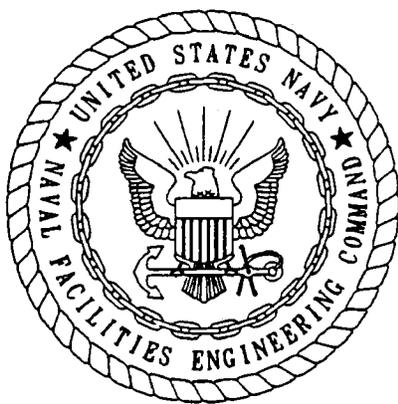


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CONTAMINATION ASSESSMENT DRAFT FINAL REPORT SITE 607NE NAVAL AVIATION
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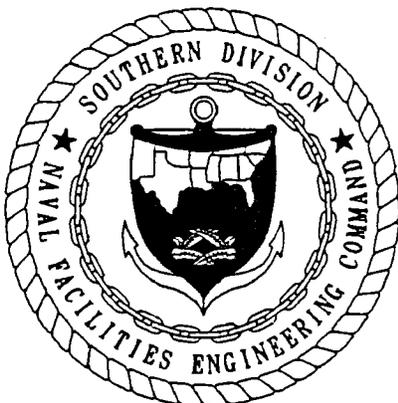


DRAFT FINAL

**CONTAMINATION ASSESSMENT
REPORT**

**SITE 607NE
NAVAL AVIATION DEPOT
NAVAL AIR STATION
PENSACOLA, FLORIDA**

JULY 1992



**SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SOUTH CAROLINA
29411-0068**

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CONTAMINATION ASSESSMENT REPORT

**SITE 607NE
NAVAL AVIATION DEPOT
NAVAL AIR STATION
PENSACOLA, FLORIDA**

UIC: N00204

Contract No. N62467-89-D-0317

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Luis Vazquez, Code 1843, Engineer-in-Charge

June 1992



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) Pensacola, Pensacola, Florida, at 904-452-2320 or to Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), Code 1843, at AUTOVON 563-0613 or 803-743-0613.

EXECUTIVE SUMMARY

During an underground storage tank (UST) removal program conducted by the Navy in 1989 and 1990, 18 sites at the Naval Aviation Depot (NADEP), Naval Air Station, Pensacola, Florida, were identified as having soil contamination exceeding State regulatory standards for total recoverable petroleum hydrocarbons (TRPH). ABB Environmental Services, Inc. (ABB-ES), was contracted by Southern Division Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to perform a Contamination Assessment (CA) for each of the 18 sites.

Site 607NE is the former location of a 500-gallon waste oil UST. The tank was located near the northeast corner of Building 607, which is located on the southern perimeter of Chevalier Field. During the tank removal program, the UST was removed and replaced with a new waste oil UST located approximately 15 feet west of the abandoned tank.

Soil borings and monitoring wells were placed at the site during the CA to assess the degree of soil and groundwater contamination. Soil and groundwater samples were collected and analyzed for appropriate parameters. Locations of soil borings and monitoring wells and laboratory analytical results are summarized in the Executive Summary Figure. The findings, conclusions, and recommendations of the CAR are summarized below.

Findings

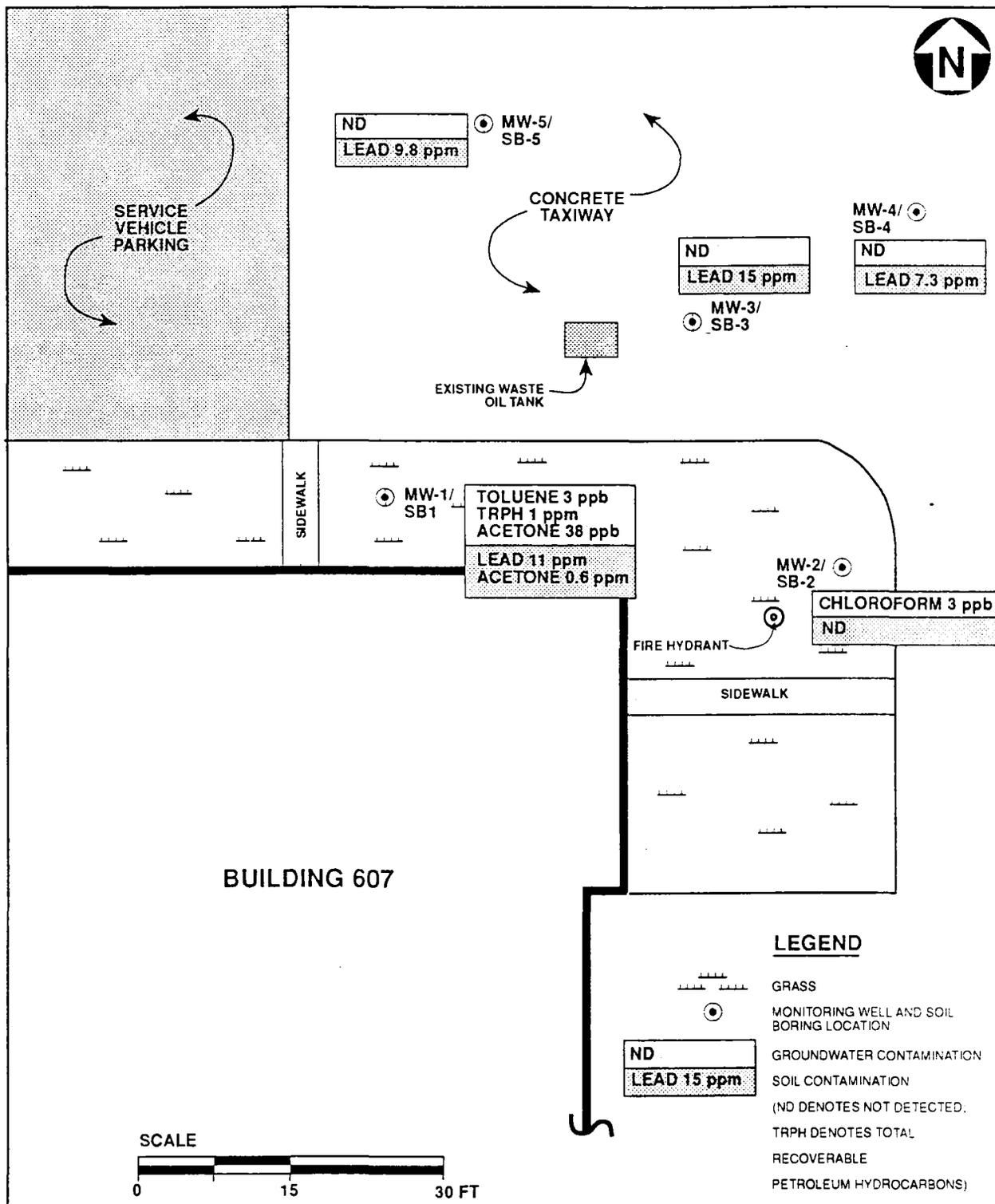
- No petroleum hydrocarbons were identified in site soils by Organic Vapor Analyzer (OVA) headspace analysis.
- Methylene chloride and di-n-butyl phthalate were found in the sample from soil boring SB3 but were also detected in the laboratory blank; hence, their presence appears to be the result of laboratory contamination. Lead and arsenic were the only metals contaminants identified in site soils, and their concentrations did not exceed State regulatory levels.
- Contaminants identified in the groundwater were chloroform, methylene chloride, toluene, and acetone. Methylene chloride was the only contaminant that exceeded State regulatory standards. The presence of methylene chloride in the equipment blank, trip blank, and laboratory blank indicates that its presence in the groundwater samples is a result of laboratory contamination. Seventeen tentatively identified compounds were detected in the sample collected from well PEN-607NE-MW1. These compounds are generally used as perfume or cleaning agents, and their presence does not appear to be the result of a petroleum discharge.
- The net groundwater flow direction at the site is toward the east.
- No potable wells were identified within a 0.25-mile radius of the site.

Conclusions

- The level of soil and groundwater contamination found at the site is minimal, is below State regulatory standards, and is not expected to impact potable water supplies on the base.

Recommendations

Because no petroleum contaminants were identified at the site, and because other contaminants identified did not exceed regulatory or guidance levels, A *No Further Action Proposal (NFAP)* is recommended for Site 607NE.



EXECUTIVE SUMMARY FIGURE



**CONTAMINATION ASSESSMENT REPORT
SITE 607NE
NADEP PENSACOLA
PENSACOLA, FLORIDA**

ACKNOWLEDGMENTS

In preparing this report, The Underground Storage Tank Section of the Navy 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

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- Appendix B: Lithologic Logs
- Appendix C: Investigative Methodologies and Procedures
- Appendix D: Aquifer Parameter Calculations
- Appendix E: Laboratory Analytical Data

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GLOSSARY

The following list contains many of the acronyms, initialisms, abbreviations, and units of measure used in this report.

ABB-ES	ABB Environmental Services, Inc.
BDL	below detection limits
BETX	benzene, ethyl benzene, toluene, and xylenes
bls	below land surface
CA	Contamination Assessment
CAP	Contamination Assessment Plan
CAR	Contamination Assessment Report
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-Term Environmental Action, Navy
CompQAP	Comprehensive Quality Assurance Plan
CTO	Contract Task Order
FAC	Florida Administrative Code
FDER	Florida Department of Environmental Regulation
FID	flame ionization detector
ft/day	feet per day
ft ² /day	feet squared per day
ft/ft	feet per foot
ft/min	feet per minute
GC	gas chromatograph
HSWA	Hazardous and Solid Waste Amendments of 1984
ID	inside diameter
K	hydraulic conductivity
msl	mean sea level
μg/l	micrograms per liter
μmhos/cm	micromhos per centimeter
NADEP	Naval Aviation Depot
NARF	Naval Air Rework Facility
NAS	Naval Air Station
NFAP	No Further Action Proposal
NGVD	National Geodetic Vertical Datum
OVA	organic vapor analyzer
PAH	polynuclear aromatic hydrocarbons
POA	Plan of Action
ppb	parts per billion
ppm	parts per million
PVC	polyvinyl chloride
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
SOUTHNAVFACENGCOM	Southern Division Naval Facilities Engineering Command
SPT	standard penetration test
SWDA	Solid Waste Disposal Act of 1965
T	transmissivity
TRPH	total recoverable petroleum hydrocarbons

GLOSSARY (Continued)

UIC	uniform identification code
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
UST	underground storage tank
V	average pore water velocity
VOA	volatile organic aromatics
VOC	volatile organic compounds

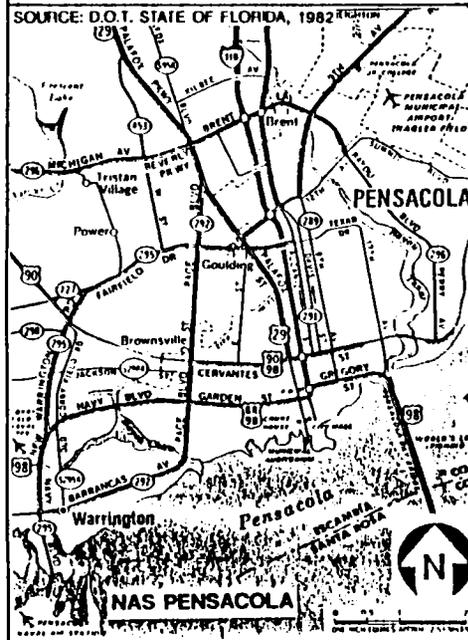
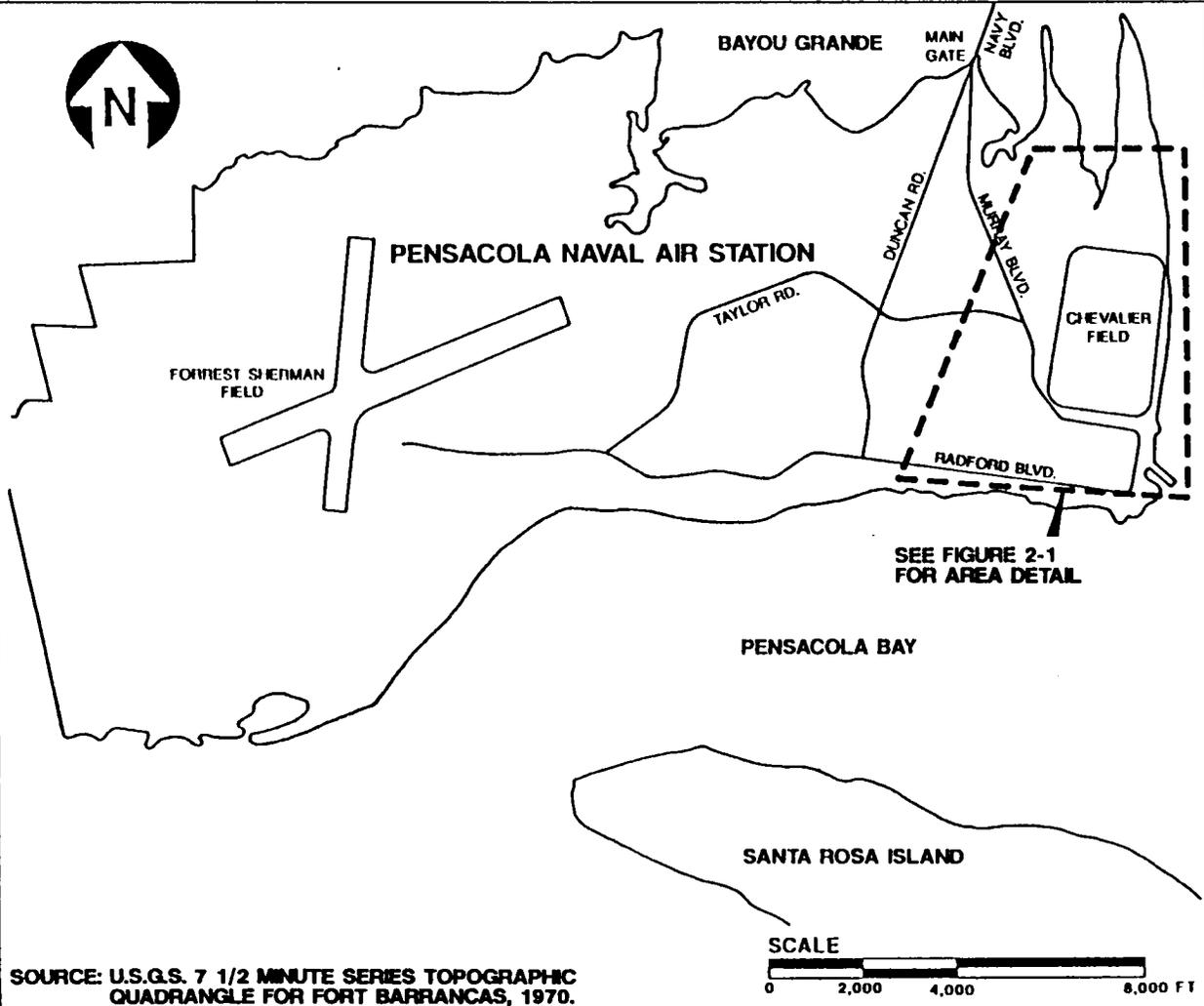
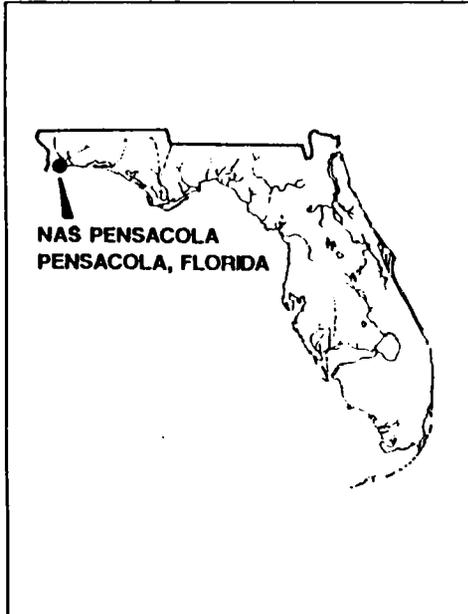
1.0 INTRODUCTION

In 1987, the Naval Air Rework Facility (NARF) in Pensacola, Florida, was renamed the Naval Aviation Depot (NADEP). NADEP Pensacola, Florida, formerly the operations and repair department of the Naval Air Station (NAS) Pensacola, is now 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). NADEP Pensacola occupies approximately 130 acres at NAS Pensacola. The mission of NADEP Pensacola is to: maintain and operate facilities for, and perform a complete range of, depot-level rework operations on designated weapons systems, accessories, and equipment; manufacture parts and assemblies, as required; provide engineering services in hardware design; furnish technical services on aircraft maintenance and logistic problems; and perform other levels of aircraft maintenance.

During a tank removal program implemented by the Navy in 1989 and 1990, petroleum underground storage tanks (USTs) at various NADEP site locations were removed. In many cases, these tanks were replaced with new USTs. Tank contents were reportedly restricted to petroleum products ranging from waste oil, diesel fuel, unleaded gasoline, and PD-680 (a petroleum distillate solvent similar to mineral spirits). The reported volumes of the tanks varied from 500 to 3,000 gallons. Soil samples were collected from each tank excavation and analyzed for total recoverable petroleum hydrocarbons (TRPH). Based on TRPH concentrations, 18 sites were found to be non-compliant with Florida Department of Environmental Regulation (FDER) standards, as defined in Chapter 17-770, Florida Administrative Code (FAC).

ABB Environmental Services, Inc. (ABB-ES), was contracted by Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to perform a contamination assessment (CA) and submit a Contamination Assessment Report (CAR) for the 18 petroleum contaminated sites at NADEP. This CAR is submitted for one of the sites, Site 607NE. The scope of services for the work at Site 607NE is described in Contract Task Order (CTO) No. 008, the Plan of Action (POA), and the Contamination Assessment Plan (CAP) and included the following:

- drilling of soil borings and analysis of site soils to assess the extent of soil contamination,
- installing and sampling groundwater monitoring wells to assess the extent of groundwater contamination,
- collecting water level data to assess the groundwater flow direction and hydraulic gradient at the site.
- conducting a potable well inventory within a 0.25-mile radius of the site,
- conducting slug tests on select wells to estimate aquifer characteristics, and



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

FIGURE 1-1
FACILITY LOCATION MAP



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- reducing and analyzing pertinent data gathered during the CA to complete this CAR.

The CA at Site 607NE was conducted from January through April 1992. The following sections of the report present the background information, data compilation, results, conclusions, and recommendations of the CAR.

2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION. Site 607NE is located near the northeast corner of Building 607, which is on the north side of Saufley Street on the south perimeter of Chevalier Field (Figure 2-1). The site is the former location of two USTs reportedly used for the storage of waste oil and used aviation fuel. Chevalier Field is the location of various activities primarily involving servicing and testing of helicopters. Building 607 is used as a helicopter flight test facility and primary activities include final preparation before helicopter test flights. Figure 2-2 is a site plan showing the locations of the existing and former USTs and surface features in the site vicinity. Most of the area around the site is covered by 6 to 8 inches of concrete. Some grassy areas are present along the perimeter of Building 607.

2.2 SITE HISTORY. The former USTs were installed in 1980. During the Navy tank removal and installation program, the USTs were removed and replaced with a double-walled, steel, 500-gallon UST located at the former UST location. The existing tank is also reportedly used for the storage of waste oil and used aviation fuel.

During the tank removal program, a composite soil sample was collected from the former UST excavation and analyzed for TRPH. The reported TRPH concentration of 190 parts per million (ppm) exceeded the FDER regulatory standard of 50 ppm for petroleum contaminated soils (FDER, May 1992) and, therefore, warranted further site investigation pursuant to Chapter 17-770, FAC.

