup level, exposure level #2, set at 2500 mg/kg according to the FAC 62-770, Table IV.

Field observations revealed that soil from six of the eleven soil borings, at the 3 to 4 foot depth interval (i.e. top of groundwater table), displayed used oil staining and odors. These observations occurred primarily west of the concrete drainpipe. In addition, the soil alongside the concrete drainpipe in the test pit excavations was visually stained with used oil. Because the soil west of the concrete drainpipe was clean, white to light brown, medium grain sand (i.e. backfill from PMI soil IRA in 1994) and the soil east of the concrete drainpipe is composed of fine sand, clay and gravel (i.e. soil cover of previous landfill), GES believes that the discharge from the concrete drain pipe migrated mostly west, through the more permeable sand backfill of the former IRA area.

In addition, GES must point out that the white sand backfilled into the former IRA excavation made contact with dissolved phase hydrocarbons (i.e. VOAs and PAHs) at moderate concentrations in the groundwater. No free-floating product or used oil staining was ever observed in the excavation. GES believes that the consistent oil stains and odors noted at the 3 to 4 foot depth, west of the concrete drainpipe, must have resulted from an alternate source of discharge, namely leakage from the concrete drain pipe. Under the old FAC 62-770, these visually contaminated soils would have to be removed and disposed.

Overall, based on the laboratory results of the 24 soil samples, we found no evidence for excessively contaminated soils (i.e. at exposure level #2) on the eastern portion of the site. Based on the laboratory results of 3 of 24 soil samples, evidence exists for soil contamination (i.e. at exposure level #1) on the eastern portion of the site. Based on field observations of visual staining and odors of used oil at 6 of 11 soil borings, evidence exists for soil contamination on the eastern portion of the site.

Based on the results of the soil assessment, GES believes that the off-site environmental impact from the discharge to the soil at the PMI facility is low. This is supported by the following: 1) the relatively low PRO concentrations in the 24 soil samples; 2) the natural attenuation by rainfall and groundwater over the past two and one-half years diluting the soil contaminants; and 3) the possibility that a portion of the discharged waste product had undergone thermal treatment at the Perma-Fix facility, thus lowering the contaminant concentrations prior to discharge.

LIMITED GROUNDWATER ASSESSMENT

TEMPORARY MONITOR WELL CONSTRUCTION DETAILS

On December 18, 1998, a GES project geologist, Lemenze Environmental drilling crew and a Precision Lab field technician were present at the facility to perform a hollow-stem boring for the installation of one temporary monitor well (TMW). The

TMW (TMW-1) was installed adjacent to the ATMW-14 location along the north side of the property. Previous data indicated that the groundwater from ATMW-15 slightly exceeded site rehabilitation levels for FL Method PRO compounds. The TMW was located near ATMW-14 to evaluate the potential for groundwater contamination that may have resulted from the discharge from the concrete drainpipe. Because the concrete pipe was observed to be leaking, a potential exists for petroleum waste discharged from the concrete drainpipe to migrate into the monitor wells on the subject site. The TMW and permanent MW locations are shown in Appendix A-3. The groundwater table is approximately 3 to 4 feet below grade.

Prior to each well installation, the equipment was cleaned to reduce the possibility of cross-contamination of soil and groundwater. The cleaning procedures consisted of:

1. steam jet wash with Liquinox soap to remove attached soil particles
2. potable steam rinse;
3. organic-free deionized water rinse;
4. isopropyl alcohol rinse; and
5. organic-free deionized water rinse.

TMW-1 was installed to a depth of 10 feet (i.e. 6 to 7 feet below the groundwater table) by advancing a one-inch inside diameter (ID) hollow-stem well point beneath the ground surface. The TMW was installed by lowering 10 feet of stainless steel, threaded flush joint, 0.01-inch slotted screen into the borehole. A stainless steel, threaded joint riser was attached to the screen section in order to establish the well above existing grade. The TMW was purged of 5 well volumes of groundwater with Teflon tubing and a peristaltic pump.

GROUNDWATER SAMPLING, OBSERVATIONS AND TESTING

On December 18, 1998, a GES project manager and a Precision Lab field technician proceeded to conduct groundwater sampling for laboratory testing to evaluate the potential for groundwater contamination along the north property line. The TMW installed on the site was sampled according to the Precision Environmental Laboratory Quality Assurance Plan (CQAP #920323). Also, on December 3, 1998, a GES project manager, a Precision Lab field technician and a Broward County DNR representative sampled the groundwater with a bailer from four permanent monitor wells (MW-1, MW-3, ATMW-14 and ATMW-15) for visual observations only.

The TMW was purged of 5 well volumes, the groundwater sample was collected directly from the discharge port of the peristaltic pump and placed in clean sampling containers by the Precision Lab field technician. The groundwater sample was labeled, packed in ice and transported to the Precision laboratory in Miramar, Florida.

Precision Environmental Laboratory was instructed to analyze the groundwater sample (TMW-1/SB-11) for volatile organic aromatics (VOAs) per EPA Method 602 and total petroleum residual organics (PROs) per FL Method PRO. Table 2 summarizes the groundwater quality on the site from the TMW location and our field observations at the four permanent MW locations.

TABLE 2 PMI Transfer Facility Groundwater Quality and Observations: December 3 and 18, 1998			
Monitor Well No.	EPA Method 602	FL Method PRO	Observations
TMW-1	BDL	BDL	Clear, no odors
MW-1	NA	NA	Floating product, 1/4"
MW-3	NA	NA	Floating product, 3/8"
ATMW-14	NA	NA	Clear, no odors
ATMW-15	NA	NA	Clear, no odors
BDL = Below Detection Limits			
NA = Not Analyzed			

The groundwater sample from TMW-1 tested below detection limits for all EPA Method 602 and FL Method PRO compounds. The groundwater samples obtained from ATMW-14 and ATMW-15 appeared clear with no odors. The groundwater samples from MW-1 and MW-3 displayed thin layers of free-floating product.

Overall, based on the laboratory results of one groundwater sample, we found no evidence for groundwater contamination along the north property line. Based on field observations at the ATMW 14 and 15 locations, we found no evidence for floating product along the north property line. However, in March of 1998, the groundwater sample from ATMW-15 tested slightly above SRLs for FL Method PRO compounds. Based on field observations at the MW-1 and MW-3 locations, evidence exists for free-floating, used oil product within the interior of the eastern portion of the site.

Based on these field observations, GES concludes that the environmental impact to the groundwater on the interior of the PMI property can range from low to high depending on how the floating product reacts with the groundwater. If the floating product does not dissolve into the groundwater, then the environmental impact will be low. However, laboratory test results at the MW-1 location in January of 1997, three months after the spill, suggest otherwise (see Appendix F for pre and post spill laboratory results at the MW-1 location). If the floating product does dissolve into the groundwater, then the environmental impact will not only be high but will compound the previously existing groundwater contamination at the former UST area.

IV. TEST PIT EXCAVATIONS

On December 18, 1998, a GES project geologist met with a heavy equipment crew from PMI to conduct test pit excavations on the eastern portion of the site. The purpose of our work was to evaluate the location, length, integrity and contents of the concrete drainpipe by conducting test pit excavations across the eastern portion of the site. A total of 2 test trenches were conducted at areas where the buried drainpipe could be located based on photographs taken by Aqua Terra during IRA activities in October of 1996. The two test pits ranged from 25 to 30 feet in length, approximately 10 feet in width and 4 feet in depth.

The north test pit excavation revealed the presence of an approximate 36-inch diameter, concrete drain pipe oriented north-south, with used oil leaking from the bell coupling joints. The south test pit excavation revealed a continuation of the concrete drainpipe with the orientation changing slightly to the southwest and with used oil leaking from both the coupling joints and holes in the pipe. One hole was so large that we were able to observe the interior of the concrete drainpipe which was mostly filled with waste petroleum product and waste water. The concrete drainpipe appears to be oriented just west of the MW-1 location toward the south property line. At this point in the investigation, we did not ascertain where the concrete drainpipe terminates.

The soil along the side walls of the test pits appeared visually stained with used oil, especially at the coupling joints. Once the groundwater table was breached, a thin layer of free-floating, used oil appeared in both excavations. This may explain why free-floating product has been observed in MW-1 and MW-3 since October of 1996. The absence of product in the MWs along the north property line may be due to the soil and product recovery cleanup that was terminated at the property line combined with removal of as much product from the pipe as possible prior to capping it. However, the slope of the pipe may have trapped additional waste petroleum product beneath the PMI property. Refer to Appendix A-4 for a site detail of the test pit excavations located on the eastern portion of the site. Refer to Appendix B for photographs of site conditions. Table 3 summarizes our observations at the two test pits excavated on the site.

TABLE 3 PMI TRANSFER FACILITY Test Pit Excavations: December 18, 1998		
Test Pit No.	Test Trench Dimensions	Test Trench Observations
North Test Pit	25' x 10' x 4' deep	Buried concrete pipe, corroded joints leaking used oil, soil stained with used oil, floating oil product
South Test Pit	30' x 10' x 4' deep	Buried concrete pipe, corroded joints & holes leaking used oil, soil stained with used oil, floating oil product
Note: Test pits backfilled with excavated material. No floating product was removed.		

V. CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

For this source evaluation of petroleum discharge, GES concludes the following:

- 1) a large volume (53,000-gallons) of waste petroleum product discharged along the eastern border of the Perma-Fix facility and flowed along the surface and through the subsurface via a concrete drain pipe to the north and south;
- 2) the discharge migrated south along the surface and through the subsurface via the concrete drain pipe onto the PMI property;
- 3) the waste petroleum product on the surface was removed by PMI, however, the subsurface waste petroleum product remains in the concrete drain pipe discovered beneath the PMI property;
- 4) the concrete drain pipe discovered on PMI property revealed several small leaks at the pipe joints that were discharging waste petroleum product into the ground;
- 5) the soil laboratory results indicate a low environmental impact to the PMI facility based on low PRO concentrations from 24 soil samples;
- 6) the groundwater laboratory results and field observations indicate a low environmental impact along the north property line of the PMI facility based on one groundwater sample testing BDL for EPA Method 602 and FL Method PRO and the groundwater appearing clear with no floating product and
- 7) field observations of persistent free floating product at the PMI monitor wells since October of 1996 presents a potential range of low to high environmental impact to the interior of the PMI property depending on how the free product reacts with the groundwater.

RECOMMENDATIONS

Based on the results of this investigation, GES recommends that Broward County DNRP determine the responsible party for the petroleum discharge detected at the PMI facility. The responsible party should conduct IRA activities by removing and disposing of the concrete drainpipe, the waste petroleum product inside of the pipe and any free floating product encountered during the removal process. Because the soil laboratory results indicate a low environmental impact from the discharge, GES believes that extensive soil IRA activities are not warranted after the concrete pipe is removed. However, confirmation soil testing should be conducted similar to the testing done when the concrete pipe was removed from the Perma-Fix property.

In regard to the discharge from the former underground tanks at the PMI facility, GES recommends a submittal of a Modification to the Remedial Action Plan for the PMI facility. A re-evaluation of the soil quality according to the target cleanup levels established in Table IV of the revised FAC 62-770 is warranted.

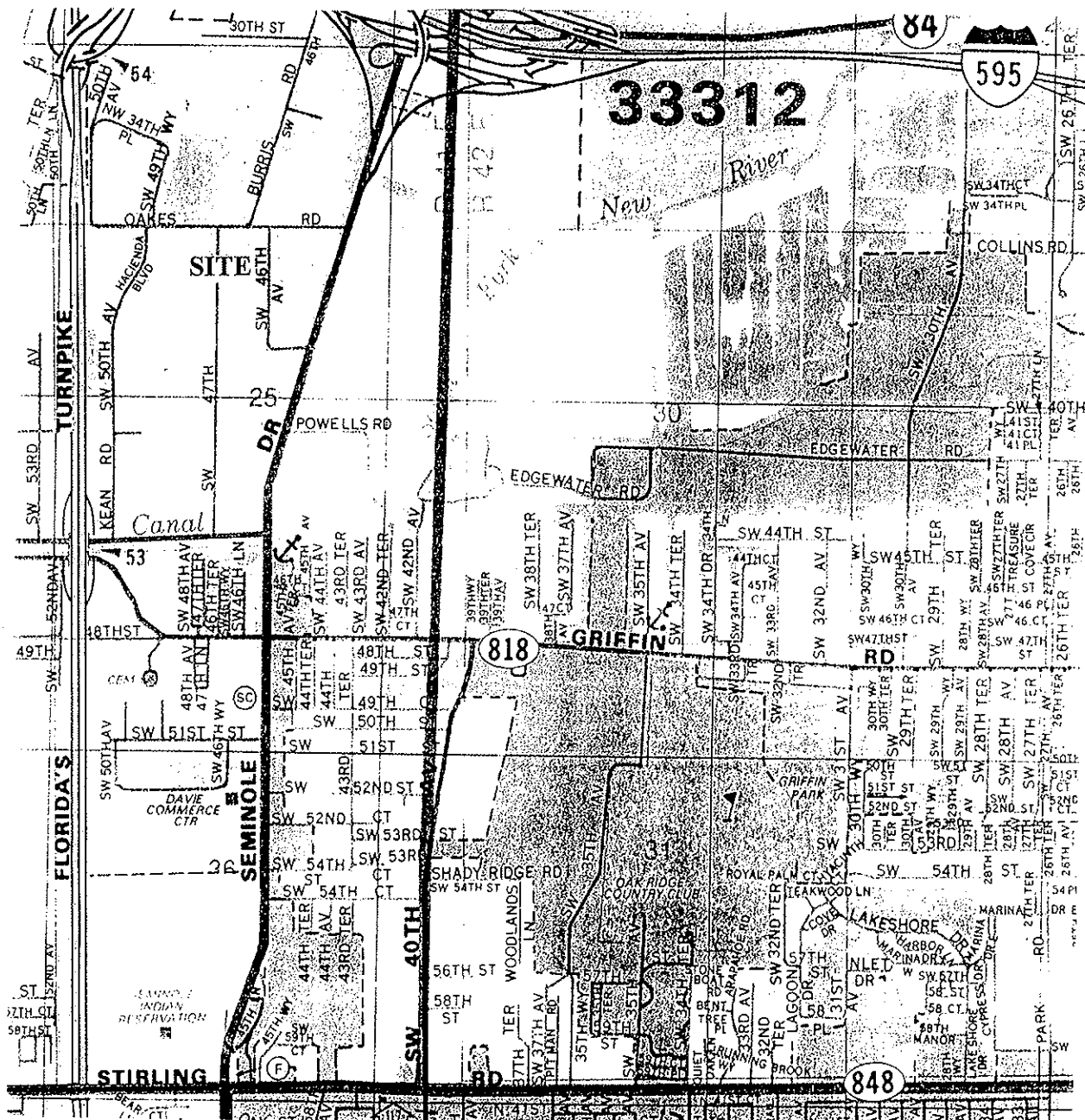
GES believes that re-sampling and testing the soils for the parameters in Table IV of the revised FAC 62-770 may preclude extensive soil IRA activities proposed in the original RAP for the PMI facility. Our concept for the Modification to the RAP would involve conducting a series of soil borings over the contaminated area (i.e. south and west of the former UST area) and obtaining soil samples for testing of EPA Methods 8020 and 8100 and FL Method PRO. Once the soil data is analyzed and compared to Table IV, exposure level #2 of the revised FAC 62-770, then GES can evaluate whether soil IRA activities are warranted for the PMI facility.

Upon review of this report and determination of the responsible party by Broward County DNRP, GES will coordinate the submittal of the RAP modification following completion of the recommended IRA activities by the off-site responsible party, the owner of the Perma-Fix facility.

Please copy GES on the review letter for this report.

APPENDIX A





**GLOBAL
ENVIRONMENTAL
SERVICES**

**SOURCE EVALUATION FOR PETROLEUM DISCHARGE
PMI TRANSFER FACILITY
3650 SW 47 AVENUE
DAVIE, FLORIDA 33314**

SITE LOCATION MAP

DRAWN BY: CL

DATE: 01-05-99

CHECKED BY: CP

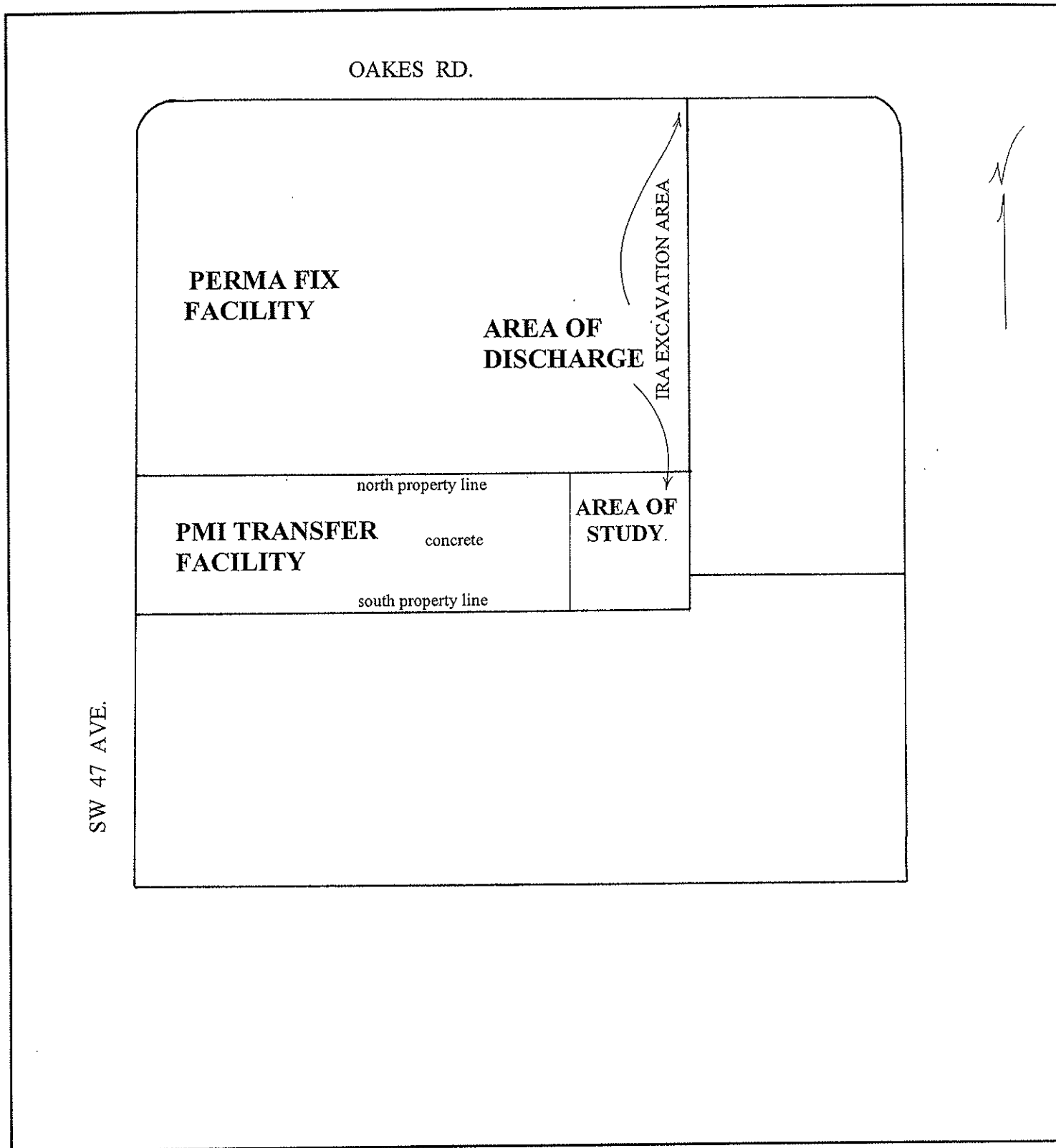
DATE: 01-05-99

SCALE: 1" = 2000'

