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# CONTAMINATION ASSESSMENT REPORT FOR BUILDING 7253 MCCOY ANNEX NTC ORLANDO FL

7/25/1997

ABB ENVIRONMENTAL

# CONTAMINATION ASSESSMENT REPORT

## BUILDING 7253
## McCOY ANNEX

## NAVAL TRAINING CENTER
## ORLANDO, FLORIDA

## UNIT IDENTIFICATION CODE: N65928
## CONTRACT NO.: N62467-89-D-0317/107

## JULY 1997

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA
29419-9010

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# Addendum 7

# Contamination Assessment Report, Building 7253

# CONTAMINATION ASSESSMENT REPORT

## BUILDING 7253
## McCOY ANNEX

## NAVAL TRAINING CENTER
## ORLANDO, FLORIDA

**Unit Identification Code: N65928**

**Contract No. N62467-89-D-0317/107**

**Prepared by:**

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

**Prepared for:**

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

**Nick Ugolini, Code 1843, Engineer-in-Charge**

**July 1997**


CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

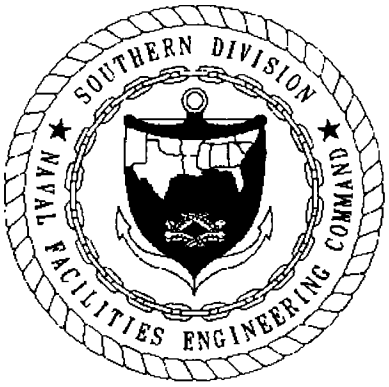
The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/107 are complete and accurate and comply with all requirements of this contract.

DATE: July 31, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: John Kaiser
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Manuel Alonso, P.G.
Project Technical Lead

(DFAR 252.227-7036)




# FOREWORD

To meet its mission objectives, the U.S. Navy performs a variety of operations, some requiring the use, handling, storage, or disposal of hazardous materials. Through accidental spills and leaks and conventional methods of past disposal, hazardous materials may have entered the environment in ways unacceptable by today's standards. With growing knowledge of the long-term effects of hazardous materials on the environment, the Department of Defense initiated various programs to investigate and remediate conditions related to suspected past releases of hazardous materials at their facilities.

One of these programs is the Comprehensive Long-Term Environmental Action, Navy (CLEAN) Underground Storage Tank (UST) program. This program complies with Subtitle I of the Resource Conservation and Recovery Act and the Hazardous and Solid Waste Amendments of 1984. In addition, the UST program complies with all State and local storage tank regulations as they pertain to the locations of each naval facility.

The UST program includes the following activities:

- registration and management of Navy and Marine Corps storage tank systems,
- contamination assessment planning,
- site field investigations,
- preparation of contamination assessment reports,
- remedial (corrective) action planning,
- implementation of the remedial action plans, and
- tank and pipeline closures.

The Southern Division, Naval Facilities Engineering Command manages the UST program, and the Florida Department of Environmental Protection oversees the Navy UST program at the Naval Training Center (NTC), Orlando, Florida.

In addition to the UST program, NTC, Orlando in conjunction with the Department of the Navy has instituted several programs to address the requirements of Base Realignment and Closure (BRAC). BRAC Cleanup teams composed of representatives from the Navy, as well as Federal and State regulatory agencies, have been formed to address the multitude of issues surrounding base closure and to enhance environmental decision making at BRAC installations where property will be available for transfer to the community. This team approach is intended to foster partnering, accelerate the environmental cleanup process, and expedite timely, cost-effective, and environmentally responsible disposal and reuse decisions.

At NTC, Orlando, the BRAC process includes the evaluation of the environmental condition of the property to ensure the suitability of transfer, reuse, or lease.

Questions regarding the UST program at the NTC, Orlando should be addressed to Mr. Nick Ugolini, Code 1843, at (803) 820-5596.

## EXECUTIVE SUMMARY

ABB Environmental Services, Inc. (ABB-ES), has been authorized by Southern Division, Naval Facilities Engineering Command to prepare contamination assessment reports for petroleum-impacted sites discovered during the Base Realignment and Closure Tank Management Plan implementation at the McCoy Annex property, Naval Training Center, Orlando, in Orlando, Florida. This Contamination Assessment Report has been prepared to evaluate soil and groundwater conditions at the former Naval Exchange Retail Store, Building 7253.