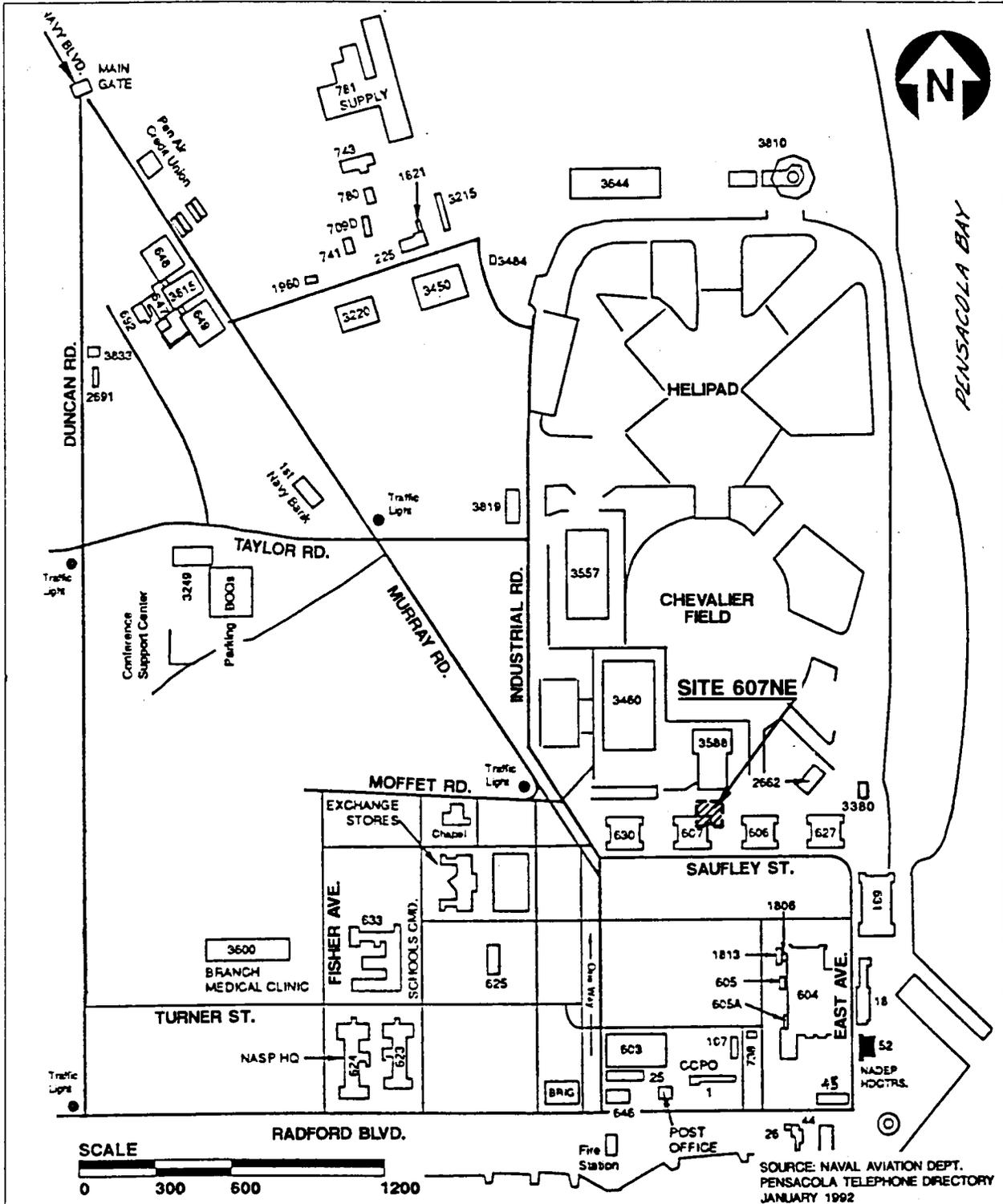


FIGURE 2-1
SITE LOCATION MAP



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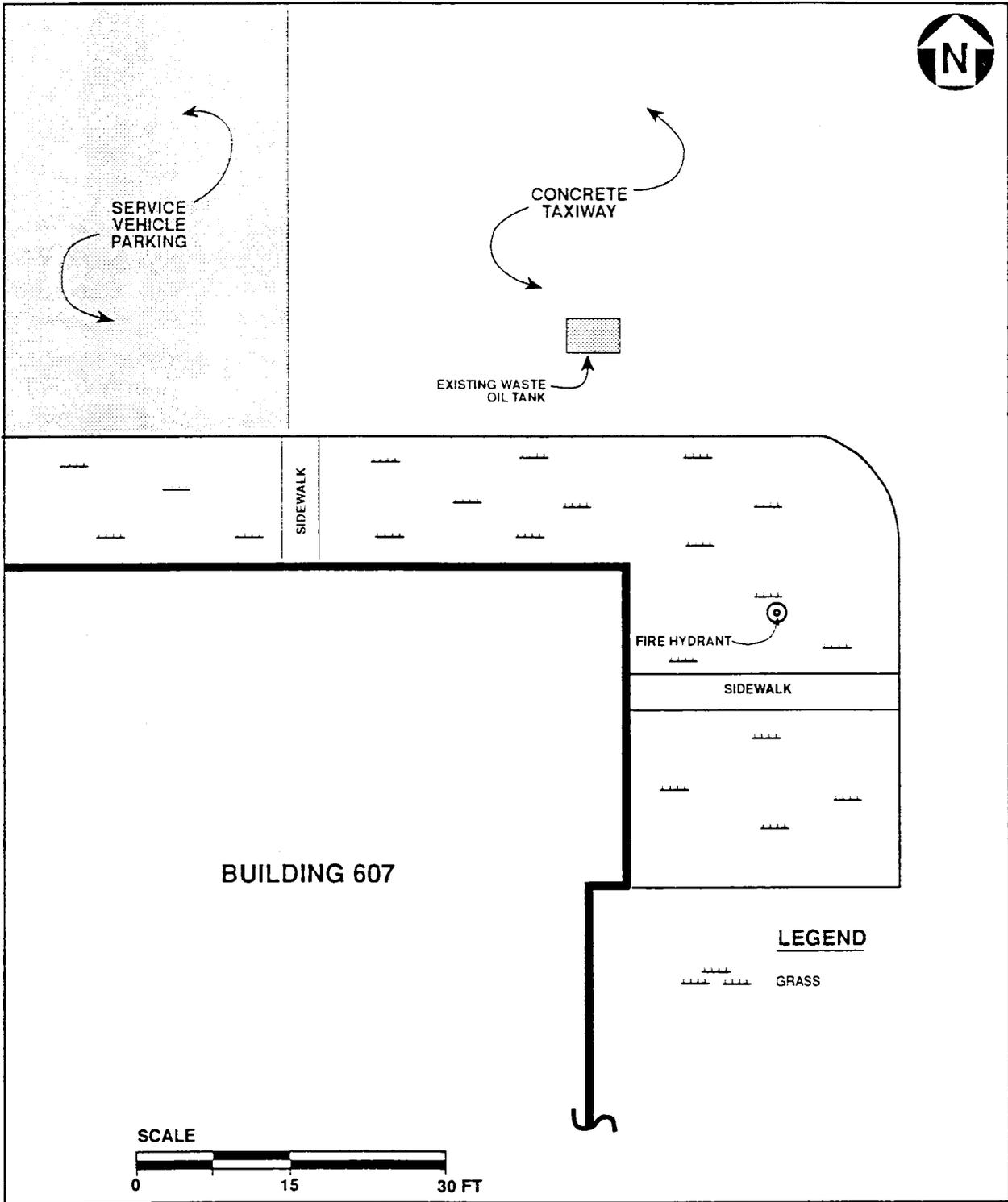


FIGURE 2-2
SITE PLAN



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3.0 SITE CONDITIONS

3.1 PHYSIOGRAPHY. Regional physiography is discussed in Appendix A. Surface elevations at the site are relatively flat and vary from 8 to 9 feet above mean sea level (msl).

3.2 HYDROGEOLOGY.

3.2.1 Regional and Local The Pensacola area is underlain by three water bearing zones. These zones, in order of increasing depth, are the sand-and-gravel aquifer, the Upper Floridan aquifer, and the Lower Floridan aquifer. A detailed discussion of these three aquifers is presented in Appendix A.

3.2.2 Site Specific The principal aquifer of concern at the site is the surficial zone of the sand-and-gravel aquifer. The surficial zone was penetrated for a depth of 12 feet bls during this investigation. The surficial zone is composed of white to grey to light brown, fine-grained to medium-grained quartz sands. The surficial zone is unconfined, and the water table was encountered at depths of 4 to 6 feet below land surface (bls) during this investigation. Site-specific aquifer characteristics and other hydrogeologic parameters are discussed in Section 5.1.

Complete lithologic logs for all site monitoring wells are presented in Appendix B.

4.0 METHODOLOGIES AND EQUIPMENT

4.1 SOIL BORING AND SOIL SAMPLING PROGRAM. Five soil borings were drilled at the site on January 23 and 24, 1992, to assess the extent and levels of soil petroleum contamination, to identify the type of subsurface material, and to aid in the placement of subsequent groundwater monitoring wells. Soil boring locations are shown in Figure 4-1. Composite soil samples collected from split-spoon standard penetration tests (SPTs) were analyzed for petroleum constituents with an organic vapor analyzer (OVA) equipped with a flame ionization detector (FID). Samples were sent to Wadsworth/Alert Laboratories in Tampa, Florida, for total metals analyses. The results of the soil boring program and soil sampling program are discussed in Section 5.2.

4.2 MONITORING WELL INSTALLATION PROGRAM. Five, 2-inch inner diameter (ID) monitoring wells (PEN-607NE-MW1 through PEN 607NE-MW5; designated as MW1 through MW5 on figures and tables in this report) were installed in each soil boring. Monitoring well locations are shown in Figure 4-1. Monitoring well construction methodologies and materials are discussed in Appendix C.

4.3 GROUNDWATER ELEVATION SURVEY. The elevation and slope of the water table were determined by surveying the top of the well casing for each monitoring well to a common reference datum using a surveyor's level and stadia rod. Elevations were referenced to the benchmark located on the northeast face of Building 631, which is located several hundred feet easterly of the site. This benchmark is part of the U.S. Coastal and Geodetic Survey benchmarking system and has an elevation of 11.15 feet above the National Geodetic Vertical Datum (NGVD) of 1929.

Groundwater level measurements were collected on February 6 and March 31, 1992. Procedures for groundwater level measurements are contained in Appendix C.

4.4 GROUNDWATER SAMPLING PROGRAM. Groundwater samples were collected from each monitoring well on February 6, 1992. The samples were sent to Wadsworth/Alert Laboratories in Tampa, Florida, for analysis. A duplicate sample, laboratory blanks, equipment blank, and a trip blank were also analyzed with the monitoring well samples. Procedures for collection of groundwater samples are presented in Appendix C.

4.5 AQUIFER SLUG TESTS. Three rising head slug tests were performed on monitoring well PEN-607NE-MW5 to assess the hydraulic conductivity of the surficial zone of the sand-and-gravel aquifer. Procedures for conducting slug tests are included in Appendix C. Slug test data graphs and calculations are attached in Appendix D.

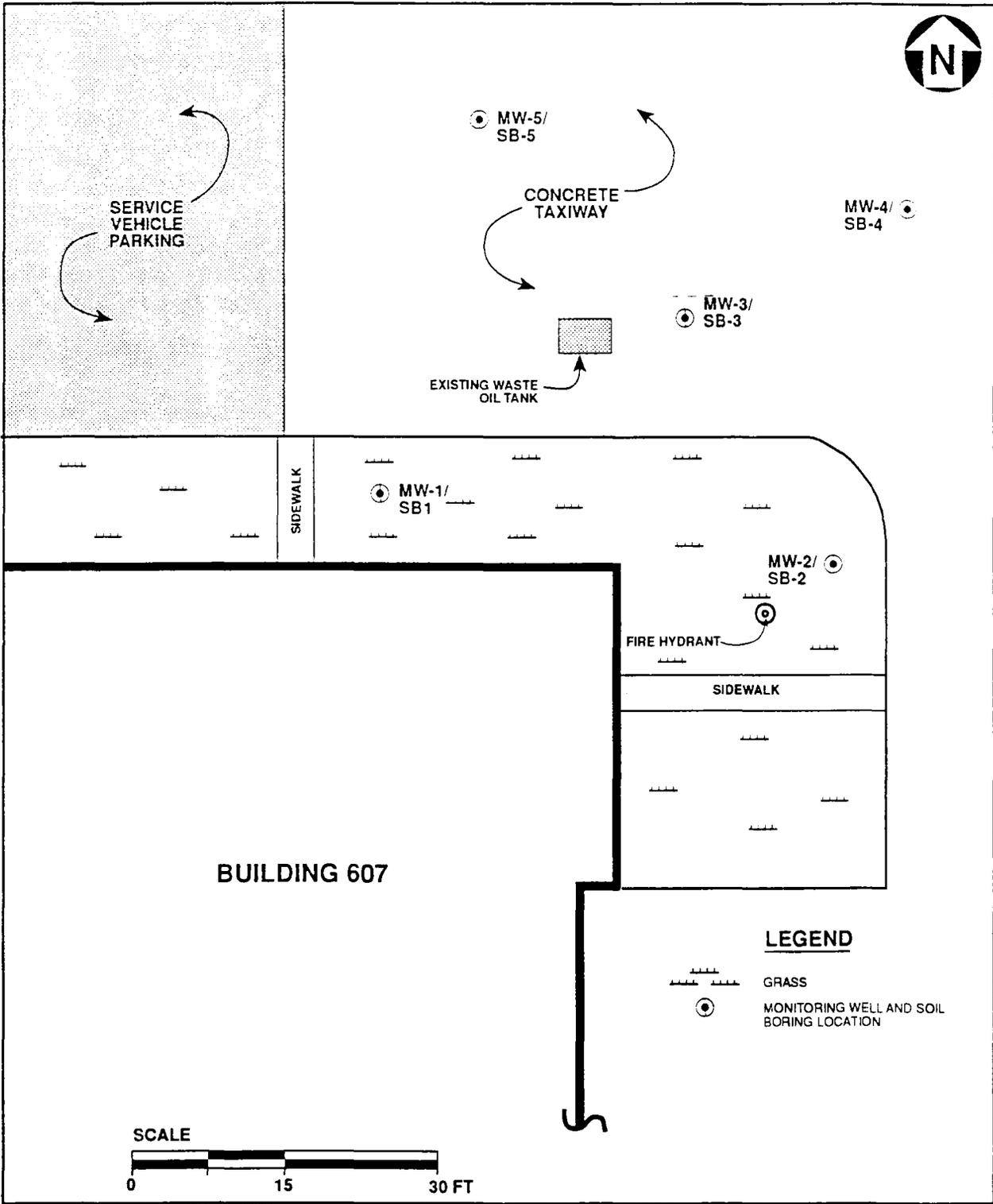


FIGURE 4-1
MONITORING WELL AND
SOIL BORING LOCATIONS



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5.0 CONTAMINATION ASSESSMENT RESULTS

5.1 SITE-SPECIFIC AQUIFER CHARACTERISTICS AND HYDROGEOLOGIC PARAMETERS. The surficial zone of the sand-and-gravel aquifer is the primary interval of concern at the site. The surficial zone is unconfined, and the water table was encountered at depths from 4 to 6 feet bls.

Groundwater level measurements in all site monitoring wells were collected on February 6 and March 31, 1992. These measurements are shown in Table 5-1 and were used to construct water table elevation contour maps to delineate the direction of groundwater flow at the site. Water table elevation contour maps for each date are shown in Figures 5-1 and 5-2. Both indicate an easterly groundwater flow direction in the surficial zone.

**Table 5-1
Top of Casing and Groundwater Elevations
February 6 and March 31, 1992**

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Well Number	February 6, 1992			March 31, 1992		
	TOC	DTW	Groundwater Elevation	TOC	DTW	Groundwater Elevation
MW-1	9.12	5.32	3.80	9.12	5.75	3.37
MW-2	8.91	5.22	3.69	8.91	5.63	3.28
MW-3	8.30	4.58	3.72	8.30	4.97	3.33
MW-4	8.38	4.67	3.71	8.38	5.07	3.31
MW-5	8.29	4.52	3.77	8.29	4.90	3.39

Notes: TOC = top of casing.
DTW = depth to water.

The average hydraulic gradient across the site is 2.1×10^{-3} feet per foot (ft/ft). Slug test results indicate an average horizontal hydraulic conductivity (K) of 3.0×10^1 feet per day (ft/day). The calculated pore water velocity (V) is 2.4×10^{-1} ft/day. Equations and calculations used to determine these values are presented in Appendix D.

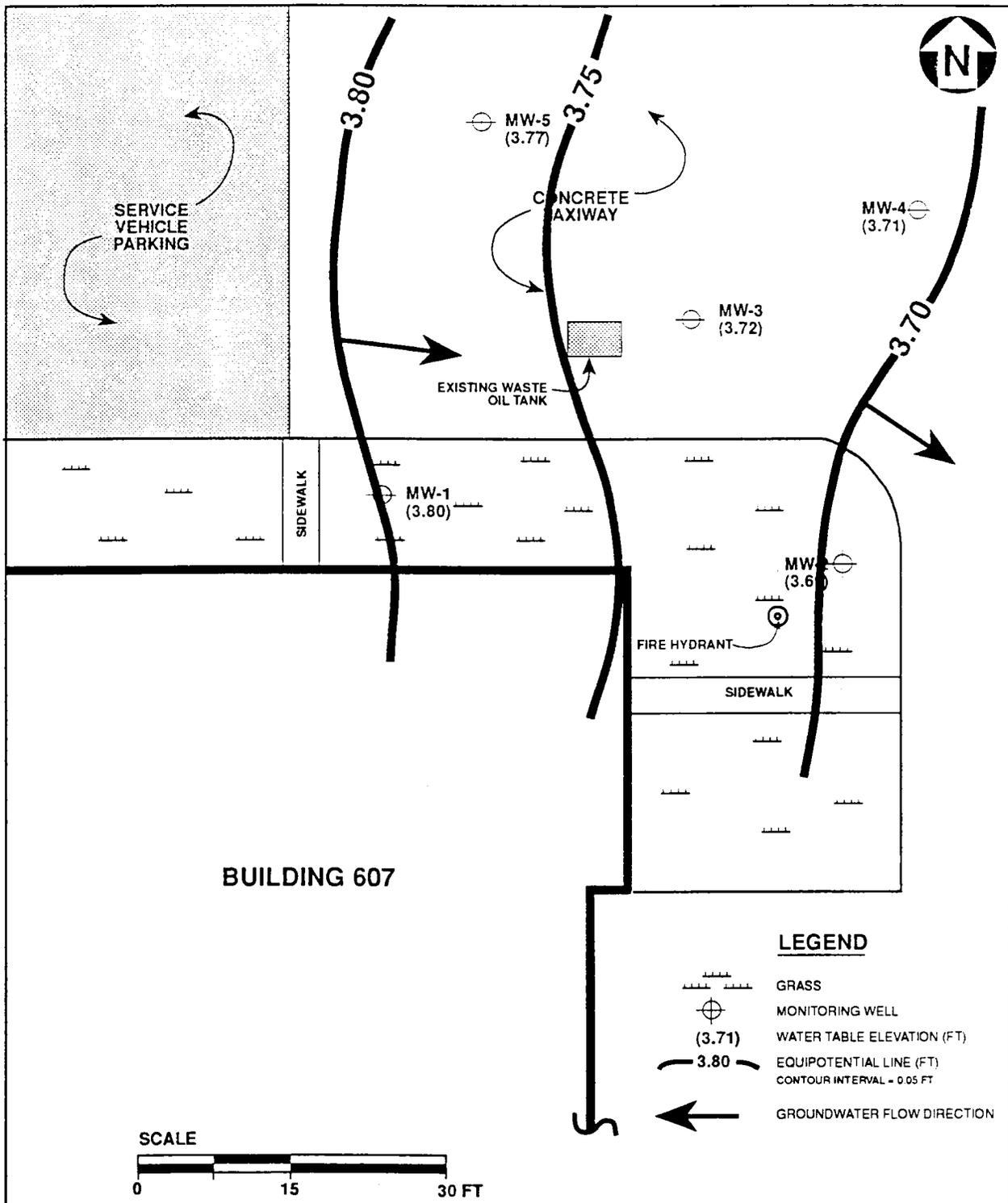


FIGURE 5-1

**WATER TABLE ELEVATION
CONTOUR MAP
SURFICIAL ZONE
SAND-AND-GRAVEL AQUIFER
FEBRUARY 6, 1992**



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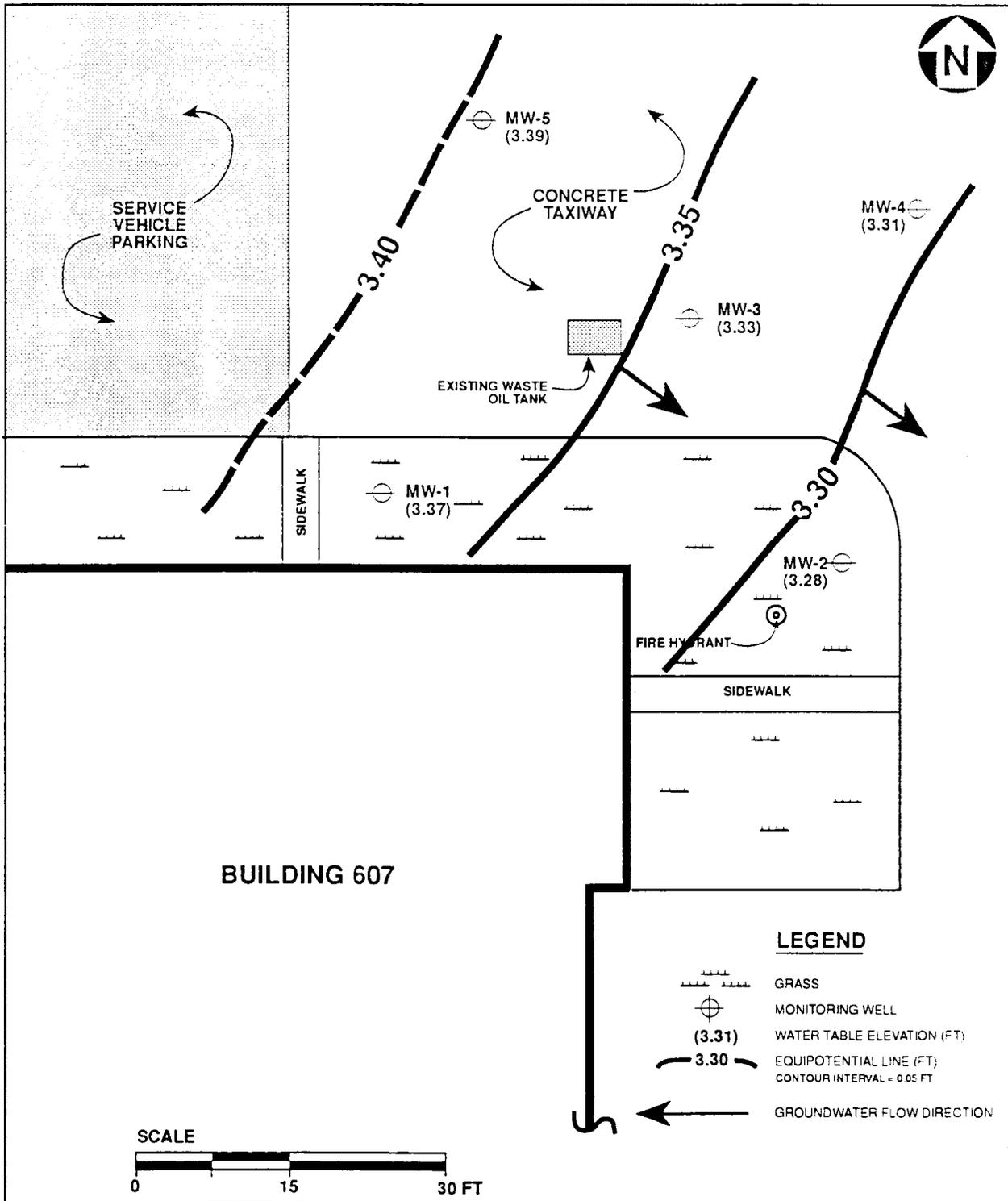


FIGURE 5-2

**WATER TABLE ELEVATION
CONTOUR MAP
SURFICIAL ZONE
SAND-AND-GRAVEL AQUIFER
MARCH 31, 1992**



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5.2 CONTAMINANT PLUME DEFINITION AND CHARACTERIZATION.

5.2.1 Soil Contamination Composite soil samples were collected from all SPT samples at depths of 4 to 6 feet bls, and from SB3 at a depth of 2 to 4 feet bls, and analyzed by OVA headspace techniques. The samples were then submitted to Wadsworth/Alert Laboratories in Tampa, Florida, for total metals analysis. The soil sample collected at the former waste oil UST location, sample SB3 (4 to 6 feet bls), was also analyzed for TRPH, and by U.S. Environmental Protection Agency (USEPA) Methods 8240 and 8270, and the Toxicity Characteristic Leaching Procedure (TCLP) for metals. Summaries of the OVA and soil laboratory analyses results are presented in Tables 5-2 and 5-3, respectively.