PROJECT NO: 145-001-01

REPORT NO: 233

PAGE NO: A-1



**GLOBAL
ENVIRONMENTAL
SERVICES**

**SOURCE EVALUATION FOR PETROLEUM DISCHARGE
PMI TRANSFER FACILITY
3650 SW 47 AVENUE
DAVIE, FLORIDA 33314**

OVERALL SITE PLAN

DRAWN BY: CL

DATE: 01-05-99

CHECKED BY: CP

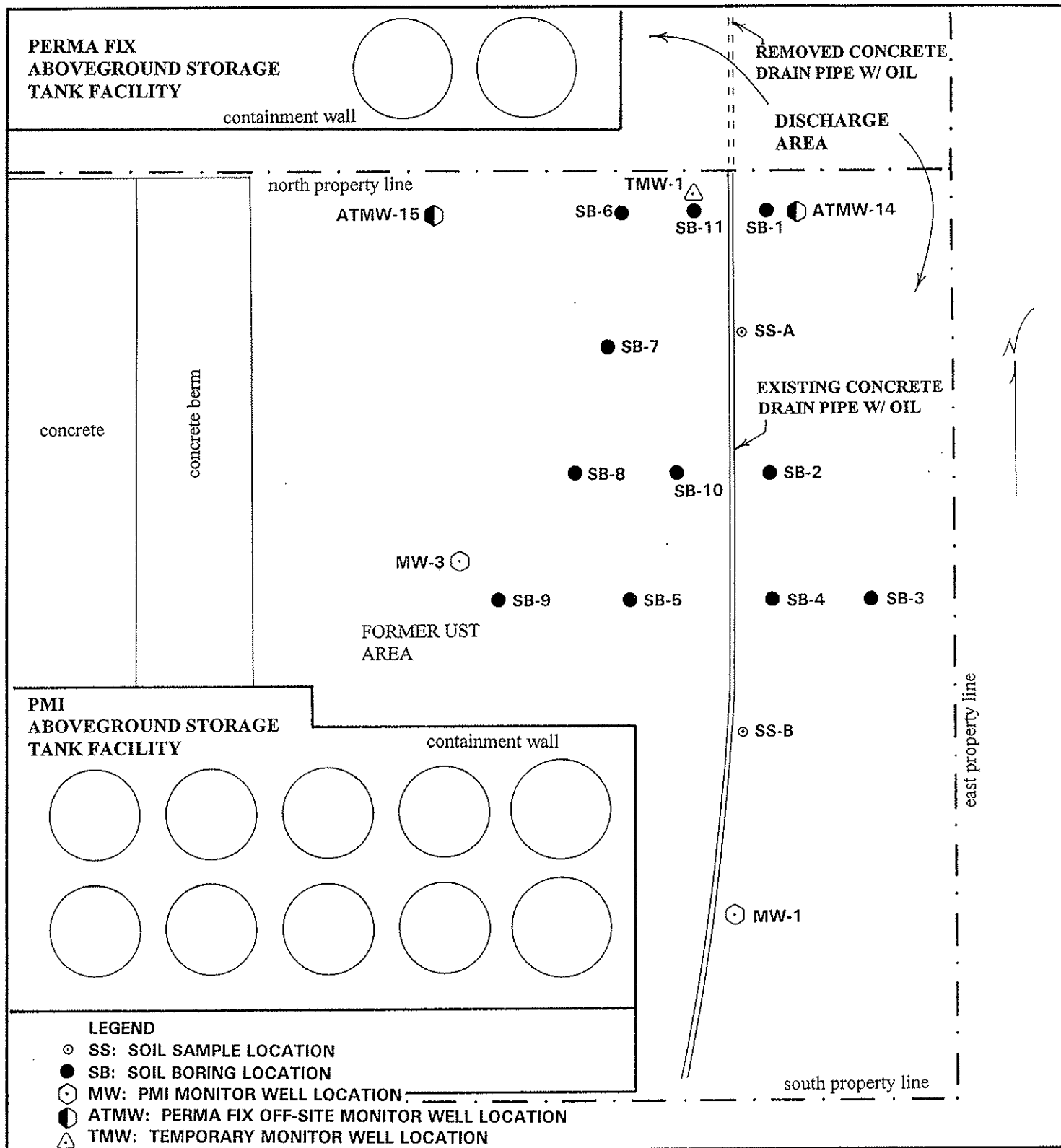
DATE: 01-05-99


SCALE: 1" - 100'

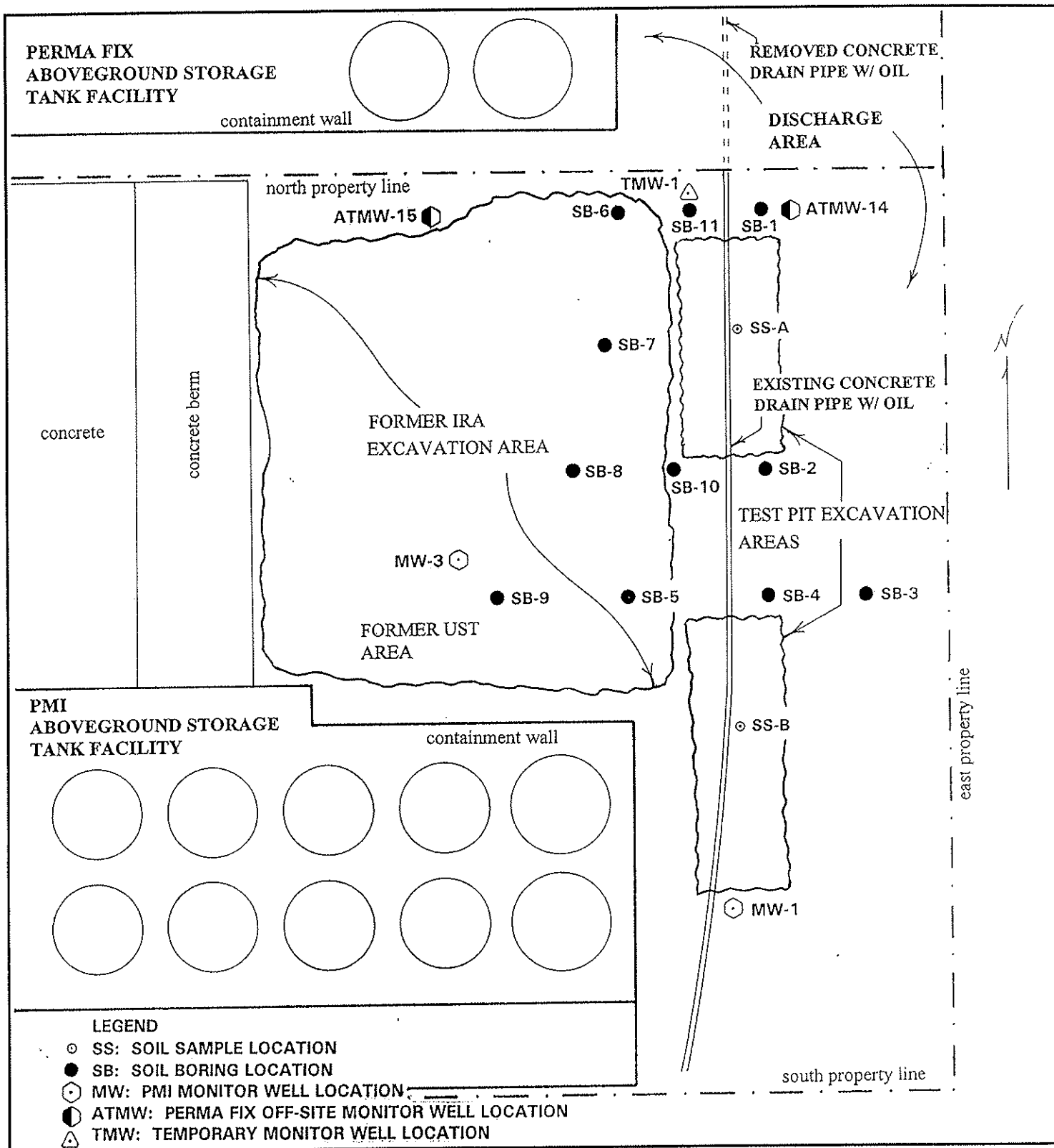
PROJECT NO: 145-001-01


REPORT NO: 233

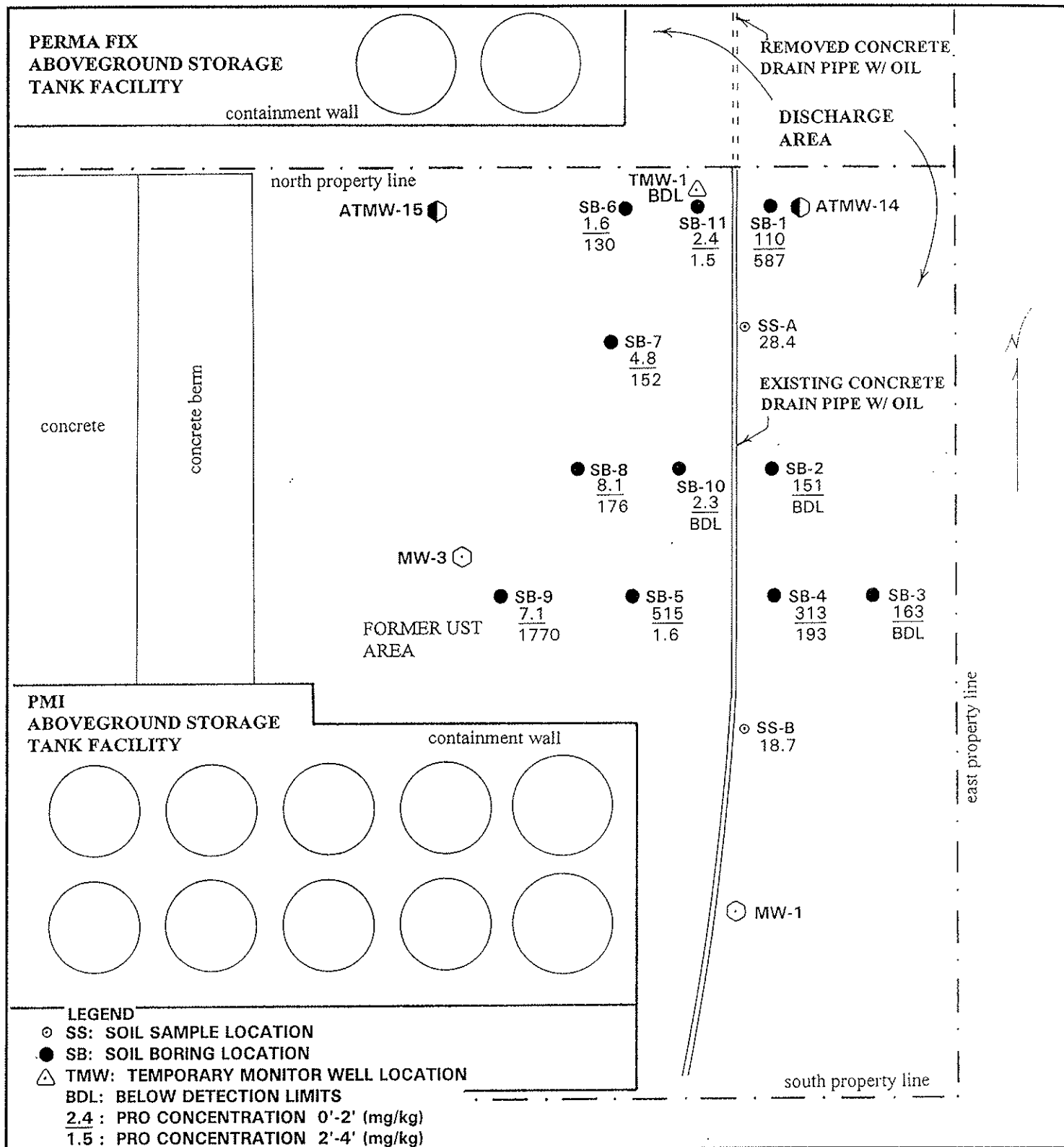
PAGE NO: A-2



 <p>GLOBAL ENVIRONMENTAL SERVICES</p>	<p align="center">SOURCE EVALUATION FOR PETROLEUM DISCHARGE PMI TRANSFER FACILITY 3650 SW 47 AVENUE DAVIE, FLORIDA 33314</p>			
	SITE DETAIL: SOIL BORING AND MONITOR WELL LOCATIONS			
	DRAWN BY: CL	DATE: 01-05-99	CHECKED BY: CP	DATE: 01-05-99
	SCALE: 1" = 15'	PROJECT NO: 145-001-01	REPORT NO: 233	PAGE NO. A-3



 <p>GLOBAL ENVIRONMENTAL SERVICES</p>	<p align="center">SOURCE EVALUATION FOR PETROLEUM DISCHARGE PMI TRANSFER FACILITY 3650 SW 47 AVENUE DAVIE, FLORIDA 33314</p>			
	SITE DETAIL: TEST PIT AND FORMER IRA EXCAVATION AREAS			
	DRAWN BY: CL	DATE: 01-05-99	CHECKED BY: CP	DATE: 01-05-99
	SCALE: 1" = 15'	PROJECT NO: 145-001-01	REPORT NO: 233	PAGE NO: A-4




 <p>GLOBAL ENVIRONMENTAL SERVICES</p>	<p align="center">SOURCE EVALUATION FOR PETROLEUM DISCHARGE</p> <p align="center">PMI TRANSFER FACILITY</p> <p align="center">3650 SW 47 AVENUE</p> <p align="center">DAVIE, FLORIDA 33314</p>			
	SITE DETAIL: PRO CONCENTRATIONS			
	DRAWN BY: CL	DATE: 01-05-99	CHECKED BY: CP	DATE: 01-05-99
	SCALE: 1" = 15'	PROJECT NO: 145-001-01	REPORT NO: 233	PAGE NO: A-5



PLATE I: North Test Pit excavation facing northwest. Concrete drainpipe uncovered in foreground. Permafrix aboveground tank farm in background.



PLATE II: North Test Pit excavation facing north. Concrete drainpipe terminates at chain link fence (property boundary). Permafrix former IRA excavation area in background.



**GLOBAL
ENVIRONMENTAL
SERVICES**

**SOURCE EVALUATION FOR PETROLEUM DISCHARGE
PMI TRANSFER FACILITY
3650 SW 47 AVENUE
DAVIE, FLORIDA 33314**

PLATES I AND II: SITE CONDITIONS

DRAWN BY: CL	DATE: 01-05-99	CHECKED BY: CP	DATE: 01-05-99
SCALE: N/A	PROJECT NO: 145-001-01	REPORT NO: 233	PAGE NO: B-1

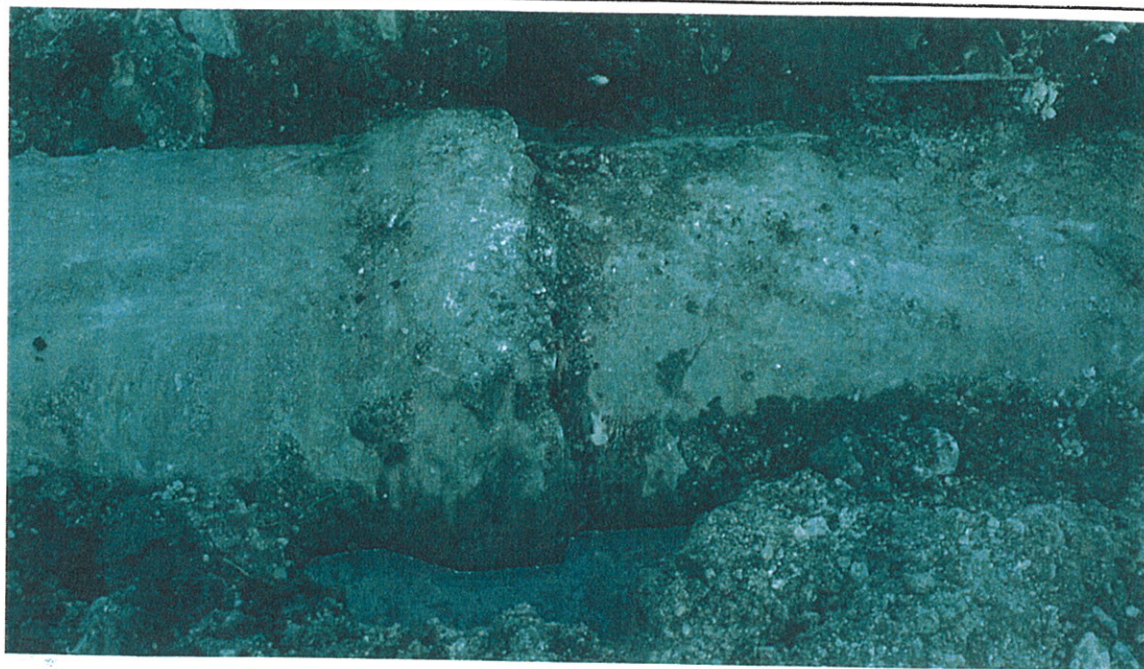


PLATE III: North Test Pit excavation close up of concrete drainpipe. Note leakage of waste petroleum products at pipe coupling.



PLATE IV: North Test Pit excavation close up of concrete drainpipe. Note corrosion of pipe coupling allowing seepage of waste petroleum products.



**GLOBAL
ENVIRONMENTAL
SERVICES**

**SOURCE EVALUATION FOR PETROLEUM DISCHARGE
PMI TRANSFER FACILITY
3650 SW 47 AVENUE
DAVIE, FLORIDA 33314**

PLATES III AND IV: SITE CONDITIONS

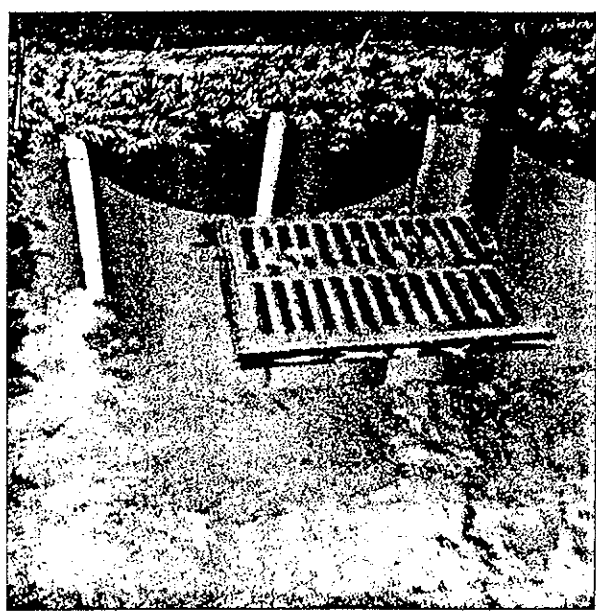
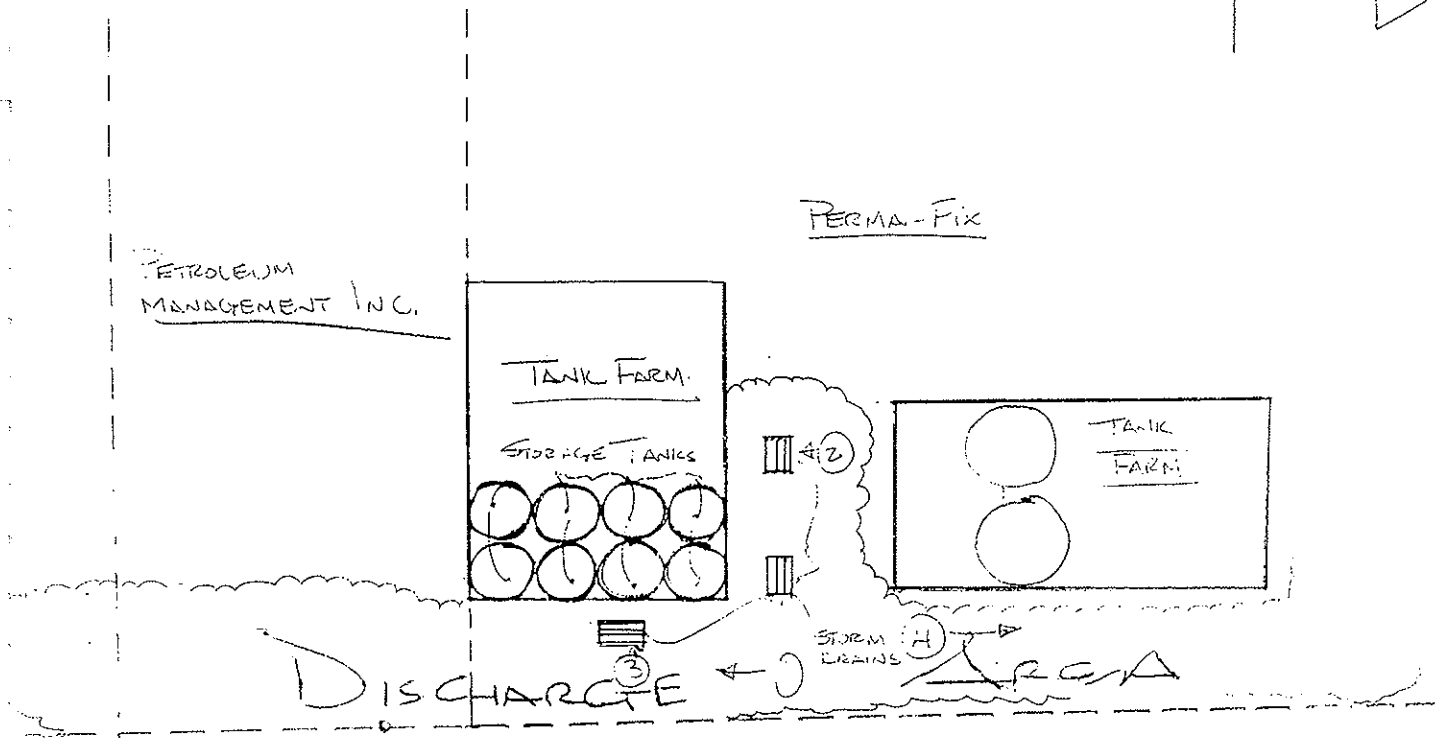
DRAWN BY: CL	DATE: 01-05-99	CHECKED BY: CP	DATE: 01-05-99
SCALE: N/A	PROJECT NO: 145-001-01	REPORT NO: 233	PAGE NO: B-2

APPENDIX C



10-14-96
PRELIMINARY SKETCH OF DISCHARGE
US EPA NOTICE OF POLLUTION INCIDENT
BROWARD COUNTY DNRP COMPLAINT FORM
BROWARD COUNTY FIRE DEPARTMENT REPORT
TOWN OF DAVIE FIRE DEPARTMENT REPORT





PERMA-FIX
STORM DRAIN WITH FREE FLOATING
PRODUCT (3) 10/14/96
SAM



PERMA-FIX
STAINED GRASS AREA WHERE (4) 10/14/96
TRAVELED NORTH DISCHARGE
SAM



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

NOTICE OF FEDERAL INTEREST A POLLUTION INCIDENT

PERMA-FIX INCORPORATED
3701 S.W. 47th AVENUE
SUITE # 109
DAVIE, FLORIDA 33314

Gentleman:

On or about OCTOBER 14, 1996, a pollution incident occurred or threatens to occur at the PERMA-FIX FACILITY in DAVIE, FLORIDA for which you may be financially responsible. Under federal statutes, the United States Government may take appropriate action to minimize or mitigate damages that are threatening or may be caused by this incident.