This contamination assessment has been conducted following the guidelines contained in Section 62-770.600, Florida Administrative Code (FAC). A brief summary of the assessment results is provided below:

1. One 10,000-gallon underground storage tank (UST) stored heating fuel at Building 7253. The UST was removed by Florida Petroleum Services, Inc., on January 8, 1996. Following the removal of the UST, signs of petroleum impact to soil and groundwater was observed.

2. Contamination assessment activities were conducted by ABB-ES from January 8, 1996, to July 15, 1997. On June 23, 1997, and July 15, 1997, hand-augered soil borings were advanced in the vicinity of the former tank area to assess whether or not soil contamination was present. No excessively contaminated soil was detected.

3. On April 1, 1997, three piezometers (PZ-1, PZ-2, and PZ-3) were installed to a depth of approximately 8 feet below land surface (bls) to assess the direction of shallow groundwater flow.

4. On April 9, 1997, three shallow monitoring wells (MW-1, MW-2, and MW-3) were installed to assess the horizontal extent of petroleum contamination in the shallow aquifer. The shallow monitoring wells were installed to a depth of 13 feet bls.

5. On April 25, 1997, groundwater samples collected from the monitoring wells indicated that no dissolved petroleum hydrocarbon contamination exceeding Chapter 62-770, FAC, target cleanup levels was present.

6. Groundwater flow was determined to be from west to east across the site with an estimated hydraulic gradient of $2.2 \times 10^{-3}$ feet per foot. Due to the absence of petroleum impact to groundwater, no deep well was installed and no aquifer characterization was performed.

7. No active potable water wells are located within 0.25 mile of this site.

8. ABB-ES recommends a No Further Action proposal for this site.

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## GLOSSARY

| | |
|---|---|
| ABB-ES | ABB Environmental Services, Inc. |
| bls | below land surface |
| CAR | Contamination Assessment Report |
| FAC | Florida Administrative Code |
| FDEP | Florida Department of Environmental Protection |
| HSA | hollow stem auger |
| ID | inside diameter |
| $\mu g/\ell$ | micrograms per liter |
| NTC | Naval Training Center |
| OVA | organic vapor analyzer |
| PAH | polynuclear aromatic hydrocarbons |
| ppm | parts per million |
| TCAR | tank closure assessment report |
| TOC | top of casing |
| TRPH | total recoverable petroleum hydrocarbons |
| USEPA | U. S. Environmental Protection Agency |
| UST | underground storage tank |
| VOA | volatile organic aromatics |

# 1.0 SITE DESCRIPTION AND BACKGROUND INFORMATION

Building 7253 (former Navy Exchange Retail Store) is located on the south side of Binnacle Way east of Barber Street in the central part of the McCoy Annex Naval Training Center (NTC), in Orange County, Florida. The site lies within the southeast part of Section 31, Township 23 South and Range 30 East, as shown on the Pine Castle, Florida, U.S. Geological Survey Quadrangle Map. Figure 1-1 shows the site location and a map of the surrounding area.

Building 7253, constructed in 1954 as the mess hall/steam generating plant for a complex of nine barracks buildings and various support buildings, has an area of 14,537 square feet. It was constructed with concrete-block walls on an elevated concrete slab and a flat built-up roof. In 1962, post exchange facilities were moved to this location. It is currently not occupied. Aerial photographs indicate that, prior to building construction in 1954, the property was undeveloped. Photographs of the site showing existing physical features are included in Appendix A, Site Photographs.

One petroleum storage tank system had been operated at the property. The system consisted of a 10,000-gallon underground storage tank (UST) containing heating fuel associated with the old steam generating plant. More recently the UST served as a trans-shipment point (bulk storage) for small fuel-oil tanker trucks making deliveries within the McCoy Annex. The location of the petroleum storage tank system is shown on Figure 1-2, Site Plan.