Table 5-2
Summary of Soil Sample Organic Vapor Analyzer (OVA) Headspace Analyses,
January 23 and 24, 1992

Contamination Assessment Report
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Boring Designation	Depth (feet)	Concentration ¹ (ppm)	Comments
SB1/MW1	4 to 6	0	No odor and no discoloration
SB2/MW2	4 to 6	0	No odor and no discoloration
SB3/MW3	4 to 6	0	No odor and no discoloration
SB4/MW4	4 to 6	0	No odor and no discoloration
SB5/MW5	4 to 6	0	No odor and no discoloration

¹Corrected for methane.

Note: ppm = parts per million.

**Table 5-3
Summary of Soil Sample Laboratory Analyses
January 23 and 24, 1992**

Contamination Assessment Report
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Sample ID	Total Metals Analysis Concentration (ppm)				
	Depth (feet)	Arsenic	Cadmium	Chromium	Lead
SB1	4 to 6	0.6	ND	ND	11
SB2	4 to 6	ND	ND	ND	ND
SB3	2	ND	ND	ND	15
SB3	4 to 6	ND	ND	ND	11
SB4	4 to 6	ND	ND	ND	5.1
SB4 duplicate	4 to 6	ND	ND	ND	7.3
SB5	4 to 6	ND	ND	ND	9.8
State regulatory level		55	55	275	77

Sample ID	Toxicity Characteristic Leaching Procedure Metals Analysis (ppm)				
	Depth (feet)	Arsenic	Cadmium	Chromium	Lead
SB3	4 to 6	ND	ND	ND	0.22
TCLP regulatory level		5.0	1.0	5.0	5.0

Duplicate sample collected from SB4.

Notes: ppm = parts per million.
ND = not detected.

No volatile organic compounds (VOC) were detected in the OVA readings, and no discoloration or petroleum odors were observed in site soils. Methylene chloride and di-n-butyl phthalate were identified in sample SB3 (at 4 to 6 feet bls). These compounds were also present in the laboratory blank, which suggests that their presence in the sample from SB3, at 4 to 6 feet bls, is the result of laboratory contamination. No other petroleum hydrocarbon compounds were identified in soil samples at the site.

Total metals analyses indicated the presence of arsenic and lead in site soils (Table 5-3; Figure 5-3). Arsenic was detected in only the sample from SB1 at a concentration of 0.6 ppm, which is below the FDER guidance concentration for total arsenic in soils of 55 ppm (FDER, February, 1991). Lead was detected in four of the five soil borings. The highest concentration of lead detected during total metals analysis was 15 parts per million (ppm), which is below the FDER regulatory concentration of 77 ppm (FDER, February, 1991). The TCLP lead value for the sample from SB3 at 4 to 6 feet bls was 0.22 ppm, which is well below the lead TCLP State regulatory standard of 5.0 ppm.

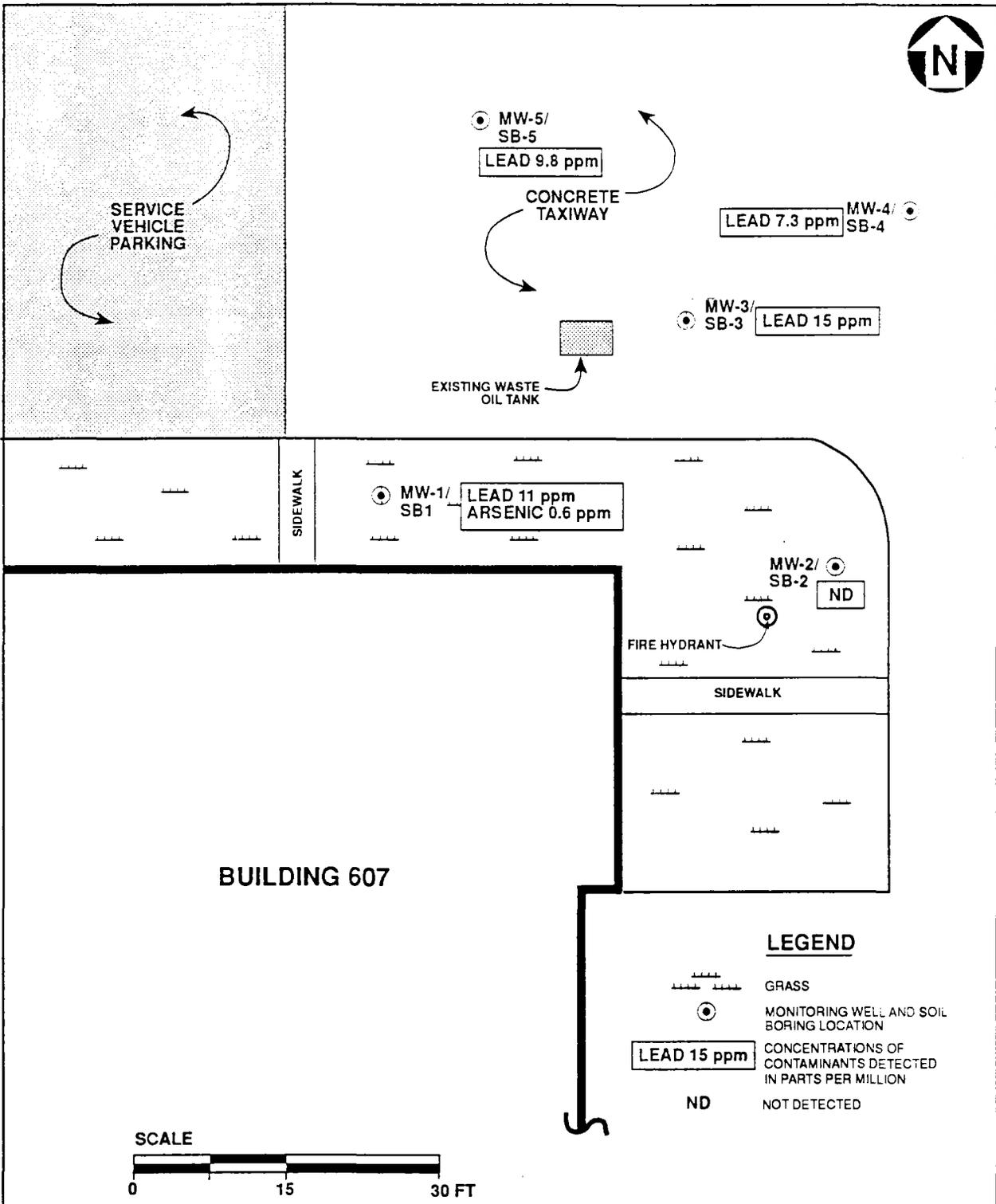


FIGURE 5-3
SOIL CONTAMINATION DISTRIBUTION
JANUARY 23 & 24, 1992



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Because: (1) no petroleum-contaminated soils were identified at the site, (2) total metals concentrations are well below State regulatory concentrations, and (3) much of the site area is paved inhibiting exposure to contaminated soils, it does not appear that soil contamination poses an environmental or health risk at the site.

5.2.2 Groundwater Assessment In some areas near NAS Pensacola, the surficial zone of the sand-and-gravel aquifer has been demonstrated to be hydraulically connected with the main producing zone of the sand-and-gravel aquifer, making potable water supplies susceptible to contamination in these areas (Roaza and others, 1991). For this reason, the surficial zone at NAS Pensacola will be herein treated as a Class G-II water source, and Class G-II State regulatory standards will be applied throughout this report.

Groundwater samples were collected from site monitoring wells on February 6, 1992, and submitted to Wadsworth/Alert Laboratories in Tampa, for VOC analysis by U.S. Environmental Protection Agency (USEPA) Method 624, for base-neutral and acid extractable analysis by USEPA Method 625, for total metals analysis, and for TRPH analysis. These analyses were performed for constituents of the waste oil and unknown analytical group as outlined in Chapter 17-790, FAC.

Laboratory analysis identified toluene, chloroform, acetone, and methylene chloride in the groundwater samples (Table 5-4; Figure 5-4). Methylene chloride was detected in all groundwater samples and was the only contaminant found in concentrations exceeding Class G-II State regulatory standards. Methylene chloride was the only contaminant detected in groundwater samples from monitoring wells PEN-607NE-MW3, PEN-607NE-MW4, and PEN-607NE-MW5. It was also detected in the equipment blank, the trip blank, and the laboratory blank at levels equal to or exceeding those found in the groundwater samples; hence, its presence in the groundwater samples appears to be the result of laboratory contamination.

**Table 5-4
Summary of Groundwater Sample Laboratory Analyses,
February 6, 1992**

Contamination Assessment Report
Site 607NE, Naval Aviation Depot
Pensacola, Florida

Compound	State Regulatory Level	MW1	MW2	MW3	MW4	MW5 Duplicate	Equip- ment Blank	Trip Blank	Lab Blank
Chloroform	100	ND	3	ND	ND	ND	ND	ND	ND
Methylene chloride	5	10	10	10	11	11	11	12	12
Toluene	50	3	ND	ND	ND	ND	ND	ND	ND
Total VOA	50	3	ND	ND	ND	ND	ND	ND	ND
Acetone	¹ 700	38	ND	ND	ND	ND	ND	NA	ND
TRPH	5	1	ND	ND	ND	ND	ND	NA	ND

¹Guidance concentration recommended by FDER, February 1989.

Notes: Duplicate sample collected from MW5.
All concentrations are in parts per billion, except TRPH, which is in parts per million.
ND = not detected.
NA = not analyzed.

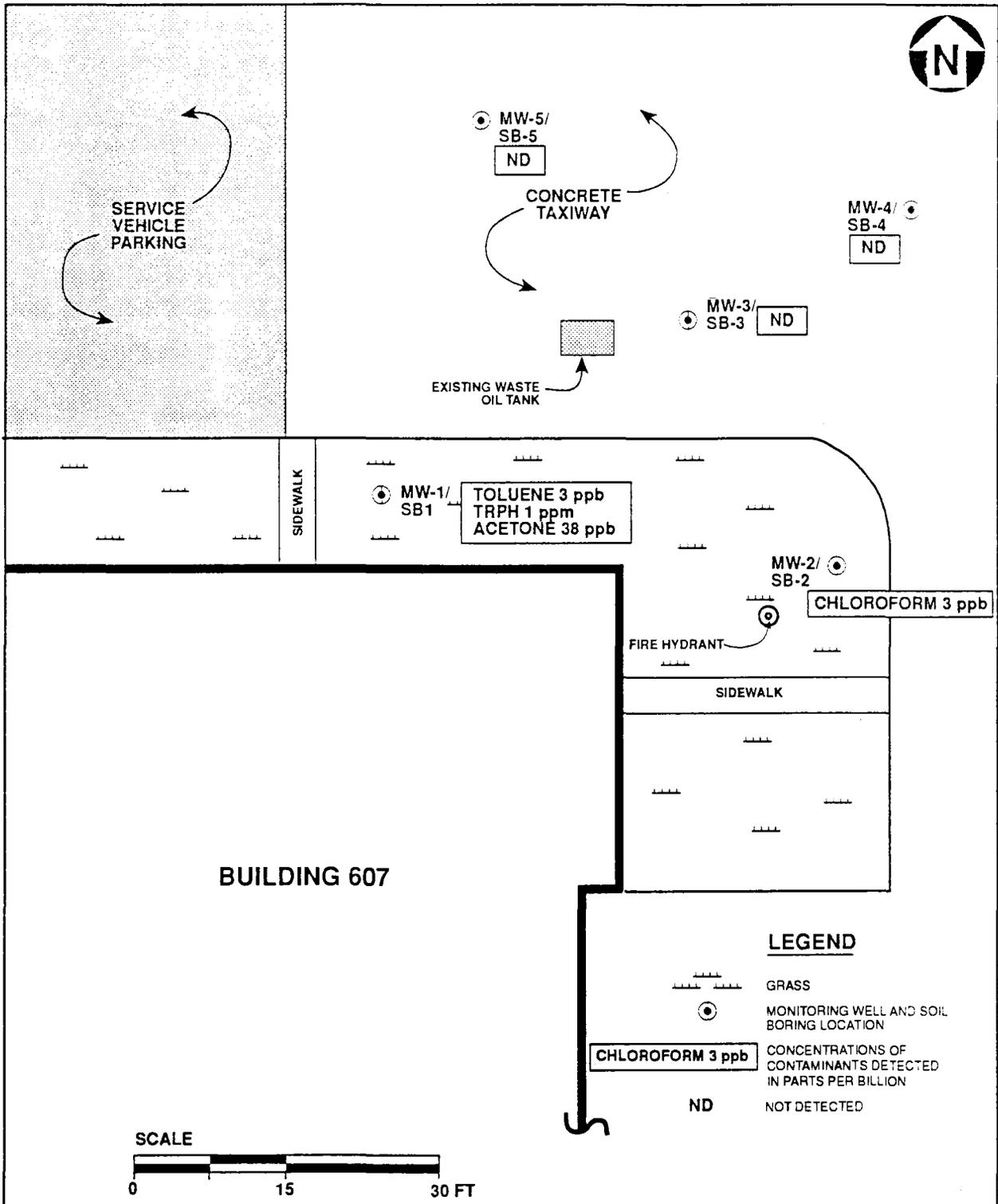


FIGURE 5-4
GROUNDWATER CONTAMINATION
DISTRIBUTION
FEBUARY 6, 1992



CONTAMINATION
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Chloroform was detected in the sample from monitoring well PEN-607NE-MW2 at 3 parts per billion (ppb), which is below the State regulatory standard for chloroform of 100 ppb.

Other than the methylene chloride in all samples and the isolated incidence of chloroform in the sample from PEN-607NE-MW2, the only sample with contaminants detected in laboratory analysis was from monitoring well PEN-607NE-MW1. Toluene (at 3 ppb) and acetone (at 38 ppb) were identified, but were significantly below the State regulatory and guidance levels of 50 ppb and 700 ppb, respectively. TRPH was detected at 1 ppm, which is below the State regulatory level of 5 ppm. Seventeen additional compounds were also tentatively identified in the sample from PEN-607NE-MW1. These compounds and their estimated concentrations are presented in Table 5-5. The compounds tentatively identified are commonly used as fragrances or cleaning agents and do not appear to be related to a petroleum discharge at the site. The absence of these compounds in samples from the remaining site wells, which are downgradient, indicates that their presence in the sample from PEN-607NE-MW1 is not a major concern. Their presence may have been the result of dumping household cleansers (possibly mop water) on the grassy area near the well.

5.3 POTABLE WELL SURVEY. A potable well survey was conducted to assess the risk of contamination to potable water sources from activities at Site 607NE. No potable water supply sources were identified within a 0.25-mile radius of the site. Two potable supply wells (Figure 5-5) exist at NAS Pensacola (Wilkins and others, 1985). The NAS Pensacola water supply system is used in conjunction with the Corry Field water supply system, which is located approximately 2 miles north of NAS Pensacola. According to NADEP personnel, these wells are not currently used for potable water supplies at NAS Pensacola, but are available as reserve potable water supplies should the need arise.

Potable well inventory data are presented in Table 5-6. Both potable wells at NAS Pensacola are screened in the main producing zone of the sand-and-gravel aquifer at depths ranging from 105 to 160 feet bls. Both wells are upgradient to Site 607NE, and are not located within a 0.25-mile radius of the site. Therefore, the possibility of contamination of potable water sources from activities at Site 607NE does not appear feasible.

**Table 5-5
Estimated Concentrations of Tentatively Identified Compounds
Found in Samples from Well PEN-607NE-MW1
February 6, 1992**

Contamination Assessment Report
Site 607NE, Naval Aviation Depot
Pensacola, Florida

Compound	Estimated Concentration (ppb)
4-Methyl-1-(1-methylethyl)cyclohexene	10
1-Methyl-4-(1-methylethyl)-1,3-cyclohexadiene	8
1-Methyl-3-(1-methylethyl) benzene	66
1-Methyl-4-(1-methylethyl)-1,4,cyclohexadiene	20
1-Methyl-4-(1-methylethylidene)	31
Methyl-(1-methylethenyl) benzene	3
1,3,3-Trimethyl-bicyclo [2.2.1] heptan-2-one	6
1,3,3-Trimethyl-bicyclo [2.2.1] heptan-2-ol	4
1-Methyl-4-(1-methylethenyl) cyclohexane,cis	9
Camphor	6
1-Methyl-4-(1-methylethyl) benzene	30
D-fenchyl alcohol	26
(2)-5-Hexenal oxime	56
Linalyl propionate	52
1-Borneol	45
3-Penten-2-ol	7
Unknown	19

Note: ppb = parts per billion.

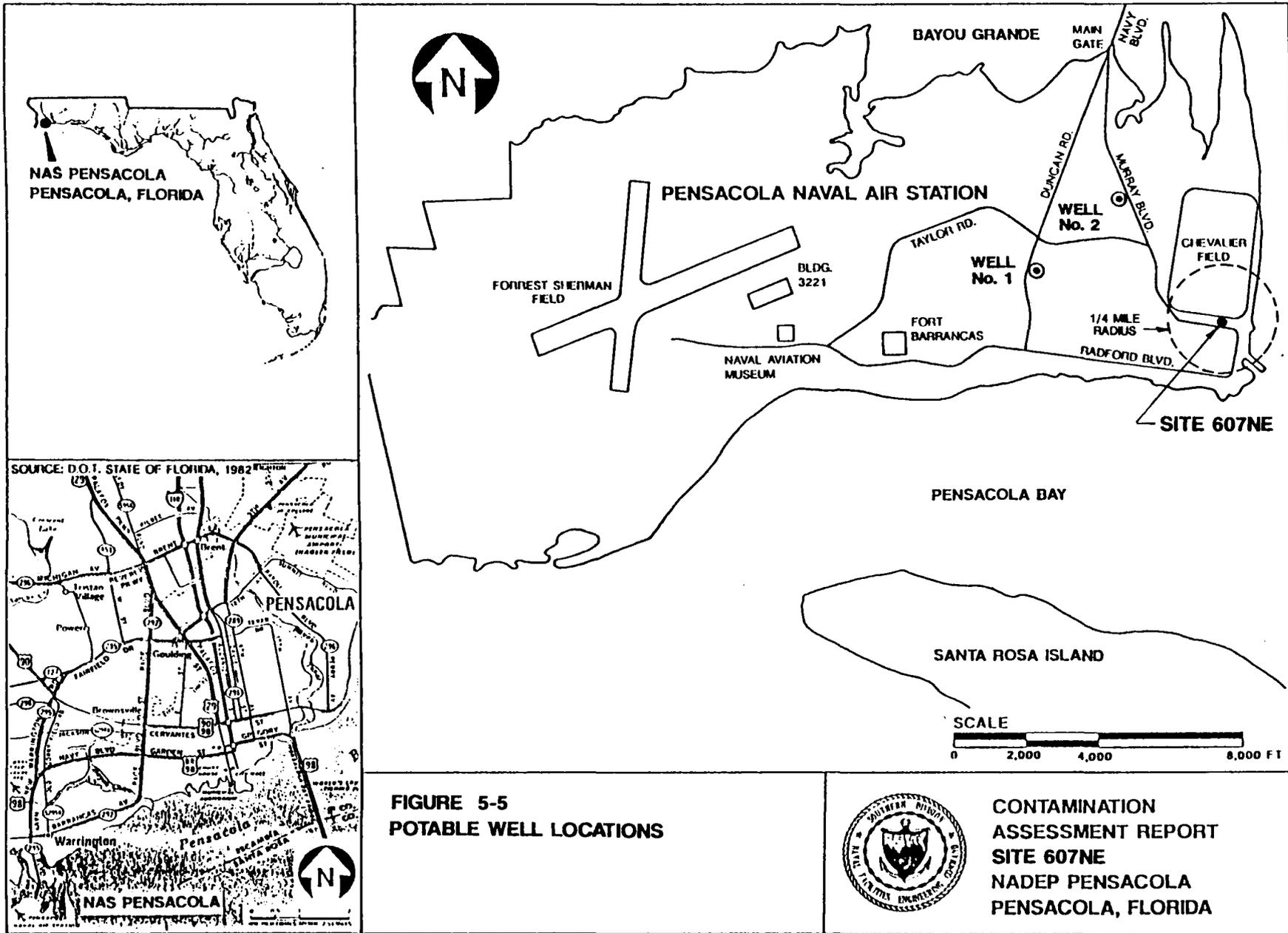
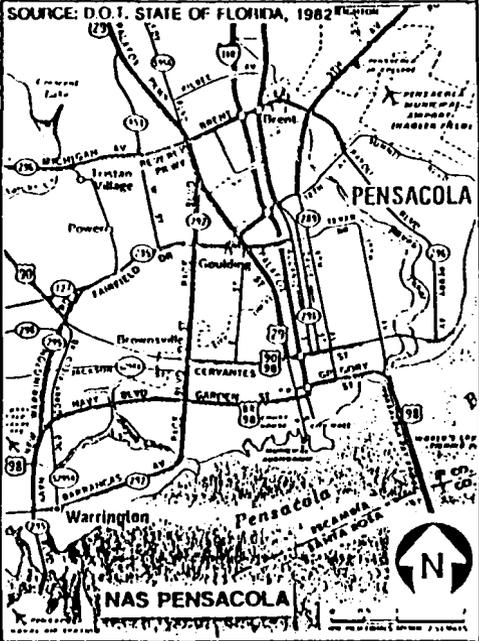


FIGURE 5-5
POTABLE WELL LOCATIONS



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**Table 5-6
Potable Well Inventory Data,
Naval Air Station, Pensacola Florida**

Contamination Assessment Report
Site 607NE, Naval Aviation Depot
Pensacola, Florida

Well Identification Number/Local Name	Location	Total Depth (feet)	Screened Interval (feet)	Diameter Casing/Screen (inches)
302116087170201/No. 1	Sec. 1,T3S,R30W Duncan and Taylor Roads	174	105-160	24/12
302124087163601/No. 2	Sec. 1,T3S,R30W Murray and Farrar Roads	178	110-160	24/12

6.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

6.1 SUMMARY. 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 predominantly comprised of very fine to fine grained quartz sands. These sediments are part of the surficial zone of the sand-and-gravel aquifer (Roaza and others, 1991).
- Groundwater beneath the site was encountered at depths of 4 to 6 feet bls and is classified as G-II.
- The direction of groundwater flow in the surficial zone is to the east.
- The average hydraulic gradient across the site is 2.1×10^{-3} ft/ft.
- The average hydraulic conductivity at the site is 3.0×10^1 ft/day.
- The average pore water velocity is 2.4×10^{-1} ft/day.
- Petroleum contamination was not identified in any of the soil borings or monitoring wells during the field investigation.
- Lead and arsenic were the only soil metals contaminants identified at the site. Arsenic was detected in one sample at 0.6 ppm, which is below the FDER regulatory level for total arsenic in soils of 55 ppm. The highest concentration of lead detected during total metals analysis was 15 parts per million (ppm), which is below the FDER regulatory level for total lead in soils of 77 ppm. The TCLP lead value for the sample from SB3 at 4 to 6 feet bls was 0.22 ppm, which is well below the lead TCLP regulatory standard of 5.0 ppm.
- Much of the site area is paved, thus minimizing exposure to soils and any soil contamination at the site that might pose an environmental or health risk.
- Groundwater contaminants identified at the site include toluene, chloroform, and methylene chloride. Methylene chloride was the only contaminant identified in concentrations above regulatory levels, and its presence appears to be the result of laboratory contamination.
- Seventeen compounds were tentatively identified in the sample from monitoring well PEN-607NE-MW1. These compounds are commonly contained in cleaning and perfume solvents, and do not appear to be related to a petroleum discharge at the site.