The [Federal Water Pollution Control Act, as amended (FWPCA)] [(Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA))] authorizes the federal government to respond to this pollution incident. Under this Act, if the owner or operator of the source of a pollution incident fails to take adequate removal actions, the owner or operator may be held financially responsible for any removal actions taken by the federal government. Removal is adequate and being done properly if it is done in accordance with federal and state statutes and regulations and the criteria of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300). If You undertake removal actions, the adequacy of these actions shall be determined by the Federal On-Scene Coordinator (OSC). The OSC for this Site is

CHARLES K. EGER

(404) 562-8741

As long as you are taking adequate actions, federal action will be limited to monitoring the progress of your actions and providing guidance as necessary. [Under the FWPCA, Section 311, your response actions will be considered in determining the amount of any penalty assessed as a result of the discharge.]

If you do not take prompt and appropriate removal actions, a federal response may be initiated. You may be held responsible for all actual costs incurred by the federal government for which you are liable as set forth in [Section 311(f) of the FWPCA]

[Section 107(a) of CERCLA]. Should you require further information concerning this matter, please contact

CHARLES K. EGER

at (404) 562-8742

PAGER

1(800) 443-7243 PIN # 069011.

Sincerely,

Charles K. Eger
On-Scene Coordinator

Received and acknowledged:

Thomas H. Treharne

Witness:

Ann E. Root 10/15/96

Date:

10/15/96



Department of Natural Resource Protection
Division of Pollution Prevention and Remediation Programs
218 S.W. 1st Avenue
Fort Lauderdale, FL 33301

COMPLAINT FORM

(954) 519-1260 • FAX (954) 765-4804

Assigned To: PP-HM-OC

Date: 10-14-96 Time: 0650 Complaint Number: 1096-049

Complainant: TOWN OF DAVIE UTILITIES Phone: _____

Address: _____ Work Phone: _____

City: _____ Zip Code: _____

Subject of Complaint: PERMA-FIX

Address: 3670 SW 47 AVE

City & Zip Code: DAVIE

Description of Complaint: 40,000 GALLON OIL SPILL

FURTHER ACTION TO BE TAKEN	REFERRAL	WEATHER CONDITIONS
<input checked="" type="checkbox"/> No Additional Action Needed	To: _____	Sky: <u>PT CLOUDY</u>
<input type="checkbox"/> Further Investigation	_____	Visibility: <u>GOOD</u>
<input type="checkbox"/> Monitor	Section: _____	Wind _____
<input type="checkbox"/> Citation Warning	Date: _____	Direction: <u>VAR</u>
<input type="checkbox"/> Citation		Velocity: <u>5-10</u>
<input type="checkbox"/> Warning Notice		
<input type="checkbox"/> Notice of Violation		

Investigator's Name: MAXWELL

BROWARD COUNTY BOARD OF COUNTY COMMISSIONERS — An Equal Opportunity Employer and Provider of Services

Scott I. Cowan Suzanne N. Gunzburger John P. Hart Lori Nance Parrish Sylvia Pottier John E. Rodstrom, Jr. Gerald F. Thompson

We're Building A Future For Your Family. And Your Business.

INVESTIGATOR'S REPORT

Investigator's Name: MAXWELL

Time on premises: IN: 0715 OUT: 1040 Date: 10-14-96

Investigator's Findings/Recommendations: I arrived at this facility and met with manager Chris Blanton, Davie FD, and Hollywood Haz Mat Team. I later also met with FDEP, USCG, EPA, FBI. Upon my arrival I observed that the spilled oil had filled the facility's tank farm secondary and tertiary containment, and had flowed both to the north and to the south off the Perma-Fix property. To the north of the property an undetermined amount of the oil had entered the storm drain at the north east corner of the property. I also observed an undetermined amount of the oil in the storm drain across Oakes Road from the Perma-Fix property. During IRA activities Perma-Fix has recovered free product, excavated and disposed of petroleum contaminated soils, pumped out portions of the affected storm drain system,

For the next several days the Emergency Response Section monitored the IRA activities and collected DNRP samples 59795, 59796, 59765, 59766, 59767, 59768, 59769, 59786, 59787, 59788, 59789, 59790 (results attached). I also prepared and submitted a Pollution Incident Report (PIR) to the EAR Section (PIR attached). Since the IRA has been completed, and this case turned over to DNRP S. McFarlane, no further action by this section is needed. Recommend complaint be closed.

Date Complainant Contacted: 10-14-96 Method: IN PERSON

Date Complaint Closed: 11-14-96

But Maxwell
(signature of investigator)

Date of Review: _____

(signature of supervisor)

Town of Davie Fire Department

ALARM REPORT

Emergency - 911 6905 Orange Drive, Davie, Florida 33314 Business 797-1090

Date Mon, October 14, 1996 Time received 06:25 Fire Station 38 Alarm # 5915
How received PAGE Received by ALL PERSONNEL Reported by BCFC-0624
Alarm type Hazardous material Incident Location 3670 SW 47TH AVE
Cause of Alarm OIL SPILL PERMA-FIX
Officer in Charge BC BURG Fire Out ☐ YES ☐ NO ☒ NA
Hazardous Materials Involved ☒ Yes
Relieved from command by N/A Time in command DURATION
Dismissed by COMMAND Time alarm completed 0758
Owner/Lessee/Victim PERMA-FIX
Address 1940 NW 67TH PLACE City GAINESVILLE State FL
Tel # 373-6066
Size of Build _____ # Levels _____ Bldg Const CBS ☐ Frame ☐ Brick ☐ Other ☐
Make _____ Type _____ Year _____ Tag # _____
Age _____ M ☐ F ☐ BP _____ Pulse _____ Resp _____

TIME UNITS RESPONDING

Eng 38 _____ Eng 138 0628 P 38 _____ Eng 68 _____ Eng 91 _____ BC 38 0626
Other Hazemat-13 0631 Other Hazemat-32 0652 Other _____ Other _____

TIME UNITS ARRIVAL

Eng 38 _____ Eng 138 0635 P 38 _____ Eng 68 _____ Eng 91 _____ BC 38 0635
Other _____ Other Hazemat-32 0702 Other _____ Other _____

TIME UNITS RETURNING

Eng 38 _____ Eng 138 0758 P 38 _____ Eng 68 _____ Eng 91 _____ BC 38 0758
Other Hazemat-13 0631 Other Hazemat-32 ? Other _____ Other _____

TIME UNITS IN STATION

Eng 38 _____ Eng 138 _____ P 38 _____ Eng 68 _____ Eng 91 _____ BC 38 _____
Other _____ Other _____ Other _____ Other _____

FD personnel at alarm 4 # injured 0 # fatality 0
civilian personnel 0 # injured 0 # fatality 0

REMARKS: (see other side) ()
RESPONDED TO A REPORT BY DPD THAT A N OIL SPILL HAD OCCURED AT PERMA-FIX. UPON ARRIVAL WE WERE ADVISED BY DPD THAT THEY HAD RESPONDED TO A BURGLARY CALL AND FOUND THAT A NUMBER OF FIXED-UP-RIGHT OIL CONTAINERS AND A NUMBER OF OIL TANKERS HAD BEEN VANDALIZED. UPON INVESTIGATION IT WAS FOUND THAT THE VALVE STEMS ON THESE CONTAINERS HAD BEEN BROKEN OFF AND THE WASTE OIL HAD BEEN LEAKING. THERE WAS NO IMMEDIATE HAZARD OTHER THAN ENVIRONMENTAL. HAZEMAT 32 WAS REQUESTED ALONG WITH DNR AND THE COAST GUARD. HAZEMAT AND DNR ARRIVED ON SCENE AND IT WAS DETERMINED THAT THE OIL HAD SPILLED AND OVERFLOWED THE CONTAINMENT AREAS. IT WAS FURTHER DETERMINED BY DNR THAT THE DRAINS WERE NOT STORM DRAINS BUT FRENCH DRAINS. CHRIS BLANTON OF PERMA-FIX ESTIMATED THAT THE PRODUCTS THAT HAD LEAKED WERE DIESEL OIL, #5 MOTOR OIL AND WATER. IT WAS FURTHER ESTIMATED THAT THE AMOUNT OF THE PRODUCTS WAS APPROX. 65,000 GALLONS.
DNR ADVISED COMMAND THAT THERE WAS NO FURTHER NEED FOR FD AND THAT THEY WOULD ASSUME RESPONSIBILITY FOR THE SPILL. COMMAND WAS TERMINATED AND ALL UNITS RETURNED. ATTACHED ARE CARDS FOR BRET C. MAXWELL (DNR REP) AND CHRIS BLANTON (PERMA-FIX).

LT [Signature]
OFFICER MAKING REPORT

50-5 HW 3-104 95
FIRE CHIEF



BROWARD COUNTY, FLORIDA
UNIFORM HAZARDOUS MATERIALS
ENGINE COMPANY REPORT



Fire Dept. of Jurisdiction: DAVIE F.D. Date: 10/14/96

Person Making Report: LT BRIAN NOLTE Incident #: 5915

Hazardous Materials Involved:

U.N. ID#	CHEMICAL NAME	EST. QTY.

Name of Spiller: Perma Fix
(company name, vehicle owner, occupant, etc.)

Address of Spiller: 3670 SW 47TH AVE, DAVIE FL.
(include City & Zip Code)

Alarm Time: 0625 Arrival Time: 0635 In-Service Time: 0758

What Happened: A NUMBER OF TANKERS AND STORAGE TANKS HAD BEEN VANDALIZED WITH THE VALVE STEMS BROKEN OFF. RESULT WAS UP TO 65,000 GAL OF WASTE OIL AND Diesel Spilling on Ground

Was a Body of Water Affected? Yes ☒ No ☐ AS DETERMINED BY DNR.

If yes, describe: _____

Was BSO Duty Officer Notified? ☒ Yes ☐ No Time: 0624

Summary of Action Taken: DNR WAS CONTACTED AND ASSUMED CONTROL OF SCENE. DNR ADVISED THAT THE FD WAS NOT NEEDED @ THIS TIME

Incident Commander: BC. BUNGS

Type of DECON Used: NONE BY DFD

Print Name: BRIAN NOLTE

Signature: [Signature]

OFFICE OF NATURAL
RESOURCE PROTECTION
NOV-8-1996
4:05 PM

10-21-96
BROWARD COUNTY DNRP POLLUTION INCIDENT REPORT
PERMA-FIX NOTIFICATION OF RELEASE



Environmental Assessment and Remediation

POLLUTION INCIDENT REPORT

This form should be filled out for any sites where releases or other activities have resulted in the contamination of soil or water to the extent that further assessment and/or remediation may be necessary. This form should be submitted to Lorenzo Fernandez, P.E., Manager, Environmental Assessment and Remediation Section of DNR, along with analytical data and any other documentation related to the incident. Incomplete reports will be returned.

<u>PERMA-FIX ENVIRONMENTAL</u>	<u>(954) 583-3795</u>
Property Owner	Telephone
<u>3701 SW 47 AVE, SUITE 109, DAVIE, FL, 33314</u>	

Mailing Address

Lessee	() Telephone
--------	------------------

Mailing Address

Facility Name _____ Telephone _____

Address

ENVIRONMENTAL CONSULTING/CLEANUP CONTRACTOR
Type of Business

<u>WASTE OIL</u>	<u>APPROX 40,000 GAL</u>	<u>UNKNOWN</u>
Type(s) of Material Discharged	Amount	Duration

Description of incident. Be specific. (was release to water, soil or pavement)

WASTE OIL RELEASED TO SOILS, STORM DRAINS, AND FRENCH DRAINS. DURING IRA
ACTIVITIES FREE FLOATING PRODUCT HAS BEEN OBSERVED ON THE SURFACE OF THE EXPOSED
GROUNDWATER.

BRET C MAXWELL 10-21-96
Inspector Date

Revised 08/12/94

Description of Inspector's instructions to onsite person.

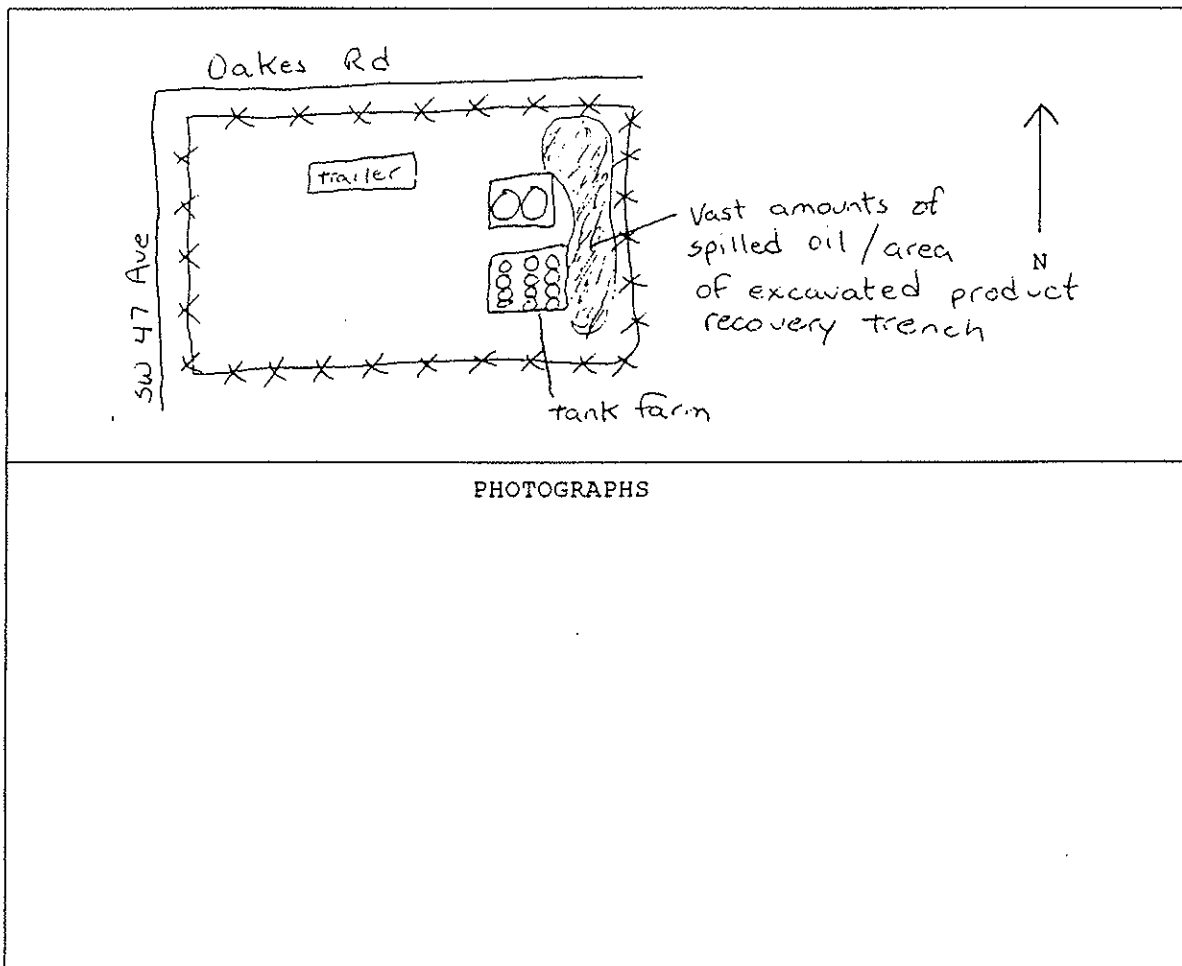
CONTINUE WITH IRA ACTIVITIES TO RECOVER AS MUCH OF THE SPILLED MATERIALS AS POSSIBLE.

Name of onsite person CHRIS BLANTON

Affiliation PERMA-FIX

Site Map

Show cross streets, north arrow, location of discharge, any other landmarks (canals, wells, RR tracks, etc.)

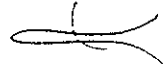


PHOTOGRAPHS

Received By _____

Date _____

PERMA-FIX
ENVIRONMENTAL SERVICES

10/20/96
LILLIAN
COPY TO: BRETT
SEAN L. STEIN
LOREN
J. STEIN
G. STEIN
original to
my file
T. Stein


October 21, 1996

Mr. Kevin M. Burger
Director
Pollution Prevention and Remediation Division
Broward County Commission Department of Natural Resources
218 SW 1st Avenue
Fort Lauderdale, Florida 33301

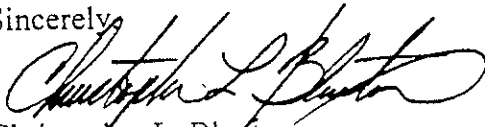
CERTIFIED MAIL

Dear Mr. Burger:

Pursuant to Section 27-355(a)(1) please accept this notification of the release from the Perma-Fix of Fort Lauderdale facility.

Should you require information that is not contained in the attached document, please contact me at your convenience.

Sincerely,



Christopher L. Blanton
General Manager

Attachment: Notification Document (Broward County Code: Section 27-355(a)(1))



Notification: Release of Hazardous Material

Broward County Code Section 27-355(a)(1)

Location of Release:

Perma-Fix of Fort Lauderdale, Inc.
3670 SW 47th Avenue
Davie, Florida 33314

Description of Incident:

At approximately 5:30 am on October 14th, Shawn Lennon, Operation Coordinator, discovered that the valves on five oil storage tanks had been sheared off at the tank. At this time, he noticed that secondary containment, tanker loading containment, and the grassed area behind the storage had been filled with oil.

Description of Actions Taken:

Immediately following discovery of the release, Shawn Lennon notified the Davie Police Department. The area was sectioned off and the local Hazardous Materials team assessed the situation. Following the assessment, Perma-Fix initiated stabilization of the area.

A vacuum truck was immediately positioned at the north side of the plant to withdraw any spilled material from the storm sewer system and a small dike was built to prevent any further contamination. Booms were placed in the canal at the outlet of the storm drain system to contain any material that may have already entered the sewer system. Once this was completed, primary and secondary containment were pumped and cleaned so that the coming rain would not increase the amount of material spilled. Once this was completed, free material was removed from the ground via a vacuum truck. Excavation of the site followed immediately in conjunction with the skimming of the standing water located on PMI's property.

DNRP, FDEP, and Region IV EPA were all notified of the spill and representatives from each organization were on site for all future planning of the emergency response.



Laboratory Analysis:

Please see the attached copies of the laboratory analysis run on the soil removed from the site. The material was profiled into Rinker Materials for incineration.

Attachments: Analytical from three soil composites for Rinker pre-burn.

**10-25-96
PERMA-FIX IRA PROGRESS REPORT**



PERMA-FIX
ENVIRONMENTAL SERVICES

October 25, 1996

Mr. Lorenzo Fernandez
Broward County Department of Natural Resource Protection
218 SW 1st Avenue
Ft. Lauderdale, Florida 33301

RE: Initial Remedial Action at Perma-Fix of Ft. Lauderdale, Inc. located at 3670 SW 47th Avenue, Davie, Florida

Dear Mr. Fernandez:

Since October 14, 1996, Perma-Fix has been performing an initial remedial action due to the spill that was discovered October 14, 1996 at the above referenced facility. During the entire time, Aqua Terra, Inc. has been involved with the supervision of the initial remedial action which included recovery of free product, excavation of the contaminated soil, and proper disposal of the materials removed. Per our conversation of this morning, Perma-Fix and Aqua Terra propose to collect samples to verify that all contaminated soil has been removed. The method and frequency of collection will be as follows:

1. All soil samples collected will be analyzed using FL-PRO by GC/MS by a State of Florida certified laboratory.
2. Samples acquired in the vicinity of the former French Drain system will be collected from the walls of the excavation at a distance of 15 feet between sampling locations and in one foot intervals to the top of the water table.
3. Samples taken outside the area of the former French Drain system will be acquired from the walls of the excavation at a distance of 40 feet between sampling locations and in one foot intervals to the top of the water table.
4. Surface soil samples will be collected at a distance of 40 feet between sampling locations outside of the excavation.

Sampling has be tentatively scheduled for Monday, October 28, 1996. We will wait for your response to this letter prior to conducting any soil sampling activities. Should you have any questions or require additional information, please do not hesitate to call us at (954) 583-3795.

Sincerely,



Christopher L. Blanton
Perma-Fix of Ft. Lauderdale, Inc.



Richard K. Meyers
Aqua Terra, Inc.



SAM



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

October 25, 1996

CERTIFIED MAIL
P 520 971 367

Chris Blanton
Perma-Fix Environmental
3701 SW 47th Avenue
Suite # 109
Davie, FL 33314

RE: Perma-Fix Environmental facility, located at 3670 SW 47th Avenue, Davie, FL 33314

Dear Mr. Blanton:

The Pollution Prevention and Remediation Programs Division has received documentation notifying this agency of the presence of Petroleum contamination in the soil and groundwater at the referenced site.

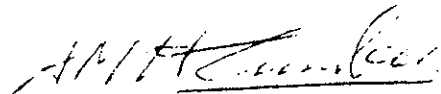
Please be informed that Section 27-356(e) of the Broward County Natural Resource Protection Code requires detailed assessment and remediation of any and all contaminants to soil and/or groundwater in a manner conforming to the Code, under License, in strict compliance with all provisions thereof.

For your convenience, we are enclosing the necessary Application for an Environmental Assessment and Remediation (EAR) License. Please complete, sign, and return this form with the appropriate fees to this office for processing within fourteen (14) days from the date of receipt of this letter to avoid enforcement procedures.

Please direct any questions you may have about this matter to Sean McFarlane at (954) 519-1406.

