

N00204.AR.003591
NAS PENSACOLA
5090.3a

MONITORING ONLY PLAN SITE 3221NE NAVAL AVIATION DEPOT NAS PENSACOLA FL
3/1/1993
ABB ENVIRONMENTAL SERVICES, INC

MONITORING ONLY PLAN

**Site 3221NE
Naval Aviation Depot
Naval Air Station
Pensacola, Florida**

UIC: N00204

Contract No. N62467-89-D-0317

Prepared by:

**ABB Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, Florida 32301**

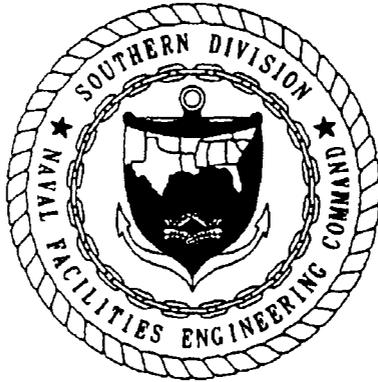
Author: Roger Durham

Prepared for:

**Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29418**

Luis Vazquez, Code 1843, Engineer-in-Charge

March 1993



FOREWORD

Subtitle I of the Hazardous and Solid Waste Amendments (HSWA) of 1984 to the Solid Waste Disposal Act (SWDA) of 1965 established a national regulatory program for managing underground storage tanks (USTs) containing hazardous materials, especially petroleum products. Hazardous wastes stored in USTs were already regulated under the Resource Conservation and Recovery Act (RCRA) of 1976, which was also an amendment to SWDA. Subtitle I requires that the U.S. Environmental Protection Agency (USEPA) promulgate UST regulations. The program was designed to be administered by the individual States, who were allowed to develop more stringent standards, but not less stringent standards. Local governments were permitted to establish regulatory programs and standards that are more stringent, but not less stringent than either State or Federal regulations. The USEPA UST regulations are found in the Code of Federal Regulations, Title 40, Part 280 (40 CFR 280) (*Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks*) and Title 40 CFR 281 (*Approval of State Underground Storage Tank Programs*). Title 40 CFR 280 was revised and published on September 23, 1988, and became effective December 22, 1988.

The Navy's UST program policy is to comply with all Federal, State, and local regulations pertaining to USTs. This report was prepared to satisfy the requirements of the Florida Department of Environmental Regulation (FDER) Chapter 17-770, Florida Administrative Code (FAC) (*State Underground Petroleum Environmental Response*) regulations on petroleum contamination in Florida's environment as a result of spills or leaking tanks or piping.

Questions regarding this report should be addressed to the Environmental Coordinator, Naval Aviation Depot (NADEP), Naval Air Station, Pensacola, Florida, at 904-452-2320, or to Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), Code 1843, at DSN 563-0613 or 803-743-0613.

ACKNOWLEDGMENTS

In preparing this report, The Underground Storage Tank Section of the Comprehensive Long-Term Environmental Action, Navy (CLEAN) Group at ABB Environmental Services, Inc. (ABB-ES), commends the support, assistance, and cooperation provided by the personnel of the Naval Aviation Depot (NADEP), Pensacola, Florida, and Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM). In particular, ABB-ES acknowledges the effort provided by the following people during the investigation and preparation of this report.

Name	Title	Position	Location
Luis Vazquez	Environmental Engineer	Engineer-in-Charge	SOUTHNAVFACENGCOM
Danny Freeman	Environmental Coordinator	Environmental Coordinator	NADEP Pensacola

TABLE OF CONTENTS

Monitoring Only Plan
Site 3221NE, Naval Aviation Depot
Pensacola, Florida

<u>Section</u>	<u>Title</u>	<u>Page No.</u>
1.0	INTRODUCTION	1-1
2.0	SITE BACKGROUND	2-1
2.1	SITE DESCRIPTION	2-1
2.2	SITE HISTORY	2-1
2.3	PREVIOUS INVESTIGATION	2-1
3.0	MONITORING ONLY PLAN	3-1
4.0	GROUNDWATER MONITORING METHODOLOGIES AND EQUIPMENT	4-1
4.1	GROUNDWATER LEVEL MEASUREMENTS	4-1
4.2	GROUNDWATER SAMPLING AND ANALYSES	4-1
4.3	HEALTH AND SAFETY PLAN	4-1
4.4	WRITTEN REPORT PREPARATION	4-1

REFERENCES

- APPENDIX A: Florida Department of Environmental Regulation Monitoring Only Approval Order
- APPENDIX B: Laboratory Analytical Data

LIST OF FIGURES

Monitoring Only Plan
Site 3221NE, Naval Aviation Depot
Pensacola, Florida

<u>Figure</u>	<u>Title</u>	<u>Page No.</u>
1-1	Facility Location Map	1-2
2-1	Site Location Map	2-2
2-2	Site Plan	2-3
2-3	Monitoring Well Locations and Groundwater Contamination Distribution Map, February 27 and April 15, 1992	2-4
3-1	Proposed Sampling Plan	3-2

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page No.</u>
4-1	Summary of Selected Groundwater Sample Laboratory Analyses, February 27 and April 15, 1992	4-2