- Because there are no potable water sources within a 0.25-mile radius of the site, there appears to be little chance for contamination of the public water supply system from activities at the site.

6.2 CONCLUSIONS. The level of soil and groundwater contamination identified at Site 607NE is minimal, is below State regulatory standards, and is not expected to impact local potable water supplies on the base.

6.3 RECOMMENDATIONS. Based on the findings and interpretations of this contamination assessment, a *No Further Action Proposal (NFAP)* is herewith submitted for Site 607NE.

7.0 PROFESSIONAL REVIEW CERTIFICATION

The contamination assessment contained in this report was prepared using sound hydrogeologic principles and judgment. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the assessment described in this report. This Contamination Assessment Report was developed for the waste oil tank located at Site 607NE at the Naval Aviation Depot, Naval Air Station in Pensacola, Florida, and should not be construed to apply to any other site.

Roger Durham
Professional Geologist
P.G. No. 001127

Date

REFERENCES

- Barr, G.L., 1987, Potentiometric surface of the upper Floridan aquifer in Florida, May, 1985: Florida Geological Survey Map Series No. 119.
- Bouwer, H., and Rice, R.C., 1976, A slug test for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells: Water Resources Research, vol. 12, p. 423-428.
- Bouwer, H., 1989, The Bouwer and Rice slug test, an update: Groundwater, vol. 127, p. 304-309.
- Florida Department of Environmental Regulation, February 1989, Groundwater guidance concentrations: compiled by R. Merchant, Division of Water Facilities, 14 p.
- Florida Department of Environmental Regulation, February 1991, Guidelines for assessment and remediation of petroleum contaminated soils: Division of Waste Management, 33 p.
- Florida Department of Environmental Regulation, May 1992, Guideline for assessment and remediation of petroleum contaminated soils, revised: Division of Waste Management, 39 p.
- Florida Department of Transportation, 1982, Florida official transportation map: 1 sheet.
- Geraghty and Miller, 1989, AQTESOLV, aquifer test design and analysis: computer program version 1.00.
- Healy, H.G., 1980, Potentiometric surface of the upper Floridan aquifer in Florida: Florida Bureau of Geology Map Series 104.
- Marsh, O.T., 1966, Geology of Escambia and Santa Rosa Counties, western Florida panhandle: Florida Geological Survey Report of Investigations No. 46, 140 p.
- Musgrove, R.H., Barraclough, J.T., and Grantham, R.G., 1965, Water resources of Escambia and Santa Rosa Counties, Florida: Florida Geological Survey Report of Investigations No. 40, 102 p.
- Naval Aviation Depot, Pensacola, 1992, Telephone Directory: 32 p.
- Puri, H.S., and Vernon, R.O., 1964, Summary of the geology of Florida and a guidebook to the classic exposures: Florida Geological Survey Special Publication 5, revised, 312 p.
- Roaza, H.P., Pratt, T.R., Richards, C.J., Johnson, J.L., and Wagner, J.R., 1991, Conceptual model of the sand-and-gravel aquifer, Escambia County, Florida: Northwest Florida Water Management District Water Resources Special Report 91-6, 125 p.

GLOSSARY (Continued)

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

Wilkins, K.T., Wagner, J.R., and Allen, T.W., 1985, Hydrogeologic data from the sand-and-gravel aquifer in southern Escambia County, Florida: Northwest Florida Water Management District Technical File Report 85-2, 153 p.

APPENDIX A
SITE CONDITIONS

Regional and Local Physiography

Florida is divided into four physiographic zones; the Coastal Lowlands, the Central Highlands, the Northern Highlands, and the Marianna Lowlands (Puri and Vernon, 1964). The Pensacola area lies entirely within the Coastal Lowlands zone, which closely parallels the Florida coastline. The Coastal Lowlands are further divided into the Atlantic, Distal, and Gulf Coastal Lowlands (Puri and Vernon, 1964). The Naval Aviation Depot (NADEP) Pensacola falls within the Gulf Coastal Lowlands. The lowlands are characterized by poor drainage and elevations less than 100 feet above mean sea level. Landforms include barrier islands, estuaries, coastal ridges, dunes, and valleys (Puri and Vernon, 1964).

Land surface altitudes at NADEP Pensacola range from sea level at the coast to greater than 30 feet above sea level. Surface drainage is variable, but is generally toward the nearest body of water.

Regional Hydrogeology

NADEP Pensacola is underlain by three water bearing zones. These zones include the sand-and-gravel aquifer, the Upper Floridan Aquifer, and the Lower Floridan Aquifer.

The sand-and-gravel aquifer is comprised of Pleistocene terrace deposits, the Pliocene Citronelle Formation (Marsh, 1966), and Miocene coarse clastics. These deposits extend from the surface to a depth of approximately 400 feet below land surface (bls) and are predominantly poorly sorted, fine-grained to coarse-grained sands interbedded with numerous layers of clay and gravel (up to 60 feet thick). There is great lithologic variability in these deposits. Clay lenses and the presence of hardpan layers within the sand-and-gravel aquifer result in the occurrence of perched water tables and artesian conditions in some areas (Musgrove and others, 1965). Groundwater flow is generally topographically controlled. Recharge to the aquifer is derived almost entirely from local rainfall. The sand-and-gravel aquifer is the sole source of potable groundwater in the Pensacola area (Roaza and others, 1991).

The sand-and-gravel aquifer is divided into three major zones: the surficial zone, the low permeability zone, and the main producing zone (Roaza and others, 1991). These designations are based on changes in permeability of the sediments comprising each zone. The surficial zone is the uppermost layer of the aquifer. It consists primarily of sand and gravel with occasional silt and clay deposits. This zone ranges in thickness from 0 to 150 feet (Roaza and others, 1991). The low permeability zone, which underlies the surficial zone, consists of various mixtures of clay, silt, sand, and gravel. Locally, this zone contains poorly sorted sands, with gravel and some clay (Roaza and others, 1991). The thickness of the zone varies from 50 to 100 feet. Individual beds of the low permeability zone are highly discontinuous, and in some areas there may be hydraulic connection between the surficial zone and the main producing zone. The main producing zone is composed of moderate to well sorted sand-and-gravel beds that are typically interbedded with beds of fine-grained sand and clay. Locally, this zone typically contains medium-grained sands and sandy clays (Roaza and others, 1991). The thickness of the main producing zone ranges from 200 to 300 feet.

The Upper Floridan Aquifer is comprised of deposits correlative to the lower Miocene Tampa Formation and the upper Oligocene Chickasawhay Formation. These two formations are undifferentiated in the Pensacola area. Locally these deposits are approximately 380 feet thick (Marsh, 1966) and are typically brown to light gray, hard, fossiliferous dolomitic limestones or dolomites with a distinctive spongy-looking texture. Locally, the overlying Pensacola Clay is approximately 1,000 feet thick and forms an effective confining unit between the sand-and-gravel aquifer and the Upper Floridan aquifer (Marsh, 1966). This confining unit has also been designated as part of the Intermediate System (Roaza and others, 1991). The Upper Floridan aquifer is recharged by local rainfall in Conecuh, Escambia, and Monroe Counties, Alabama (Healy, 1980). General groundwater flow in the Upper Floridan aquifer is to the southeast toward the Gulf of Mexico (Barr, 1987). The groundwater in the Upper Floridan aquifer is mineralized in this area and is not used as a water supply.

The Lower Floridan aquifer is comprised of upper to middle Eocene limestones. The aquifer is approximately 500 feet thick in the vicinity (Marsh, 1966). The limestones are typically white to grayish cream, soft, and chalky. The Lower Floridan aquifer is confined from above by the Bucatunna Clay Member of the middle Oligocene Byram Formation and from below by gray shales and clays of middle Eocene age. The Bucatunna Clay, also called the Intermediate Zone, is approximately 170 feet thick in the vicinity (Musgrove and others, 1965). Groundwater flow in the aquifer is to the southeast toward the Gulf of Mexico (Healy, 1980). The water quality is poor because of high mineralization.

Local Hydrogeology

The surficial zone of the sand-and-gravel aquifer is the interval of primary concern at NAS Pensacola. The surficial zone extends from the surface to a depth of approximately 100 feet bls. Soils from 0 to 50 feet bls are generally composed of fine- to very fine-grained sands, with very little silt and clay. Occasional coarse-grained sands to fine-grained gravels were found with the fine- to very fine-grained sands, and thin peat layers were found at NAS Pensacola in the Sherman Field vicinity.

Groundwater in the surficial zone is non-artesian and is encountered at depths from less than 2 feet bls to greater than 20 feet bls at the NADEP facility. The depth to groundwater is mainly controlled by topography. Recharge is predominantly from local rainfall.

Figure A-1 shows the groundwater flow direction in the site vicinity on March 30, 1992. The direction of groundwater flow in the site vicinity is predominantly easterly, although variations in topography and the presence of surface water bodies result in localized changes in the groundwater flow direction. For example, groundwater flow is northerly at the north end of Chevalier Field and appears to be influenced by a creek that exists north of Building 3810. A southerly flow toward Pensacola Bay is indicated along Radford Avenue in the southwest area shown on Figure A-1. A westerly flow was observed near the 3557 Building area on the west edge of Chevalier Field. The presence of a drainage ditch along the west side of Industrial Road appears to be the cause of this phenomenon. The reversal of the predominantly eastern flow near Building 3557 results in an apparent piezometric "high" in the central part of Chevalier Field.

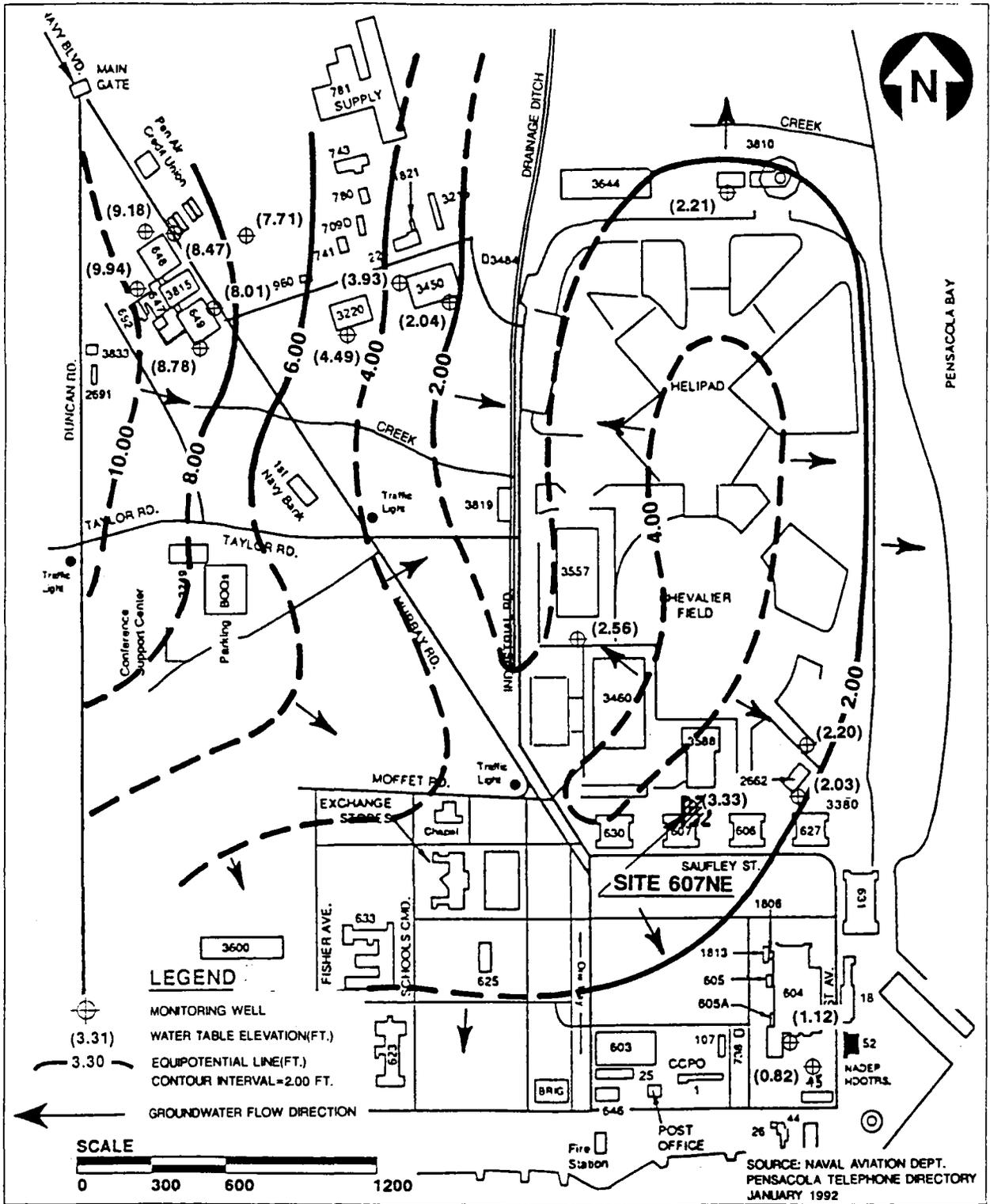


FIGURE A-1
WATER TABLE ELEVATION CONTOUR
MAP, SURFICIAL ZONE -
SAND AND GRAVEL AQUIFER
MARCH 30, 1992



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Perched water tables were observed in the Sherman Field area, approximately 2 miles west of the site, and are apparently the result of peat layers found in this area. Perched water tables were not observed in the site vicinity.

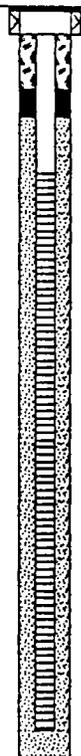
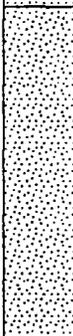
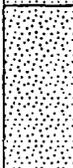
Locally, hydraulic gradients in the surficial zone vary from approximately 3×10^{-3} feet per foot (ft/ft) to 7×10^{-3} ft/ft. Gradients are generally less in the lower flat-lying areas than those in the topographically higher areas to the northwest of Chevalier Field. Additional water level measurements, taken on numerous occasions at low-elevation sites located near Pensacola Bay, indicate that tidal fluctuations do not appear to alter the groundwater flow direction and do not appear to significantly affect the hydraulic gradients observed at NAS Pensacola.

APPENDIX B
LITHOLOGIC LOGS

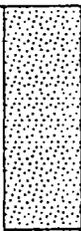
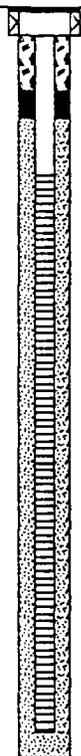
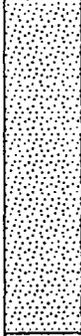
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CLIENT: SOUTHNAVFACENGCOM		PROJECT NO: 7527-30	
CONTRACTOR: Groundwater Protection Inc./Orlando, FL		DATE STARTED: 1/23/92	COMPLTD: 1/23/92
METHOD: 4.25" ID HSA	CASE SIZE: 2 inch	SCREEN INT.: 10'	PROTECTION LEVEL: D
TOC ELEV.: 9.12 FT.	MONITOR INST.: Porta Fid/GC	TOT DPTH: 13FT.	DPTH TO ∇ 5.32 FT.
LOGGED BY: R. Durham	WELL DEVELOPMENT DATE: 1/23/92		SITE: NADEP Pensacola

DEPTH FT.	LABORATORY SAMPLE ID.	RECOVERY SAMPLE	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0				SAND: Light gray to tan, fine to medium grained, some silt and clay.		SP		
5		16/24	0	SAND: Orange-brown to tan, very fine to fine grained.		SP	1,2,1,2	
10		12/24	0	SAND: Brown to brown-gray, very fine to fine grained, wet.		SP	5,8,15,15	
15								
20								
25								

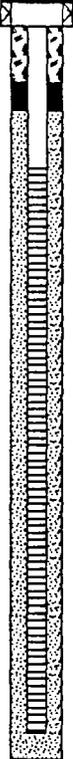
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CLIENT: SOUTHNAVFACENGCOM		PROJECT NO: 7527-30	
CONTRACTOR: Groundwater Protection Inc./Orlando, FL		DATE STARTED: 1/23/92	COMPLTD: 1/23/92
METHOD: 4.25" ID HSA	CASE SIZE: 2 Inch	SCREEN INT.: 10'	PROTECTION LEVEL: 0
TOC ELEV.: 8.91 FT.	MONITOR INST.: Porta Fid/GC	TOT DPTH: 13FT.	DPTH TO ∇ 5.22 FT.
LOGGED BY: R. Durham	WELL DEVELOPMENT DATE: 1/23/92		SITE: NADEP Pensacola

DEPTH F.T.	LABORATORY SAMPLE ID.	RECOVERY SAMPLE	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/8-IN	WELL DATA
				SAND: Yellow-brown, very fine to fine grained.		SP		
				SAND: White, very fine to fine grained.		SP		
5		14/24	0	SAND: White to light brown, very fine to fine grained.		SP	3,8,7,11	
10		24/24		SAND: White to light gray, very fine to fine grained, wet.		SP	12,17,30,24	
15								
20								
25								

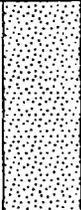
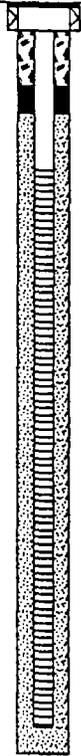
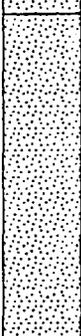
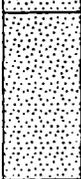
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CLIENT: SOUTHNAVFACENGCOM		PROJECT NO: 7527-30	
CONTRACTOR: Groundwater Protection Inc./Orlando, FL		DATE STARTED: 1/23/92	COMPLTD: 1/23/92
METHOD: 4.25" ID HSA	CASE SIZE: 2 Inch	SCREEN INT.: 10'	PROTECTION LEVEL: D
TOC ELEV.: 8.30 FT.	MONITOR INST.: Porta Fid/GC	TOT DPTH: 13FT.	DPTH TO ∇ 4.58 FT.
LOGGED BY: R. Durham	WELL DEVELOPMENT DATE: 1/23/92		SITE: NADEP Pensacola

DEPTH FT.	LABORATORY SAMPLE ID.	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/8-IN	WELL DATA
				SAND: Light gray to tan, fine to medium grained.		SP		
5	SB3 (4-E)	18/24	0	SAND: As above, damp.		SP	1,2,1	
10		24/24		SAND: As above, saturated.		SP	8,15,17,20	
15								
20								
25								

TITLE: NADEP Pensacola		LOG of WELL: 607NE MW-4	BORING NO. SB4
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7527-30
CONTRACTOR: Groundwater Protection Inc./Orlando, FL		DATE STARTED: 1/23/92	COMPLTD: 1/23/92
METHOD: 4.25" ID HSA	CASE SIZE: 2 Inch	SCREEN INT.: 10'	PROTECTION LEVEL: 0
TOC ELEV.: 8.38 FT.	MONITOR INST.: Porta Fid/GC	TOT DPTH: 13FT.	DPTH TO ∇ 4.67 FT.
LOGGED BY: R. Durham	WELL DEVELOPMENT DATE: 1/23/92		SITE: NADEP Pensacola

DEPTH FT.	LABORATORY SAMPLE ID.	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0				SAND: Brown-gray to gray-white, very fine to fine grained.		SP		
5		13/24	0	SAND: Off-white, very fine to fine grained.		SP	5,7,9,8	∇
10		23/24		SAND: As above.		SP	9,18,30,24	
15								
20								
25								

TITLE: NADEP Pensacola		LOG of WELL: 607NE MW-5	BORING NO. SB5
CLIENT: SOUTHNAVFACENGCOM			PROJECT NO: 7527-30
CONTRACTOR: Groundwater Protection Inc./Orlando, FL		DATE STARTED: 1/24/92	COMPLTD: 1/24/92
METHOD: 4.25" ID HSA	CASE SIZE: 2 inch	SCREEN INT.: 10'	PROTECTION LEVEL: D
TOC ELEV.: 8.29 FT.	MONITOR INST.: Porta Fid/GC	TOT DPTH: 13FT.	DPTH TO ∇ 4.52 FT.
LOGGED BY: R. Durham	WELL DEVELOPMENT DATE: 1/23/92		SITE: NADEP Pensacola

DEPTH FT.	LABORATORY SAMPLE ID.	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0				SAND: Light gray to tan, fine to medum grained.		SP		
5		18/24		SAND: Light gray, fine to medium grained, some black silt.		SP	2,3,3,4	
10		16/24		SAND: Light grayish-brown, very fine to fine grained, wet.		SP	15,24,27,22	
15								
20								
25								

APPENDIX C

INVESTIGATIVE METHODOLOGIES AND PROCEDURES

Soil Boring Methods

Boreholes were advanced using 4.25-inch inside diameter, hollow-stem augers using a rotary drill rig. Soil samples were collected from each borehole using a Standard Penetration Test (SPT) split-spoon sampler. SPT samples were generally collected at 5-foot intervals to the total depth of the well. The soil samples collected above the water table were placed in 16-ounce glass jars and head space analyses were performed using an organic vapor analyzer (OVA) with a flame ionization detector (FID) following Florida Department of Environmental Regulation (FDER) Chapter 17-770.200(2), Florida Administrative Code (FAC) guidelines. Samples from below the water table were analyzed using a portable gas chromatograph (GC) calibrated to detect benzene, ethyl benzene, toluene, and xylene (BETX) to the part per billion (ppb) level. The purpose of the screening procedure was to optimize monitoring well placement during the investigation.