Sincerely,

DIVISION OF POLLUTION PREVENTION AND REMEDIATION PROGRAMS


Abdul Cumber, P.E., Engineer IV
Environmental Assessment and
Remediation Section

SAM:sam

cc: Kevin M. Burger, Director, PPRP Division
h: wpltrs perma.ltr

10-29-96
BROWARD COUNTY DNRP INSPECTION REPORT
BROWARD COUNTY DNRP IRA REVIEW LETTER





MEMORANDUM

DATE: October 29, 1996
TO: File
FROM: Sean A. McFarlane, Engineer II *SA*
RE: Site visit to the Perma-Fix facility located at 3670 SW 47th Ave., Davie FL 33314

On the above date, a site visit was performed at the above referenced address to observe Initial Remedial Action (IRA) activities. Accompanying me was Lorenzo Fernandez, P.E., EAR Section Manager and Kevin Burger, PPRP, Division Director.

A 4'x4' excavation running approximately 260 feet north to south and 40 feet west (along NE corner of the impacted Tank Farm) was observed in the area of discharge and where visible contamination was detected. Free Floating Product (FFP) in the northern end of the excavation trench was seen at the time of this visit. Fill material was also observed to be recently placed on the sides of the trench.

During excavation activities a 36-inch concrete pipe was found approximately 3 feet below land surface. This pipe ran north to south along the eastern property line and was removed from the site. The pipe was capped at each end with concrete as it entered Oakes Road to the north and the Petroleum Management Inc.(PMI) facility to the south.

Based on information from the site's environmental consultant (Richard Meyers of Aqua Terra, inc.), the removed pipe contained an "oil-like" product. Additionally the source of this "oil-like" product was not determined; however, the product found is being assumed to be as a result of the discharge incident (note: no samples were taken of the product found in the pipe).

The consultant also noted that the catch basins to the north, on Oakes Road, were impacted by the discharge and were pumped of any visible FFP. Also a boom was placed on the canal to the east to capture any product which may have entered the catch basins and flowed into the storm sewer system which runs into this canal.

Proposed sampling for the soil along the walls of the excavation is presently being reviewed by this Division.

h:\wpltrs\perma.mem



October 29, 1996

Mr. Christopher Blanton, Plant Manager
Perma-Fix Environmental Services
3701 SW 47 Ave.
Davie, FL 33314

CERTIFIED R.R.R. #P414573447

RE: October 14, 1996 waste oil release at the Perma-Fix Davie, FL.. facility

Dear Mr. Blanton:

This letter acknowledges that the Pollution Prevention and Remediation Programs Division (the Division) has received and reviewed your Release Notification for the October 14, 1996 waste oil release at your Davie, FL. facility. Receipt of this written notification of the incident conforms with the requirements established in Section 27-355(a)(1) of the Broward County Natural Resource Protection Code (the Code).

The Division has monitored the Initial Remedial Actions (IRA) for the release including recovery of free product, excavation of the french drain system, and excavation/disposal of petroleum contaminated soils. We have also collected environmental samples of the spilled material from the Perma-Fix property, the adjacent storm water drainage system, the canal into which the drainage system discharges, and the property located adjacent and to the south, of the PMI facility. The Division plans to continue monitoring IRA activities until all visually contaminated soils are excavated from the impacted areas and the excavations are backfilled.

It is this Division's understanding that an estimated 40,000 gallons of the oil were released into the secondary and tertiary containment of the tank farm and onto the adjacent soils. We will require you to provide in writing as soon as possible the most current estimate of the quantity of the release including relevant records of the tanks' inventories prior to this incident.

The Division also requires that you complete activities, which in some cases may already be in progress, for the following tasks no later than 14 days after your receipt of this letter:

- Inspect and clean as necessary the storm drain system running parallel and adjacent to the northern boundary of your facility. After the discharge, oil was observed in the storm drains at the northeast corner of the property and directly across Oakes Road to the north, and was also observed in the canal into which the storm drain system discharges (located to the east of the facility).
- Complete the excavation of soils impacted from the release. Note that analytical confirmatory samples of the soils on the sides of the excavation pit above the water table (and the bottom of the pit if above the water table) must be collected at a minimum frequency of one sample per 15 linear feet and at one foot intervals to the top of the standing water in the trench for the immediate vicinity of the containment area and the french drain system. A minimum frequency of one sample per 20 linear feet and at one foot intervals to the top of the standing water will be permitted in the remaining area of the trench to the north of the tank farm and french drain. These samples must be analyzed using the Florida Petroleum Range Organics (TPH-FL-PRO) method to demonstrate

to the Division that all contaminated soils have been removed.

If the sample results indicate that elevated levels of contamination remain in the pit, further excavation and/or remediation activities may be required. The analytical results for these samples must be reviewed and approved by the Division prior to backfill of the excavation. If backfilling of the pit is of an urgent nature due to a hazardous condition (ie: potential structural weakening/collapse of the tank farm containment structure), you may backfill the area prior to the review of the confirmatory samples. However, the Division reserves the right to require further excavation and/or remediation activities if the sample results reveal the presence of residual contamination. The Division also recommends the use of a fill material that will facilitate future storm water drainage on the property.

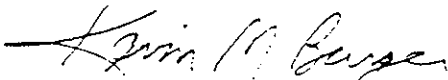
- An evaluation of the current groundwater quality at the facility by sampling and analyzing of the onsite groundwater monitoring wells for EPA Methods 8260 and 8270 must be conducted. The analytical data, along with historical analytical data from these wells should be provided in writing to this Division. Note that the installation of more groundwater monitoring wells may be required as part of your Environmental Assessment and Remediation (EAR) License.
- Investigate the routing of the reinforced concrete pipe (RCP) which was discovered parallel to the east of the tank farm containment structure. Explore the possibility that the RCP conveyed the spilled material off the property.

In addition to reporting to this Division on the completion of the activities as identified above, please submit the Initial Remedial Action report as discussed in our meeting on October 29, 1996, to the attention of Mr. Sean McFarlane at the address indicated above. Please copy the Division through Mr. McFarlane on all future reports, analytical data submissions, disposal manifests, and correspondence with other regulatory entities concerning this incident.

Due to the likelihood of groundwater contamination as a result of this release and pursuant to Section 27-356(e)(2) of the Code, this Division will require you to obtain an EAR License (an application for this license is enclosed). This license will require an assessment of the environmental impacts of the release and will serve as the basis for defining any additional remediation activities that may be necessary. If you have any questions or need more information about the license or the licensing process, please feel free to call Mr. Sean McFarlane at 519-1406.

Sincerely,

DIVISION OF POLLUTION PREVENTION & REMEDIATION PROGRAMS



Kevin M. Burger, Director

Enclosure: Application for Environmental Assessment and Remediation License.

cc: ssomerville

gstephens

smcfarlane

lfernandez

bmaxwell ✓

**10-30-96 AND 11-7-96
PERMA-FIX APPLICATION FOR EAR LICENSE
PERMA-FIX EAR LICENSE**





OFFICE OF NATURAL
RESOURCE PROTECTION
95 NOV -5 AM 10:02

OFFICE OF NATURAL
RESOURCE PROTECTION
Department of Natural Resource Protection
Division of Pollution Prevention and Remediation Programs
95 NOV -7 AM 8:49
218 S.W. 1st Avenue
Fort Lauderdale, FL 33301

(954) 519-1260 • FAX (954) 765-4804

**APPLICATION FOR
ENVIRONMENTAL ASSESSMENT AND REMEDIATION LICENSE**

Lorenzo Fernandez, P.E., Manager
Environmental Assessment & Remediation Section
Broward County Department of
Natural Resource Protection
218 S.W. First Avenue
Fort Lauderdale, FL 33301

Dear Mr. Fernandez:

Enclosed is a check for One Thousand Five Hundred and Fifty Dollars (\$1550) made payable to **Broward County Board of County Commissioners**.

I understand that this license is subject to Annual Fees of (\$1550) due payable prior to the anniversary date indicated on page 1 of the license. I understand that the applicant is to follow all the general and specific conditions in the license. I understand that this license is being issued for the assessment and remediation of soil and/or groundwater contamination at the following site.

Perma-Fix of Ft. Lauderdale, Inc.

Name of Facility

3670 SW 47th Avenue

Street Address

Davie,

City

Florida 33314

State Zip Code

Christopher L. Blanton

General Manager

Name of Applicant

Title

Perma-Fix of Ft. Lauderdale, Inc.

(954)-583-3795

Company Name

Business Telephone

3701 SW 47th AVENUE Suite 109

Street Address

Davie,

Florida 33314

City

State Zip Code

Sincerely,

Signature

10-30-96

Date

h:\wpltrs\license.app



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

November 7, 1996

Certified Mail

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

P 485 594 036

RE: EAR License No.: 00429
Perma-Fix of Ft. Lauderdale, Inc.
3670 SW 47th Avenue
Davie, FL 33314

Dear Mr. Blanton:

Attached please find two original copies of your Environmental Assessment and Remediation (EAR) License which requires your signature. Execution of this license is a one time event and no further licenses will be generated until the Broward County Department of Natural Resource Protection (the Department) inactivates your site. Please execute and notarize this license in the spaces provided and return both original copies to the Department at the address indicated above within 14 days of receipt. Upon receipt by the Department, one fully executed original will be returned to you for your records.

Your cooperation in these matters is appreciated. If you need additional information, or have any questions, please call (954) 519-1406.

Sincerely,

DIVISION OF POLLUTION PREVENTION AND REMEDIATION PROGRAMS

Sean McFarlane
Engineer II

SAM/sam
h:\wpltr\perma.cvr



Department of Natural Resource Protection
Pollution Prevention and Remediation Programs Division

218 S.W. 1st Avenue
Fort Lauderdale, FL 33301

(305) 519-1260 • FAX (305) 765-4804

ENVIRONMENTAL ASSESSMENT and REMEDIATION LICENSE

LICENSEE

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

LICENSE NO.: 00429

DEP ID NO.: NA

FACILITY NAME/ADDRESS

Perma-Fix of Ft. Lauderdale, Inc
3670 SW 47th Avenue
Davie, FL 33314
Telephone: (954) 583-3795

This license is issued by the Broward County Department of Natural Resource Protection (DNRP) under the provisions of Section 27-356(e) of the Broward County Natural Resource Protection Code (the Code). This license is subject to all applicable requirements of the Code as specified in Section 27-58 "General Conditions" and Section 27-356(e)(4) "Operating Requirements." The licensee is hereby directed by DNRP to perform and complete all necessary assessment and remediation activities as applicable, and to submit all reports, plans and other pertinent documents as specified in attached Exhibit I for review and/or approval to DNRP in the time periods specified. The licensee is required to execute and notarize this license in the space provided below and return both original copies to DNRP at the address indicated above within 14 days of receipt. Upon receipt by DNRP, one fully executed original will be returned to the licensee for their records.

ORIGINAL APPLICATION RECEIVED: 11/05/96

ISSUE DATE: 11/05/96

PREPARED BY: Sean McFarlane

ANNUAL FEES DUE: 11/05/97*

*Annual fees are due on or before
this due date and each year thereafter
until DNRP issuance of "No Further Action"

Director, Pollution Prevention
and Remediation Programs Division

I, Christopher L. Blanton do hereby agree to the terms and conditions of this license as specified above and in the Code. I also agree to perform all activities necessary to assess and remediate the location/area covered by this license to the full satisfaction of DNRP.

(signature and title of Licensee)

STATE OF FLORIDA Subscribed and sworn to (or affirmed) before me this 12-2-96
COUNTY OF Broward (Date)

by Christopher L. Blanton, who (Check one): X is

personally known to me, OR has produced as identification.
(Type of Identification)

(Signature of Notary)

Commission No. CC 474708

(name of Notary typed, printed or stamped)

(SEAL ABOVE)

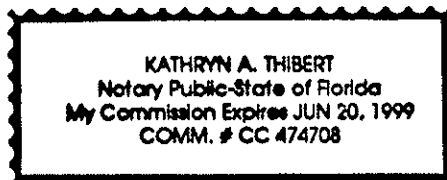


EXHIBIT I

Description (location) of the area(s) to be assessed and/or remediated:

The area where detectable levels of petroleum contamination are present in the soil and groundwater, to the full extent of contamination.

The following (assessment and/or remediation) activities are required to be performed as indicated, and the corresponding reports submitted to DNRP as specified below or as stipulated in future correspondence generated by DNRP:

Contamination Assessment Report (CAR): 03/07/97

Risk Assessment/Justification (RAJ): only if requested by DNRP (2 months after CAR approval)

Remedial Action Plan (RAP): 3 months after CAR approval

Quarterly Progress Reports: to be announced (TBA): dates provided in correspondence from DNRP

SAM/sam

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**12-16-96 AND 1-7-97
AQUA TERRA IRA REPORT
BROWARD COUNTY DNRP REVIEW OF IRA REPORT**



INITIAL REMEDIAL ACTION REPORT
FOR THE
PERMA-FIX ENVIRONMENTAL SERVICES FACILITY
3670 S.W. 47TH AVENUE
DAVIE, FLORIDA
EAR LICENSE NO. 00429

PREPARED FOR:

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

SUBMITTED BY:

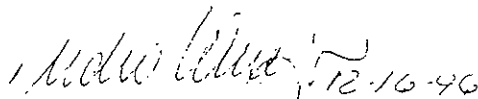
AQUA TERRA, INC.
3250 CORPORATE WAY
MIRAMAR, FLORIDA 33025

PROJECT NO. AT-1239

DECEMBER 1996



Richard K. Meyers
Senior Project Scientist



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

TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION	1
2.0 BACKGROUND	2
3.0 INITIAL REMEDIAL ACTION ACTIVITIES	3
3.1 Soil Excavation Activities	
3.2 Free Product (Oil) Recovery	
3.3 Soil Verification Sampling and Results	
3.4 Groundwater Sampling	
4.0 CONCLUSION	7

FIGURES

FIGURE 1	Site Map
FIGURE 2	Site Map with Concrete Pipe Location
FIGURE 3	Site Map with Monitoring Well and Soil (Excavation Wall) Sampling Locations-Initial Excavation Area
FIGURE 4	Site Map with Monitoring Well and Soil (Excavation Wall) Sampling Locations-Expanded Excavation Area
FIGURE 5	Site Map with Monitoring Well and Soil (Surface) Sampling Locations
FIGURE 6	Site Map with Monitoring Well and Final Excavation Area

TABLES

TABLE 1	Summary of Soil Analytical Data (Walls of Initial Excavation)
TABLE 2	Summary of Soil Analytical Data (Walls of Expanded Excavation)

APPENDICES

APPENDIX A	Soil Waste Disposal Manifests
APPENDIX B	Soil Verification Analytical Results and Chain of Custody Forms
APPENDIX C	Groundwater Analytical Results and Chain of Custody Forms
APPENDIX D	Photographs of On-Site Activities

3.0 INITIAL REMEDIAL ACTION ACTIVITIES

The oil spill affected only the eastern portion of the subject site spanning from the south to north property boundaries. The oil which discharged outside of the containment walls migrated from the south to the north end of the subject site. Subsurface drainage at the subject site was limited to a French-Drain system located at the northeast corner of the southern above ground tank system and a storm sewer system located immediately north of the northern property boundary. A site map is included as Figure 1.

An inspection of the spill on October 14, 1996 indicated that the spill did not impact the area beyond the eastern property boundary. The neighboring property to the south, Petroleum Management, Inc. (PMI), complained of marginal amounts of floating oil at their facility. Aqua Terra supervised the skimming of standing water at the northeast portion of the PMI property using a vacuum truck. Aqua Terra completed the off-site recovery of oil to the satisfaction of Petroleum Management. Immediately south of PMI booms, oil-dry and absorbent pads were used to recover oil that migrated to this location via the wind and rainwater. All materials used to recover the oil in this area were stored in drums and relocated to the Perma-Fix facility for proper disposal.

The majority of the spill at the subject site either pooled on the ground surface or entered the on-site French-Drain system. Minimal amounts of oil entered the storm sewer system at the northern property boundary which ultimately discharges to nearby canals. In an effort to contain the spill from migrating to nearby canals, the oil was continuously recovered from the storm sewer catch basins, the French-Drain catch basins and any pools of oil that accumulated on the ground surface using vacuum trucks. Periodic inspections indicated that the spill did not affect the nearby canals. All oil recovered by the vacuum trucks was temporarily downloaded to a portable holding tank until the above ground tank valves were replaced. The tank valves were replaced within a couple of days from the date of the spill.

Following the removal of the pools of oil on the ground surface, approximately six inches of soil was scraped from the impacted area with a backhoe. The scraped soil was placed on visqueen on the northwest end of the subject site. By October 16, 1996, the majority of the oil which had spilled on the ground surface or in the storm sewer system was recovered.

It was determined that the existence of the French-Drain system was preventing the proper recovery of oil that entered the French-Drain catch basins. On October 17,

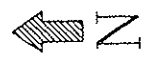
1996, Aqua Terra supervised the removal of the French-Drain system while continuously removing product discharging from the system using a vacuum truck. All impacted dry soil removed was stockpiled whereas all impacted wet soil was placed in lined roll-offs awaiting transportation to a thermal treatment facility. During the removal of the French-Drain system, an unidentifiable concrete pipe (30-36" diameter) was encountered running along a north-south direction at a depth of approximately three feet below land surface (bls). It was determined that the concrete pipe was discharging oil through a hole at the top of the pipe. After inquiring into the nature of this concrete pipe, no regulatory agency was able to identify the purpose of the pipe. According to a Mr. Danielli, who owned a majority of the property in the area during the 1970's, the extent of the concrete pipe did not go much beyond the Perma-Fix property boundaries. He said that the original intent of the pipe was to facilitate drainage but that the construction of the pipe was never completed.

Since the pipe continued to discharge oil and approval was granted by DNRP to remove the pipe, the decision was made to remove and dispose of this pipe. The entire length of the pipe was excavated, pressure cleaned and removed from the southern to the northern property boundaries. After allowing all the oil to flow out of the remaining sections of pipe at each property boundary, both ends of the pipe at each property boundary were sealed with hydraulic cement to prevent any environmental concerns in the future. All oil entering the trench created by the removal of the pipe was recovered using a vacuum truck. After further investigation, it was determined that only one (1) eight foot section of concrete pipe remained at the northern property boundary (between Perma-Fix and Oakes Road). This pipe section was subsequently removed and disposed, leaving no pipe remaining on the north end of the property. Figure 2 depicts the location of the concrete pipe. WHAT HAPPENED TO PIPING LEADING TO SOUTH END OF PROPERTY

3.1 Soil Excavation Activities

All soil excavation activities were conducted by Chuck's Backhoe personnel under the supervision of Aqua Terra. As mentioned previously, the initial soil excavation involved the scraping of impacted areas in an effort to prevent oil from migrating deeper into the subsurface. Additional soil was removed while removing both the French-Drain system and the unidentifiable concrete pipe. In both of these locations the soil was excavated to approximately one foot below the water table. In all, a total of 1,958.42 tons of soil were excavated, transported and thermally treated at the Rinker Materials Corporation facility in Miami, Florida. A copy of the soil waste disposal manifests are provided in Appendix A.

OAKES ROAD (S.W. 36TH STREET)



S.W. 47TH AVENUE

ENTRANCE/DRIVEWAY

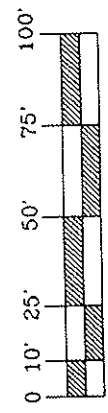
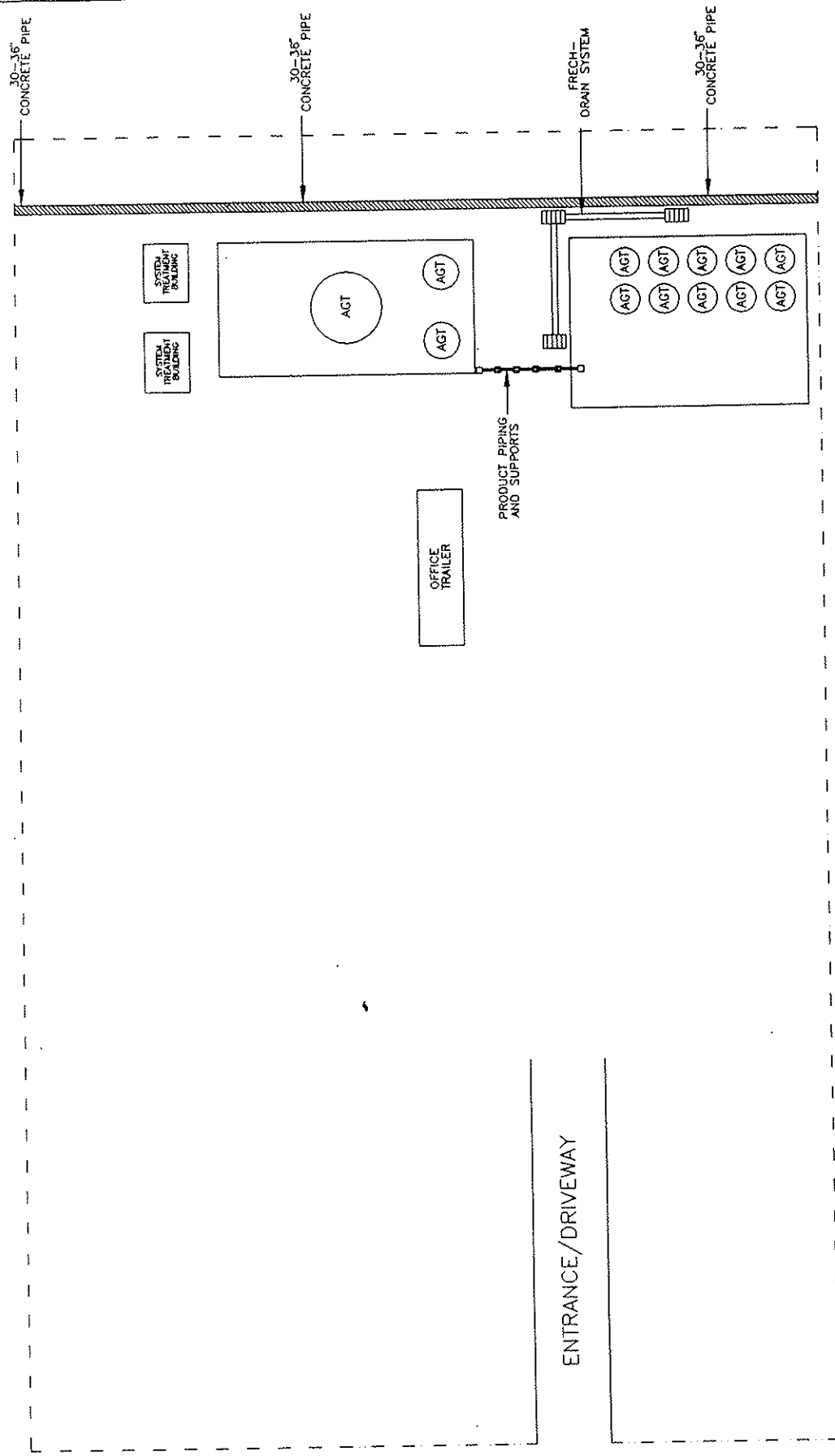


FIGURE 2: SITE MAP WITH CONCRETE PIPE LOCATION

AQUA TERRA, INC.
ENVIRONMENTAL CONSULTANTS

DRAWN BY: RKM

10/31/96

PROJECT NAME: PERMA-FIX ENVIRONMENTAL SERVICES

ADDRESS: 3670 S.W. 47TH AVENUE, DAVIE, FLORIDA

PROJ. #: AT-1239



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

January 7, 1997

Certified Mail
P 485 594 244

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

RE: Initial Remedial Action (IRA) report for the Perma-Fix of Ft. Lauderdale, Inc. facility, located at 3670 SW 47th Avenue, Davie, FL 33314, prepared by Aqua Terra, Inc., dated on 12/16/96 and received on 12/18/96.