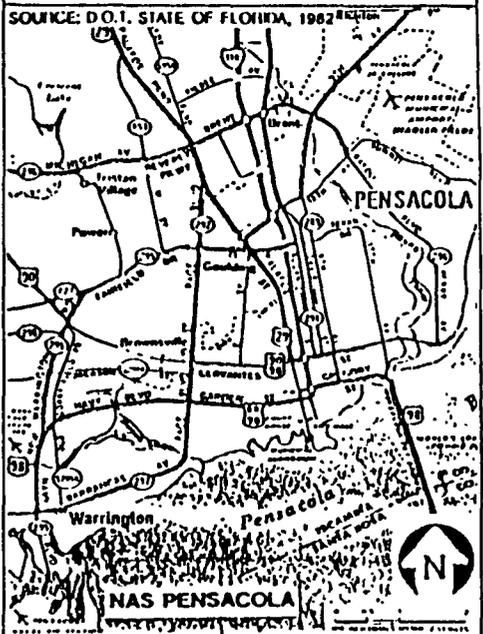
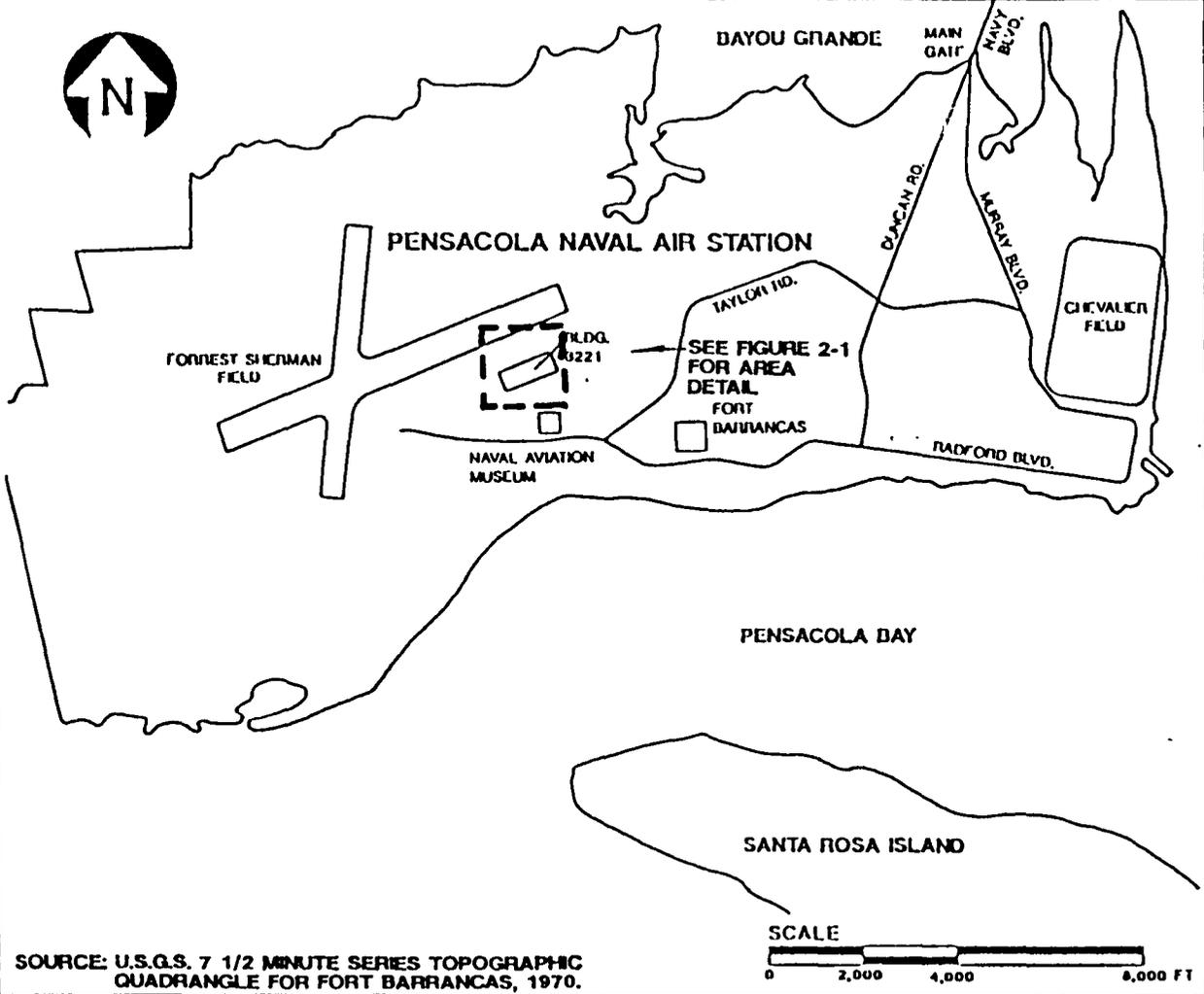
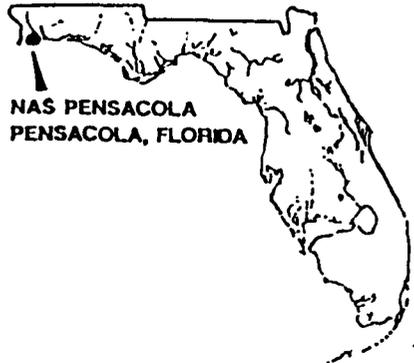
GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
CAR	Contamination Assessment Report
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-Term Environmental Action, Navy
CompQAP	Comprehensive Quality Assurance Plan
FAC	Florida Administrative Code
FDER	Florida Department of Environmental Regulations
ft/day	feet per day
ft/ft	feet per foot
HSWA	Hazardous and Solid Waste Amendments
ID	inside diameter
MOP	Monitoring Only Plan
$\mu\text{g}/\text{l}$	micrograms per liter
NADEP	Naval Aviation Depot
NAS	Naval Air Station
NGVD	National Geodetic Vertical Datum of 1929
ppm	parts per million
RCRA	Resource Conservation and Recovery Act of 1976
SOUTHNAVFACENGCOM	Southern Division, Naval Facilities Engineering Command
SWDA	Solid Waste Disposal Act
TRPH	total recoverable petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank

1.0 INTRODUCTION

The Naval Aviation Depot (NADEP), Pensacola, Florida, is the operations and repair department of the Naval Air Station (NAS) Pensacola. NADEP Pensacola is a tenant command located on NAS facilities within the Pensacola Naval Base Complex. The Pensacola Naval Base Complex is located on the western edge of Pensacola Bay on State Route 295 (Navy Boulevard; Figure 1-1).

ABB Environmental Services, Inc. (ABB-ES), was contracted by Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to prepare a *Monitoring Only Plan (MOP)* for conducting quarterly sampling of select monitoring wells at Site 3221NE at NADEP Pensacola. The scope and manner for implementing the *MOP* are presented in this report.



SOURCE: U.S.G.S. 7 1/2 MINUTE SERIES TOPOGRAPHIC QUADRANGLE FOR FORT BARRANCAS, 1970.



FIGURE 1-1
FACILITY LOCATION MAP



MONITORING ONLY PLAN
SITE 3221NE
NADEP PENSACOLA
PENSACOLA, FLORIDA

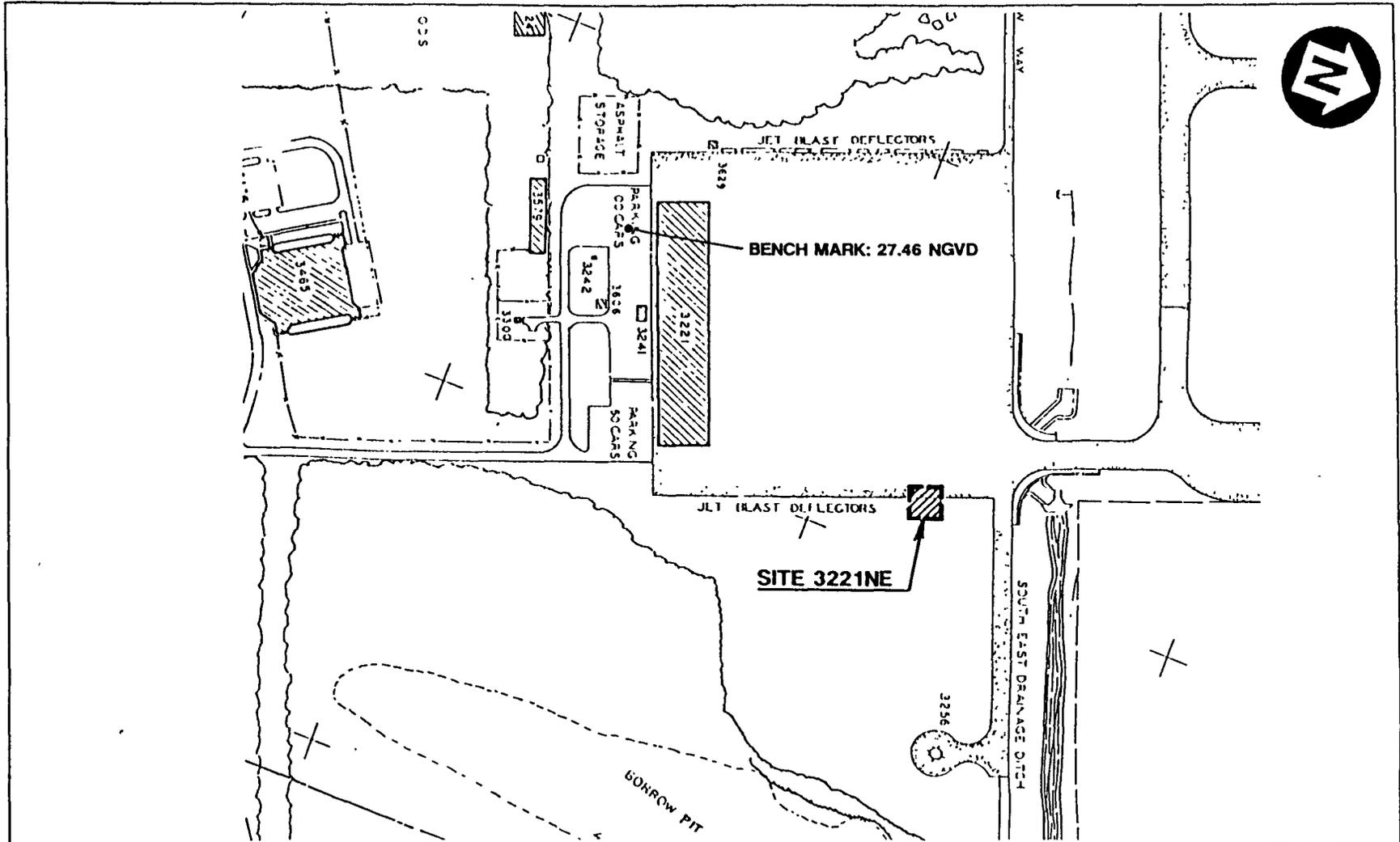
2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION. Building 3221 is located on the eastern perimeter of Forrest Sherman Field (Figure 1-1). It is the location of various helicopter maintenance and repair activities for the NADEP. The eastern half of the facility is currently being used by the Museum of Naval Aviation for aircraft restoration. Restoration activities include, but are not limited to, the use of paint and paint products. A large, 18-inch-thick concrete apron extends north from Building 3221 to the intersection with the Sherman Field flightline. The concreted area in the immediate site vicinity appears to be primarily used for helicopter and airplane parking. Restoration activities appear to be performed away from the site and in the immediate vicinity of Building 3221.