Monitoring Well Construction

Monitoring wells were installed in many of the boreholes drilled at the NADEP facility. All monitoring wells installed during the investigation were constructed of 2-inch inner diameter, schedule 40, polyvinyl chloride (PVC) casing with flush-threaded joints and 0.010-inch machine-slotted screen. Shallow wells were constructed with 10 feet of screen. Deeper wells were constructed with 5 feet of screen. PVC well casings extend from the top of the screen to land surface. A 20/30 grade silica sand filter pack was placed in the annular space to approximately 2 to 3 feet above the top of the screen. A 1- to 2-foot thick bentonite seal was then placed on top of the filter pack. The remaining annular space was grouted to the surface with a neat cement grout. A protective traffic-bearing vault was installed to complete each well location. In concreted areas, the well pad consisted of 6-inch thick reinforced concrete around the traffic-bearing vault to the depth of the surrounding concrete. Each monitoring well is equipped with a locking well cap and a padlock. Figure C-1 depicts a typical shallow monitoring well installation for the site.

Water Level Measurements

The groundwater levels were measured using an electric water level indicator and an engineering tape divided into increments of 0.01 foot. The wells were checked for the presence of free product by visual observation of a groundwater sample taken from each well using an extruded Teflon™ bailer. Water level elevations were calculated by subtracting the measured depth to groundwater from the elevation at the top of the well casing.

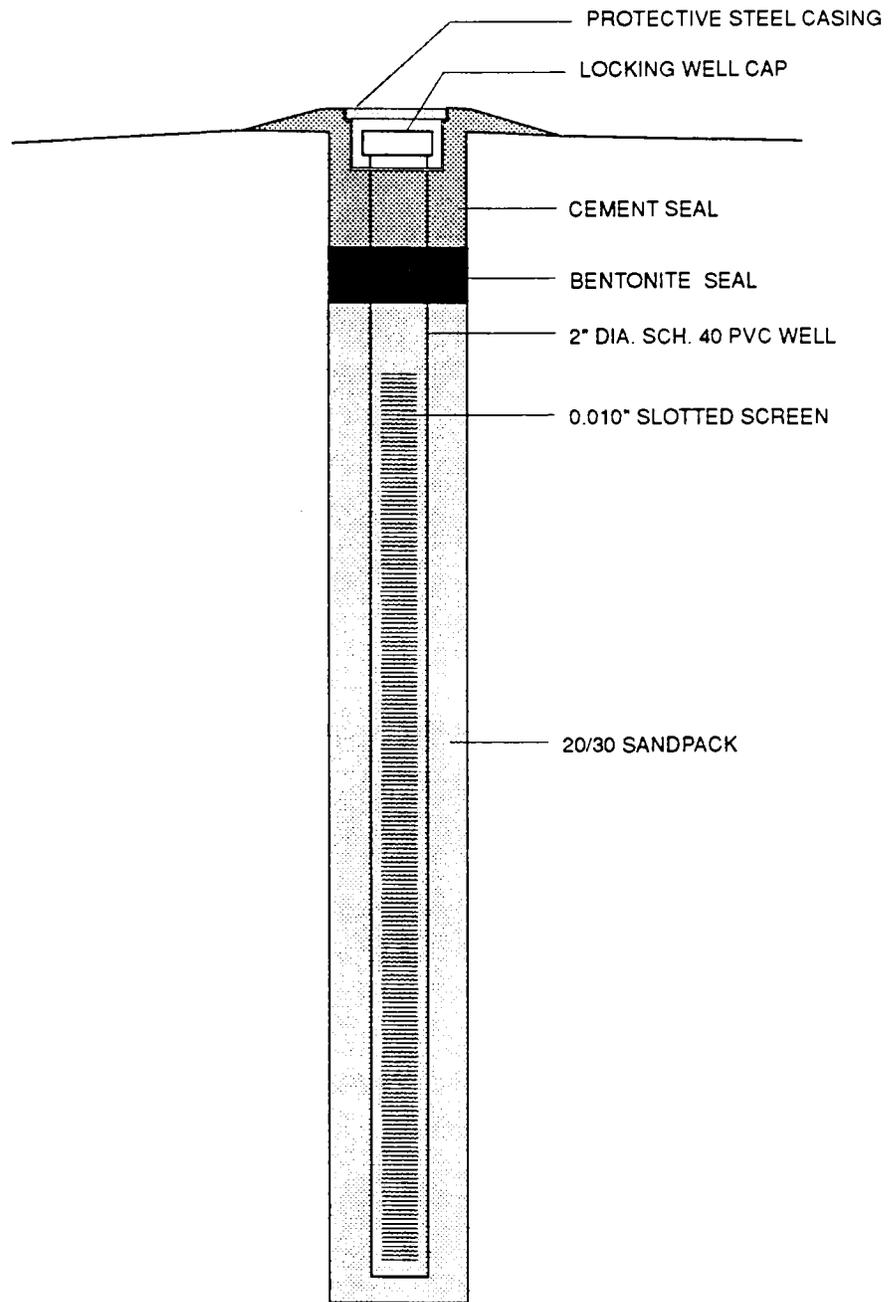


FIGURE C-1

MONITORING WELL
CONSTRUCTION DIAGRAM



CONTAMINATION
ASSESSMENT REPORT
SITE 607 NE
NADEP PENSACOLA
PENSACOLA, FLORIDA

Groundwater Sampling

The groundwater samples were collected in accordance with ABB Environmental Services, Inc. (ABB-ES), FDER-approved Comprehensive Quality Assurance Plan (CompQAP). The monitoring wells were purged with a Teflon™ bailer. Purging continued until a minimum of three well volumes had been removed from the well. Groundwater samples were collected using an extruded Teflon™ bailer. The samples were placed into appropriate containers, properly preserved, and placed on ice. Samples were then shipped to Wadsworth/Alert Laboratories in Tampa, Florida. All groundwater samples collected were analyzed for waste oil and unknown constituents as outlined in FDER Chapter 17-770, Florida Administrative Code (FAC).

Slug Test Procedures

The slug test developed by Bouwer and Rice (1976) permits the measurement of saturated hydraulic conductivity (K) with a single well. The test method used is known as a rising head test and is performed by quickly withdrawing a volume of water (slug) from the well and measuring the subsequent rate of rise of the water level in the well. Bouwer (1989) recommends the rising head slug test for wells with screened intervals that are only partially submerged into unconfined aquifers.

The slug was constructed of 1-inch outside diameter polyvinyl chloride (PVC) pipe, 5 feet in length, filled with sand, and capped watertight at both ends. The water level changes in the monitoring wells were recorded with a data logger and pressure transducer. The pressure transducer was suspended just above the bottom of the well and an initial water level was recorded prior to beginning the test. The slug was then lowered into the well until it was totally submerged beneath the water table. Water levels were then observed until recovery to the original level. Generally, recovery occurred within 3 to 4 seconds. Following stabilization, the slug was quickly removed with water level measurements recorded over time until the water level returned to the original level. Three rising head tests were conducted for each well in order to obtain an average recovery response.

APPENDIX D

AQUIFER PARAMETER CALCULATIONS

Aquifer Parameter Calculations

Hydraulic gradient

Water table elevations were plotted on a scaled water table contour map where flow lines (depicting groundwater flow direction) were drawn perpendicular to the groundwater elevation contours. The groundwater hydraulic gradient was calculated by subtracting the differences in groundwater elevation (in feet) between two points on the map and dividing the elevation difference by the distance between two points to obtain a resulting gradient in feet per foot. Water elevation data collected on February 6 and March 31, 1992, were used to calculate hydraulic gradients at the site. For each date, three traverses were made perpendicular to equipotential contour lines to calculate an average site hydraulic gradient. For each traverse, the hydraulic gradient was calculated as follows:

$$i = \frac{(h_1 - h_2)}{d} \quad (1)$$

where

- i = hydraulic gradient (feet per foot [ft/ft]),
- h_1 = water table elevation, upgradient (feet),
- h_2 = water table elevation, downgradient (feet), and
- d = horizontal distance (feet) between h_1 and h_2 along a flow line.

Hydraulic gradients calculated in this manner varied from 1.7×10^{-3} ft/ft to 2.4×10^{-3} ft/ft. The average hydraulic gradient at the site was calculated to be 2.1×10^{-3} ft/ft.

Hydraulic conductivity

Hydraulic conductivity from data gathered in the slug tests was calculated following the methods of Bouwer and Rice (1976) and Bouwer (1989) for partially penetrating wells screened in unconfined aquifers. The following well information was needed to assess the hydraulic conductivity:

- radius of well casing (r_c),
- radius of borehole, $r_w = r_c$ plus thickness of the sand pack surrounding the well screen),
- length of screened interval below water table (L_s),
- effective well radius (r_e),
- depth of well below water table (L_w),

- depth to confining unit or bottom of aquifer below the static water, table (H), and
- plot of time versus the logarithm of y, where y is the difference between the static water level outside the well and the water level inside the well.

Figure D-1 is a well diagram depicting many of the above listed parameters. Calculations were made assuming that $L_w < H$. Hydraulic conductivity, K, was calculated from the above parameters as follows:

$$K = [R_c^2 \ln(\frac{r_e}{r_w}) - 2L_e] [\frac{1}{t} \ln(\frac{y_0}{y_t})] \quad (2)$$

where

y_0 = y at time zero, and
 y_t = y at time t.

The effective well radius, r_e , and the term $((1/t) \ln (y_0/y_t))$ were derived by using the computer program AQTESOLV™ (Geraghty & Miller, Inc., 1989). This computer program follows procedures and assumptions outlined by Bouwer (1989).

Slug test graphs are attached at the end of this appendix. Values of y were calculated for a particular time, t, and plotted on the graph. The computer program selects a "best-fit" line through the data points by linear regression along a "straight-line" portion of the graph. The slope of the "best-fit" line is used to calculate the hydraulic conductivity, K.

Three slug tests were performed inside well PEN-607NE-MW5. Hydraulic conductivity, K, is reported in feet per minute (ft/min) on the slug test graphs, and was recalculated to feet per day (ft/day). K was found to vary from 2.8×10^1 ft/day to 3.1×10^1 ft/day with an average K of 3.0×10^1 ft/day.

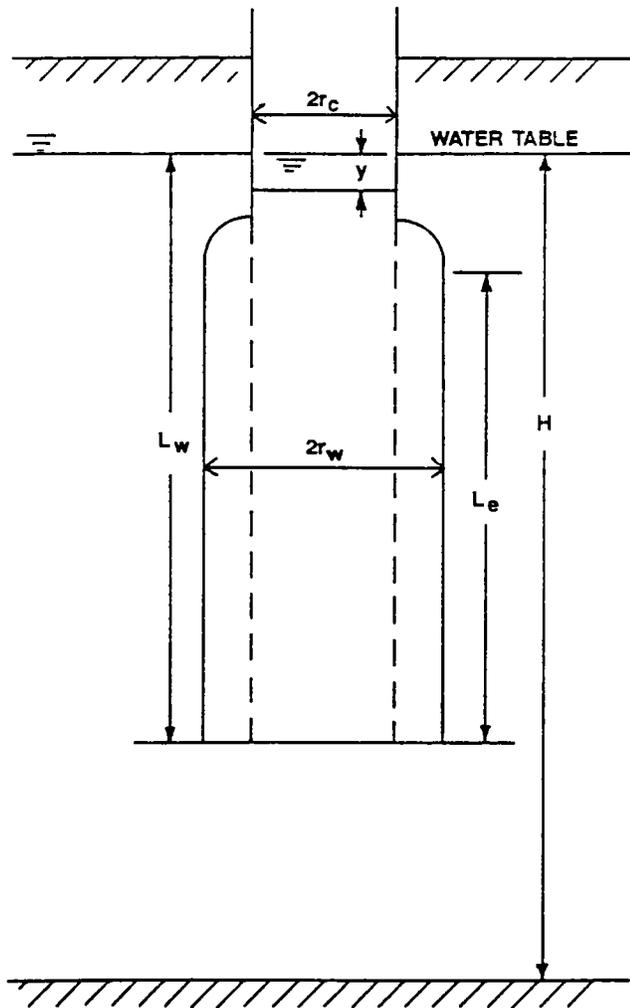
Average pore water velocity

Estimates of average pore water velocity were obtained using the following formula:

$$V = \frac{(K*i)}{n} \quad (3)$$

where

V = seepage velocity in ft/day,
 K = hydraulic conductivity in ft/day,
 i = hydraulic gradient, and
 n = estimated porosity.



- r_c -radius of well.
- r_w -radius of well + total thickness of the sand/gravel pack.
- L_e -length of screened interval below the water table.
- L_w -depth of well below water table.
- H -depth to confining unit below the water table.
- y -difference between static water level outside well and water level inside well.

FIGURE D-1
DEFINITIONS OF SLUG TEST
PARAMETERS (from Bouwer, 1989)



CONTAMINATION
ASSESSMENT REPORT
SITE 607NE
NADEP PENSACOLA
PENSACOLA, FLORIDA

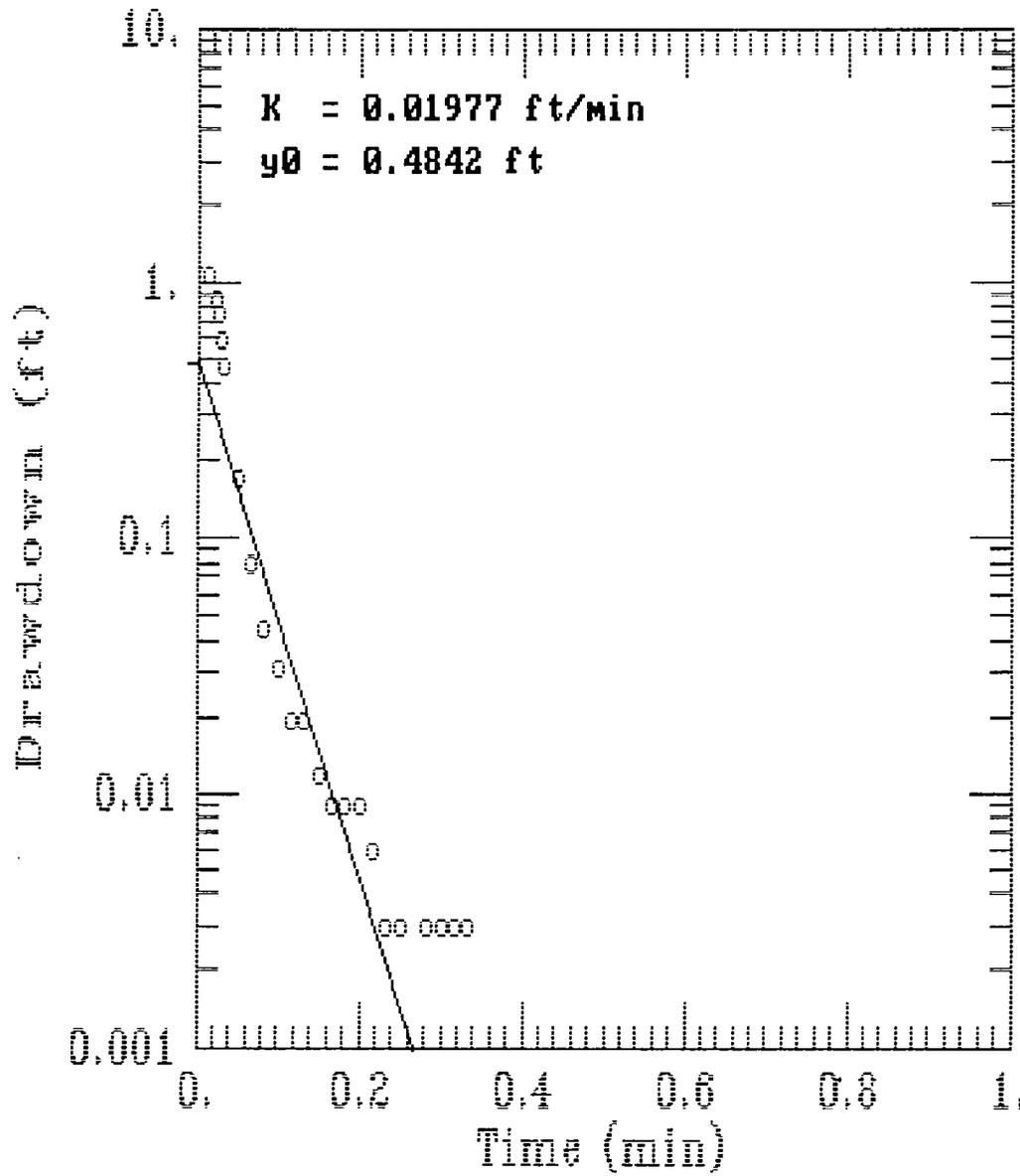
Assuming an estimated porosity of 25 percent, an average hydraulic gradient of 2.1×10^{-3} , and an average hydraulic conductivity of 3.0×10^1 ft/day, the average pore water velocity is calculated as follows:

$$v = \frac{3.0 \times 10^1 \text{ ft/day} * 2.1 \times 10^{-3} \text{ ft/ft}}{0.25}$$

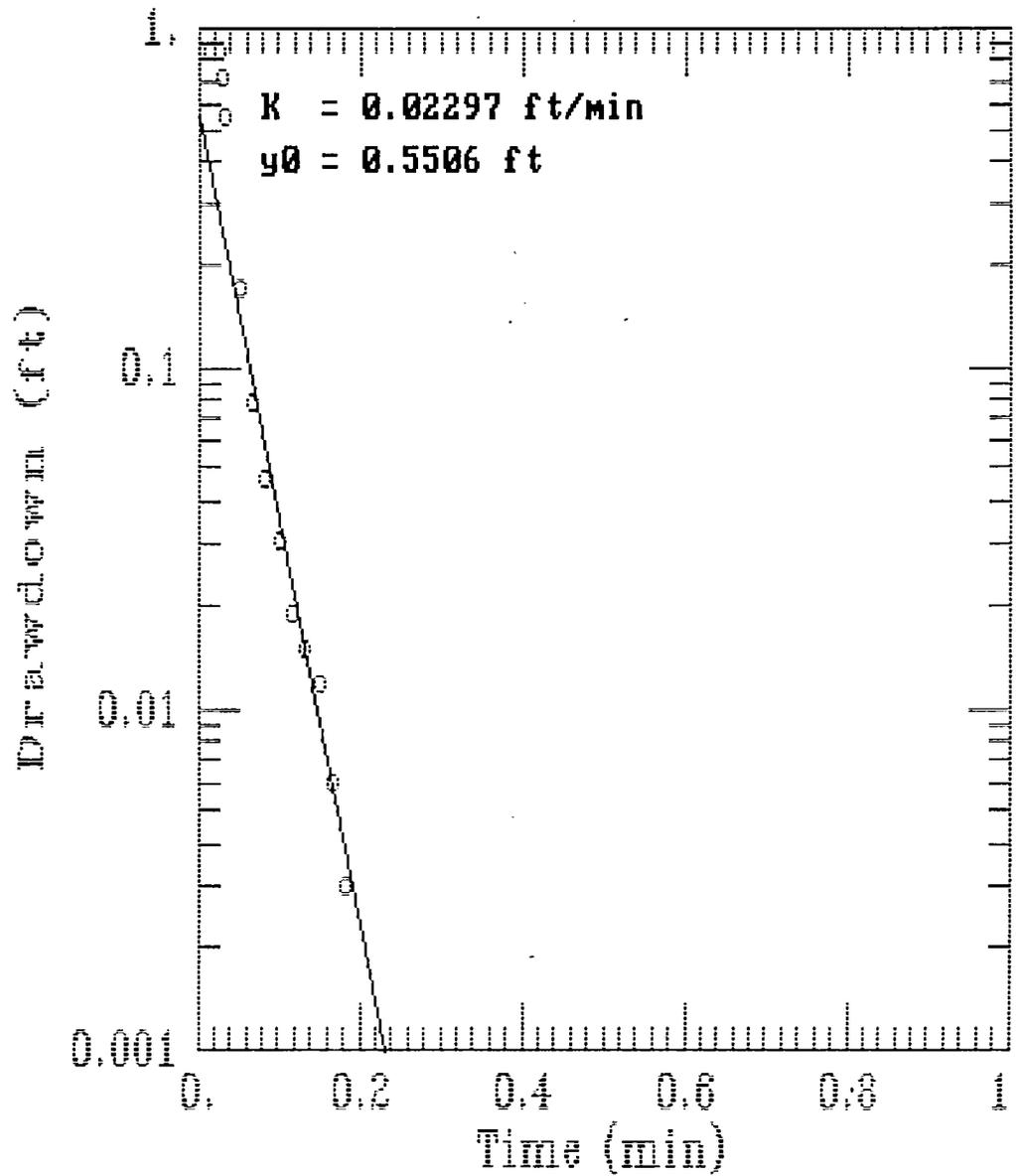
$$V = 2.4 \times 10^{-1} \text{ ft/day}$$