The 10,000-gallon UST and associated piping was removed by Florida Petroleum Services, Inc., on January 8, 1996. Evidence of petroleum impact to soil was found within the excavation during the tank removal (organic vapor analyzer [OVA] readings of 30 parts per million [ppm] and 40 ppm at 4 and 5 feet below land surface [bls]). A groundwater sample analytical results showed evidence of petroleum impact to groundwater with polynuclear aromatic hydrocarbon (PAH) concentrations above standard laboratory detection limits. A tank closure assessment report (TCAR) was submitted to the Florida Department of Environmental Protection (FDEP) for review. Appendix B contains the TCAR for the site.

This Contamination Assessment Report (CAR) summarizes the data gathered during the contamination assessment activities at Building 7253 following the petroleum storage system closure for the site. General information such as regional physiography, geology, hydrogeology, investigative methodologies, and procedures are included in the NTC, Orlando, McCoy Annex, CAR (ABB-ES, 1996).

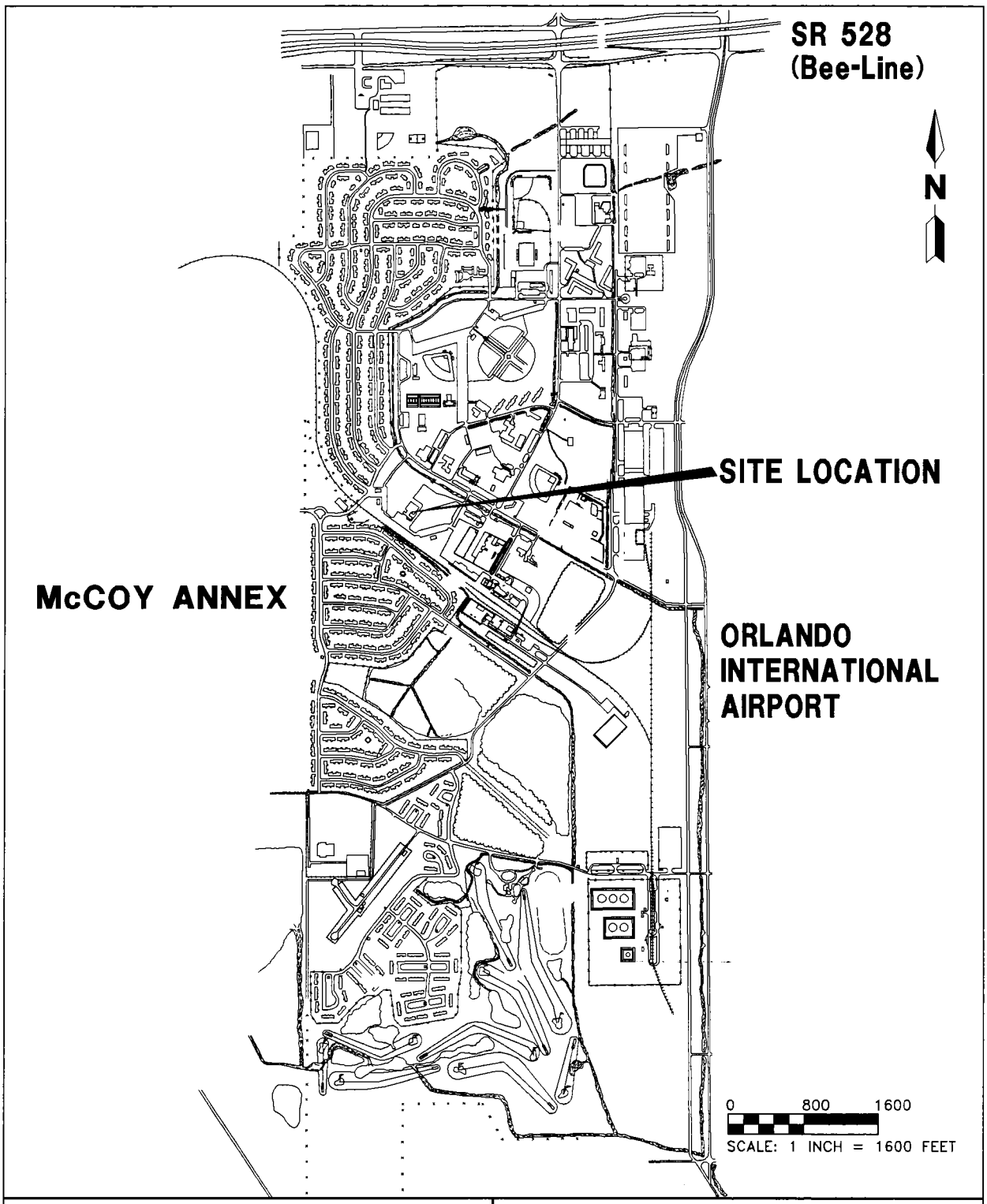


**FIGURE 1-1**
**SITE VICINITY MAP**

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**CONTAMINATION ASSESSMENT REPORT, BUILDING 7253, MCCOY ANNEX**

**NAVAL TRAINING CENTER ORLANDO, FLORIDA**

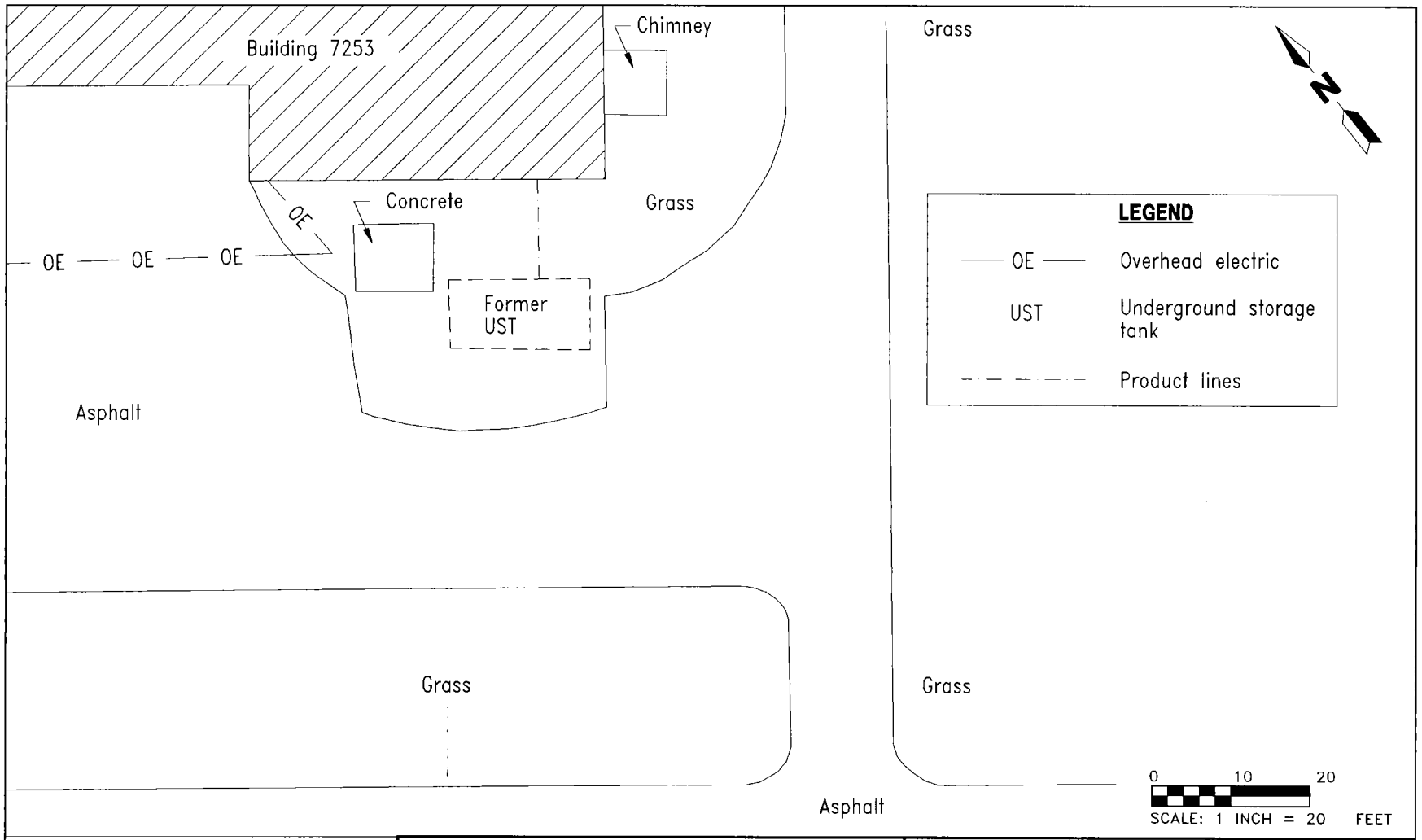


**FIGURE 1-2**
**SITE PLAN**

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**CONTAMINATION ASSESSMENT REPORT, BUILDING 7253, MCCOY ANNEX**