Site 3221NE is located approximately 400 feet north of the northeast corner of Building 3221 (Figure 2-1). The site is the former location of a 500-gallon underground storage tank (UST) reportedly used for the storage of water-contaminated JP-5 fuel and waste oil. Figure 2-2 is a site plan showing the former UST location and surface features in the site vicinity. The UST was located in a grassy area between jet deflectors along the eastern edge of the concrete apron.

2.2 SITE HISTORY. The former UST at Site 3221NE was reportedly installed in 1967. During a tank removal and installation program conducted by the Navy in 1989 and 1990, the UST was removed from the site. A composite soil sample was collected from the UST excavation and analyzed for total recoverable petroleum hydrocarbons (TRPH). The reported TRPH concentration of 1,900 parts per million (ppm) exceeded the Florida Department of Environmental Regulation (FDER) regulatory standard of 50 ppm for petroleum contaminated soils (FDER, May 1992) and, therefore, warranted further site investigation pursuant to Chapter 17-770, Florida Administrative Code (FAC).

2.3 PREVIOUS INVESTIGATION. ABB-ES was contracted by SOUTHNAVFACENGCOCM to perform a contamination assessment at Site 3221NE. The contamination assessment was conducted from January through April 1992. A Contamination Assessment Report (CAR) was submitted to FDER in August 1992. Sixteen soil borings were drilled at the site to assess the extent and levels of soil petroleum contamination. Eleven, 2-inch inside diameter (ID), monitoring wells (PEN-3221NE-MW-1 through PEN-3221NE-MW-11; designated as MW-1 through MW-11 in figures and tables in this report) were installed in 11 soil borings at the site. The shallow wells were screened in the upper part of the surficial zone, at depths of 5 to 15 feet below land surface (bls). A deep permanent monitoring well (PEN-3221NE-MW-12D; designated as MW-12D on figures) was installed downgradient of the former UST location. The deep well was screened at a depth of 30 to 35 feet bls to assess the vertical extent of contamination near the former UST location. Monitoring well locations are shown in Figure 2-3. Groundwater samples were collected from each monitoring well on February 27, 1992, and analyzed for used oil constituents as outlined in Chapter 17-770, FAC. Monitoring well PEN-3221NE-MW-10 was resampled on April 15, 1992, to confirm the presence of contamination found previously in this well. A groundwater contamination distribution map, based on the February 27 and April 15, 1992, data, is shown in Figure 2-3.