SLUG TEST PLOTS

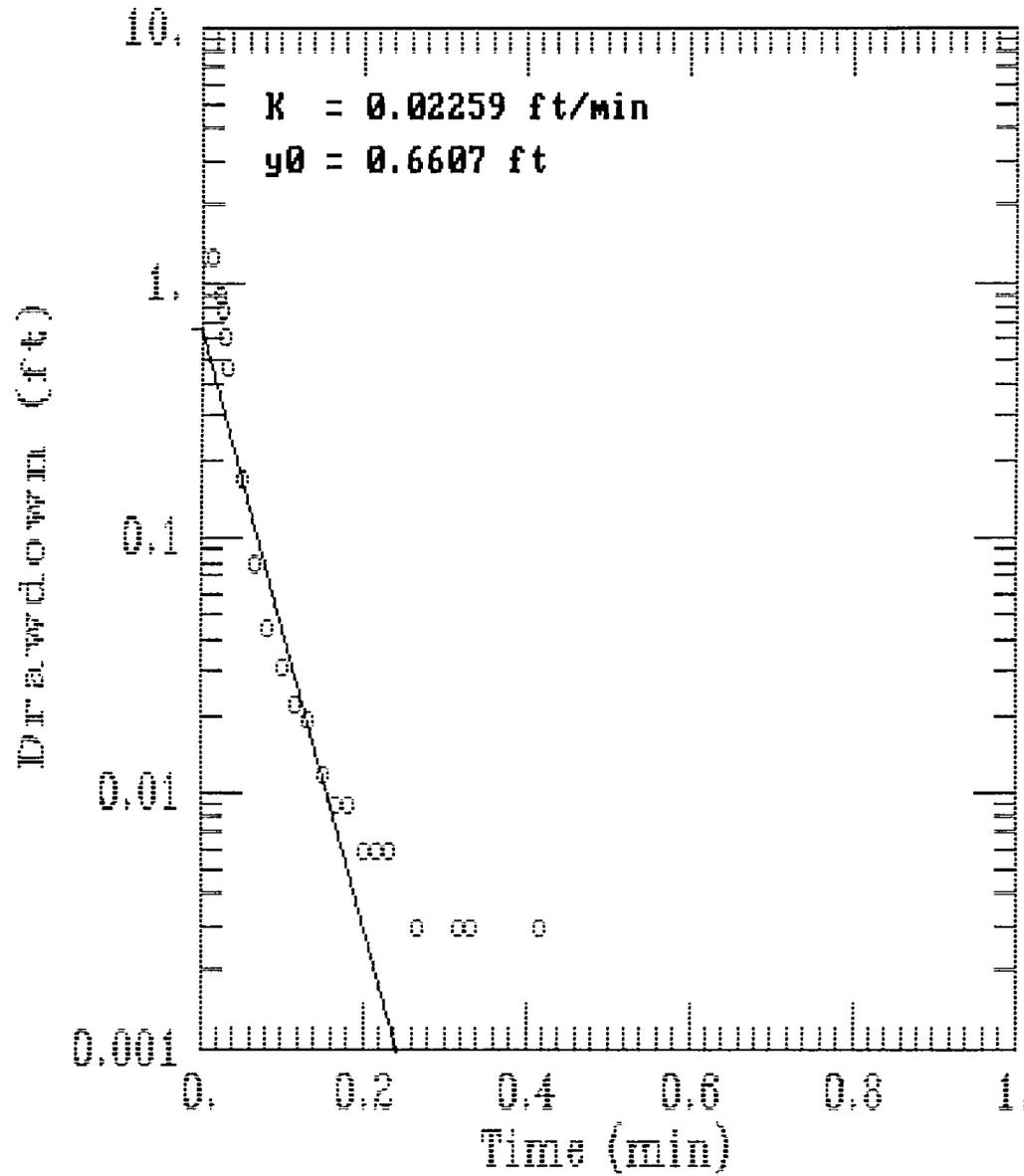
PEN-607NE-MW-5 RUN #1



PEN-607NE-MW-5 RUN #2



PEN-607NE-MW5 RUN #3



APPENDIX E
LABORATORY ANALYTICAL DATA

SOIL SAMPLE ANALYSES



WADSWORTH/ALERT
LABORATORIES

5910 Breckenridge Pkwy., Suite H, Tampa, FL 33610

Sampling, testing, mobile labs

Since 1938

ANALYTICAL REPORT

SUBCONTRACT NUMBER: 1-08-134

TASK ORDER: 0014

NAS/NADEP PENSACOLA - PHASE I

Presented to:

ROGER DURHAM

ABB ENVIRONMENTAL SERVICES, INC.

WADSWORTH/ALERT LABORATORIES

5910 BRECKENRIDGE PARKWAY, SUITE H

TAMPA, FL 33610

(813) 621-0784

Dan Henson
Project Manager

Randall C. Grubbs
Laboratory Director - Florida

February 12, 1992



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WADSWORTH/ALERT
LABORATORIES 5910 Breckenridge Pkwy., Suite H, Tampa, FL 33610

Sampling, testing, mobile labs

Since 1938

February 12, 1992

Mr. Roger Durham
ABB Environmental Services, Inc.
2571 Executive Center Circle East
Suite 100
Tallahassee, FL 32301

Dear Mr. Durham:

Over the course of the past month, it was noted that toluene has begun randomly appearing in samples, trip blanks and equipment blanks at levels ranging from about 2 ug/L to about 22 ug/L. We have investigated its presence and feel that we have located the source of this random contamination problem.

WAL began using custom printed sample container labels this past fall. At that time we evaluated the labels for any trace contaminants and found none. In late December we received a second shipment of identical labels and began using them for sampling kits sent out after 20 December 1991. The investigation of the toluene contamination led us to evaluate this second shipment of labels as well. Upon evaluation, it was found that these labels are contaminated with Toluene as well as 2-Butanone (MEK). Given that these are volatile compounds it can be demonstrated that, under certain conditions, these compounds might migrate across the septum of the sample vial.

We have discontinued use of these labels and are attempting to reissue new labels and bottles for any sample kits which are still pending. In addition we are working with the printer to determine why these labels were not made to our previously determined specifications. We have also established a policy of testing all label batches before they may be used in any kits.

The impact which these findings have on any recent or current analytical data must be determined on an individual basis. If you have any questions regarding this matter or would like to further investigate particular results, please contact your project manager or myself at (813) 621-0784. Thank you for your patience and help in this matter.

Sincerely,

Wadsworth/ALERT Laboratories

N. Myron Gunsalus, Jr.
Quality Control Coordinator



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INVOLVEMENT

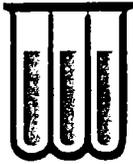
This report summarizes the analytical results of the NAS/NADEP Pensacola - Phase I site submitted by ABB Environmental Services, Inc. to Wadsworth/ALERT Laboratories who provided independent, analytical services for this project under the direction of Roger Durham. The samples were accepted into Wadsworth's Florida facility on 25 January 1992, in accordance with documented sample acceptance procedures. The associated analytical methods and sample results are outlined sequentially in this report.

Analytical results included in this report have been reviewed for compliance with the Laboratory QA/QC Plan as summarized in the Quality Control Section at the rear of the report. Sample custody documentation describing the number of samples and sample matrices is also included. Any qualifications and/or non-compliant items have been noted below.

Laboratory ID #
2A2715-8,9

Narrative

The laboratory blank associated with the volatile organics analysis of these samples contained methylene chloride. Methylene chloride is a common laboratory contaminant and its presence in the samples should be considered suspect.



WADSWORTH/ALERT
LABORATORIES

ANALYTICAL METHODS

Wadsworth/ALERT Laboratories utilizes only USEPA approved analytical methods and instrumentation. The analytical methods utilized for the analysis of these samples are listed below.

PARAMETER

METHOD

ORGANICS

Volatiles	** SW846 Method 8240
Extraction	** SW846 Method 5030
Base/Neutral Acid Extractables	** SW846 Method 8270
Extraction	** SW846 Method 3550

METALS

Arsenic	** EPA Method 206.2	** SW846 Method 7060
Barium		** SW846 Method 6010
Cadmium	** EPA Method 200.7	** SW846 Method 6010
Chromium	** EPA Method 200.7	** SW846 Method 6010
Lead	** EPA Method 239.2	** SW846 Method 6010
Mercury		** SW846 Method 7470
Selenium		** SW846 Method 6010
Silver		** SW846 Method 6010
Digestion		** SW846 Method 3050

MISCELLANEOUS

Tot. Rec. Petroleum Hydrocarbons	** EPA Method 418.1	** SW846 Method 9073 Draft
Extraction		** SW846 Method 9071
TCLP Extraction		** SW846 Method 1311

NOTE: ** Indicates usage of this method to obtain results for this report.

EPA Methods -Methods for Chemical Analysis of Water and Wastes, USEPA, 600/4-79-020, March, 1983. July, 1982

Drinking Waters USEPA, 600/4-88/039, December, 1988.

Std. Methods -Standard Methods for the Examination of Water and Wastewater, APHA, 16th edition, 1985.

USEPA Methods -From 40CFR Part 136, published in Federal Register on October 26, 1984.

SW846 Methods -Test Methods for Evaluating Solid Waste Physical/Chemical Methods, 3rd Edition, USEPA, 1986.

ASTM Methods -American Society for Testing and Materials.

NIOSH Method -NIOSH Manual of Analytical Methods, National Institute for Occupational Safety and Health, 2nd Edition, April 1977.



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-1
MATRIX : SOIL

DATE RECEIVED: 1/25/92

SAMPLE ID : SB1 (4-6')

NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 94

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	1/31/92	0.6	0.5	mg/kg
Cadmium	1/31/92	ND	0.5	mg/kg
Chromium	1/31/92	ND	2.5	mg/kg
Lead	1/31/92	11	2.5	mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-2
MATRIX : SOIL

DATE RECEIVED: 1/25/92

SAMPLE ID : SB2 (4-6') NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 94

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	1/31/92	ND	0.5 mg/kg
Cadmium	1/31/92	ND	0.5 mg/kg
Chromium	1/31/92	ND	2.5 mg/kg
Lead	1/31/92	ND	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-3
MATRIX : SOIL

DATE RECEIVED: 1/25/92

SAMPLE ID : SB3 (2')

NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 97

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	1/31/92	ND	0.5 mg/kg
Cadmium	1/31/92	ND	0.5 mg/kg
Chromium	1/31/92	ND	2.5 mg/kg
Lead	1/31/92	15	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-4
MATRIX: SOIL

DATE RECEIVED: 1/25/92
DATE EXTRACTED: NA
DATE ANALYZED: 1/29/92

SAMPLE ID: SB3 (4-6') NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 8240 - GC/MS

DRY WEIGHT (%): 89

Acetone	ND**	cis-1,3-Dichloropropene	ND
Benzene	ND	trans-1,3-dichloropropene	ND
Bromodichloromethane	ND	Ethylbenzene	ND
Bromoform	ND	2-Hexanone	ND**
Bromomethane	ND	Methylene chloride	23 B
2-Butanone	ND**	4-Methyl-2-pentanone	ND**
Carbon disulfide	ND	Styrene	ND
Carbon tetrachloride	ND	1,1,2,2-Tetrachloroethane	ND
Chlorobenzene	ND	Tetrachloroethene	ND
Chlorodibromomethane	ND	Toluene	ND
Chloroethane	ND	1,1,1-Trichloroethane	ND
Chloroform	ND	1,1,2-Trichloroethane	ND
Chloromethane	ND	Trichloroethene	ND
1,1-Dichloroethane	ND	Vinyl chloride	ND
1,2-Dichloroethane	ND	Xylene(Total)	ND
1,1-Dichloroethene	ND		
1,2-Dichloroethene(Total)	ND		
1,2-Dichloropropane	ND		

NOTE: ND (None Detected, lower detectable limit = 8 ug/kg) dry weight
 ND* (None Detected, lower detectable limit = ug/kg) dry weight
 ND** (None Detected, lower detectable limit = 80 ug/kg) dry weight
 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	93	(75-123)	(85-126)	(85-138)
Toluene-d8	98	(92-107)	(89-124)	(89-128)
Bromofluorobenzene	102	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-4
MATRIX: SOIL

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 2/ 4/92

SAMPLE ID: SB3 (4-6') NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297
BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 8270 - GC/MS (1 of 2)

DRY WEIGHT (%): 89

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	3.8 B
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzdine	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 = 0.33 mg/kg) dry weight
ND* (None Detected, lower detectable limit = 1.7 mg/kg) dry weight
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 #: 2A2715-4
MATRIX: SOIL

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 2/ 4/92

SAMPLE ID: SB3 (4-6') NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 8270 - GC/MS (2 of 2)

HRS84297

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 = 0.33 mg/kg) dry weight
ND* (None Detected, lower detectable limit = 1.7 mg/kg) dry weight
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	45	(22-135)	(10-155)
Fluorobiphenyl	79	(34-140)	(12-153)
Terphenyl-d14	103	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-4
MATRIX: SOIL

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 2/ 4/92

SAMPLE ID: SB3 (4-6') NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 8270 - GC/MS

DRY WEIGHT (%): 89

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 = 0.33 mg/kg) dry weight
ND* (None Detected, lower detectable limit = 1.7 mg/kg) dry weight
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	23	(17-95)	(24-118)
Phenol-d5	43	(11-89)	(17-124)
2,4,6-Tribromophenol	38	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-4
MATRIX : SOIL

DATE RECEIVED: 1/25/92

SAMPLE ID : SB3 (4-6') NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 89

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	1/31/92	ND	0.5 mg/kg
Cadmium	1/31/92	ND	0.5 mg/kg
Chromium	1/31/92	ND	2.5 mg/kg
Lead	1/31/92	11	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-4
MATRIX : SOIL

DATE RECEIVED: 1/25/92
UNITS: mg/L

SAMPLE ID : SB3 (4-6') NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
TOXICITY CHARACTERISTIC LIST**

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 1/28/92

PREPARATION - ANALYSIS DATE	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET.LIMIT	REGULATORY LIMIT
Silver 2/ 4/92	ND/0.05			5
Arsenic 2/ 4/92	ND/0.5			5
Barium 2/ 4/92	ND/0.10			100
Cadmium 2/ 4/92	ND/0.01			1
Chromium 2/ 4/92	ND/0.05			5
Mercury 2/ 6- 2/ 7/92	ND/0.002			0.2
Lead 2/ 4/92	0.22/0.05			5
Selenium 2/ 4/92	ND/0.5			1

NOTE: Bias Correction Factor determined on sample :

ND (None Detected)

CF (Bias Correction Factor)

* (No Bias Correction performed)

** (No Bias Correction performed above Regulatory Limit)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2715-4
MATRIX : SOIL

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/31/92

SAMPLE ID: SB3 (4-6') NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/kg	5

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-5
MATRIX : SOIL

DATE RECEIVED: 1/25/92

SAMPLE ID : SB4 (4-6')

NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	1/31/92	ND	0.5 mg/kg
Cadmium	1/31/92	ND	0.5 mg/kg
Chromium	1/31/92	ND	2.5 mg/kg
Lead	1/31/92	5.1	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-6
MATRIX : SOIL

DATE RECEIVED: 1/25/92

SAMPLE ID : SB4 DUP (4-6')

NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297

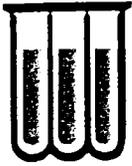
**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	1/31/92	ND	0.5 mg/kg
Cadmium	1/31/92	ND	0.5 mg/kg
Chromium	1/31/92	ND	2.5 mg/kg
Lead	1/31/92	7.3	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-7
MATRIX : SOIL

DATE RECEIVED: 1/25/92

SAMPLE ID : SB5 (4-6') NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297

**METALS ANALYTICAL REPORT
SELECTED LIST**

Total metals analysis results - dry weight basis

DRY WEIGHT (%): 90

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT
Arsenic	1/31/92	ND	0.5 mg/kg
Cadmium	1/31/92	ND	0.5 mg/kg
Chromium	1/31/92	ND	2.5 mg/kg
Lead	1/31/92	9.8	2.5 mg/kg

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-8
MATRIX: WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 8240 - GC/MS

Acetone	ND**	cis-1,3-Dichloropropene	ND
Benzene	ND	trans-1,3-dichloropropene	ND
Bromodichloromethane	ND	Ethylbenzene	ND
Bromoform	ND	2-Hexanone	ND**
Bromomethane	ND	Methylene chloride	7B
2-Butanone	ND**	4-Methyl-2-pentanone	ND**
Carbon disulfide	ND	Styrene	ND
Carbon tetrachloride	ND	1,1,2,2-Tetrachloroethane	ND
Chlorobenzene	ND	Tetrachloroethene	ND
Chlorodibromomethane	ND	Toluene	ND
Chloroethane	ND	1,1,1-Trichloroethane	ND
Chloroform	ND	1,1,2-Trichloroethane	ND
Chloromethane	ND	Trichloroethene	ND
1,1-Dichloroethane	ND	Vinyl chloride	ND
1,2-Dichloroethane	ND	Xylene(Total)	ND
1,1-Dichloroethene	ND		
1,2-Dichloroethene(Total)	ND		
1,2-Dichloropropane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = ug/L) as rec'd
 ND** (None Detected, lower detectable limit = 10 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	106	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(92-107)	(89-124)	(89-128)
Bromofluorobenzene	99	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-8
MATRIX: WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 2/ 4/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 8270 - 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
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 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 #: 2A2715-8
MATRIX: WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 2/ 4/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 8270 - GC/MS (2 of 2)

HRS84297

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	83	(22-135)	(10-155)
Fluorobiphenyl	67	(34-140)	(12-153)
Terphenyl-d14	124	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-8
MATRIX: WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 2/ 4/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 8270 - 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	13	(17-95)	(24-118)
Phenol-d5	18	(11-89)	(17-124)
2,4,6-Tribromophenol	22	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-8
MATRIX : WATER

DATE RECEIVED: 1/25/92

SAMPLE ID : EQUIPMENT BLANK NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059

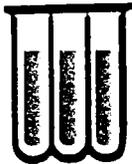
METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	1/30- 1/31/92	ND	10	ug/L
Cadmium	1/30/92	ND	10	ug/L
Chromium	1/30/92	ND	50	ug/L
Lead	1/30/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 2A2715-8
MATRIX : WATER

DATE RECEIVED: 1/25/92
UNITS: mg/L

SAMPLE ID : EQUIPMENT BLANK NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297

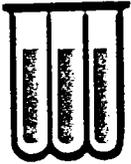
METALS ANALYTICAL REPORT
TOXICITY CHARACTERISTIC LIST

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 2/ 3/92

PREPARATION - ANALYSIS DATE	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
Silver 2/ 4/92	ND/0.05			5
Arsenic 2/ 4/92	ND/0.5			5
Barium 2/ 4/92	ND/0.10			100
Cadmium 2/ 4/92	ND/0.01			1
Chromium 2/ 4/92	ND/0.05			5
Mercury 2/ 6- 2/ 7/92	ND/0.002			0.2
Lead 2/ 4/92	ND/0.05			5
Selenium 2/ 4/92	ND/0.5			1

NOTE: Bias Correction Factor determined on sample :
ND (None Detected)
CF (Bias Correction Factor)
* (No Bias Correction performed)
** (No Bias Correction performed above Regulatory Limit)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2715-8
MATRIX : WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

SAMPLE ID: EQUIPMENT BLANK NADEP PENSACOLA/ 607 NE

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

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



WADSWORTH/ALERT
LABORATORIES QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



WADSWORTH/ALERT
LABORATORIES

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS	MSD	RPD	QC LIMITS	
		%REC	%REC		RPD	RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150

(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.	accep. method perform range
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Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-9
MATRIX: WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: TRIP BLANK

NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059

VOLATILE ORGANICS
USEPA METHOD 8240 - GC/MS

HRS84297

Acetone	ND**	cis-1,3-Dichloropropene	ND
Benzene	ND	trans-1,3-dichloropropene	ND
Bromodichloromethane	ND	Ethylbenzene	ND
Bromoform	ND	2-Hexanone	ND**
Bromomethane	ND	Methylene chloride	11B
2-Butanone	ND**	4-Methyl-2-pentanone	ND**
Carbon disulfide	ND	Styrene	ND
Carbon tetrachloride	ND	1,1,2,2-Tetrachloroethane	ND
Chlorobenzene	ND	Tetrachloroethene	ND
Chlorodibromomethane	ND	Toluene	71
Chloroethane	ND	1,1,1-Trichloroethane	ND
Chloroform	ND	1,1,2-Trichloroethane	ND
Chloromethane	ND	Trichloroethene	ND
1,1-Dichloroethane	ND	Vinyl chloride	ND
1,2-Dichloroethane	ND	Xylene(Total)	ND
1,1-Dichloroethene	ND		
1,2-Dichloroethene(Total)	ND		
1,2-Dichloropropane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = ug/L) as rec'd
 ND** (None Detected, lower detectable limit = 10 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	111	(75-123)	(85-126)	(85-138)
Toluene-d8	101	(92-107)	(89-124)	(89-128)
Bromofluorobenzene	99	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-9
MATRIX: WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: TRIP BLANK

NADEP PENSACOLA/ 607 NE

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
OTHER COMPOUNDS

Trichloroflouromethane

1 ug/L

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



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-BK
MATRIX: WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 8240 - GC/MS

Acetone	ND**	cis-1,3-Dichloropropene	ND
Benzene	ND	trans-1,3-dichloropropene	ND
Bromodichloromethane	ND	Ethylbenzene	ND
Bromoform	ND	2-Hexanone	ND**
Bromomethane	ND	Methylene chloride	8
2-Butanone	ND**	4-Methyl-2-pentanone	ND**
Carbon disulfide	ND	Styrene	ND
Carbon tetrachloride	ND	1,1,2,2-Tetrachloroethane	ND
Chlorobenzene	ND	Tetrachloroethene	ND
Chlorodibromomethane	ND	Toluene	ND
Chloroethane	ND	1,1,1-Trichloroethane	ND
Chloroform	ND	1,1,2-Trichloroethane	ND
Chloromethane	ND	Trichloroethene	ND
1,1-Dichloroethane	ND	Vinyl chloride	ND
1,2-Dichloroethane	ND	Xylene(Total)	ND
1,1-Dichloroethene	ND		
1,2-Dichloroethene(Total)	ND		
1,2-Dichloropropane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = ug/L) as rec'd
 ND** (None Detected, lower detectable limit = 10 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	108	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(92-107)	(89-124)	(89-128)
Bromofluorobenzene	96	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-BK
MATRIX: WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 4/92

SAMPLE ID: LABORATORY BLANK

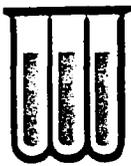
CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 8240 - GC/MS