Dear Mr. Blanton:

The Broward County Division of Pollution Prevention and Remediation Programs (the Division) has completed a review of the above-referenced document. The report is approved; however, please note the following comments:

1. In the above report a pipe containing pollutants was found running north to south on the eastern portion of the property. It appears from the report that the length of pipe from the north to the southern boundary was removed; however, it is unclear on the extent of the pipe past the southern boundary and what has or will be done to prevent this pipe from becoming a conduit for contaminated material in the future. Please specify the pipe length past the southern boundary of the property and the action to be taken to remove or seal its remaining length.
2. The amount of free product recovered was not specified.

Please, provide the above requested information in the Contamination Assessment Report (CAR) that is due in this office on or before **March 7, 1997**.

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

Sincerely,

DIVISION OF POLLUTION PREVENTION AND REMEDIATION PROGRAMS

Sean McFarlane

Engineer II

SAM:sam

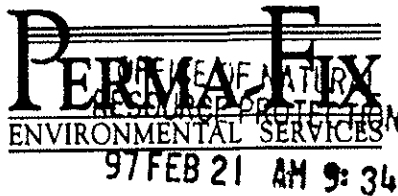
cc: Isidro A. Duque, P.G., Aqua Terra, Inc.

Kevin Burger, Director, the Division

h:\wpltr permafex.ira

2-18-97 AND 4-8-97
PERMA-FIX FIRST REQUEST FOR CAR TIME EXTENSION
PERMA-FIX SECOND REQUEST FOR CAR TIME EXTENSION





February 18, 1997

Mr. Sean McFarlane
Engineer II
Broward County Department of Natural Resource Protection
Division of Pollution Prevention and Remediation Programs
218 SW 1st Avenue
Fort Lauderdale, Florida 33301

CERTIFIED MAIL AND FAX

Dear Mr. McFarlane:

Perma-Fix of Ft. Lauderdale, Inc. received your letter dated January 7, 1997 pertaining to the Initial Remedial Action reported to you on December 18, 1996.

Due to the magnitude of the spill and the financial impact that this \$300,000.00 + clean up has had on this company, Perma-Fix of Ft. Lauderdale, Inc. is requesting that it be granted an extension with regards to the Contamination Assessment Report (CAR). Your letter stated that the report is due March 7, 1997. We are requesting an extension until April 15, 1997.

Currently, Perma-Fix of Ft. Lauderdale, Inc. has again retained Aqua Terra, Inc. to perform the contamination assessment. Also, we have retained Precision Environmental Laboratories, Inc. to conduct the sample analysis. We are currently evaluating drilling subcontractors, of which Chem Drill, Inc. looks to be the driller of choice.

We are currently looking at February 25, 1997 as the date that we will start to advance borings and wells. Richard Meyers with Aqua Terra, Inc. will be filing with your office an exact start date within the next few days.

I would sincerely appreciate the granting of this extension. Please contact me as soon as possible to discuss whether or not we can use April 15, 1997 as the new due date.

Sincerely,

Christopher L. Blanton
General Manager

cc: Richard Meyers, Aqua Terra, Inc.
Kevin Burger, Director, the Division
Lorenzo Fernandez, P.E.,

PERMA-FIX
ENVIRONMENTAL SERVICES

OFFICE OF NATURAL
RESOURCE PROTECTION
97 APR 11 AM 10:39

April 8, 1997

Mr. Sean McFarlane
Engineer II
Broward County Department of Natural Resource Protection
Division of Pollution Prevention and Remediation Programs
218 SW 1st Avenue
Fort Lauderdale, Florida 33301

CERTIFIED MAIL AND FAX

Dear Mr. McFarlane:

Perma-Fix of Fort Lauderdale, Inc. along with our consultants, Aqua Terra Inc., has been diligently working toward the completion of the Contamination Assessment required because of the October 14, 1996 vandalism to our facility. However, initial review of the analytical data from groundwater samples collected from the newly installed wells suggests the existence of constituents not associated with the incident.


Consequently, at the recommendation of our Consultants, I am requesting an extension of the Assessment submittal deadline until July 8, 1997. The reason for the extension is three-fold. First, we would like to review all Quality Assurance/Quality Control data from the laboratory to confirm the reported data. Second, it is our intention to re-sample the wells and analyze the groundwater samples to confirm or refute the initial data obtained. Finally, it is our intention to expand the scope of the project and gather additional groundwater flow and quality data from areas around the perimeter of our facility. The expanded scope may entail installation of additional wells in an upgradient and downgradient direction to groundwater flow.

I hope that this extension request can be honored. Perma-Fix of Fort Lauderdale, Inc. is working very diligently to assess the damage caused by the vandalism and when we present the data to you, we want it to be as complete as possible.

Please respond back to me at your convenience. Unless I hear from you prior to the deadline on April 15th, we will assume that the extension has been granted.

If you need to discuss this situation with me, I can be reached at 954-583-3795.

Sincerely,


Christopher L. Blanton
General Manager

cc: Richard Meyers, Aqua Terra, Inc.
Kevin Burger, Director, the Division
Lorenzo Fernandez, P.E., DNRP

**7-7-97 AND 8-7-97
AQUA TERRA CAR SUBMITTAL
BROWARD COUNTY DNRP DISAPPROVAL LETTER OF CAR**



OFFICE OF NATURAL
RESOURCE PROTECTION
97 JUL -8 PM 4:08

**CONTAMINATION ASSESSMENT REPORT
PERMA-FIX ENVIRONMENTAL
SERVICES OF FORT LAUDERDALE, INC.
3670 S.W. 47TH AVENUE
DAVIE, FLORIDA 33314**

PREPARED FOR:

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

SUBMITTED BY:

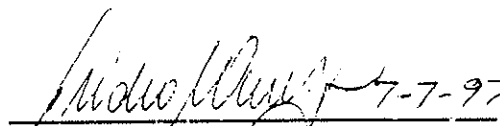
**AQUA TERRA, INC.
3250 CORPORATE WAY
MIRAMAR, FLORIDA 33025**

PROJECT NO. AT-1260

JULY 1997



**Richard K. Meyers
Senior Project Scientist**



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

(1935) non-equilibrium well equation, and modifications thereof, that are commonly used to calculate transmissivity from pump test data assume (1) aquifer homogeneity and isotropy, (2) 100% pumping well efficiency, (3) no recharge, and (4) that the pumping well receives water from the entire aquifer thickness, among other conditions. Commonly, the conditions encountered during aquifer performance tests conducted, during environmental assessments, inherently fail to come close to the above assumptions.

Conclusions and Recommendations

- Soil Analytical data indicate that no soil contamination exists at the subject property.
- Groundwater analytical data indicate contaminant concentrations above the Site Rehabilitation Levels (SRLs) per Chapter 62-770.700 F.A.C. However, the groundwater samples collected from five of the seven monitoring wells tested (EMW-1, ATMW-2, ATMW-3, ATMW-4, ATMW-5 and ATMW-6) only indicate minor groundwater exceedances caused by hydrocarbon contamination. The other two wells tested (ATMW-1 and ATMW-7) reveal moderate contaminant concentrations.
- Although not initially observed, free product presently exists in monitoring well ATMW-7.
- Vinyl chloride exists in several on-site monitoring wells above Florida Drinking Water Standards.

Based on the above conclusions, Aqua Terra recommends the following:

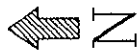
Since none of the soil samples collected reveal contamination, Aqua Terra recommends that no further action be granted for the soil at the subject property.

As EPA representatives have discussed with Mintech, the vinyl chloride found in the on-site groundwater is most likely being caused by a source located outside the subject property. Consequently, Aqua Terra did not address this issue as part of this assessment. Mintech is presently ascertaining information regarding the vinyl chloride issue.

Since free product exists in monitoring well ATMW-7, Aqua Terra recommends the extent of free product be delineated by installing additional monitoring wells. In addition, until assessment and delineation of free product is completed, it is recommended that product recovery activities continue in the area of monitoring well ATMW-7. In order to enhance the overall product recovery activities, Perma-Fix anticipates the installation of an automated shallow-well product recovery system. General Information on the system is included in Appendix D.

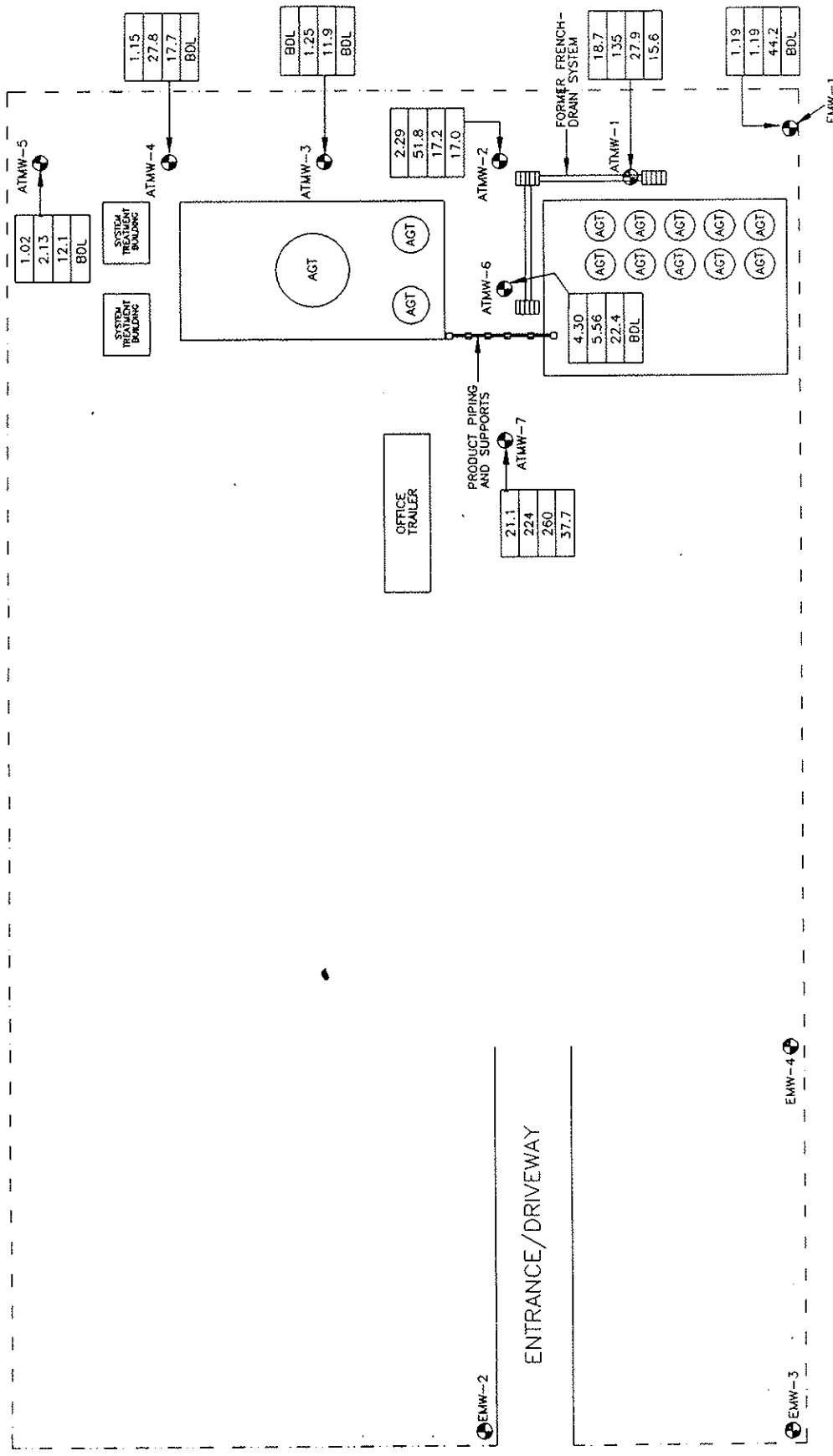
With regard to the general groundwater conditions, Aqua Terra recommends that a "Monitoring Only Plan" be implemented on a quarterly basis for a time period of one year. Any further action (i.e. additional groundwater monitoring or necessary remediation) will be based on the groundwater analytical results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

OAKES ROAD (S.W. 36TH STREET)



S.W. 47TH AVENUE

ENTRANCE/DRIVEWAY



LEGEND:

- ALL CONCENTRATIONS IN PARTS PER BILLION
- - NEW/EXISTING MONITORING WELL (MW) LOCATIONS
- | | |
|------|------------------------------------|
| 18.7 | - BENZENE |
| 135 | - TOTAL VOLATILE ORGANIC AROMATICS |
| 27.9 | - METHYL-TERT-BUTYL-ETHER |
| 15.6 | - TOTAL NAPHTHALENES |



FIGURE 4: GROUNDWATER CONTAMINANT CONCENTRATIONS MAP	DRAWN BY: RKM
PROJECT NAME: PERMA-FIX ENVIRONMENTAL SERVICES	5/2/97
ADDRESS: 3670 S.W. 47TH AVENUE, DAVIE, FLORIDA	PROJ. # AT 1260

AQUA TERRA, INC.
ENVIRONMENTAL CONSULTANTS



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.

BROWARD COUNTY BOARD OF COUNTY COMMISSIONERS — An Equal Opportunity Employer and Provider of Services

Norman Abramowitz Scott I. Cowan Suzanne N. Gunzburger Ilene Lieberman Lori Nance Parrish Sylvia Portier John E. Rodstrom, Jr.

World Wide Web: <http://www.co.broward.fl.us/dnpr>

Christopher Blanton

08/07/97

Page 2.

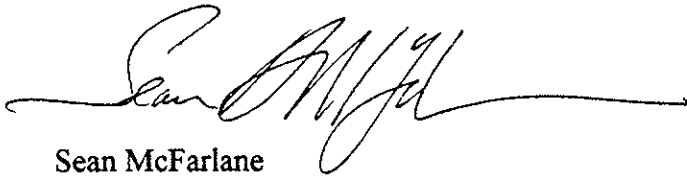
Please continue to be advised that the Division requires 72 hours advanced notice, in writing, before any field work is performed on the site.

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

A handwritten signature in black ink, appearing to read "Sean McFarlane", with a long horizontal flourish extending to the right.

Sean McFarlane
Engineer II

SAM/sam

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

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**8-22-97 AND 9-15-97
AQUA TERRA RESPONSE TO DISAPPROVAL LETTER
BROWARD COUNTY DNRP REQUEST FOR CAR ADDENDUM**



OFFICE OF NATURAL
RESOURCE PROTECTION
97 AUG 26 AM 9:20

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 ($\mu\text{g/l}$) 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 $0.05 \mu\text{g/l}$ 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



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 EAC. 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.

Mr. Christopher Blanton
September 15, 1997
Page 2

Sincerely,

DIVISION OF POLLUTION PREVENTION AND REMEDIATION PROGRAMS

A handwritten signature in black ink, appearing to read "Sean McFarlane", with a long horizontal flourish extending to the right.

Sean McFarlane
Engineer II

SAM/sam

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

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**10-30-97 AND 12-2-97
AQUA TERRA CAR ADDENDUM #1 SUBMITTAL
BROWARD COUNTY DNRP DISAPPROVAL LETTER OF CAR ADDENDUM**



OFFICE OF NATURAL
RESOURCE PROTECTION
97 OCT 30 PM 1:13

**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
Project Scientist**



**Isidro A. Duques
Registered Geologist No. 1660
State of Florida**

TABLE OF CONTENTS

	<u>PAGE</u>
1.0 INTRODUCTION	1
2.0 MONITORING WELL INSTALLATION AND SAMPLING ACTIVITIES	2
3.0 ADDITIONAL INVESTIGATIVE ACTIVITIES	4
4.0 CONCLUSION AND RECOMMENDATION	5

FIGURES

FIGURE 1	Site Map with Monitoring Well Locations
FIGURE 2	Shallow Well Construction Profile (ATMW-9, ATMW-10, ATMW-11 and ATMW-12)
FIGURE 3	Deep Well Construction Profile (ATMW-8D)

APPENDICES

APPENDIX A	Correspondence Letters
APPENDIX B	Laboratory Reports and Chain of Custody Documentation
APPENDIX C	Excerpts from the United States EPA Draft Remedial Investigation Report for the Florida Petroleum Reprocessors Site
APPENDIX D	Historical Summary of PMI Data Documenting Soil and Groundwater Impacts Prior to the Perma-Fix Vandalism Incident

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, 1992²:
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, 1992¹:
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, 1992¹:
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, 1992²:
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. April 22, 1994²:
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, 1994²:
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, 1995³:
Contamination Assessment Report (CAR) was prepared for the facility 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, 1995³:
Remedial Action Plan (RAP) was prepared for the facility by USEG and submitted to the DNRP for approval.
- XII. September 1997 - Remedial Investigation Report⁴:
 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	3/3/95	3/3/95	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
ETHYLBENZENE (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 NAPHTHALENES (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



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

December 2, 1997

Certified Mail
P 520 971 475

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

Re: Contamination Assessment Report (CAR) Addendum 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 10/30/97 and received on 10/30/97. EAR License No.:00429

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 and your Monitoring Only Proposal for Natural Attenuation is denied. Please note the following comments:

1. Free Floating Product (FFP) continues to be present in monitoring well ATMW-7. Your request to abandon ATMW-7 is denied. Please continue to bail FFP from this well or propose an action to remove the contamination source.
2. Isopleth maps were not provided in the above report that delineated the areal and vertical extent of contamination for Free Floating Product, Benzene, Vinyl Chloride, MTBE and Lead.
3. Groundwater Elevation data was not provided within the above referenced report. Please provide an isopleth map depicting groundwater flow within all site assessment wells.
4. Research performed by Aqua Terra failed to conclusively exclude the October 1996 spill incident as a compounding source of groundwater contamination on the PMI facility. PMI's May 23, 1995 contamination assessment report (CAR) noted extensive soil contamination; however, FFP was not found on this site. In fact, FFP was reported in monitoring wells at the PMI facility soon after the spill occurred on your site. Please provide the Division with analytical and graphical data to support your argument.

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

Mr. Christopher Blanton
December 2, 1997
Page 2

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

A handwritten signature in black ink, appearing to read 'Sean McFarlane', followed by a long horizontal line extending to the right.

Sean McFarlane
Engineer II

SAM/sam

cc: Richard Meyers, Aqua Terra, Inc.

h:\wpltrs\permaf3.car

12-24-97 AND 2-16-98
AQUA TERRA REQUEST LETTER FOR DNRP MEETING
AQUA TERRA INTENT LETTER TO COMPLETE CAR



97 DEC 31 PM 9:01

AQUA TERRA, INC.



ENVIRONMENTAL CONSULTANTS

December 24, 1997

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

**RE: PERMA-FIX FACILITY
3670 S.W. 47TH AVENUE, DAVIE, FLORIDA.
AT-1260**

Dear Mr. McFarlane:

On behalf of Perma-Fix of Ft. Lauderdale, Inc. (Perma-Fix), Aqua Terra, Inc. (Aqua Terra) requests a meeting at your earliest convenience to be held between Broward County Department of Natural Resource Protection (DNRP) representatives, Perma-Fix representatives and Aqua Terra representatives in an effort to discuss the requirements imposed by DNRP in the letter dated December 2, 1997 (attached). Aqua Terra requests that Perma-Fix be granted an agreed upon extension of time determined during this meeting to complete the required assessment activities and report preparation.

Should you have any questions or require any additional information, please contact us at (954) 433-8804

Sincerely,

AQUA TERRA, INC.