**NAVAL TRAINING CENTER ORLANDO, FLORIDA**

## 2.0 CONTAMINATION ASSESSMENT METHODOLOGY

2.1 SOIL BORING PROGRAM. In order to determine if petroleum-contaminated soil exists onsite, seven hand-augered soil borings (HA-1 through HA-7) were advanced using a 3.25-inch inside diameter (ID) stainless-steel bucket auger on June 23 and July 15, 1997. Figure 2-1 shows the locations of the borings. The hand-augered borings were completed into the water table, which was encountered at approximately 4 feet bls.

A total of 21 soil samples were collected from the 7 hand-augered soil borings. Soil samples were collected at depths of 0 to 2 feet, 2 to 4 feet, and 4 to 6 feet bls. Headspace organic vapor concentrations were measured for all soil samples by placing the soil sample in a 16-ounce glass jar and using a calibrated organic vapor analyzer (OVA), Foxboro 128 equipped with a flame ionization detector following procedures outlined in Section 62-770.200 Florida Administrative Code (FAC). Carbon filters are utilized to differentiate total hydrocarbon response from naturally occurring methane gas. Filtered and unfiltered readings are obtained from a single jar. All sampling and analysis is performed in accordance with ABB Environmental Services, Inc. (ABB-ES) FDEP-approved Comprehensive Quality Assurance Plan.

2.2 MONITORING WELL INSTALLATION PROGRAM. Three shallow monitoring wells (MW-1, MW-2, and MW-3) were installed at the site on April 9, 1997. The wells were installed using hollow-stem auger (HSA) techniques to a depth of 13 feet bls. A typical shallow monitoring well construction detail is provided as Figure 2-2. Each shallow monitoring well was constructed with 10 feet of 2-inch diameter 0.010-inch slotted well screen coupled to 3 feet of 2-inch Schedule 40 solid polyvinyl