Acetone	ND**	cis-1,3-Dichloropropene	ND
Benzene	ND	trans-1,3-dichloropropene	ND
Bromodichloromethane	ND	Ethylbenzene	ND
Bromoform	ND	2-Hexanone	ND**
Bromomethane	ND	Methylene chloride	8
2-Butanone	ND**	4-Methyl-2-pentanone	ND**
Carbon disulfide	ND	Styrene	ND
Carbon tetrachloride	ND	1,1,2,2-Tetrachloroethane	ND
Chlorobenzene	ND	Tetrachloroethene	ND
Chlorodibromomethane	ND	Toluene	ND
Chloroethane	ND	1,1,1-Trichloroethane	ND
Chloroform	ND	1,1,2-Trichloroethane	ND
Chloromethane	ND	Trichloroethene	ND
1,1-Dichloroethane	ND	Vinyl chloride	ND
1,2-Dichloroethane	ND	Xylene(Total)	ND
1,1-Dichloroethene	ND		
1,2-Dichloroethene(Total)	ND		
1,2-Dichloropropane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = ug/L) as rec'd
 ND** (None Detected, lower detectable limit = 10 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	101	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(92-107)	(89-124)	(89-128)
Bromofluorobenzene	99	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-BK
MATRIX: WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/ 5/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 8240 - GC/MS

Acetone	ND**	cis-1,3-Dichloropropene	ND
Benzene	ND	trans-1,3-dichloropropene	ND
Bromodichloromethane	ND	Ethylbenzene	ND
Bromoform	ND	2-Hexanone	ND**
Bromomethane	ND	Methylene chloride	1
2-Butanone	ND**	4-Methyl-2-pentanone	ND**
Carbon disulfide	ND	Styrene	ND
Carbon tetrachloride	ND	1,1,2,2-Tetrachloroethane	ND
Chlorobenzene	ND	Tetrachloroethene	ND
Chlorodibromomethane	ND	Toluene	ND
Chloroethane	ND	1,1,1-Trichloroethane	ND
Chloroform	ND	1,1,2-Trichloroethane	ND
Chloromethane	ND	Trichloroethene	ND
1,1-Dichloroethane	ND	Vinyl chloride	ND
1,2-Dichloroethane	ND	Xylene(Total)	ND
1,1-Dichloroethene	ND		
1,2-Dichloroethene(Total)	ND		
1,2-Dichloropropane	ND		

NOTE: ND (None Detected, lower detectable limit = 1 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = ug/L) as rec'd
 ND** (None Detected, lower detectable limit = 10 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	103	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(92-107)	(89-124)	(89-128)
Bromofluorobenzene	106	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-BK
MATRIX: SOIL

DATE RECEIVED: 1/25/92
DATE EXTRACTED: NA
DATE ANALYZED: 1/29/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
USEPA METHOD 8240 - GC/MS

DRY WEIGHT (%):

Acetone	ND**	cis-1,3-Dichloropropene	ND
Benzene	ND	trans-1,3-dichloropropene	ND
Bromodichloromethane	ND	Ethylbenzene	ND
Bromoform	ND	2-Hexanone	ND**
Bromomethane	ND	Methylene chloride	14
2-Butanone	ND**	4-Methyl-2-pentanone	ND**
Carbon disulfide	ND	Styrene	ND
Carbon tetrachloride	ND	1,1,2,2-Tetrachloroethane	ND
Chlorobenzene	ND	Tetrachloroethene	ND
Chlorodibromomethane	ND	Toluene	ND
Chloroethane	ND	1,1,1-Trichloroethane	ND
Chloroform	ND	1,1,2-Trichloroethane	ND
Chloromethane	ND	Trichloroethene	ND
1,1-Dichloroethane	ND	Vinyl chloride	ND
1,2-Dichloroethane	ND	Xylene(Total)	ND
1,1-Dichloroethene	ND		
1,2-Dichloroethene(Total)	ND		
1,2-Dichloropropane	ND		

NOTE: ND (None Detected, lower detectable limit = 5 ug/L) as rec'd
 ND* (None Detected, lower detectable limit = 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	LOW LEVEL
1,2-Dichloroethane	99	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(92-107)	(89-124)	(89-128)
Bromofluorobenzene	106	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-BK
MATRIX: WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 2/ 4/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 8270 - 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
Benidine	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 #: 2A2715-BK
MATRIX: WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 2/ 4/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
BASE/NEUTRAL EXTRACTABLE ORGANICS HRS84297
USEPA METHOD 8270 - 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	90	(22-135)	(10-155)
Fluorobiphenyl	72	(34-140)	(12-153)
Terphenyl-d14	112	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-BK
MATRIX: WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 2/ 4/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 8270 - 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	17	(17-95)	(24-118)
Phenol-d5	16	(11-89)	(17-124)
2,4,6-Tribromophenol	30	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-BK
MATRIX: SOIL

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 2/ 4/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297
BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 8270 - GC/MS (1 of 2)

Acenaphthene	ND	Dibenzo(a,h)anthracene	ND
Acenaphthylene	ND	Di-n-butyl phthalate	1.1
Anthracene	ND	1,2-Dichlorobenzene	ND
Benzo(a)anthracene	ND	1,3-Dichlorobenzene	ND
Benzo(b)fluoranthene	ND	1,4-Dichlorobenzene	ND
Benzo(k)fluoranthene	ND	3,3'-Dichlorobenzidine	ND*
Benzo(ghi)perylene	ND	Diethyl phthalate	ND
Benzo(a)pyrene	ND	Dimethyl phthalate	ND
Bis(2-Chloroethoxy)methane	ND	2,4-Dinitrotoluene	ND
Bis(2-Chloroethyl)ether	ND	2,6-Dinitrotoluene	ND
Bis(2-Chloroisopropyl)ether	ND	Di-n-octyl phthalate	ND
Bis(2-Ethylhexyl)phthalate	ND	Fluoranthene	ND
4-Bromophenyl phenyl ether	ND	Fluorene	ND
Butyl benzyl phthalate	ND	Hexachlorobenzene	ND
2-Chloronaphthalene	ND	Hexachlorobutadiene	ND
4-Chlorophenyl phenyl ether	ND	Hexachlorocyclopentadiene	ND
Chrysene	ND	Hexachloroethane	ND
		Indeno(1,2,3-cd)pyrene	ND

NOTE: ND (None Detected, lower detectable limit = 0.33 mg/kg) as rec'd
ND* (None Detected, lower detectable limit = 1.7 mg/kg) 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 #: 2A2715-BK
MATRIX: SOIL

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 2/ 4/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297
BASE/NEUTRAL EXTRACTABLE ORGANICS
USEPA METHOD 8270 - 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 = 0.33 mg/kg) as rec'd
ND* (None Detected, lower detectable limit = 1.7 mg/kg) 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	90	(22-135)	(10-155)
Fluorobiphenyl	114	(34-140)	(12-153)
Terphenyl-d14	147	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-BK
MATRIX: SOIL

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 2/ 4/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

ACID EXTRACTABLE ORGANICS
USEPA METHOD 8270 - 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 = 0.33 mg/kg) as rec'd
 ND* (None Detected, lower detectable limit = 1.7 mg/kg) 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	36	(17-95)	(24-118)
Phenol-d5	72	(11-89)	(17-124)
2,4,6-Tribromophenol	88	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-BK
MATRIX : WATER

DATE RECEIVED: 1/25/92

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	1/30- 1/31/92	ND	10	ug/L
Cadmium	1/30/92	ND	10	ug/L
Chromium	1/30/92	ND	50	ug/L
Lead	1/30/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-BK
MATRIX : WATER

DATE RECEIVED: 1/25/92
UNITS: mg/L

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

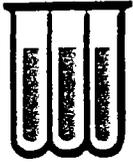
METALS ANALYTICAL REPORT
TOXICITY CHARACTERISTIC LIST

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 2/ 3/92

PREPARATION - ANALYSIS DATE	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET.LIMIT	REGULATORY LIMIT
Silver 2/ 4/92	ND/0.05			5
Arsenic 2/ 4/92	ND/0.5			5
Barium 2/ 4/92	ND/0.10			100
Cadmium 2/ 4/92	ND/0.01			1
Chromium 2/ 4/92	ND/0.05			5
Mercury 2/ 6- 2/ 7/92	ND/0.002			0.2
Lead 2/ 4/92	ND/0.05			5
Selenium 2/ 4/92	ND/0.5			1

NOTE: Bias Correction Factor determined on sample :
ND (None Detected)
CF (Bias Correction Factor)
* (No Bias Correction performed)
** (No Bias Correction performed above Regulatory Limit)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-BK
MATRIX : SOIL

DATE RECEIVED: 1/25/92

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

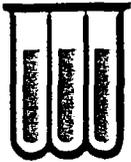
METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

DRY WEIGHT (%):

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	1/31/92	ND	0.01	mg/L
Cadmium	1/31/92	ND	0.01	mg/L
Chromium	1/31/92	ND	0.05	mg/L
Lead	1/31/92	ND	0.05	mg/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2A2715-BK
MATRIX : SOIL

DATE RECEIVED: 1/25/92
UNITS: mg/L

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297
METALS ANALYTICAL REPORT
TOXICITY CHARACTERISTIC LIST

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 1/28/92

PREPARATION - ANALYSIS DATE	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
Silver				
2/ 4/92	ND/0.05			5
Arsenic				
2/ 4/92	ND/0.5			5
Barium				
2/ 4/92	ND/0.10			100
Cadmium				
2/ 4/92	ND/0.01			1
Chromium				
2/ 4/92	ND/0.05			5
Mercury				
2/ 6- 2/ 7/92	ND/0.002			0.2
Lead				
2/ 4/92	ND/0.05			5
Selenium				
2/ 4/92	ND/0.5			1

NOTE: Bias Correction Factor determined on sample :
ND (None Detected)
CF (Bias Correction Factor)
* (No Bias Correction performed)
** (No Bias Correction performed above Regulatory Limit)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2A2715-BK
MATRIX : WATER

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/30/92

SAMPLE ID: LABORATORY BLANK

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 ID: 2A2715-BK
MATRIX : SOIL

DATE RECEIVED: 1/25/92
DATE EXTRACTED: 1/30/92
DATE ANALYZED: 1/31/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

	RESULT	UNITS	LOWER DETECTION LIMIT
Total Recoverable Petroleum Hydrocarbons	ND	mg/kg	5

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715-LCS
MATRIX: WATER
METHOD: 8240

DATE RECEIVED: 01/25/92
DATE EXTRACTED: N/A
DATE ANALYZED: 02/04/92

LABORATORY CHECK SAMPLE

COMPOUND	LCS %REC	QC LIMITS %RECOVERY
1,1-Dichloroethene	68	56-133
Trichloroethene	96	67-106
Chlorobenzene	96	78-122
Toluene	97	64-128
Benzene	88	83-123
Dichlorobromomethane	87	71-123



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715-LCS
MATRIX: WATER
METHOD: 8240

DATE RECEIVED: 01/25/92
DATE EXTRACTED: N/A
DATE ANALYZED: 02/05/92

LABORATORY CHECK SAMPLE

COMPOUND	LCS %REC	QC LIMITS %RECOVERY
1,1-Dichloroethene	101	56-133
Trichloroethene	95	67-106
Chlorobenzene	99	78-122
Toluene	94	64-128
Benzene	88	83-123
Dichlorobromomethane	82	71-123



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715-LCS
MATRIX: SOIL
METHOD: 8240

DATE RECEIVED: 01/25/92
DATE EXTRACTED: NA
DATE ANALYZED: 01/29/92

LABORATORY CHECK SAMPLE

COMPOUND	LCS %REC	QC LIMITS %RECOVERY
1,1-Dichloroethene	111	49-167
Trichloroethene	93	76-113
Chlorobenzene	90	80-121
Toluene	97	83-114
Benzene	92	79-140
Dichlorobromomethane	78	78-129



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715-LCS
MATRIX: WATER
METHOD: 8270

DATE RECEIVED: 01/25/92
DATE EXTRACTED: 01/30/92
DATE ANALYZED: 02/04/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
1,2,4-Trichlorobenzene	41	20-111
Acenaphthene	92	31-105
2,4-Dinitrotoluene	66	22-107
Pyrene	108	12-108
Nitrosodipropylamine	123	42-125
1,4-Dichlorobenzene	48	31-99



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715
MATRIX: WATER
METHOD: 8270

DATE RECEIVED: 01/25/92
DATE EXTRACTED: 01/30/92
DATE ANALYZED: 02/04/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Pentachlorophenol	20	10-100
Phenol	33	12-90
2-Chlorophenol	61	30-100
4-Chloro-o-cresol	12	12-109
4-Nitrophenol	27	10-102



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715-LCS
MATRIX: SOIL
METHOD: 8270

DATE RECEIVED: 01/25/92
DATE EXTRACTED: 01/30/92
DATE ANALYZED: 02/04/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
1,2,4-Trichlorobenzene	68	36-104
Acenaphthene	95	22-137
2,4-Dinitrotoluene	68	11-102
Pyrene	127	43-143
Nitrosodipropylamine	128	41-139
1,4-Dichlorobenzene	74	21-98



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715-LCS
MATRIX: SOIL
METHOD: 8270

DATE RECEIVED: 01/25/92
DATE EXTRACTED: 01/30/92
DATE ANALYZED: 02/04/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Pentachlorophenol	27	17-117
Phenol	53	23-97
2-Chlorophenol	52	20-113
4-Chloro-o-cresol	84	33-103
4-Nitrophenol	46	15-128



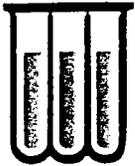
WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715-LCS
MATRIX: WATER

DATE RECEIVED: 01/25/92
DATE PREP'D: 01/30/92
DATE ANALYZED: 01/30/92 to
01/31/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Arsenic, furnace	103	54-130
Cadmium	105	78-113
Chromium	108	79-121
Lead, furnace	91	64-131



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715-LCS
MATRIX: LEACHATE/WATER

DATE RECEIVED: 01/25/92
DATE PREP'D: 02/04/92 to
02/06/92
DATE ANALYZED: 02/04/92 to
02/07/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Arsenic	99	52-116
Barium	100	66-118
Cadmium	101	67-117
Chromium	104	61-127
Lead	100	68-124
Mercury	102	62-131
Selenium	86	42-124
Silver	108	52-130



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715-LCS
MATRIX: SOIL

DATE RECEIVED: 01/25/92
DATE PREP'D: 01/31/92
DATE ANALYZED: 01/31/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Arsenic, furnace	86	51-124
Cadmium	89	67-113
Chromium	95	73-117
Lead	96	58-130



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715-LCS
MATRIX: LEACHATE/SOIL

DATE RECEIVED: 01/25/92
DATE PREP'D: 02/04/92 to
02/06/92
DATE ANALYZED: 02/04/92 to
02/07/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Arsenic	106	52-116
Barium	93	66-118
Cadmium	92	67-117
Chromium	94	61-127
Lead	93	68-124
Mercury	98	62-131
Selenium	81	42-124
Silver	96	52-130



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715-LCS
MATRIX: WATER

DATE RECEIVED: 01/25/92
DATE EXTRACTED: 01/30/92
DATE ANALYZED: 01/30/92

LABORATORY CHECK SAMPLE

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Tot. Rec. Pet. Hydrocarbons	104	75-124



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715-LCS
MATRIX: SOIL

DATE RECEIVED: 01/25/92
DATE EXTRACTED: 01/30/92
DATE ANALYZED: 01/31/92

LABORATORY CHECK SAMPLE

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Tot. Rec. Pet. Hydrocarbons	84	50-140



WADSWORTH/ALERT
LABORATORIES

LAB# : 2A2715-4
MATRIX: SOIL
METHOD: 8240

DATE RECEIVED : 01/25/92
DATE EXTRACTED: NA
DATE ANALYZED : 01/29/92

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	MS %REC	MSD %REC	RPD	QC LIMITS RPD	RECOVERY
1,1-Dichloroethene	105	107	2	28	60-145
Trichloroethene	94	96	2	19	64-103
Chlorobenzene	88	87	1	21	72-115
Toluene	97	95	2	12	85-109
Benzene	91	90	1	13	87-114
Dichlorobromomethane	78	79	1	21	67-111



WADSWORTH/ALERT
LABORATORIES

LAB#: 2A2715-7
MATRIX: SOIL

DATE RECEIVED: 01/25/92
DATE PREP'D: 01/31/92
DATE ANALYZED: 01/31/92

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
INORGANIC PARAMETERS - METALS

ELEMENT	MS %REC	MSD %REC	RPD	QC LIMITS	
				RPD	RECOVERY
Arsenic, furnace	92	94	2	15	51-124
Cadmium	91	93	2	17	73-107
Chromium	97	97	0	14	80-108
Lead	98	101	3	34	65-135



WADSWORTH/ALERT
LABORATORIES

LAB #: 2A2715-4
MATRIX: LEACHATE/SOIL

DATE RECEIVED: 01/25/92
DATE PREP'D: 02/04/92 to
02/06/92
DATE ANALYZED: 02/04/92 to
02/07/92

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
INORGANIC PARAMETERS - METALS

ELEMENT	MS %REC	MSD %REC	RPD	QC LIMITS	
				RPD	RECOVERY
Arsenic	101	102	1	18	35-145
Barium	101	100	1	10	72-102
Cadmium	96	96	0	10	76-116
Chromium	100	101	1	10	69-128
Lead	100	96	4	13	48-128
Mercury	100	100	0	10	67-107
Selenium	91	87	4	12	65-137
Silver	100	101	1	10	78-110

**WADSWORTH/ALERT LABORATORIES
SAMPLE SHIPPER EVALUATION AND RECEIPT FORM**

Client: ABR Project Name/Number: WADP - POU SICK A

Samples Received By: Robert Thompson Date Received: 1/25/92 - Fedex
(Signature)

Sample Evaluation Form By: Robert Thompson LAB No: 372812A2715-169
(Signature)

Type of shipping container samples received in? WAL Cooler
Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

	YES	NO
1. Were custody seals on shipping container(s) intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Were custody papers properly included with samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Were custody papers properly filled out (ink, signed, match labels)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Did all bottles arrive in good condition (unbroken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Were correct bottles used for the tests indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Were proper sample preservation techniques indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Were samples received within adequate holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section)	<u>no vials</u>	<input checked="" type="checkbox"/>
10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11. Were samples accepted into the laboratory? (If no see comments)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Cooler # 109 Temp 10 °C Cooler # _____ Temp _____ °C
Cooler # _____ Temp _____ °C Cooler # _____ Temp _____ °C

Comments: Fedex. Denver. 5A. 1/25/92

iced trip blank - not listed on COC.

WADSWORTH/ALERT LABORATORIES - FLORIDA

5910-H BRECKENRIDGE PARKWAY/TAMPA, FL 33610
(813) 621-0784

No 4809

Chain-of Custody Record

PROJ. NO.		PROJECT NAME/LOCATION					NO. OF CONTAINERS	PARAMETER						REMARKS
TO #0014		NADEP PENSACOLA / 607 NE						<div style="display: flex; justify-content: space-around; font-size: small;"> As. Co. Cd. Pb 0240 0270 TELP mds 601/602 610 TRD4 </div>						
SAMPLERS: (Signature)														
STA. NO.	DATE	TIME	COMP.	GRAB.	STATION LOCATION									
4-6'	1/23/92	1315	X		SB 1	1	1							
4-6'	1/23/92	1425	X		SB 2	1	1							
2'	1/23/92	1445		X	SB 3	1	1							
4-6'	1/23/92	1530	X		SB 3	3	1	1	1			not enough sample for duplicate		
4-6'	1/24/92	0740	X		SB 4	1	1							
4-6'	1/24/92	0740	X		SB 4 (DUP)	1	1					Duplicate of SB 4 (4-6')		
4-6'	1/24/92	0945	X		SB 5	1	1							
	1/24/92	1210			EQUIP. BLANK	6	1	2	2	2	1	EQUIPMENT BLANK		
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)				
		12/31/91 1330						1/24/92 1000						
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)				
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Remarks						
								FEDER. DELIVERED S.A. 1/25/92						

GROUNDWATER SAMPLE ANALYSES



WADSWORTH/ALERT
LABORATORIES 5910 Breckenridge Pkwy., Suite H, Tampa, FL 33610

Sampling, testing, mobile labs

Since 1938

ANALYTICAL REPORT

SUBCONTRACT NUMBER: 1-08-134

TASK ORDER NUMBER: 0015

NAS/NADEP PENSACOLA - PHASE I

Presented to:

PETER REDFERN

ABB ENVIRONMENTAL SERVICES, INC.

WADSWORTH/ALERT LABORATORIES

5910 BRECKENRIDGE PARKWAY, SUITE H

TAMPA, FL 33610

(813) 621-0784

Dan Henson
Project Manager

Randall C. Grubbs
Laboratory Director - Florida

February 28, 1992



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LABORATORY
5910 Breckenridge Pkwy
Suite H
Tampa, FL 33610
(813) 621-0784



WADSWORTH/ALERT
LABORATORIES

INVOLVEMENT

This report summarizes the analytical results of the NAS/NADEP Pensacola - Phase I site submitted by ABB Environmental Services, Inc. to Wadsworth/ALERT Laboratories who provided independent, analytical services for this project under the direction of Peter Redfern. The samples were accepted into Wadsworth's Florida facility on 07 February 1992, in accordance with documented sample acceptance procedures. The associated analytical methods and sample results are outlined sequentially in this report.

Analytical results included in this report have been reviewed for compliance with the Laboratory QA/QC Plan as summarized in the Quality Control Section at the rear of the report. Sample custody documentation describing the number of samples and sample matrices is also included. Any qualifications and/or non-compliant items have been noted below.

Laboratory ID #

2B0710-1,2,3,4,5,6,7,8

Narrative

The laboratory blank associated with these samples contained the following common laboratory contaminants: Methylene Chloride, Hexane, 1,1,2-Trichloro-1,2,2-Trifluoroethane. Their presence in the samples should be considered suspect.



WADSWORTH/ALERT
LABORATORIES

ANALYTICAL METHODS

Wadsworth/ALERT Laboratories utilizes only USEPA approved analytical methods and instrumentation. The analytical methods utilized for the analysis of these samples are listed below.

PARAMETER	METHOD

ORGANICS	
Volatile Organics	** EPA Method 624
Base/Neutral Acid Extractables	** EPA Method 625
METALS	
Arsenic	** EPA Method 206.2
Cadmium	** EPA Method 200.7
Chromium	** EPA Method 200.7
Lead	** EPA Method 239.2
MISCELLANEOUS	
Tot. Rec. Petroleum Hydrocarbons	** EPA Method 418.1

NOTE: ** Indicates usage of this method to obtain results for this report.

EPA Methods -Methods for Chemical Analysis of Water and Wastes, USEPA, 600/4-79-020, March, 1983. July, 1982
Drinking Waters USEPA, 600/4-88/039, December, 1988.