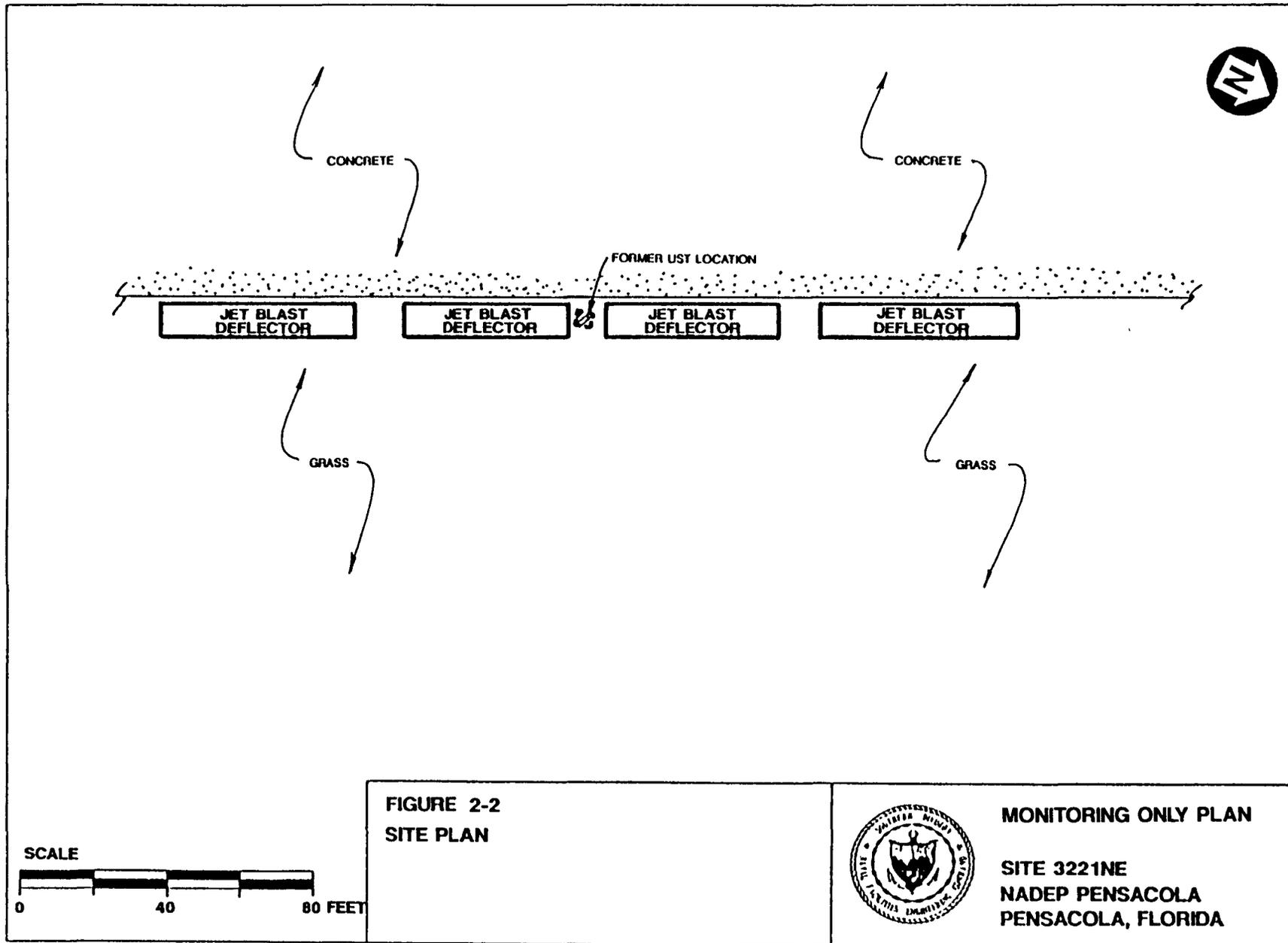


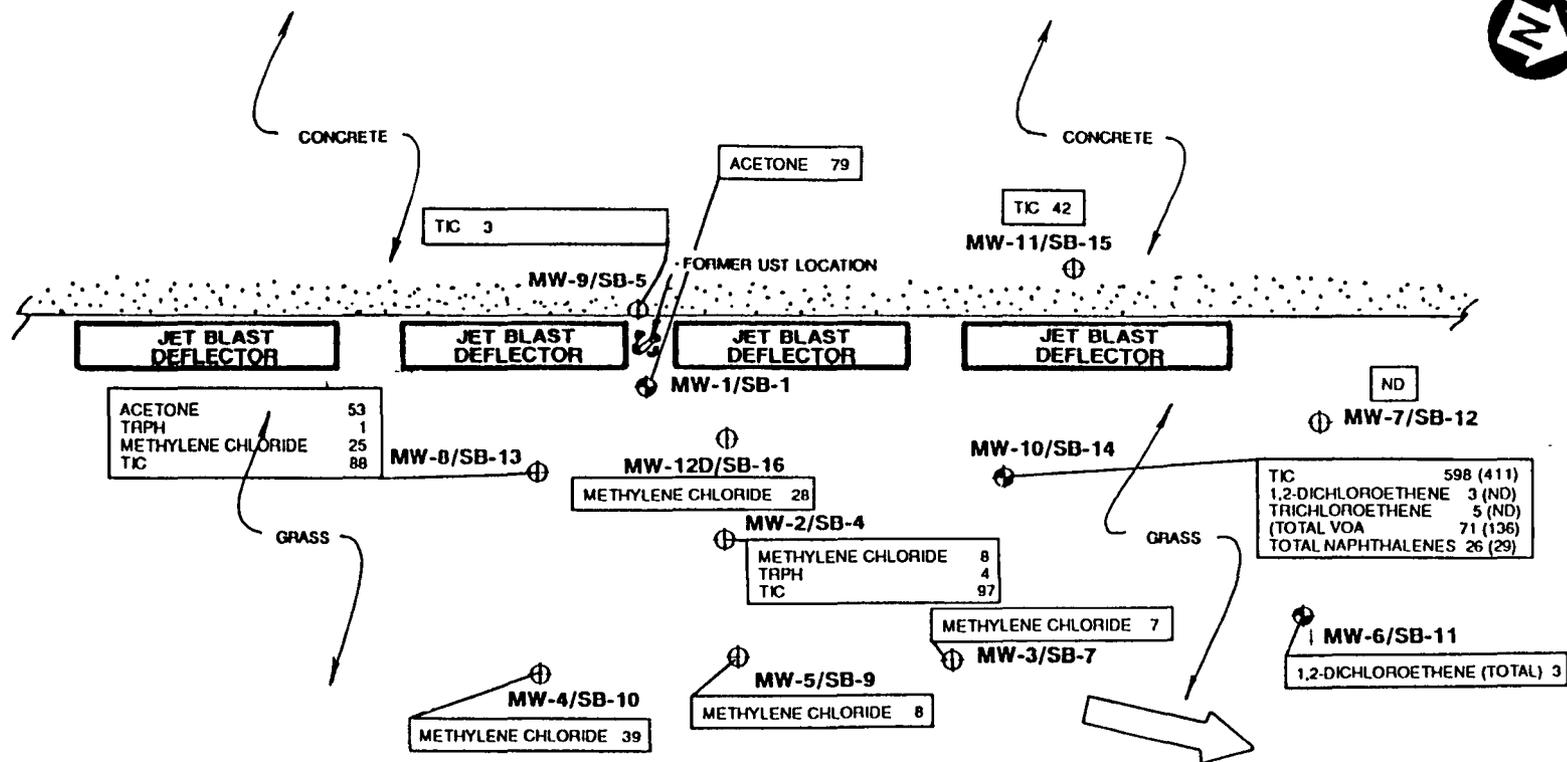
**FIGURE 2-1
SITE LOCATION MAP**



MONITORING ONLY PLAN

**SITE 3221NE
NADEP PENSACOLA
PENSACOLA, FLORIDA**





LEGEND

⊕ MONITORING WELL/PIEZOMETER/SOIL BORING LOCATION



CONTAMINATION (ppb)
TRPH reported in ppm and DENOTES TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
(ND DENOTES NOT DETECTED) (NS DENOTES NOT SAMPLED)
(TIC DENOTES TENTATIVELY IDENTIFIED OR UNIDENTIFIED COMPOUNDS)
FOR MW-10, CONCENTRATIONS IN () DENOTE APRIL 15, 1992, SAMPLING EVENT



GROUNDWATER FLOW DIRECTION

SCALE



**FIGURE 2-3
MONITORING WELL LOCATIONS AND
GROUNDWATER CONTAMINATION
DISTRIBUTION MAP,
FEBRUARY 27 AND APRIL 15, 1992**



MONITORING ONLY PLAN

**SITE 3221NE
NADEP PENSACOLA
PENSACOLA, FLORIDA**

Based on the results of the field investigations and the laboratory analytical results collected during this investigation, the following is a summary of conditions at the site.

- The sediments encountered during drilling operations are generally comprised of very fine-grained to medium-grained quartz sand.
- Groundwater beneath the site was encountered at depths of approximately 6 to 10 feet bls and is classified as G-II.
- The direction of groundwater flow in the surficial zone is to the north.
- The average hydraulic gradient across the site is 2.5×10^{-3} feet per foot (ft/ft).
- The average hydraulic conductivity at the site is 3.3×10^1 feet per day (ft/day).
- The average pore water velocity is 3.3×10^{-1} ft/day.
- Compounds identified in groundwater samples at the site include methylene chloride, trichloroethene, 1,2-dichloroethene, acetone, ethylbenzene, toluene, xylenes, naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and TRPH.
- Methylene chloride concentrations exceeded State regulatory standards in samples from six monitoring wells; however, because methylene chloride was detected in the laboratory blank, methylene chloride detected in site groundwater samples appears to be the result of laboratory contamination.
- Total VOA concentrations exceeded State regulatory standards in samples collected from only one site well, PEN-3221NE-MW-10. The extent of petroleum contamination appears to be restricted to the immediate vicinity of this well.
- Thirty-nine tentatively identified compounds and six unidentified compounds were detected in groundwater samples, but do not appear to be of major concern outside the immediate area of well PEN-3221NE-MW-10. The tentatively identified compounds generally appear to be fuel constituents or probable fuel degradation products.
- The apparent source of contamination, the former UST, has been removed from the site.
- No potable water sources were identified within a 0.25-mile radius of the site.

Based on the findings and conclusions of the contamination assessment a MOP was recommended in the CAR for Site 3221NE.