Richard K. Meyers
Sr. Project Scientist

Attachment

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

AQUA TERRA, INC.

ENVIRONMENTAL CONSULTANTS

FLORIDA DEPARTMENT OF
NATURAL RESOURCE PROTECTION
90 FEB 18 PM 12:57

February 16, 1998

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

RE: PERMA-FIX FACILITY
3670 S.W. 47TH AVENUE, DAVIE, FLORIDA.
AT-1260

Dear Mr. McFarlane:

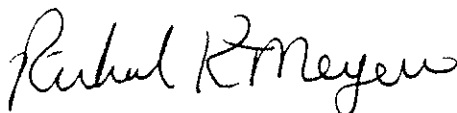
Per the requirements of your letter dated December 2, 1997 and our meeting on January 9, 1998, Aqua Terra, Inc. (Aqua Terra), on behalf of Perma-Fix of Ft. Lauderdale, Inc. (Perma-Fix), is providing the following attached information:

- 1) Isopleth maps delineating free product, benzene, vinyl chloride and MTBE;
- 2) Total lead concentration map; and
- 3) Groundwater elevation data table and map depicting the groundwater flow direction on January 31, 1998.

Should you have any questions or require any additional information, please contact Isidro Duque or myself at (954) 433-8804.

Sincerely,

AQUA TERRA, INC.



Richard K. Meyers
Sr. Project Scientist

Attachment

cc: Chris Blanton, Perma-Fix of Ft. Lauderdale, Inc.
Tom Trebonik, Mintech, Inc.

**4-17-98 AND 5-5-98
AQUA TERRA CAR ADDENDUM #2 SUBMITTAL
BROWARD COUNTY DNRP APPROVAL LETTER FOR CAR**



AQUA TERRA, INC.



ENVIRONMENTAL CONSULTANTS

OFFICE: 3300 S. UNIVERSITY
NATURAL RESOURCE PROTECTION

93 APR 21 AM 9:02

April 17, 1998

Ms. Luisa Simo
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
AT-1260**

Dear Ms. Simo:

In response to your letter of December 2, 1998 and our meeting of January 9, 1998, Aqua Terra, Inc. (Aqua Terra) has completed the following requirements:

1. Monitoring well ATMW-7 was removed from the subject property. The void created by the well removal was grouted from the bottom to the top. Additionally, monitoring well ATMW-13, located approximately two feet north of monitoring well ATMW-7, did not reveal the presence of free product.
2. Isopleth maps indicating free product, benzene, vinyl chloride, MTBE and lead were provided to you as part of a letter sent to your department dated February 16, 1998.
3. Groundwater elevation data and a groundwater flow map were provided to you as part of a letter sent to your department dated February 16, 1998.
4. Two (2) shallow monitoring wells were installed on the northern boundary of the Petroleum Management, Inc. (PMI) property. On March 26, 1998, groundwater samples were collected from these wells for analysis of EPA Method 601 and 602 constituents, total recoverable petroleum hydrocarbons (TRPH) by FL-PRO and total RCRA metals. With the exception of TRPH in monitoring well ATMW-15, no other compounds exceed the Groundwater Cleanup Target Levels For Resource Protection/Recovery per 62-770 F.A.C. The TRPH concentration in monitoring well ATMW-15 (5.1 mg/l) slightly exceeds the cleanup target level of 5.0 mg/l. A copy of a site plan depicting the monitoring well locations and a copy of the laboratory analytical reports are attached.

98 JUN 12 AM 9:25

AQUA TERRA, INC.
ENVIRONMENTAL CONSULTANTS

June 9, 1998

Ms. Luisa Simo
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
AT-1260**

Dear Ms. Simo:

In response to your letter of May 5, 1998, Aqua Terra, Inc. (Aqua Terra) proposes that this Monitoring Only Plan (MOP) be accepted regarding the Perma-Fix of Fort Lauderdale, Inc. (Perma-Fix) facility as defined below.

- Groundwater elevation data will be collected from all on-site monitoring wells and a groundwater flow map will be generated on a quarterly basis;
- Monitoring wells EMW-1, ATMW-5 and ATMW-12 (site plan attached) will be sampled for analysis by EPA Methods 601 and 602 on a quarterly basis; *what about ATMW-15*
- A Monitoring Only Report will be prepared on a quarterly basis summarizing the field activities and laboratory analytical results; and
- The groundwater collected from the specified wells will be monitored on a quarterly basis for up to one (1) year.

Additionally, Aqua Terra requests, on behalf of Perma-Fix, that we be allowed to properly abandon the two wells installed on the PMI property.

Aqua Terra will wait for your response prior to beginning the above specified work. Should you have any questions or require additional information, please do not hesitate to call me at (954) 433-8804.

Sincerely,

AQUA TERRA, INC.

Richard K. Meyers

Richard K. Meyers
Sr. Project Scientist

cc: Chris Blanton, Perma-Fix

*MOP for
perma-fix
prepare the*



file

Department of Natural Resource Protection
Division of Pollution Prevention and Remediation Programs
218 S.W. 1st Avenue
Fort Lauderdale, FL 33301

July 25, 1998

(954) 519-1260 • FAX (954) 765-4804

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

Re: The Monitoring Only Plan prepared and submitted by Aqua Terra Inc. for the Perma-Fix of Ft. Lauderdale site, located at 3670 SW 47th Avenue, Davie, Florida, dated June 9, 1998, received June 12, 1998.

Dear Mr. Blanton:

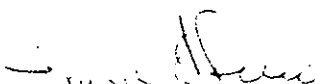
The Division of Pollution Prevention and Remediation Programs (Division) has completed a review of the above-referenced document. The Monitoring Only Plan can not be approved at this time, please note the following comments:

- 1) Since the most contaminated well ATMW-7 was removed, monitoring well ATMW-13 (which is the closest well to the location of ATMW-7) needs to be tested for EPA methods 602,610,601 and FLPRO.
- 2) To verify the direction of groundwater flow, a new set of groundwater levels measurements must be performed.

The additional information should be submitted to this office by September 15, 1998. If you have any questions or require additional information, please contact this office at (954) 519-1416.

Sincerely,

DIVISION OF POLLUTION PREVENTION AND REMEDIATION PROGRAMS


Luisa Simó
Hydrogeologist II

cc: Lorenzo Fernandez, P.E., DNRP
Richard Meyers, Aqua Terra, Inc.

a:\perma.mop

9-17-98 AND 10-19-98
AQUA TERRA MOP PROPOSAL LETTER
BROWARD COUNTY DNRP APPROVAL LETTER FOR MOP



AQUA TERRA, INC.
ENVIRONMENTAL CONSULTANTS

received
9/17/98
JS

September 17, 1998

Ms. Luisa Simo
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
AT-1260**

Dear Ms. Simo:

The following activities were performed at the above referenced facility by Aqua Terra, Inc. (Aqua Terra) on September 1, 1998 in response to your letter of July 25, 1998 (attached):

- Depth to groundwater level measurements from all on-site monitoring wells were collected in order to generate a groundwater flow map and groundwater flow direction; and
- A groundwater sample from monitoring well ATMW-13 (site plan presented as Figure 1) and an equipment blank were collected for analysis by EPA Method 601, 602 and 610 constituents and FL-PRO.

Based on the groundwater elevation data (Table 1), the groundwater flow direction was determined to ~~be to the west-southwest~~. The groundwater flow direction is depicted in the Groundwater Elevation Map, presented as Figure 2.

The results of the groundwater analysis revealed that all compounds tested were below detection limits, with the exception of methyl-tert-butyl-ether (MTBE) and benzene with concentrations of 2.31 micrograms per liter ($\mu\text{g/l}$) and 2.85 $\mu\text{g/l}$, respectively.

Based on the analytical results, it does not appear that the area in the vicinity of well ATMW-13 is a source of groundwater contamination. As previously stated, Aqua Terra proposes that Monitoring Only be accepted as defined below.

- Groundwater level measurements will be collected from all on-site monitoring wells and a groundwater flow map will be generated on a quarterly basis;
- Monitoring wells EMW-1, ATMW-5 and ATMW-12 will be sampled for analysis by EPA Methods 601 and 602 on a quarterly basis;

Perma-Fix of Fort Lauderdale, Inc.
3670 S.W. 47th Avenue, Davie, Florida

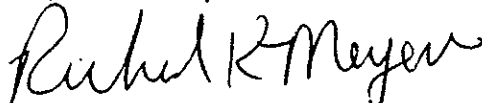
- A Monitoring Only Report will be prepared on a quarterly basis summarizing the field activities and laboratory analytical results; and
- The groundwater collected from the specified wells will be monitored on a quarterly basis for up to one (1) year.

Additionally, Aqua Terra requests, on behalf of Perma-Fix, that we be allowed to properly abandon the two wells installed on the PMI property by Perma-Fix. ?

Aqua Terra will wait for your response prior to beginning the above specified work. Should you have any questions or require additional information, please do not hesitate to call me at (954) 433-8804.

Sincerely,

AQUA TERRA, INC.



Richard K. Meyers
Sr. Project Scientist

cc: Chris Blanton, Perma-Fix



file

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

October 19, 1998

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

Re: The additional information to the Monitoring Only Proposal for Natural Attenuation prepared and submitted by Aqua Terra Inc. for the Perma-Fix of Ft. Lauderdale site, located at 3670 SW 47th Avenue, Davie, Florida, dated and received September 17, 1998.

Dear Mr. Blanton:

The Division of Pollution Prevention and Remediation Programs (Division) has reviewed the above-referenced document. The report meets the requirements of your Environmental Assessment and Remediation (EAR) license. Your proposal to implement Monitoring Only at this site is approved with the condition that monitoring well ATMW-13 be added to your quarterly sampling plan.

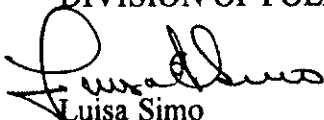
Quarterly Monitoring Reports should include the following items:

- a) Groundwater contaminant concentration maps for each contaminant. Separate maps should be prepared for each chemical of concern indicating the respective groundwater standard isoconcentration contour for each contaminant.
- b) EPA methods 602 and 610 analyses from monitoring wells EMW-1, ATMW-5, ATMW-12 and ATMW-13.
- c) Groundwater table elevation measurements and corresponding groundwater elevation contour map indicating groundwater flow direction.
- d) A scaled base map showing all monitoring well locations.
- e) A table summarizing current and historical ground water quality data.

The first Quarterly Monitoring Only Report is due in this office no later than January 20, 1999, with subsequent reports due April 20, 1999, July 20, 1999 and October 20, 1999. If you have any questions, or require additional information, please contact this office at (954) 519-1416.

Sincerely,

DIVISION OF POLLUTION PREVENTION AND REMEDIATION PROGRAMS


Luisa Simo
Hydrogeologist II

cc/ Lorenzo Fernandez, P.E.,
Richard Meyers, Aqua Terra, Inc.

APPENDIX D



GLOBAL ENVIRONMENTAL SERVICES

BORING LOG

Date: 01-05-99

Project No.: 145-001-01

Report No.: 233

Page: D-1

PROJECT: PMI TRANSFER FACILITY
3650 SW 47 AVE.
DAVIE, FL 33314

BORING DESIGNATION:

SB-1

SHEET:

1 OF 11

SECTION: 25

TOWNSHIP: 50 SOUTH

RANGE:

41 EAST

CLIENT: PMI

G.S. ELEVATION (ft.):

DATE STARTED: 12-03-98

LOCATION: EAST SIDE OF FACILITY

WATER TABLE (ft.): 3' - 4'

DATE FINISHED: 12-03-98

REMARKS: LAB SAMPLES TAKEN AT
0' - 2' AND 2' - 4' DEPTHS

DATE OF READING:

DRILLED BY: LEMENZE DRILLING

EST. W.S.W.T. (ft.):

N/A

TYPE OF SAMPLING: HAND AUGER

DEPTH (FT.)	OVA READINGS UNFILT. - FILT. = RESULTANT	DESCRIPTION	REMARKS
0-1		0' - 2' BROWN SAND & GRAVEL	NO OIL STAINS OR ODORS
1-2		2' - 4' DARK BROWN SAND WITH CLAY	0' - 3' OIL STAINS AND ODORS
2-3			3' - 4'
3-4			
4-5			
5-6			
6-7			
7-8			
8-9			
9-10			
10-11			
11-12			
12-13			
13-14			
14-15			
15-16			

GLOBAL ENVIRONMENTAL SERVICES

BORING LOG

Date: 01-05-99
 Project No.: 145-001-01
 Report No.: 233
 Page: D-2

PROJECT: PMI TRANSFER FACILITY BORING DESIGNATION: SB-2 SHEET: 2 OF 11
 3650 SW 47 AVE. SECTION: 25 TOWNSHIP: 50 SOUTH RANGE: 41 EAST
 DAVIE, FL 33314

CLIENT: PMI G.S. ELEVATION (ft.): DATE STARTED: 12-18-98

LOCATION: EAST SIDE OF FACILITY WATER TABLE (ft.): 3' - 4' DATE FINISHED: 12-18-98

REMARKS: LAB SAMPLES TAKEN AT DATE OF READING: DRILLED BY: LEMENZE DRILLING
 0' - 2' AND 2' - 4' DEPTHS

EST. W.S.W.T. (ft.): N/A TYPE OF SAMPLING: GEO PROBE

DEPTH (FT.)	OVA READINGS UNFILT. - FILT. = RESULTANT	DESCRIPTION	REMARKS
0-1		0' - 3' BROWN SAND AND GRAVEL	NO STAINS OR ODORS 0' - 4'
1-2			
2-3		3' - 4' DARK BROWN SAND	
3-4			
4-5			
5-6			
6-7			
7-8			
8-9			
9-10			
10-11			
11-12			
12-13			
13-14			
14-15			
15-16			

GLOBAL ENVIRONMENTAL SERVICES

BORING LOG

Date: 01-05-99
 Project No.: 145-001-01
 Report No.: 233
 Page: D-3

PROJECT: PMI TRANSFER FACILITY BORING DESIGNATION: **SB-3** SHEET: **3 OF 11**
 3650 SW 47 AVE. SECTION: 25 TOWNSHIP: 50 SOUTH RANGE: 41 EAST
 DAVIE, FL 33314

CLIENT: PMI G.S. ELEVATION (ft.): DATE STARTED: 12-18-98

LOCATION: EAST SIDE OF FACILITY WATER TABLE (ft.): 3' - 4' DATE FINISHED: 12-18-98

REMARKS: LAB SAMPLES TAKEN AT DATE OF READING: DRILLED BY: LEMENZE DRILLING
 0' - 2' AND 2' - 4' DEPTHS

EST. W.S.W.T. (ft.): N/A TYPE OF SAMPLING: GEO PROBE

DEPTH (FT.)	OVA READINGS UNFILT. - FILT. = RESULTANT	DESCRIPTION	REMARKS
0-1		0' - 3' BROWN SAND AND GRAVEL	NO STAINS OR ODORS 0' - 4'
1-2			
2-3		3' - 4' DARK BROWN SAND AND CLAY	
3-4			
4-5			
5-6			
6-7			
7-8			
8-9			
9-10			
10-11			
11-12			
12-13			
13-14			
14-15			
15-16			

GLOBAL ENVIRONMENTAL SERVICES

BORING LOG

Date: 01-05-99

Project No.: 145-001-01

Report No.: 233

Page: D-4

PROJECT: PMI TRANSFER FACILITY
3650 SW 47 AVE.
DAVIE, FL 33314

BORING DESIGNATION: SB-4
SECTION: 25 TOWNSHIP: 50 SOUTH

SHEET: 4 OF 11
RANGE: 41 EAST

CLIENT: PMI

G.S. ELEVATION (ft.):

DATE STARTED: 12-18-98

LOCATION: EAST SIDE OF FACILITY

WATER TABLE (ft.): 3' - 4'

DATE FINISHED: 12-18-98

REMARKS: LAB SAMPLES TAKEN AT
0' - 2' AND 2' - 4' DEPTHS

DATE OF READING:

DRILLED BY: LEMENZE DRILLING

EST. W.S.W.T. (ft.):

N/A

TYPE OF SAMPLING: GEO PROBE

DEPTH (FT.)	OVA READINGS UNFILT. - FILT. = RESULTANT	DESCRIPTION	REMARKS
0-1		0' - 3' BROWN SAND AND GRAVEL	SLIGHT OIL ODORS 0' - 4'
1-2			
2-3		3' - 4' DARK BROWN SAND AND CLAY	
3-4			
4-5			
5-6			
6-7			
7-8			
8-9			
9-10			
10-11			
11-12			
12-13			
13-14			
14-15			
15-16			

GLOBAL ENVIRONMENTAL SERVICES

BORING LOG

Date: 01-05-99

Project No.: 145-001-01

Report No.: 233

Page: D-5

PROJECT: PMI TRANSFER FACILITY
3650 SW 47 AVE.
DAVIE, FL 33314

BORING DESIGNATION:

SB-5

SHEET:

5 OF 11

SECTION:

25

TOWNSHIP:

50 SOUTH

RANGE:

41 EAST

CLIENT: PMI

G.S. ELEVATION (ft.):

DATE STARTED: 12-18-98

LOCATION: EAST SIDE OF FACILITY

WATER TABLE (ft.): 3' - 4'

DATE FINISHED: 12-18-98

REMARKS: LAB SAMPLES TAKEN AT
0' - 2' AND 2' - 4' DEPTHS

DATE OF READING:

DRILLED BY: LEMENZE DRILLING

EST. W.S.W.T. (ft.):

N/A

TYPE OF SAMPLING: GEO PROBE

DEPTH (FT.)	OVA READINGS UNFILT. - FILT. = RESULTANT	DESCRIPTION	REMARKS
0-1		0' - 4' LIGHT BROWN SAND	NO STAINS OR ODORS 0' - 4'
1-2			
2-3			
3-4			
4-5			
5-6			
6-7			
7-8			
8-9			
9-10			
10-11			
11-12			
12-13			
13-14			
14-15			
15-16			

GLOBAL ENVIRONMENTAL SERVICES

BORING LOG

Date: 01-05-99

Project No.: 145-001-01

Report No.: 233

Page: D-6

PROJECT: PMI TRANSFER FACILITY
3650 SW 47 AVE.
DAVIE, FL 33314

BORING DESIGNATION: **SB-6**
SECTION: 25 TOWNSHIP: 50 SOUTH

SHEET: **6 OF 11**
RANGE: 41 EAST

CLIENT: PMI

G.S. ELEVATION (ft.):

DATE STARTED: 12-03-98

LOCATION: EAST SIDE OF FACILITY

WATER TABLE (ft.): 3' - 4'

DATE FINISHED: 12-03-98

REMARKS: LAB SAMPLES TAKEN AT
0' - 2' AND 2' - 4' DEPTHS

DATE OF READING:

DRILLED BY: LEMENZE DRILLING

EST. W.S.W.T. (ft.):

N/A

TYPE OF SAMPLING: HAND AUGER

DEPTH (FT.)	OVA READINGS UNFILT. - FILT. = RESULTANT	DESCRIPTION	REMARKS
0-1		0' - 3' WHITE FINE SAND	NO OIL STAINS OR ODORS 0' - 3'
1-2			
2-3		3' - 4' GREY FINE SAND	OIL STAINS AND ODORS 3' - 4'
3-4			
4-5			
5-6			
6-7			
7-8			
8-9			
9-10			
10-11			
11-12			
12-13			
13-14			
14-15			
15-16			

GLOBAL ENVIRONMENTAL SERVICES

BORING LOG

Date: 01-05-99

Project No.: 145-001-01

Report No.: 233

Page: D-7

PROJECT: PMI TRANSFER FACILITY
3650 SW 47 AVE.
DAVIE, FL 33314

BORING DESIGNATION: **SB-7**
SECTION: 25 TOWNSHIP: 50 SOUTH

SHEET: **7 OF 11**
RANGE: 41 EAST

CLIENT: PMI

G.S. ELEVATION (ft.):

DATE STARTED: 12-03-98

LOCATION: EAST SIDE OF FACILITY

WATER TABLE (ft.): 3' - 4'

DATE FINISHED: 12-03-98

REMARKS: LAB SAMPLES TAKEN AT
0' - 2' AND 2' - 4' DEPTHS

DATE OF READING:

DRILLED BY: LEMENZE DRILLING

EST. W.S.W.T. (ft.):

N/A

TYPE OF SAMPLING: HAND AUGER

DEPTH (FT.)	OVA READINGS UNFILT. - FILT. = RESULTANT	DESCRIPTION	REMARKS
0-1		0' - 3' WHITE FINE SAND	NO OIL STAINS OR ODORS 0' - 3'
1-2			
2-3		3' - 4' OIL STAINED FINE SAND WITH ODORS	OIL STAINS AND ODORS 3' - 4'
3-4			
4-5			
5-6			
6-7			
7-8			
8-9			
9-10			
10-11			
11-12			
12-13			
13-14			
14-15			
15-16			

GLOBAL ENVIRONMENTAL SERVICES

BORING LOG

Date: 01-05-99

Project No.: 145-001-01

Report No.: 233

Page: D-8

PROJECT: PMI TRANSFER FACILITY
3650 SW 47 AVE.
DAVIE, FL 33314

BORING DESIGNATION: **SB-8**
SECTION: 25 TOWNSHIP: 50 SOUTH

SHEET: **8 OF 11**
RANGE: 41 EAST

CLIENT: PMI

G.S. ELEVATION (ft.):

DATE STARTED: 12-03-98

LOCATION: EAST SIDE OF FACILITY

WATER TABLE (ft.): 3' - 4'