Std. Methods -Standard Methods for the Examination of Water and Wastewater, APHA, 16th edition, 1985.

USEPA Methods -From 40CFR Part 136, published in Federal Register on October 26, 1984.

SW846 Methods -Test Methods for Evaluating Solid Waste Physical/Chemical Methods, 3rd Edition, USEPA, 1986.

ASTM Methods -American Society for Testing and Materials.

NIOSH Method -NIOSH Manual of Analytical Methods, National Institute for Occupational Safety and Health, 2nd Edition, April 1977.



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-1
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-1

PROJ: NADEP PENSACOLA/607NE

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	10 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	3
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	91	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	100	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-1
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-1

PROJ: NADEP PENSACOLA/607NE

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
OTHER COMPOUNDS

Acetone

38 ug/L

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

4-Methyl-1-(1-methylethyl) cyclohexene	10 ug/L
1-Methyl-4-(1-methylethyl)-1,3-cyclohexadiene	8 ug/L
1-Methyl-3-(1-methylethyl) benzene	66 ug/L
1-Methyl-4-(1-methylethyl)-1,4-cyclohexadiene	20 ug/L
1-Methyl-4-(1-methylethylidene)	31 ug/L
Methyl-(1-methylethenyl) benzene	3 ug/L
1,3,3-Trimethyl-bicyclo[2.2.1] heptan-2-one	6 ug/L
1,3,3-Trimethyl-bicyclo[2.2.1] heptan-2-ol	4 ug/L
1-Methyl-4-(1-methylethenyl) cyclohexane, cis	9 ug/L
Camphor	6 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-1
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-1

PROJ: NADEP PENSACOLA/607NE

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 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 = 11 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 55 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 #: 2B0710-1
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-1

PROJ: NADEP PENSACOLA/607NE

CERTIFICATION #: E84059

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

HRS84297

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 = 11 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 55 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	45	(22-135)	(10-155)
Fluorobiphenyl	51	(34-140)	(12-153)
Terphenyl-d14	35	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-1
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-1

PROJ: NADEP PENSACOLA/607NE

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 = 11 ug/L) as rec'd
ND* (None Detected, lower detectable limit = 55 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	60	(17-95)	(24-118)
Phenol-d5	45	(11-89)	(17-124)
2,4,6-Tribromophenol	28	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-1
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-1

PROJ: NADEP PENSACOLA/607NE

CERTIFICATION #: E84059
HRS84297

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

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

Benzene, 1-methyl-4-(1-methylethyl)	30 ug/L
D-fenchyl alcohol	26 ug/L
(2)-5-Hexenal oxime	56 ug/L
Linalyl propionate	52 ug/L
1-Borneol	45 ug/L
3-Penten-2-ol	7 ug/L
1-Unknown	19 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-1
MATRIX : WATER

DATE RECEIVED: 2/ 7/92

SAMPLE ID : MW-1

PROJ: NADEP PENSACOLA/607NE

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	2/18/92	ND	10	ug/L
Cadmium	2/18/92	ND	10	ug/L
Chromium	2/18/92	ND	50	ug/L
Lead	2/18- 2/19/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2B0710-1
MATRIX : WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/18/92
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-1

PROJ: NADEP PENSACOLA/607NE

CERTIFICATION #: E84059
HRS84297

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS REPORT

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

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-2
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-2

PROJ: NADEP PENSACOLA/607NE

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	10 B
Chlorobenzene	ND	1,1,2,2-Tetrachloroethane	ND
Chloroethane	ND	Tetrachloroethene	ND
2-Chloroethylvinyl ether	ND	Toluene	ND
Chloroform	3	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	100	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	97	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-2
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-2

PROJ: NADEP PENSACOLA/607NE

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
OTHER COMPOUNDS

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

1,1,2-Trichloro-1,2,2-trifluoro ethane	34 ug/L
1-Propanol	8 ug/L
1-Methyl-3-(1-methylethyl) benzene	1 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-2
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-2

PROJ: NADEP PENSACOLA/607NE

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
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 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 #: 2B0710-2
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-2

PROJ: NADEP PENSACOLA/607NE

CERTIFICATION #: E84059

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

HRS84297

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	57	(22-135)	(10-155)
Fluorobiphenyl	66	(34-140)	(12-153)
Terphenyl-d14	34	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-2
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-2

PROJ: NADEP PENSACOLA/607NE

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	47	(17-95)	(24-118)
Phenol-d5	35	(11-89)	(17-124)
2,4,6-Tribromophenol	24	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-2
MATRIX : WATER

DATE RECEIVED: 2/ 7/92

SAMPLE ID : MW-2

PROJ: NADEP PENSACOLA/607NE

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	2/18/92	ND	10	ug/L
Cadmium	2/18/92	ND	10	ug/L
Chromium	2/18/92	ND	50	ug/L
Lead	2/18- 2/19/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2B0710-2
MATRIX : WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/18/92
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-2

PROJ: NADEP PENSACOLA/607NE

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 #: 2B0710-3
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-3

PROJ: NADEP PENSACOLA/ 607NE

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	10 B
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	104	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	99	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2BO710-3
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-3

PROJ: NADEP PENSACOLA/ 607NE

VOLATILE ORGANICS
OTHER COMPOUNDS

CERTIFICATION #: E84059
HRS84297

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

1,1,2-Trichloro-1,2,2-Triflouroethane
Hexane

6 ug/L
2 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-3
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

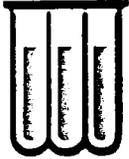
SAMPLE ID: MW-3

PROJ: NADEP PENSACOLA/ 607NE

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
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 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 #: 2B0710-3
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-3

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059

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

HRS84297

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	49	(22-135)	(10-155)
Fluorobiphenyl	52	(34-140)	(12-153)
Terphenyl-d14	34	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-3
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-3

PROJ: NADEP PENSACOLA/ 607NE

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	34	(17-95)	(24-118)
Phenol-d5	29	(11-89)	(17-124)
2,4,6-Tribromophenol	32	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-3
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-3

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

HRS84297

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

Cyclopropane, pentyl	7 ug/L
Dodecane	7 ug/L
Pentadecane	6 ug/L
Tetradecane	5 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 2B0710-3
MATRIX : WATER

DATE RECEIVED: 2/ 7/92

SAMPLE ID : MW-3

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	2/18/92	ND	10	ug/L
Cadmium	2/18/92	ND	10	ug/L
Chromium	2/18/92	ND	50	ug/L
Lead	2/18- 2/19/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2B0710-3
MATRIX : WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/18/92
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-3

PROJ: NADEP PENSACOLA/ 607NE

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 #: 2B0710-4
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-4

PROJ: NADEP PENSACOLA/ 607NE

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	11 B
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	106	(75-123)	(85-126)	(85-138)
Toluene-d8	99	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	98	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-4
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-4

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
OTHER COMPOUNDS

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

1,1,2-Trichloro-1,2,2-triflouroethane
Hexane

4 ug/L
1 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-4
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-4

PROJ: NADEP PENSACOLA/ 607NE

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 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 #: 2B0710-4
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-4

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059

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

HRS84297

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	56	(22-135)	(10-155)
Fluorobiphenyl	54	(34-140)	(12-153)
Terphenyl-d14	35	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-4
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-4

PROJ: NADEP PENSACOLA/ 607NE

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	35	(17-95)	(24-118)
Phenol-d5	25	(11-89)	(17-124)
2,4,6-Tribromophenol	24	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-4
MATRIX : WATER

DATE RECEIVED: 2/ 7/92

SAMPLE ID : MW-4

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: EB4059

METALS ANALYTICAL REPORT
SELECTED LIST

HRSB4297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	2/18/92	ND	10	ug/L
Cadmium	2/18/92	ND	10	ug/L
Chromium	2/18/92	ND	50	ug/L
Lead	2/18- 2/19/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2B0710-4
MATRIX : WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/18/92
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-4

PROJ: NADEP PENSACOLA/ 607NE

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 #: 2B0710-5
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/20/92

SAMPLE ID: MW-5

PROJ: NADEP PENSACOLA/ 607NE

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	11 B
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	107	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	98	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-5
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-5

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059

VOLATILE ORGANICS
OTHER COMPOUNDS

HRS84297

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

1,1,2-Trichloro,1,2,2-triflouroethane
Hexane

1 ug/L
1 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2BO710-5
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-5

PROJ: NADEP PENSACOLA/ 607NE

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
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 #: 2BO710-5
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-5

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059

BASE/NEUTRAL EXTRACTABLE ORGANICS

HRS84297

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	61	(22-135)	(10-155)
Fluorobiphenyl	61	(34-140)	(12-153)
Terphenyl-d14	33	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2BO710-5
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: MW-5

PROJ: NADEP PENSACOLA/ 607NE

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	50	(17-95)	(24-118)
Phenol-d5	39	(11-89)	(17-124)
2,4,6-Tribromophenol	34	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-5
MATRIX : WATER

DATE RECEIVED: 2/ 7/92

SAMPLE ID : MW-5

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059

**METALS ANALYTICAL REPORT
SELECTED LIST**

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	2/18/92	ND	10	ug/L
Cadmium	2/18/92	ND	10	ug/L
Chromium	2/18/92	ND	50	ug/L
Lead	2/18- 2/19/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2B0710-5
MATRIX : WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/18/92
DATE ANALYZED: 2/19/92

SAMPLE ID: MW-5

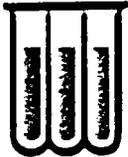
PROJ: NADEP PENSACOLA/ 607NE

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 #: 2B0710-6
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/20/92

SAMPLE ID: DUPLICATE

PROJ: NADEP PENSACOLA/ 607NE

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	11 B
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	107	(75-123)	(85-126)	(85-138)
Toluene-d8	100	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	98	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-6
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: DUPLICATE

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059

VOLATILE ORGANICS
OTHER COMPOUNDS

HRS84297

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

1,1,2-Trichloro,1,2,2-trifouroethane
Hexane

3 ug/L
1 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-6
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: DUPLICATE

PROJ: NADEP PENSACOLA/ 607NE

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
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 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 #: 2B0710-6
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: DUPLICATE

PROJ: NADEP PENSACOLA/ 607NE

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	56	(22-135)	(10-155)
Fluorobiphenyl	55	(34-140)	(12-153)
Terphenyl-d14	30	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-6
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: DUPLICATE

PROJ: NADEP PENSACOLA/ 607NE

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	39	(17-95)	(24-118)
Phenol-d5	28	(11-89)	(17-124)
2,4,6-Tribromophenol	24	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 2B0710-6
MATRIX : WATER

DATE RECEIVED: 2/ 7/92

SAMPLE ID : DUPLICATE

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	2/18/92	ND	10	ug/L
Cadmium	2/18/92	ND	10	ug/L
Chromium	2/18/92	ND	50	ug/L
Lead	2/18- 2/19/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2B0710-6
MATRIX : WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/18/92
DATE ANALYZED: 2/19/92

SAMPLE ID: DUPLICATE

PROJ: NADEP PENSACOLA/ 607NE

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 #: 2B0710-7
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/20/92

SAMPLE ID: EQUIPMENT BLANK

PROJ: NADEP PENSACOLA/ 607NE

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	11 B
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	104	(75-123)	(85-126)	(85-138)
Toluene-d8	98	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	90	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-7
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: EQUIPMENT BLANK

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
OTHER COMPOUNDS

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

1,1,2-Trichloro-1,2,2-trifouroethane
Hexane

3 ug/L
4 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-7
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: EQUIPMENT BLANK

PROJ: NADEP PENSACOLA/ 607NE

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
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 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 #: 2B0710-7
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: EQUIPMENT BLANK

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059

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

HRS84297

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	64	(22-135)	(10-155)
Fluorobiphenyl	62	(34-140)	(12-153)
Terphenyl-d14	82	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-7
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: EQUIPMENT BLANK

PROJ: NADEP PENSACOLA/ 607NE

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	69	(17-95)	(24-118)
Phenol-d5	58	(11-89)	(17-124)
2,4,6-Tribromophenol	37	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-7
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: EQUIPMENT BLANK

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059

EXTRACTABLE ORGANICS
OTHER COMPOUNDS

HRS84297

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

1,2-Pentadiene

18 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 2B0710-7
MATRIX : WATER

DATE RECEIVED: 2/ 7/92

SAMPLE ID : EQUIPMENT BLANK

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059

METALS ANALYTICAL REPORT
SELECTED LIST

HRS84297

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	2/18/92	ND	10	ug/L
Cadmium	2/18/92	ND	10	ug/L
Chromium	2/18/92	ND	50	ug/L
Lead	2/18- 2/19/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2B0710-7
MATRIX : WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/18/92
DATE ANALYZED: 2/19/92

SAMPLE ID: EQUIPMENT BLANK

PROJ: NADEP PENSACOLA/ 607NE

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 #: 2B0710-8
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/20/92

SAMPLE ID: TRIP BLANK

PROJ: NADEP PENSACOLA/ 607NE

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	12 B
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	106	(75-123)	(85-126)	(85-138)
Toluene-d8	102	(75-123)	(89-124)	(89-128)
Bromofluorobenzene	97	(86-115)	(84-124)	(83-128)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-8
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: TRIP BLANK

PROJ: NADEP PENSACOLA/ 607NE

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
OTHER COMPOUNDS

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

1,1,2-Trichloro-1,2,2-trifouroethane
Hexane

2 ug/L
1 ug/L



WADSWORTH/ALERT
LABORATORIES

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



WADSWORTH/ALERT
LABORATORIES

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



WADSWORTH/ALERT
LABORATORIES

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY
(cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS	MSD	RPD	QC LIMITS	
		%REC	%REC		RPD	RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150

(cmpd. name)	sample	1st%	2nd%	Rel.%	accep. method
	result	recov.	recov.	diff.	perform range

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-BK
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: LABORATORY BLANK

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	12
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	107	(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 #: 2B0710-BK
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: NA
DATE ANALYZED: 2/19/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

VOLATILE ORGANICS
OTHER COMPOUNDS

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

1,1,2-Trichloro-1,2,2-trifluoroethane
Hexane

3 ug/L
2 ug/L



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-BK
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297
BASE/NEUTRAL -- EXTRACTABLE ORGANICS
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
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 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 #: 2B0710-BK
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: LABORATORY BLANK

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	67	(22-135)	(10-155)
Fluorobiphenyl	67	(34-140)	(12-153)
Terphenyl-d14	82	(10-132)	(13-140)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB #: 2B0710-BK
MATRIX: WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/12/92
DATE ANALYZED: 2/18/92

SAMPLE ID: LABORATORY BLANK

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	63	(17-95)	(24-118)
Phenol-d5	60	(11-89)	(17-124)
2,4,6-Tribromophenol	37	(10-134)	(10-156)



WADSWORTH/ALERT
LABORATORIES

COMPANY : ABB ENVIRONMENTAL SERVICES, INC.
LAB # : 2B0710-BK
MATRIX : WATER

DATE RECEIVED: 2/ 7/92

SAMPLE ID : LABORATORY BLANK

CERTIFICATION #: E84059
HRS84297

METALS ANALYTICAL REPORT
SELECTED LIST

Total metals analysis results - as received

ELEMENT	PREPARATION - ANALYSIS DATE	RESULT	DETECTION LIMIT	
Arsenic	2/18/92	ND	10	ug/L
Cadmium	2/18/92	ND	10	ug/L
Chromium	2/18/92	ND	50	ug/L
Lead	2/18- 2/19/92	ND	5	ug/L

NOTE: ND (None Detected)



WADSWORTH/ALERT
LABORATORIES

COMPANY: ABB ENVIRONMENTAL SERVICES, INC.
LAB ID: 2B0710-BK
MATRIX : WATER

DATE RECEIVED: 2/ 7/92
DATE EXTRACTED: 2/18/92
DATE ANALYZED: 2/19/92

SAMPLE ID: LABORATORY BLANK

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

LAB #: 2B0710-LCS
MATRIX: WATER
METHOD: 624

DATE RECEIVED: 02/07/92
DATE EXTRACTED: NA
DATE ANALYZED: 02/19/92

LABORATORY CHECK SAMPLE

COMPOUND	LCS %REC	QC LIMITS %RECOVERY
1,1-Dichloroethene	118	56-133
Trichloroethene	101	67-106
Chlorobenzene	93	78-122
Toluene	108	64-128
Benzene	111	83-123
Dichlorobromomethane	88	71-123



WADSWORTH/ALERT
LABORATORIES

LAB #: 2B0716-LCS
MATRIX: WATER
METHOD: 625

DATE RECEIVED: 02/07/92
DATE EXTRACTED: 02/12/92
DATE ANALYZED: 02/18/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
1,2,4-Trichlorobenzene	98	20-111
Acenaphthene	101	31-105
2,4-Dinitrotoluene	67	22-107
Pyrene	96	12-108
Nitrosodipropylamine	71	42-125
1,4-Dichlorobenzene	63	31-99



WADSWORTH/ALERT
LABORATORIES

LAB #: 2B0716-LCS
MATRIX: WATER
METHOD: 625

DATE RECEIVED: 02/07/92
DATE EXTRACTED: 02/12/92
DATE ANALYZED: 02/18/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Pentachlorophenol	31	10-100
Phenol	47	12-90
2-Chlorophenol	55	30-100
4-Chloro-o-cresol	59	12-109
4-Nitrophenol	15	10-102



WADSWORTH/ALERT
LABORATORIES

LAB #: 2B0710-LCS
MATRIX: WATER

DATE RECEIVED: 02/07/92
DATE PREP'D: 02/18/92
DATE ANALYZED: 02/18/92 to
02/19/92

LABORATORY CHECK SAMPLE RECOVERY

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Arsenic, furnace	98	54-130
Cadmium	101	78-113
Chromium	103	79-121
Lead, furnace	98	64-131



WADSWORTH/ALERT
LABORATORIES

LAB #: 2B0710-LCS
MATRIX: WATER

DATE RECEIVED: 02/07/92
DATE EXTRACTED: 02/18/92
DATE ANALYZED: 02/19/92

LABORATORY CHECK SAMPLE

COMPOUND	LCS %REC	QC LIMITS RECOVERY
Tot. Rec. Pet. Hydrocarbons	100	75-124



WADSWORTH/ALERT
LABORATORIES

LAB#: 2B0710-3
MATRIX: WATER
METHOD: 625

DATE RECEIVED: 02/07/92
DATE EXTRACTED: 02/12/92
DATE ANALYZED: 02/18/92

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	MS %REC	MSD %REC	RPD	QC LIMITS RPD	RECOVERY
1,2,4-Trichlorobenzene	78	72	8	15	27-65
Acenaphthene	89	94	5	25	57-104
2,4-Dinitrotoluene	55	50	10	22	22-81
Pyrene	80	69	15	30	58-148
Nitrosodipropylamine	60	56	7	29	40-127
1,4-Dichlorobenzene	52	50	4	20	16-56



WADSWORTH/ALERT
LABORATORIES

LAB#: 2B0710-3
MATRIX: WATER
METHOD: 625

DATE RECEIVED: 02/07/92
DATE EXTRACTED: 02/12/92
DATE ANALYZED: 02/18/92

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	MS %REC	MSD %REC	RPD	QC LIMITS RPD	RECOVERY
Pentachlorophenol	15	14	7	42	13-96
Phenol	42	35	18	23	15-97
2-Chlorophenol	47	42	11	21	17-89
4-Chloro-o-cresol	55	43	24	36	8-101
4-Nitrophenol	23	19	19	34	13-99

**WADSWORTH/ALERT LABORATORIES
SAMPLE SHIPPER EVALUATION AND RECEIPT FORM**

Client: ABB Project Name/Number: 607NE

Samples Received By: Jenton Martin Jr (Signature) Date Received: 2/7/92

Sample Evaluation Form By: Jenton Martin Jr (Signature) LAB No: 3829/280710-1 to 11

Type of shipping container samples received in? WAL Cooler
 Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

	YES	NO
1. Were custody seals on shipping container(s) intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Were custody papers properly included with samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Were custody papers properly filled out (ink, signed, match labels)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Did all bottles arrive in good condition (unbroken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Were correct bottles used for the tests indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Were proper sample preservation techniques indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Were samples received within adequate holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11. Were samples accepted into the laboratory? (If no see comments)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Cooler # 184 Temp 5 °C Cooler # _____ Temp _____ °C
 Cooler # _____ Temp _____ °C Cooler # _____ Temp _____ °C

Comments: _____

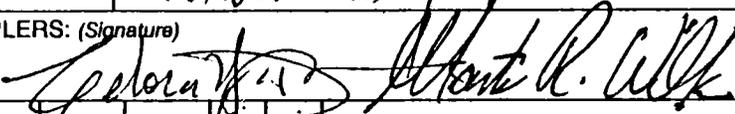
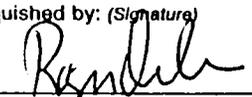
382-7
 ZB0710-11011

WADSWORTH/ALERT LABORATORIES - FLORIDA

5910-H BRECKENRIDGE PARKWAY/TAMPA, FL 33610
 (813) 621-0784

No 5180

Chain-of Custody Record

PROJ. NO.		PROJECT NAME/LOCATION					NO. OF CONTAINERS	PARAMETER					REMARKS
SAMPLERS: (Signature)								G24	G25/GWA	As Collected	TRPH		
STA. NO.	DATE	TIME	COMP.	GRAB.	STATION LOCATION								
	NADEP Pensacola / 607 NE												
													
	2/6/92	0920		X	mw 1		6	2	2	1	1		
	2/6/92	0911		X	mw 2		6	2	2	1	1		
	2/6/92	1030		X	mw 3		6	2	2	1	1		
	2/6/92	1038		X	mw 4		6	2	2	1	1		
	2/6/92	1127		X	mw 5		6	2	2	1	1		
	2/6/92	1127		X	Duplicate		6	2	2	1	1		
	2/6/92	1145			EQUIP BLANK		6	2	2	1	1		
	2/6/92				TRIP BLANK		2	2					
Relinquished by: (Signature)		Date / Time		Received by: (Signature)			Relinquished by: (Signature)		Date / Time		Received by: (Signature)		
		2/6/92 1603											
Relinquished by: (Signature)		Date / Time		Received by: (Signature)			Relinquished by: (Signature)		Date / Time		Received by: (Signature)		
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)			Date / Time		Remarks				

Distribution Original Accompanies Shipment. Copy returned with Report.