3.0 MONITORING ONLY PLAN

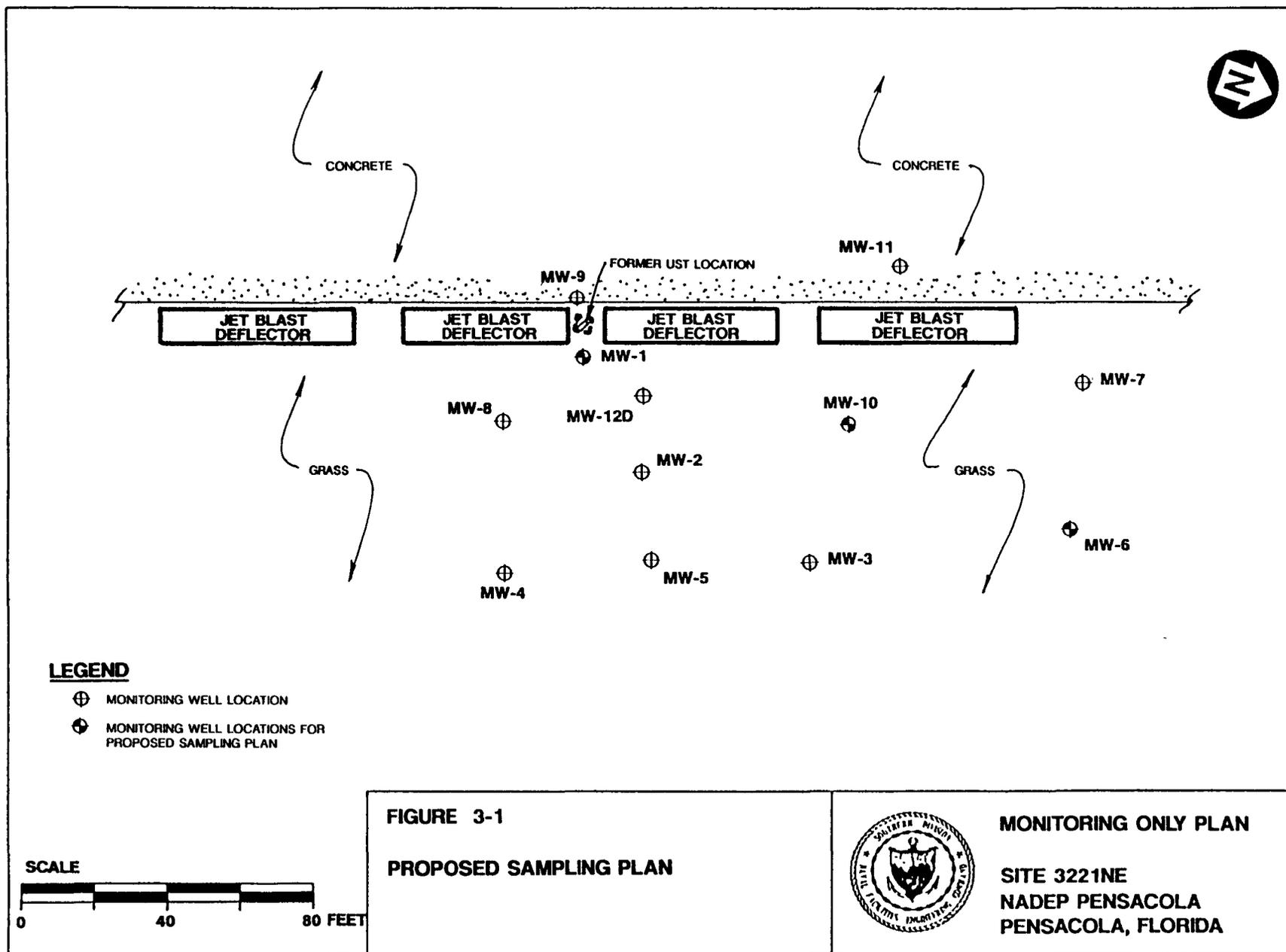
Upon review of the CAR, FDER issued a "monitoring only" approval order for Site 3221NE. The scope of the monitoring plan is outlined in the October 1, 1992, letter addressed to Luis Vazquez from John M. Ruddell of the FDER Division of Waste Management. A copy of this correspondence is included in Appendix A.

The "monitoring only" approval order requires the following:

- quarterly groundwater sampling of wells PEN-3221NE-MW-1, PEN-3221NE-MW-6, and PEN-3221NE-MW-10 for a period of 1 year (Figure 3-1),
- analyses of groundwater samples by U.S. Environmental Protection Agency (USEPA) Method 624, and
- submittal of quarterly analytical results in a written report to FDER within 60 days of sample collection.

At the end of the monitoring period, groundwater contaminant levels must decrease to the following levels, or additional monitoring, supplemental assessment, and/or remediation may be required.

- Total VOA concentration of less than 500 micrograms per liter ($\mu\text{g}/\ell$) for the sample collected from well PEN-3221NE-MW-1.
- Total VOA concentration of less than 50 $\mu\text{g}/\ell$ for the samples collected from wells PEN-3221NE-MW-6 and PEN-3221NE-MW-10.



LEGEND

- ⊕ MONITORING WELL LOCATION
- ⊕ MONITORING WELL LOCATIONS FOR PROPOSED SAMPLING PLAN

SCALE



**FIGURE 3-1
PROPOSED SAMPLING PLAN**



MONITORING ONLY PLAN

**SITE 3221NE
NADEP PENSACOLA
PENSACOLA, FLORIDA**

4.0 GROUNDWATER MONITORING METHODOLOGIES AND EQUIPMENT

The following methodologies and equipment will be used to implement the "monitoring approval" order for each quarterly sampling event.

4.1 GROUNDWATER LEVEL MEASUREMENTS. Groundwater levels from each existing monitoring well at the site will be measured using an electric water level indicator and an engineering tape with divisions in increments of 0.01 foot. Groundwater level elevations will be calculated by subtracting the measured depth to groundwater from the elevation at the top of the well casing. Top of casing measurements will be referenced to a benchmark located on a culvert near the southwest corner of Building 3221 (See Figure 2-1). This benchmark is part of the U.S. Coastal and Geodetic Survey benchmarking system and has an elevation of 27.46 feet above the National Geodetic Vertical Datum (NGVD) of 1929. A groundwater flow direction map will be constructed using groundwater elevation data.

4.2 GROUNDWATER SAMPLING AND ANALYSES. Groundwater samples will be collected in accordance with the Comprehensive Long-Term Environmental Action, Navy (CLEAN) Comprehensive Quality Assurance Plan (CompQAP). Each monitoring well will be purged with a Teflon™ bailer until a minimum of five well volumes have been removed from the well. Groundwater samples will be collected using an extruded Teflon™ bailer. A duplicate sample, equipment blank, and trip blank will also be collected. The samples will be placed into appropriate containers, properly preserved, and stored on ice. Samples will be shipped to an FDER-approved analytical laboratory. All groundwater samples collected will be analyzed by USEPA Method 624.

4.3 HEALTH AND SAFETY PLAN. Groundwater contaminants identified in the samples collected from monitoring wells PEN-3221NE-MW-1, PEN-3221NE-MW-6, and PEN-3221NE-MW-10 on February 27 and April 15, 1992, are presented in Table 4-1. Complete laboratory analyses are presented in Appendix B, Laboratory Analytical Data. Based on the contaminants found in the samples collected from these wells during these sampling events, a Health and Safety Plan (HASP) will be developed.

4.4 WRITTEN REPORT PREPARATION. A written report will be prepared and submitted to SOUTHNAVFACENGCOM and FDER within 60 days of each quarterly sampling event. The report will discuss the groundwater sampling analytical results and recommendations (if any), as well as present a brief review of site background information and site conditions. Site location maps, locations of monitoring wells, and groundwater contamination maps will be included with the report.