DATE FINISHED: 12-03-98

REMARKS: LAB SAMPLES TAKEN AT
0' - 2' AND 2' - 4' DEPTHS

DATE OF READING:

DRILLED BY: LEMENZE DRILLING

EST. W.S.W.T. (ft.):

N/A

TYPE OF SAMPLING: HAND AUGER

DEPTH (FT.)	OVA READINGS UNFILT. - FILT. = RESULTANT	DESCRIPTION	REMARKS
0-1		0' - 3' WHITE FINE SAND	NO OIL STAINS OR ODORS 0' - 3'
1-2			
2-3		3' - 4' OIL STAINED FINE SAND WITH ODORS	OIL STAINS AND ODORS 3' - 4'
3-4			
4-5			
5-6			
6-7			
7-8			
8-9			
9-10			
10-11			
11-12			
12-13			
13-14			
14-15			
15-16			

GLOBAL ENVIRONMENTAL SERVICES

BORING LOG

Date: 01-05-99

Project No.: 145-001-01

Report No.: 233

Page: D-9

PROJECT: PMI TRANSFER FACILITY
3650 SW 47 AVE.
DAVIE, FL 33314

BORING DESIGNATION: **SB-9**
SECTION: 25 TOWNSHIP: 50 SOUTH

SHEET: **9 OF 11**
RANGE: 41 EAST

CLIENT: PMI

G.S. ELEVATION (ft.):

DATE STARTED: 12-03-98

LOCATION: EAST SIDE OF FACILITY

WATER TABLE (ft.): 3' - 4'

DATE FINISHED: 12-03-98

REMARKS: LAB SAMPLES TAKEN AT
0' - 2' AND 2' - 4' DEPTHS

DATE OF READING:

DRILLED BY: LEMENZE DRILLING

EST. W.S.W.T. (ft.):

N/A

TYPE OF SAMPLING: HAND AUGER

DEPTH (FT.)	OVA READINGS UNFILT. - FILT. = RESULTANT	DESCRIPTION	REMARKS
0-1		0' - 3' WHITE FINE SAND	NO OIL STAINS OR ODORS 0' - 3'
1-2			
2-3		3' - 4' OIL STAINED SAND WITH ODORS	OIL STAINS AND ODORS 3' - 4'
3-4			
4-5			
5-6			
6-7			
7-8			
8-9			
9-10			
10-11			
11-12			
12-13			
13-14			
14-15			
15-16			

GLOBAL ENVIRONMENTAL SERVICES

BORING LOG

Date: 01-05-99

Project No.: 145-001-01

Report No.: 233

Page: D-10

PROJECT: PMI TRANSFER FACILITY
3650 SW 47 AVE.
DAVIE, FL 33314

BORING DESIGNATION: **SB-10**
SECTION: 25 TOWNSHIP: 50 SOUTH

SHEET: **10 OF 11**
RANGE: 41 EAST

CLIENT: PMI

G.S. ELEVATION (ft.):

DATE STARTED: 12-18-98

LOCATION: EAST SIDE OF FACILITY

WATER TABLE (ft.): 3' - 4'

DATE FINISHED: 12-18-98

REMARKS: LAB SAMPLES TAKEN AT
0' - 2' AND 2' - 4' DEPTHS

DATE OF READING:

DRILLED BY: LEMENZE DRILLING

EST. W.S.W.T. (ft.):

N/A

TYPE OF SAMPLING: GEO PROBE

DEPTH (FT.)	OVA READINGS UNFILT. - FILT. = RESULTANT	DESCRIPTION	REMARKS
0-1		0' - 4' LIGHT BROWN SAND	NO STAINS OR ODORS 0' - 4'
1-2			
2-3			
3-4			
4-5			
5-6			
6-7			
7-8			
8-9			
9-10			
10-11			
11-12			
12-13			
13-14			
14-15			
15-16			

GLOBAL ENVIRONMENTAL SERVICES

BORING LOG

Date: 01-05-99

Project No.: 145-001-01

Report No.: 233

Page: D-11

PROJECT: PMI TRANSFER FACILITY
3650 SW 47 AVE.
DAVIE, FL 33314

BORING DESIGNATION: **SB-11**
SECTION: 25 TOWNSHIP: 50 SOUTH

SHEET: **11 OF 11**
RANGE: 41 EAST

CLIENT: PMI

G.S. ELEVATION (ft.):

DATE STARTED: 12-18-98

LOCATION: EAST SIDE OF FACILITY

WATER TABLE (ft.): 3' - 4'

DATE FINISHED: 12-18-98

REMARKS: LAB SAMPLES TAKEN AT
0' - 2' AND 2' - 4' DEPTHS

DATE OF READING:

DRILLED BY: LEMENZE DRILLING

EST. W.S.W.T. (ft.):

N/A

TYPE OF SAMPLING: GEO PROBE

DEPTH (FT.)	OVA READINGS UNFILT. - FILT. = RESULTANT	DESCRIPTION	REMARKS
0-1		0' - 3' BROWN SAND AND GRAVEL	NO STAINS OR ODORS 0' - 4'
1-2			
2-3		3' - 4' DARK BROWN SAND AND CLAY	
3-4			
4-5			
5-6			
6-7			
7-8			
8-9			
9-10			
10-11			
11-12			
12-13			
13-14			
14-15			
15-16			

APPENDIX E



PRECISION ENVIRONMENTAL LABORATORY, INC.

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PETROM000296
Judd Gilbert
Petroleum Management Inc (PMI)
4700 Oakes Road, 2nd Floor
Davie, FL 33325

Page 1
December 8, 1998
Submission # 9812000194
Order # 80094396
FDER CompQAP# 920323G
HRS Certification# E86349, 86413

QUICK REFERENCE SUMMARY REPORT ALL BDL'S FOR ANALYTES HAVE BEEN REMOVED

Site Location/Project
3650 SW 47th Ave Davie Fl.
145-001.01

Sample I.D.: SB-1 (0-2')
Collected: 12/03/98 10:00
Received: 12/03/98 15:51
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}		DONE	MEDF	1			
Petroleum Range Organics (C8-C40)	110	mg/Kg	FL-PRO (DEP UST)	1.000	12/04/98	12/08/98	JT

Site Location/Project
3650 SW 47th Ave Davie Fl.
145-001.01

Sample I.D.: SB-1 (2-4')
Collected: 12/03/98 10:00
Received: 12/03/98 15:51
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}		DONE	MEDF	1			
Petroleum Range Organics (C8-C40)	587	mg/Kg	FL-PRO (DEP UST)	1.000	12/05/98	12/06/98	JT

Site Location/Project
3650 SW 47th Ave Davie Fl.
145-001.01

Sample I.D.: SB-6 (0-2')
Collected: 12/03/98 13:25
Received: 12/03/98 15:51
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}		DONE	MEDF	1			
Petroleum Range Organics (C8-C40)	1.6	mg/Kg	FL-PRO (DEP UST)	1.000	12/04/98	12/06/98	JT

PETROM000296
Judd Gilbert
Petroleum Management Inc (PMI)
4700 Oakes Road, 2nd Floor
Davie, FL 33325

Page 2
December 8, 1998
Submission # 9812000194
Order # 80094400
FDER CompQAP# 920323G
HRS Certification# E86349, 86413

QUICK REFERENCE SUMMARY REPORT
ALL BDL'S FOR ANALYTES HAVE BEEN REMOVED

Site Location/Project
3650 SW 47th Ave Davie Fl.
145-001.01

Sample I.D.: SB-6 (2-4')
Collected: 12/03/98 13:25
Received: 12/03/98 15:51
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}		DONE	MEDF	1			
Petroleum Range Organics (C8-C40)	130	mg/Kg	FL-PRO (DEP UST)	1.000	12/04/98	12/06/98	JT

Site Location/Project
3650 SW 47th Ave Davie Fl.
145-001.01

Sample I.D.: SB-7 (0-2')
Collected: 12/03/98 13:00
Received: 12/03/98 15:51
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}		DONE	MEDF	1			
Petroleum Range Organics (C8-C40)	4.8	mg/Kg	FL-PRO (DEP UST)	1.000	12/04/98	12/06/98	JT

Site Location/Project
3650 SW 47th Ave Davie Fl.
145-001.01

Sample I.D.: SB-7 (2-4')
Collected: 12/03/98 13:00
Received: 12/03/98 15:51
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}		DONE	MEDF	1			
Petroleum Range Organics (C8-C40)	152	mg/Kg	FL-PRO (DEP UST)	1.000	12/04/98	12/06/98	JT

PETROM000296
Judd Gilbert
Petroleum Management Inc (PMI)
4700 Oakes Road, 2nd Floor
Davie, FL 33325

Page 3
December 8, 1998
Submission # 9812000194
Order # 80094404
FDER CompQAP# 920323G
HRS Certification# E86349, 86413

QUICK REFERENCE SUMMARY REPORT
ALL BDL'S FOR ANALYTES HAVE BEEN REMOVED

Site Location/Project
3650 SW 47th Ave Davie Fl.
145-001.01

Sample I.D.: SB-8 (0-2')
Collected: 12/03/98 12:37
Received: 12/03/98 15:51
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}		DONE	MEDF	1			
Petroleum Range Organics (C8-C40)	8.1	mg/Kg	FL-PRO (DEP UST)	1.000	12/04/98	12/06/98	JT

Site Location/Project
3650 SW 47th Ave Davie Fl.
145-001.01

Sample I.D.: SB-8 (2-4')
Collected: 12/03/98 12:37
Received: 12/03/98 15:51
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}		DONE	MEDF	1			
Petroleum Range Organics (C8-C40)	176	mg/Kg	FL-PRO (DEP UST)	1.000	12/04/98	12/06/98	JT

Site Location/Project
3650 SW 47th Ave Davie Fl.
145-001.01

Sample I.D.: SB-9 (0-2')
Collected: 12/03/98 12:20
Received: 12/03/98 15:51
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}		DONE	MEDF	1			
Petroleum Range Organics (C8-C40)	7.1	mg/Kg	FL-PRO (DEP UST)	1.000	12/04/98	12/06/98	JT

PETROM000296
Judd Gilbert
Petroleum Management Inc (PMI)
4700 Oakes Road, 2nd Floor
Davie, FL 33325

Page 4
December 8, 1998
Submission # 9812000194
Order # 80094409
FDER CompQAP# 920323G
HRS Certification# E86349, 86413

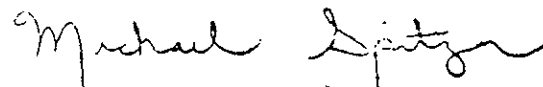
QUICK REFERENCE SUMMARY REPORT
ALL BDL'S FOR ANALYTES HAVE BEEN REMOVED

Site Location/Project
3650 SW 47th Ave Davie Fl.
145-001.01

Sample I.D.: SB-9 (2-4')
Collected: 12/03/98 12:20
Received: 12/03/98 15:51
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}		DONE	MEDF	1			
Petroleum Range Organics (C8-C40)	1770	mg/Kg	FL-PRO (DEP UST)	1.000	12/04/98	12/06/98	JT

BDL: Indicates Analyte is Below Detection Limit
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
MEDF: Matrix Effected Dilution Factor


Michael A. Spitzer, Laboratory Director

FDEP Facility No. _____
 Page _____ of _____
 Sampling Comp/OAP NO. _____
 Approval Date: _____

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

Submission Code: 94409
 Order: 8-943961
 Entered to file: 12-199

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

Report To: PMI & GES Report To Address: _____
 Bill To: PMI Billing Address: _____

Project Number/Name: #145-001-01 PMI Transfer Facility Site Location: 3650 SW 47 Ave
 Project Contact: Judd Gilbert Phone: 954-581-4455 FAX: 954-583-0252
 Alternate Contact: Chris Perry Phone: 561-266-0096 FAX: 561-266-0092
 Sampled By (print): Patty Namin Sampler's Signature: _____

Sampled By (print): <u>Paty N...</u>										Sample Condition as Received: <u>41.2</u> c																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
SAMPLE ID		DATE COLLECTED		TIME COLLECTED		pH		TEMP °C		COND		MATRIX		SAMPLE LOCATION/ JOB DESCRIPTION (optional if needed when samples are from different site locations)		# CONTAINERS		ANALYSIS REQUIRED PLACE NAME OR METHOD NUMBER OF TESTS NEEDED IN LARGE BOXES BELOW. (✓) CHECK OFF WHICH SAMPLE ITEMS NEED EACH TEST PERFORMED																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
1	SB-1 (0-2')	12/3/98		1000								S	94396	1	✓	Florida																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

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

Report Format: Standard Other (specify) _____

Special Comments: Patty Namin

(1) Relinquished by Signature: _____ Date: 12/3/98
 Company: Ale En v.

(2) Relinquished by Signature: _____ Date: 12/3/98
 Company: PRACOR, Environmental

(1) Received by Signature: Patty Namin Date: 12/3/98
 Company: PRACOR, Environmental

(2) Received by Signature: _____ Date: _____
 Company: _____

DUE DATE REQUESTED: Confirmation _____
 Coating Code: _____
 Misc. Charges: _____
 SHAD-ED AREAS ARE FOR LAB USE ONLY

PRECISION ENVIRONMENTAL LABORATORY, INC.

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PETROM000296
Judd Gilbert
Petroleum Management Inc (PMI)
4700 Oakes Road, 2nd Floor
Davie, FL 33325

Page 1
December 27, 1998
Submission # 9812001023
Order # 80100710
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SB-2 (0-2)
Collected: 12/18/98 10:20
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-(SOILS)			MEDF	1			
Petroleum Range Organics (C8-C40)	151	mg/Kg	FL-PRO (DEP UST)	1.000	12/20/98	12/22/98	JT

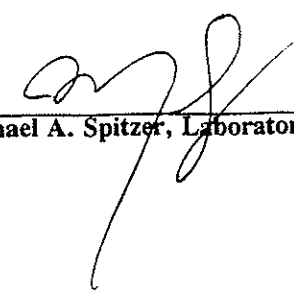
BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effect Dilution Factor***

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.

Certs: Al. = #41180, Ct. = #PH0217, Ks. = #E270 + E1245, Ky. = #90087, La. = #9601, Md. = #271, Ma. = #M-FL535
NC. = #539, ND. = #R163, OK. = #9523, SC. = #96023, Tn. = #TN02826


Michael A. Spitzer, Laboratory Director

PETROM000296
Judd Gilbert
Petroleum Management Inc (PMI)
4700 Oakes Road, 2nd Floor
Davie, FL 33325

Page 2
December 27, 1998
Submission # 9812001023
Order # 80100711
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SB-2 (2-4)
Collected: 12/18/98 10:20
Received: 12/18/98 16:55
Collected by: Patty Namin

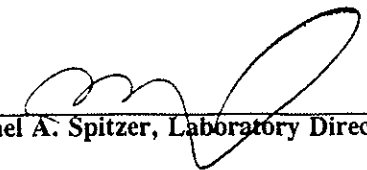
PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}			MEDF	1			
Petroleum Range Organics (C8-C40)	BDL	mg/Kg	FL-PRO (DEP UST)	1.000	12/20/98	12/22/98	JT

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.

Certs:Al.=#41180, Ct.=#PH0217, Ks.=#E270 + E1245, Ky.=#90087, La.=#9601, Md.=#271, Ma.=#M-FL535
NC.=#539, ND.=#R163, OK.=#9523, SC.=#96023, Tn.=#TN02826


Michael A. Spitzer, Laboratory Director

PETROM000296
Judd Gilbert
Petroleum Management Inc (PMI)
4700 Oakes Road, 2nd Floor
Davie, FL 33325

Page 3
December 27, 1998
Submission # 9812001023
Order # 80100712
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SB-3 (0-2)
Collected: 12/18/98 10:40
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-(SOILS)			MEDF	1			
Petroleum Range Organics (C8-C40)	163	mg/Kg	FL-PRO (DEP UST)	1.000	12/20/98	12/22/98	JT

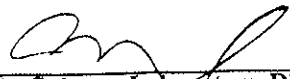
BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effect Dilution Factor***

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.

Certs:Al.=#41180, Ct.=#PH0217, Ks.=#E270 + E1245, Ky.=#90087, La.=#9601, Md.=#271, Ma.=#M-FL535
NC.=#539, ND.=#R163, OK.=#9523, SC.=#96023, Tn.=#TN02826


Michael A. Spitzer, Laboratory Director

PETROM000296
Judd Gilbert
Petroleum Management Inc (PMI)
4700 Oakes Road, 2nd Floor
Davie, FL 33325

Page 4
December 27, 1998
Submission # 9812001023
Order # 80100713
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SB-3 (2-4)
Collected: 12/18/98 10:40
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}			MEDF	1			
Petroleum Range Organics (C8-C40)	BDL	mg/Kg	FL-PRO (DEP UST)	1.000	12/20/98	12/22/98	JT

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effect 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.

Certs:Al.=#41180, Ct.=#PH0217, Ks.=#E270 + E1245, Ky.=#90087, La.=#9601, Md.=#271, Ma.=#M-FL535
NC.=#539, ND.=#R163, OK.=#9523, SC.=#96023, Tn.=#TN02826


Michael A. Spitzer, Laboratory Director

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Davie, FL 33325

Page 5
December 27, 1998
Submission # 9812001023
Order # 80100714
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SB-4 (0-2)
Collected: 12/18/98 11:00
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}			MEDF	1			
Petroleum Range Organics (C8-C40)	313	mg/Kg	FL-PRO (DEP UST)	1.000	12/21/98	12/22/98	JT

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effect 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.

Certs: Al. = #41180, Ct. = #PH0217, Ks. = #E270 + E1245, Ky. = #90087, La. = #9601, Md. = #271, Ma. = #M-FL535
NC. = #539, ND. = #R163, OK. = #9523, SC. = #96023, Tn. = #TN02826


Michael A. Spitzer, Laboratory Director

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Page 6
December 27, 1998
Submission # 9812001023
Order # 80100715
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SB-4 (2-4)
Collected: 12/18/98 11:00
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}			MEDF	1			
Petroleum Range Organics (C8-C40)	193	mg/Kg	FL-PRO (DEP UST)	1.000	12/20/98	12/22/98	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.

Certs:Al.=#41180, Ct.=#PH0217, Ks.=#E270 + E1245, Ky.=#90087, La.=#9601, Md.=#271, Ma.=#M-FL535
NC.=#539, ND.=#R163, OK.=#9523, SC.=#96023, Tn.=#TN02826


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Page 7
December 27, 1998
Submission # 9812001023
Order # 80100716
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SB-5 (0-2)
Collected: 12/18/98 11:15
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}			MEDF	1			
Petroleum Range Organics (C8-C40)	515	mg/Kg	FL-PRO (DEP UST)	1.000	12/20/98	12/22/98	JT

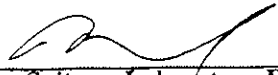
BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effect Dilution Factor***

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.

Certs:Al.=#41180, Ct.=#PH0217, Ks.=#E270 + E1245, Ky.=#90087, La.=#9601, Md.=#271, Ma.=#M-FL535
NC.=#539, ND.=#R163, OK.=#9523, SC.=#96023, Tn.=#TN02826


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Page 8
December 27, 1998
Submission # 9812001023
Order # 80100717
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SB-5 (2-4)
Collected: 12/18/98 11:15
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}			MEDF	1			
Petroleum Range Organics (C8-C40)	1.6	mg/Kg	FL-PRO (DEP UST)	1.000	12/21/98	12/22/98	JT

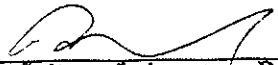
BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effected Dilution Factor***

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.

Certs: Al. = #41180, Ct. = #PH0217, Ks. = #E270 + E1245, Ky. = #90087, La. = #9601, Md. = #271, Ma. = #M-FL535
NC. = #539, ND. = #R163, OK. = #9523, SC. = #96023, Tn. = #TN02826


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Page 9
December 27, 1998
Submission # 9812001023
Order # 80100718
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SB-10 (0-2)
Collected: 12/18/98 11:30
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}			MEDF	1			
Petroleum Range Organics (C8-C40)	2.3	mg/Kg	FL-PRO (DEP UST)	1.000	12/20/98	12/22/98	JT


BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effect 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.

Certs: Al. = #41180, Ct. = #PH0217, Ks. = #E270 + E1245, Ky. = #90087, La. = #9601, Md. = #271, Ma. = #M-FL535
NC. = #539, ND. = #R163, OK. = #9523, SC. = #96023, Tn. = #TN02826


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Davie, FL 33325

Page 10
December 27, 1998
Submission # 9812001023
Order # 80100719
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SB-10 (2-4)
Collected: 12/18/98 11:30
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}			MEDF	1			
Petroleum Range Organics (C8-C40)	BDL	mg/Kg	FL-PRO (DEP UST)	1.000	12/20/98	12/22/98	JT

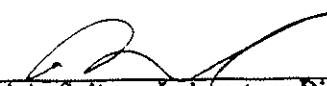
BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effect Dilution Factor***

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.

Certs:Al. =#41180, Ct. =#PH0217, Ks. =#E270 + E1245, Ky. =#90087, La. =#9601, Md. =#271, Ma. =#M-FL535
NC. =#539, ND. =#R163, OK. =#9523, SC. =#96023, Tn. =#TN02826


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Page 11
December 27, 1998
Submission # 9812001023
Order # 80100720
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SB-11 (0-2)
Collected: 12/18/98 12:40
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}			MEDF	1			
Petroleum Range Organics (C8-C40)	2.4	mg/Kg	FL-PRO (DEP UST)	1.000	12/20/98	12/22/98	JT

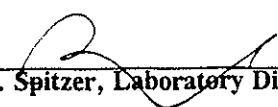
BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effect Dilution Factor***

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.