**Table 4-1
Summary of Selected Groundwater Sample Laboratory Analyses,
February 27 and April 15, 1992**

Monitoring Only Plan
Site 3221NE, Naval Aviation Depot
Pensacola, Florida

Compound	State Target Level or Guidance Concentration	MW-1 ¹	MW-6 ¹	MW-10 ¹	MW-10 ²
1,2-Dichloroethene (total)	³ 4.2	ND	3	3	ND
Trichloroethene	³ 3	ND	ND	5	ND
Ethylbenzene		ND	ND	40	44
Toluene		ND	ND	1	ND
Xylenes (total)		ND	ND	30	92
Total VOA	⁴ 50	ND	ND	71	136
Acetone	³ 700	79	ND	ND	ND
Naphthalene		ND	ND	13	16
1-Methylnaphthalene		ND	ND	7	7
2-Methylnaphthalene		ND	ND	6	6
Total naphthalenes	⁴ 100	ND	ND	26	29
Tentatively Identified Compounds (TIC)					
1,2-Dimethyl-benzene		ND	ND	ND	57
1,3-Dimethyl-benzene		ND	ND	200	ND
Ethylbenzene		ND	ND	ND	27
Propyl benzene		ND	ND	10	11
1-Ethyl-2-methyl-benzene		ND	ND	60	44
1-Ethyl-3-methyl-benzene		ND	ND	18	89
1-Ethyl-4-methyl-benzene		ND	ND	42	32
1-Ethyl-3,5-dimethyl-benzene		ND	ND	6	ND
1-Ethyl-2,4-dimethyl-benzene		ND	ND	8	ND
4-Ethyl-1,2-dimethyl-benzene		ND	ND	ND	12
1,2,3-Trimethyl-benzene		ND	ND	110	29
1,2,4-Trimethyl-benzene		ND	ND	39	21
1,3,5-Trimethyl-benzene		ND	ND	19	29
1,2,4,5-Tetramethyl-benzene		ND	ND	10	ND
(1-Methylethyl)-benzene		ND	ND	36	11
Unknown substituted benzene		ND	ND	ND	12
1-Methyl-3-propyl benzene		ND	ND	12	ND
1-Methyl-2-(1-methylethyl)-benzene		ND	ND	13	9
1-Methyl-3-(1-methylethyl)-benzene		ND	ND	15	15
4-Methyl benzoic acid-2-oxo-2-phenylethyl ester		ND	ND	ND	13
Total concentration of tentatively identified compounds		ND	ND	598	411

¹February 27, 1992, sampling event.

²April 15, 1992, sampling event.

³Guidance Concentration (Florida Department of Environmental Regulation [FDER], February, 1989).

⁴State target level (FDER, Chapter 17-770, Florida Administrative Code).

Notes: All concentrations are in parts per billion.

ND = not detected.

Total VOA = total volatile organic aromatics; the sum of benzene, ethylbenzene, toluene, and xylenes.

Total naphthalenes = the sum of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene.

REFERENCES

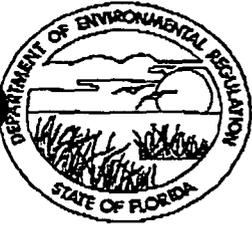
Florida Department of Environmental Regulation, May 1992, Guidelines for assessment and remediation of petroleum contaminated soils, revised: Division of Waste Management.

Florida Department of Transportation, 1982, Florida official transportation map: 1 sheet.

U.S. Geological Survey, 1970, Fort Barrancas Quadrangle: 7.5-minute topographic series.

APPENDIX A

**Florida Department of Environmental Regulation
Monitoring Only Approval Order**



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

October 1, 1992

Mr. Luis Vasquez
 Engineer-In-Charge (EIC)
 Southern Division
 Naval Facilities Engineering Command
 2155 Eagle Dr., P.O. Box 10068
 Charleston, S.C. 29411-0068

RE: Site 3221 NE
 Naval Aviation Depot
 Naval Air Station Pensacola, Florida

Dear Mr. Vasquez:

The Bureau of Waste Cleanup has reviewed the Contamination Assessment Report (CAR) and Monitoring Only Plan (MOP) dated August 17, 1992 (received August 24, 1992), submitted for this site. Pursuant to Rule 17-770.600(6), Florida Administrative Code (F.A.C.), the Department approves the "monitoring only" proposal. Pursuant to Rules 17-770.660 and 17-770.700(3), F.A.C., you are required to complete the monitoring program outlined below, and to submit the analytical results to the Department within sixty (60) days of sample collection:

<u>Monitoring Wells</u>	<u>Parameters</u>	<u>Frequency</u>	<u>Duration</u>
MW-1, MW-6 and MW-10	EPA Method 624	Quarterly	One Year

If contaminant concentrations in the designated wells increase above the concentrations listed below, then the resampling/supplemental assessment described in Rule 17-770.660(6) should be performed. If the contaminant concentrations do not decrease below Rule 17-770.730(5) target cleanup levels (unless higher alternative site rehabilitation levels have been established) after the duration of the monitoring period, then additional monitoring, supplemental contamination assessment and/or remediation may be required:

MW-1: 500 ug/l Total VOAs;

MW-6 and MW-10: 50 ug/l Total VOAs.

Persons whose substantial interests are affected by this Approval Order have the right to challenge the Department's

Mr. Vasquez
October 1, 1992
Page Two

decision. Such a challenge may include filing a petition for an administrative determination (hearing) as described in the following paragraphs. However, pursuant to Chapter 17-103, F.A.C., you may request an extension of time to file the Petition. All requests for extensions of time or petitions for administrative determinations must be filed directly with the Department's Office of General Counsel at the address given below within twenty-one (21) days of receipt of this notice (do not send them to the Bureau of Waste Cleanup).

Notwithstanding the above, a person whose substantial interests are affected by this Approval Order may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within twenty-one (21) days of receipt of this notice. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information:

- (a) The name, address, and telephone number of each petitioner, the Department file number (DER facility number), and the name and address of the facility;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by each petitioner, if any;
- (e) A statement of facts which each petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes each petitioner contends require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by each petitioner, stating precisely the action each petitioner wants the Department to take with respect to the Department's action or proposed action.

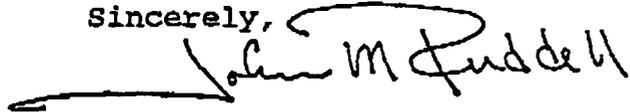
This Approval Order is final and effective on the date of receipt of this Order unless a petition (or time extension) is filed in accordance with the preceding paragraphs. Upon the timely filing of a petition, this Order will not be effective until further order of the Department.

Mr. Vasquez
October 1, 1992
Page Three

When the Order is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, F.S., by filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal, accompanied by the applicable filing fees, with the appropriate District Court of Appeal. The Notice of Appeal must be filed within thirty (30) days from the date the Final Order is filed with the Clerk of the Department.

Any questions you may have on the technical aspects of this Approval Order should be directed to Jorge R. Caspary at (904) 488-0190. Contact with the above named person does not constitute a petition for administrative determination.

Sincerely,



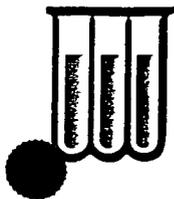
John M. Ruddell, Director
Division of Waste Management

JMR/gjw

cc: Kenneth Busen, ABB-Tallahassee
Robert Barr, DER Northwest District Office

APPENDIX B

Laboratory Analytical Data



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-1
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 3/11/92

SAMPLE ID: MW-1

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
 ND** (None Detected, lower detectable limit = ug/L) as rec'd
 J (Detected, but below quantitation limit; estimated value)
 B (Compound detected in method blank associated with this sample)
 -- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	96	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	93	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-1
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 3/11/92

SAMPLE ID: MW-1

PROJ:NADEP PEN/3221NE

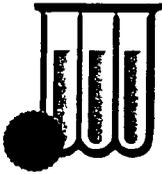
CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
OTHER COMPOUNDS

Acetone

79 ug/L

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-1
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: 3/ 2/92
DATE ANALYZED: 3/10/92

SAMPLE ID: MW-1

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

HRS84297

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyi phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
 J (Detected, but below quantitation limit; estimated value)
 B (Compound detected in method blank associated with this sample)
 -- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-1
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: 3/ 2/92
DATE ANALYZED: 3/10/92

SAMPLE ID: MW-1

PROJ:NADEP PEN/3221NE

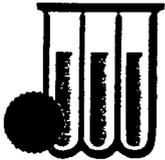
CERTIFICATION #: E84059
HRS84297

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit: estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	37	(22-135)	(10-155)
Fluorobiphenyl	30	(34-140)	(12-153)
Terphenyl-d14	16	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-1
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: 3/ 2/92
DATE ANALYZED: 3/10/92

SAMPLE ID: MW-1

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
 J (Detected, but below quantitation limit; estimated value)
 B (Compound detected in method blank associated with this sample)
 -- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	22	(17-95)	(24-118)
Phenol-d5	15	(11-89)	(17-124)
2,4,6-Tribromophenol	10	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 2B2805-1
MATRIX : WATER

DATE RECEIVED: 2/28/92

SAMPLE ID : MW-1

PROJ:NADEP PEN/3221NE

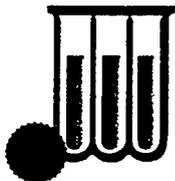
CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	3/11/92	ND	10	ug/L
Cadmium	3/11/92	ND	10	ug/L
Chromium	3/11/92	ND	50	ug/L
Lead	3/11- 3/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2B2805-1
MATRIX : WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: 3/10/92
DATE ANALYZED: 3/10/92

SAMPLE ID: MW-1

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-6
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 3/13/92

SAMPLE ID: MW-6

PROJ:NADEP PEN/3221NE

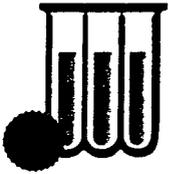
CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	ND
Carbon tetrachloride	ND	Methylene chloride	8
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	ND
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
 ND** (None Detected, lower detectable limit = ug/L) as rec'd
 J (Detected, but below quantitation limit; estimated value)
 B (Compound detected in method blank associated with this sample)
 -- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	96	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	93	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-6
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: 3/ 2/92
DATE ANALYZED: 3/11/92

SAMPLE ID: MW-6

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059

BASE/NEUTRAL -- EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (1 of 2)

HRS84297

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzenidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
 J (Detected, but below quantitation limit; estimated value)
 B (Compound detected in method blank associated with this sample)
 -- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-6
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: 3/ 2/92
DATE ANALYZED: 3/11/92

SAMPLE 1D: MW-6

PROJ:NADEP PEN/3221NE

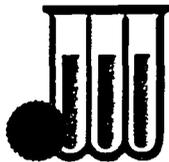
CERTIFICATION #: E84059
HRS84297

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625-- GC/MS (2 of 2)

Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
 J (Detected, but below quantitation limit: estimated value)
 B (Compound detected in method blank associated with this sample)
 -- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	58	(22-135)	(10-155)
Fluorobiphenyl	75	(34-140)	(12-153)
Terphenyl-d14	29	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-6
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: 3/ 2/92
DATE ANALYZED: 3/11/92

SAMPLE ID: MW-6

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
 J (Detected, but below quantitation limit; estimated value)
 B (Compound detected in method blank associated with this sample)
 -- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	76	(17-95)	(24-118)
Phenol-d5	69	(11-89)	(17-124)
2,4,6-Tribromophenol	45	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 2B2805-6
MATRIX : WATER

DATE RECEIVED: 2/28/92

SAMPLE ID : MW-6

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	3/11/92	ND	10	ug/L
Cadmium	3/11/92	ND	10	ug/L
Chromium	3/11/92	ND	50	ug/L
Lead	3/11- 3/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2B2805-6
MATRIX : WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: 3/10/92
DATE ANALYZED: 3/10/92

SAMPLE ID: MW-6

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-10
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 3/12/92

SAMPLE ID: MW-10

PROJ:NADEP PEN/3221NE

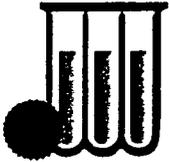
CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	3
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	40
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	1
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	5
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	30
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 10 ug/L) as rec'd
 ND** (None Detected, lower detectable limit = ug/L) as rec'd
 J (Detected, but below quantitation limit; estimated value)
 B (Compound detected in method blank associated with this sample)
 -- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	97	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	97	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-10
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: NA
DATE ANALYZED: 3/12/92

SAMPLE ID: MW-10

PROJ:NADEP PEN/3221NE

VOLATILE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1,3-Dimethyl-benzene	200 ug/L
Propyl benzene	10 ug/L
1-Ethyl-2-methyl-benzene	60 ug/L
1-Ethyl-4-methyl benzene	42 ug/L
1,2,3-Trimethyl-benzene	110 ug/L
(1-Methylethyl)-benzene	36 ug/L
1-Methyl-3-propyl benzene	12 ug/L
1-Methyl-3-(1-methylethyl)-benzene	15 ug/L
1-Methyl-2-(1-methylethyl)-benzene	13 ug/L
1-Ethyl-3-methyl-benzene	18 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-10
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: 3/ 2/92
DATE ANALYZED: 3/11/92

SAMPLE ID: MW-10

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059

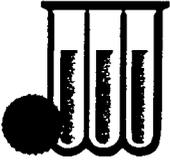
BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzenidine	ND*	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-10
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: 3/ 2/92
DATE ANALYZED: 3/11/92

SAMPLE ID: MW-10

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS (2 of 2)

HRS84297

Isophorone	ND
Naphthalene	13
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
 J (Detected, but below quantitation limit: estimated value)
 B (Compound detected in method blank associated with this sample)
 -- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	81	(22-135)	(10-155)
Fluorobiphenyl	84	(34-140)	(12-153)
Terphenyl-d14	90	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-10
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: 3/ 2/92
DATE ANALYZED: 3/11/92

SAMPLE ID: MW-10

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059
HRS84297

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

1-Methylnaphthalene	7 ug/L
2-Methylnaphthalene	6 ug/L

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

1,3-Dimethyl-benzene	25 ug/L
1-Ethyl-4-methyl-benzene	26 ug/L
1,3,5-Trimethyl-benzene	19 ug/L
1-Ethyl-3-methyl-benzene	8 ug/L
1,2,4-Trimethyl-benzene	39 ug/L
1-Ethyl-3,5-dimethyl-benzene	6 ug/L
1,2,4,5-Tetramethyl-benzene	10 ug/L
1-Ethyl-2,4-dimethyl-benzene	8 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B2805-10
MATRIX: WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: 3/ 2/92
DATE ANALYZED: 3/11/92