Certs:Al.=#41180, Ct.=#PH0217, Ks.=#E270 + E1245, Ky.=#90087, La.=#9601, Md.=#271, Ma.=#M-FL535
NC.=#539, ND.=#R163, OK.=#9523, SC.=#96023, Tn.=#TN02826


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Page 12
December 27, 1998
Submission # 9812001023
Order # 80100721
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SB-11 (2-4)
Collected: 12/18/98 12:40
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}			MEDF	1			
Petroleum Range Organics (C8-C40)	1.5	mg/Kg	FL-PRO (DEP UST)	1.000	12/20/98	12/22/98	JT

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effect 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.

Certs:Al.=#41180, Ct.=#PH0217, Ks.=#E270 + E1245, Ky.=#90087, La.=#9601, Md.=#271, Ma.=#M-FL535
NC.=#539, ND.=#R163, OK.=#9523, SC.=#96023, Tn.=#TN02826


Michael A. Spitzer, Laboratory Director

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Page 13
December 27, 1998
Submission # 9812001023
Order # 80100722
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SS-A
Collected: 12/18/98 15:35
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}			MEDF	1			
Petroleum Range Organics (C8-C40)	28.4	mg/Kg	FL-PRO (DEP UST)	1.000	12/20/98	12/22/98	JT


BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effect 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.

Certs: Al. = #41180, Ct. = #PH0217, Ks. = #E270 + E1245, Ky. = #90087, La. = #9601, Md. = #271, Ma. = #M-FL535
NC. = #539, ND. = #R163, OK. = #9523, SC. = #96023, Tn. = #TN02826


Michael A. Spitzer, Laboratory Director

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Page 14
December 27, 1998
Submission # 9812001023
Order # 80100723
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: SS-B
Collected: 12/18/98 15:55
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
FL-PRO (Petroleum Residual Organic)-{SOILS}			MEDF	1			
Petroleum Range Organics (C8-C40)	18.7	mg/Kg	FL-PRO (DEP UST)	1.000	12/20/98	12/22/98	JT

BDL: Indicates Analyte is Below Detection LimitMEDF: Matrix Effect 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.

Certs:Al.=#41180, Ct.=#PH0217, Ks.=#E270 + E1245, Ky.=#90087, La.=#9601, Md.=#271, Ma.=#M-FL535

NC.=#539, ND.=#R163, OK.=#9523, SC.=#96023, Tn.=#TN02826


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Page 15
 December 27, 1998
 Submission # 9812001023
 Order # 80100724
 FDEP CompQAP# 920323
 HRS Certification# E86349, 86413

Site Location/Project
 Davie
 PMI Facility

Sample I.D.: Temp Well SB-11
 Collected: 12/18/98 13:00
 Received: 12/18/98 16:55
 Collected by: Patty Namin

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	12/24/98	12/24/98	PMD
Benzene	BDL	ug/L	5030/8021B	1.000	12/24/98	12/24/98	PMD
Toluene	BDL	ug/L	5030/8021B	1.000	12/24/98	12/24/98	PMD
Chlorobenzene	BDL	ug/L	5030/8021B	1.000	12/24/98	12/24/98	PMD
Ethylbenzene	BDL	ug/L	5030/8021B	1.000	12/24/98	12/24/98	PMD
m & p Xylene	BDL	ug/L	5030/8021B	1.000	12/24/98	12/24/98	PMD
o- Xylene	BDL	ug/L	5030/8021B	1.000	12/24/98	12/24/98	PMD
1,3-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	12/24/98	12/24/98	PMD
1,4-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	12/24/98	12/24/98	PMD
1,2-Dichlorobenzene	BDL	ug/L	5030/8021B	1.000	12/24/98	12/24/98	PMD
FL-PRO (Petroleum Residual Organic)-(WATER)			MEDF	1			

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Page 16
December 27, 1998
Submission # 9812001023
Order # 80100724
FDEP CompQAP# 920323
HRS Certification# E86349, 86413

Site Location/Project
Davie
PMI Facility

Sample I.D.: Temp Well SB-11
Collected: 12/18/98 13:00
Received: 12/18/98 16:55
Collected by: Patty Namin

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Petroleum Range Organics (C8-C40)	BDL	mg/L	FL-PRO (DEP UST)	0.100	12/27/98	12/27/98	IO/TPH

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.

Certs: Al. = #41180, Ct. = #PH0217, Ks. = #E270 + E1245, Ky. = #90087, La. = #9601, Md. = #271, Ma. = #M-FL535
NC. = #539, ND. = #R163, OK. = #9523, SC. = #96023, Tn. = #TN02826


Michael A. Spitzer, Laboratory Director

PRECISION ENVIRONMENTAL LABORATORY

CHAIN OF CUSTODY RECORD (DEP 02-770.900 (modified form))

FDEP Facility No. _____
 Page 2 of 2
 Sampling CompOAP NO. _____
 Approval Date: _____

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

Pink - Sampler Copy

Yellow - Lab Copy

Original - Return w/Report

Report To: _____ Report To Address: _____
 Bill To: _____ Billing Address: _____

Project Number/Name: PMT Facility Site Location: DAVIS, FL
 Project Contact: Chris Perry Phone: (561) 266-0092 FAX: (561) 266-0092
 Alternate Contact: Chris Perry Phone: (561) 266-0092 FAX: (561) 266-0092
 Sampled By (print): PATRY NAMIA Sampler's Signature: [Signature]

ANALYSIS REQUIRED										Sample Condition as Received:		Lot Number of Sampling Containers Used
PLACE NAME OR METHOD NUMBER OF TESTS NEEDED IN LARGE BOXES BELOW.										Temp	C	
(✓) CHECK OFF WHICH SAMPLE ITEMS NEED EACH TEST PERFORMED										Sealed	Yes	No
I T E M	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	pH	TEMP °C	F L D	C O N D	MATRIX	SAMPLE LOCATION/ JOB DESCRIPTION <small>(optional if needed when samples are from different site locations)</small>	CONTAINERS		
										EPA	602	PR-0
1	SB-11 (0-2')	12/18/98	12:40					Soil	100720	✓		
2	SB-11 (2-4')	12/18/98	12:40					Soil	100721	✓		
3	TEMPWELL-SB11	12/18/98	13:00					GW	100724	✓		
4	SS-A	12/18/98	15:35					S	100722	✓		
5	SS-B	12/18/98	15:55					S	100723	✓		
6												
7												
8												
9												
10												
Total # of Containers:												

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

(1) Relinquished by Signature: [Signature] Date: 12/18/98
 Company: [Signature]
 (2) Relinquished by Signature: _____ Date: _____
 Company: _____
 (1) Received by Signature: [Signature] Date: 12/18/98
 Company: [Signature]
 (2) Received by Signature: _____ Date: _____
 Company: _____

SHADED AREAS ARE FOR LAB USE ONLY

APPENDIX F

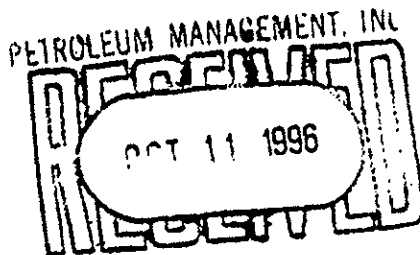


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Site Location/Project
Davie, FL
Quarterly



Page 1
October 7, 1996
Submission # 9610000146
Order # 178098
FIER CompQAP# 920323G
HHS Certification# E86349, 86413

Sample I.D.: Mon. Well
Collected: 10/03/96 10:45
Received: 10/03/96 17:00
Collected by: Reggie Foxx

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
8021 VOA (602) Compounds in Water by GC			MEDF	1			
Methyl-tert-butyl-ether	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Benzene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Toluene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Chlorobenzene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Ethylbenzene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
m & p Xylene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
o- Xylene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,3-Dichlorobenzene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,4-Dichlorobenzene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,2-Dichlorobenzene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
8021 VOH (601) Compounds in Water by GC			MEDF	1			
Dichlorodifluoromethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Chloromethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Vinyl Chloride	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Bromomethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Chloroethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Trichlorofluoromethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD

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Judd Gilbert
Petroleum Management Inc (PMI)
4700 Oakes Road 2nd Floor
Davie, FL 33325

Page 2
October 7, 1996
Submission # 9610000146
Order # 178098
FDER Comp QAP# 920323G
HRS Certification# E86349, 86413

Site Location/Project
Davie, FL
Quarterly

Sample I.D.: Mon. Well
Collected: 10/03/96 10:45
Received: 10/03/96 17:00
Collected by: Reggie Foxx

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
1,1-Dichloroethene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Ethylene Chloride	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Trans-1,2-Dichloroethene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,1-Dichloroethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
2,2-Dichloropropane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Cis-1,2-Dichloroethene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Chloroform	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Bromochloromethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,1,1-Trichloroethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,1-Dichloropropene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Carbon Tetrachloride	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,2-Dichloroethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Trichloroethene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,2-Dichloropropane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Bromodichloromethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1-Chloroethylvinyl Ether	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Dibromomethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Cis-1,3-Dichloropropene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD

PETROM000296
 Judd Gilbert
 Petroleum Management Inc (PMD)
 4700 Oakes Road 2nd Floor
 Davie, FL 33325

Page 3
 October 7, 1996
 Submission # 9610000146
 Order # 178098
 FDER CompQAP# 920323G
 HRS Certification# E86349, 86413

Site Location/Project
 Davie, FL
 Quarterly

Sample I.D.: Mon. Well
 Collected: 10/03/96 10:45
 Received: 10/03/96 17:00
 Collected by: Reggie Foxx

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Trans-1,3-Dichloropropene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,1,2-Trichloroethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,3-Dichloropropane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Tetrachloroethene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Dibromochloromethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,2-Dibromoethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Chlorobenzene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,1,1,2-Tetrachloroethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
Bromoform	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,1,2,2-Tetrachloroethane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,2,3-Trichloropropane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
2-Chlorotoluene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
4-Chlorotoluene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,3-Dichlorobenzene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,4-Dichlorobenzene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,2-Dichlorobenzene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,2-Dibromo-3-Chloropropane	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD
1,2,4-Trichlorobenzene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	PMD

PETROM000296
 Judd Gilbert
 Petroleum Management Inc (PMI)
 4700 Oakes Road 2nd Floor
 Davie, FL 33325

Page 4
 October 7, 1996
 Submission # 9610000146
 Order # 178098
 FDER CompQAP# 920323G
 HRS Certification# E86349, 86413

Site Location/Project
 Davie, FL
 Quarterly

Sample I.D.: Mon. Well
 Collected: 10/03/96 10:45
 Received: 10/03/96 17:00
 Collected by: Reggie Foxx

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Hexachlorobutadiene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	MD
1,2,3-Trichlorobenzene	BDL	ug/L	5030/8021	1.000	10/04/96	10/04/96	MD
8270 - PAHs (610) in Water by GC-MS			MEDF	1			
Naphthalene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
2-Methylnaphthalene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
1-Methylnaphthalene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
Acenaphthene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
Phenanthrene	5.3	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
Fluoranthene	11.8	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
Benzo(a)anthracene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
Benzo(b)fluoranthene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
Benzo(a)pyrene	BDL	ug/L	3510/8270	2.000	10/04/96	10/05/96	MEC
Benzo(ghi)perylene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
Acenaphthylene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
Fluorene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
Anthracene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
Pyrene	26.6	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
Chrysene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC

PETROM000296
Judd Gilbert
Petroleum Management Inc (PMD)
4700 Oakes Road 2nd Floor
Davie, FL 33325

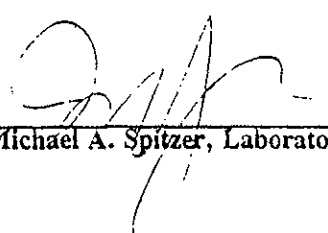
Page 5
October 7, 1996
Submission # 9610000146
Order # 178098
FDER CompQAP# 920323G
HRS Certification# E86349, 86413

Site Location/Project
Davie, FL
Quarterly

Sample I.D.: Mon. Well
Collected: 10/03/96 10:45
Received: 10/03/96 17:00
Collected by: Reggie Foxx

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Benzo(k)fluoranthene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
Indeno(1,2,3-cd)pyrene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC
Dibenzo(a,h)anthracene	BDL	ug/L	3510/8270	5.000	10/04/96	10/05/96	MEC

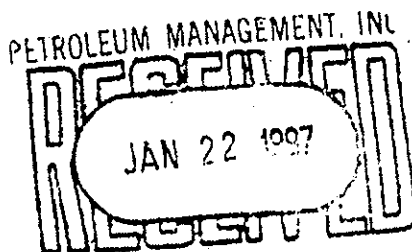
BDL: Indicates Analyte is Below Detection Limit
Work Subcontracted to Outside Labs Denoted by HRS Cert ID in Analyst Field
Qualifier following result conforms to FAC 62-160 Table 7
Unless otherwise noted, mg/Kg denotes wet weight
MEDF: Matrix Effect Dilution Factor


Michael A. Spitzer, Laboratory Director

PRECISION ENVIRONMENTAL LABORATORY, INC.

first in quality • first in service

PETROM000296
Judd Gilbert
Petroleum Management Inc (PMI)
4700 Oakes Road 2nd Floor
Davie, FL 33325



Page 1
January 15, 1997
Submission # 9701000266
Order # 196474
FDER CompQAP# 920323G
HRS Certification# E86349, 86413

Site Location/Project
4700 Oakes Road 2nd Floor Davie, FL. 33325
Quarterly

Sample I.D.: Mon. Well
Collected: 01/09/97 10:58
Received: 01/09/97 16:54
Collected by: Reginald N. Foxx

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
8021 VOA (602) Compounds in Water by GC			MEDF	10			
Methyl-tert-butyl-ether	34.0	ug/L	5030/8021	10.000	01/11/97	01/11/97	MD
Benzene	50.4	ug/L	5030/8021	10.000	01/11/97	01/11/97	MD
Toluene	193	ug/L	5030/8021	10.000	01/11/97	01/11/97	MD
Chlorobenzene	BDL	ug/L	5030/8021	10.000	01/11/97	01/11/97	MD
Ethylbenzene	26.3	ug/L	5030/8021	10.000	01/11/97	01/11/97	MD
m & p Xylene	93.5	ug/L	5030/8021	10.000	01/11/97	01/11/97	MD
o- Xylene	56.1	ug/L	5030/8021	10.000	01/11/97	01/11/97	MD
1,3-Dichlorobenzene	BDL	ug/L	5030/8021	10.000	01/11/97	01/11/97	MD
1,4-Dichlorobenzene	BDL	ug/L	5030/8021	10.000	01/11/97	01/11/97	MD
1,2-Dichlorobenzene	BDL	ug/L	5030/8021	10.000	01/11/97	01/11/97	MD
8021 VOH (601) Compounds in Water by GC			MEDF	1			
Dichlorodifluoromethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Chloromethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Vinyl Chloride	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Bromomethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Chloroethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Trichlorofluoromethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD

PETROM000296
 Judd Gilbert
 Petroleum Management Inc (PMI)
 4700 Oakes Road 2nd Floor
 Davie, FL 33325

Page 2
 January 15, 1997
 Submission # 9701000266
 Order # 196474
 FDER CompQAP# 920323G
 HRS Certification# E86349, 86413

Site Location/Project
 4700 Oakes Road 2nd Floor Davie, FL. 33325
 Quarterly

Sample I.D.: Mon. Well
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 Collected by: Reginald N. Foxx

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
1,1-Dichloroethene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Methylene Chloride	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Trans-1,2-Dichloroethene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,1-Dichloroethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
2,2-Dichloropropane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Cis-1,2-Dichloroethene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Chloroform	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Bromochloromethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,1,1-Trichloroethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,1-Dichloropropene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Carbon Tetrachloride	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,2-Dichloroethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Trichloroethene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,2-Dichloropropane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Bromodichloromethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
2-Chloroethylvinyl Ether	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Dibromomethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Cis-1,3-Dichloropropene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD

PETROM000296
 Judd Gilbert
 Petroleum Management Inc (PMI)
 4700 Oakes Road 2nd Floor
 Davie, FL 33325

Page 3
 January 15, 1997
 Submission # 9701000266
 Order # 196474
 FDER CompQAP# 920323G
 HRS Certification# E86349, 86413

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 4700 Oakes Road 2nd Floor Davie, FL. 33325
 Quarterly

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PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Trans-1,3-Dichloropropene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,1,2-Trichloroethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,3-Dichloropropane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Tetrachloroethene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Dibromochloromethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,2-Dibromoethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Chlorobenzene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,1,1,2-Tetrachloroethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
Bromoform	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,1,1,2,2-Tetrachloroethane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,2,3-Trichloropropane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
2-Chlorotoluene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
4-Chlorotoluene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,3-Dichlorobenzene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,4-Dichlorobenzene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,2-Dichlorobenzene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,2-Dibromo-3-Chloropropane	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,2,4-Trichlorobenzene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD

PETROM000296
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 4700 Oakes Road 2nd Floor
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Page 4
 January 15, 1997
 Submission # 9701000266
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Site Location/Project
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 Quarterly

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 Collected by: Reginald N. Foxx

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Hexachlorobutadiene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
1,2,3-Trichlorobenzene	BDL	ug/L	5030/8021	1.000	01/12/97	01/12/97	MD
8270 PAHs (610) in Water by GC-MS			MEDF	10			
Naphthalene	298	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
2-Methylnaphthalene	1220	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
1-Methylnaphthalene	619	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
Acenaphthene	BDL	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
Phenanthrene	223	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
Fluoranthene	BDL	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
Benzo(a)anthracene	BDL	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
Benzo(b)fluoranthene	BDL	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
Benzo(a)pyrene	BDL	ug/L	3510/8270	20.000	01/14/97	01/14/97	MEC
Benzo(ghi)perylene	BDL	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
Acenaphthylene	BDL	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
Fluorene	BDL	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
Anthracene	BDL	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
Pyrene	BDL	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
Chrysene	BDL	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC

PETROM000296
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Page 5
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PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE EXT.	DATE ANALY.	ANALYST
Benzo(k)fluoranthene	BDL	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
Indeno(1,2,3-cd)pyrene	BDL	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC
Dibenzo(a,h)anthracene	BDL	ug/L	3510/8270	50.000	01/14/97	01/14/97	MEC

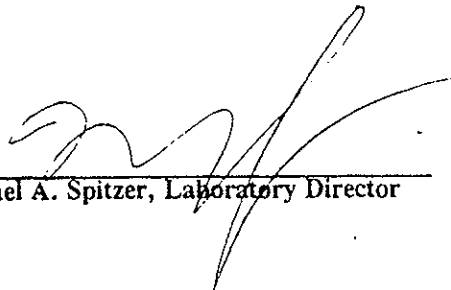
BDL: Indicates Analyte is Below Detection Limit

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

MEDF: Matrix Effected Dilution Factor


Michael A. Spitzer, Laboratory Director

Submission Code: **9961-266**
Order: **196474**
Entered to time: **DAB**

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

FDEP Facility No. _____
Page _____ of _____
Sampling Campaign NO. _____
Approval Date: _____

Original - Return w/Report

Yellow - Lab Copy

Pink - Sampler Copy

Report To: PETROM000296 Q1 Petroleum Management, Inc.

Bill To: PETROLEUM MANAGEMENT INC (PMI)

Project Number/Name: QUARTERLY

Project Contact: MICK GILDER

Alternate Contact:

Sampled By (Print): *Reginald N. Fox*

Sample's Signature: *Reginald N. Fox*

Report To Address: 4700 OAKES ROAD 2ND FLOOR DAWK FL 33325

Billing Address: 4700 OAKES ROAD 2ND FLOOR DAWK, FL 33325

DAY: 2-4 RT: 10 GRAB: 800 STOP: 0

Phone: 581-4455 FAX: 583-0252

Phone:

FAX:

Site Location:

ANALYSIS REQUIRED
PLACE NAME, OR METHOD NUMBER OF TESTS NEEDED IN LARGE BOXES BELOW.
(/1) CHECK OFF WHICH SAMPLE ITEMS NEED EACH TEST PERFORMED

Sample Condition as Received: **49 C**
Temp: **49 C**
Seal: **Yes**
No

Lot Number of Sampling Containers Used: _____

SAMPLE LOCATION/ JOB DESCRIPTION
(optional if needed when samples are from different site locations)

MATRIX
DW
SW
GW
SEB
S
EFF
HM
BIO
DA

C O N D F F L D

T E M P °C F F L D

pH F F L D

TIME COLLECTED

DATE COLLECTED

SAMPLE ID

1

mon. well

196474.3

GW

10:58

11/19/97

10:58

11/19/97

10:58

11/19/97

10:58

11/19/97

10:58

10:58

DAIQC Report Headed: Yes No [See price guide for applicable fees]

Report Format: Standard Other (specify)

DUE DATE REQUESTED: Confirmation #

Coating Code: _____

Misc. Charges C/P: _____ P/T: 1.0 R

SHADED AREAS ARE FOR LAB USE ONLY

(1) Retiquated by Signature:

Company:

(2) Received by Signature:

Company:

Date: 7-9-97

Time: 11:54

Date: 11/19/97

Time: 10:54

(1) Retiquated by Signature: *Reginald N. Fox*

Company: *P.E.C.*

(2) Received by Signature: *Reginald N. Fox*

Company: *P.E.C.*

Special Comments: Free Planting Product in well

DAIQC Report Headed: Yes No

Report Format: Standard Other (specify)

DUE DATE REQUESTED: Confirmation #

Coating Code: _____

Misc. Charges C/P: _____ P/T: 1.0 R

SHADED AREAS ARE FOR LAB USE ONLY