SAMPLE ID: MW-10

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND*
2-Methyl-4,6-dinitrophenol	ND*
2-Nitrophenol	ND
4-Nitrophenol	ND*
Pentachlorophenol	ND*
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
 J (Detected, but below quantitation limit; estimated value)
 B (Compound detected in method blank associated with this sample)
 -- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	86	(17-95)	(24-118)
Phenol-d5	72	(11-89)	(17-124)
2,4,5-Tribromophenol	76	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 2B2805-10
MATRIX : WATER

DATE RECEIVED: 2/28/92

SAMPLE ID : MW-10

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	3/11/92	ND	10	ug/L
Cadmium	3/11/92	ND	10	ug/L
Chromium	3/11/92	ND	50	ug/L
Lead	3/11- 3/12/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2B2805-10
MATRIX : WATER

DATE RECEIVED: 2/28/92
DATE EXTRACTED: 3/10/92
DATE ANALYZED: 3/10/92

SAMPLE ID: MW-10

PROJ:NADEP PEN/3221NE

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-9
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/21/92

SAMPLE ID: 3221NE-MW10 NADEP PEN

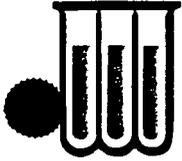
CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 624 - GC/MS

Acrolein	ND*	1,1-Dichloroethene	ND
Acrylonitrile	ND*	1,2-Dichloroethene(Total)	ND
Benzene	ND	1,2-Dichloropropane	ND
Bromodichloromethane	ND	cis-1,3-Dichloropropene	ND
Bromoform	ND	trans-1,3-Dichloropropene	ND
Bromomethane	ND	Ethylbenzene	44
Carbon tetrachloride	ND	Methylene chloride	ND
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	ND	1,1,1-Trichloroethane	ND
Chloromethane	ND	1,1,2-Trichloroethane	ND
Dibromochloromethane	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,3-Dichlorobenzene	ND	Vinyl chloride	ND
1,4-Dichlorobenzene	ND	Xylene(Total)	92
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		

NOTE: ND (None Detected, lower detectable limit = 3 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 30 ug/L) as rec'd
 ND** (None Detected, lower detectable limit = ug/L) as rec'd
 J (Detected, but below quantitation limit; estimated value)
 B (Compound detected in method blank associated with this sample)
 -- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS		
		WATER	SOLID	LOW LEVEL
1,2-Dichloroethane	98	(75-123)	(85-126)	(85-138)
Toluene-d8	103	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	96	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-9
MATRIX: WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: NA
DATE ANALYZED: 4/21/92

SAMPLE ID: 3221NE-MW10 NADEP PEN

VOLATILE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

(1-Methylethyl) benzene	11 ug/L
Propyl benzene	11 ug/L
1-Ethyl-2-methyl benzene	44 ug/L
1,3,5-Trimethyl benzene	29 ug/L
1-Ethyl-3-methyl benzene	89 ug/L
1-Ethyl-4-methyl benzene	23 ug/L
4-Methyl benzoic acid-2-oxo-2-phenylethyl ester	13 ug/L
1-Methyl-3-(1-methylethyl) benzene	15 ug/L
Substituted benzene	12 ug/L
1-Methyl-2-(1-methylethyl) benzene	9 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D2302-1
MATRIX: WATER

DATE RECEIVED: 4/23/92
DATE EXTRACTED: 4/23/92
DATE ANALYZED: 4/29/92

SAMPLE ID: 3221NE-MW10 NADEP PEN

CERTIFICATION #: E84059

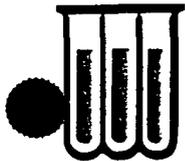
BASE/NEUTRAL -- EXTRACTABLE ORGANICS

HRS84297

USEPA METHOD 625 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	ND
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzydine	ND	1,3-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,4-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	3,3'-Dichlorobenzidine	ND
Benzo(k)fluoranthene	ND	Diethyl phthalate	ND
Benzo(ghi)perylene	ND	Dimethyl phthalate	ND
Benzo(a)pyrene	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethoxy)methane	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Chloroisopropyl)ether	ND	Fluoranthene	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluorene	ND
4-Bromophenyl phenyl ether	ND	Hexachlorobenzene	ND
Butyl benzyl phthalate	ND	Hexachlorobutadiene	ND
2-Chloronaphthalene	ND	Hexachlorocyclopentadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachloroethane	ND
Chrysene	ND	Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
J (Detected, but below quantitation limit; estimated value)
B (Compound detected in method blank associated with this sample)
-- (Not Analyzed)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D2302-1
MATRIX: WATER

DATE RECEIVED: 4/23/92
DATE EXTRACTED: 4/23/92
DATE ANALYZED: 4/29/92

SAMPLE ID: 3221NE-MW10 NADEP PEN

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 625 - GC/MS (2 of 2)

Isophorone	ND
Naphthalene	16
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodiphenylamine	ND
N-Nitrosodi-n-propylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
 J (Detected, but below quantitation limit: estimated value)
 B (Compound detected in method blank associated with this sample)
 -- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
Nitrobenzene-d5	94	(22-135)	(10-155)
Fluorobiphenyl	79	(34-140)	(12-153)
Terphenyl-d14	72	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D2302-1
MATRIX: WATER

DATE RECEIVED: 4/23/92
DATE EXTRACTED: 4/23/92
DATE ANALYZED: 4/29/92

SAMPLE ID: 3221NE-MW10 NADEP PEN

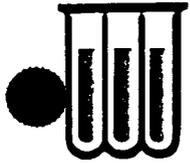
EXTRACTABLE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

1-Methyl naphthalene	7 ug/L
2-Methyl naphthalene	6 ug/L

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS
with their estimated concentrations

Ethyl benzene	27 ug/L
Benzene, 1,2-dimethyl	57 ug/L
Benzene, 1-ethyl-4-methyl	32 ug/L
Benzene, 1,2,4-trimethyl	21 ug/L
Benzene, 1,2,3-trimethyl	29 ug/L
Benzene, 4-ethyl-1,2-dimethyl	12 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D2302-1
MATRIX: WATER

DATE RECEIVED: 4/23/92
DATE EXTRACTED: 4/23/92
DATE ANALYZED: 4/29/92

SAMPLE ID: 3221NE-MW10 NADEP PEN

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 625 - GC/MS

4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND
2-Methyl-4,6-dinitrophenol	ND
2-Nitrophenol	ND
4-Nitrophenol	ND
Pentachlorophenol	ND
Phenol	ND
2,4,6-Trichlorophenol	ND

NOTE: ND (None Detected, lower detectable limit = 10 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 50 ug/L) as rec'd
 J (Detected, but below quantitation limit; estimated value)
 B (Compound detected in method blank associated with this sample)
 -- (Not Analyzed)

SURROGATE RECOVERY:	%	ACCEPTABLE LIMITS	
		WATER	SOLID
2-Fluorophenol	92	(17-95)	(24-118)
Phenol-d5	83	(11-89)	(17-124)
2,4,6-Tribromophenol	108	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2D1601-9
MATRIX : WATER

DATE RECEIVED: 4/16/92

SAMPLE ID : 3221NE-MW10 NADEP PEN

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results -- as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	4/28/92	ND	10	ug/L
Cadmium	4/28/92	ND	10	ug/L
Chromium	4/28/92	ND	50	ug/L
Lead	4/28/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2D1601-9
MATRIX : WATER

DATE RECEIVED: 4/16/92
DATE EXTRACTED: 4/30/92
DATE ANALYZED: 5/ 1/92

SAMPLE ID: 3221NE-MW10 NADEP PEN

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/L	1

NOTE: ND (None Detected)