chloride. This assembly is placed in the borehole so that the screen interval is located at a depth that encompasses seasonal water table fluctuations. The annular space between the screen and the borehole is filled with 20/30-grade silica sand to 1 foot above the screened interval. A 1-foot fine sand (30/65-grade) seal is placed on top of the filter pack. The remaining annular space is sealed to grade with neat cement grout mixture. A summary of the well construction details is presented in Table 2-1. Appendix C contains the well completion logs provided by the drilling subcontractor.

All monitoring wells are completed flush mount with surface grade well vaults, and locking well caps were installed to conform with standards outlined in 40C-3, FAC. Each monitoring well was developed by pumping until clear and free of sediment. Thorough field decontamination procedures are strictly enforced to prevent possible cross contamination between field monitoring points. All drilling equipment, including drilling rods, bits, and HSA, is thoroughly decontaminated between each well installation.

2.3 GROUNDWATER SAMPLING PROGRAM. Groundwater samples were collected from temporary well TW-1 on February 7, 1996, and monitoring wells MW-1, MW-2, and MW-3 on April 25, 1997. The samples collected from TW-1 on February 7, 1997, were packed on ice and transported to Quality Analytical Laboratories, Inc., Montgomery, Alabama, for analysis. The samples collected on April 24, 1997, were packed on ice and transported to PC&B Environmental Laboratories, Inc., Oviedo, Florida for analysis. The groundwater samples collected from TW-1 were analyzed

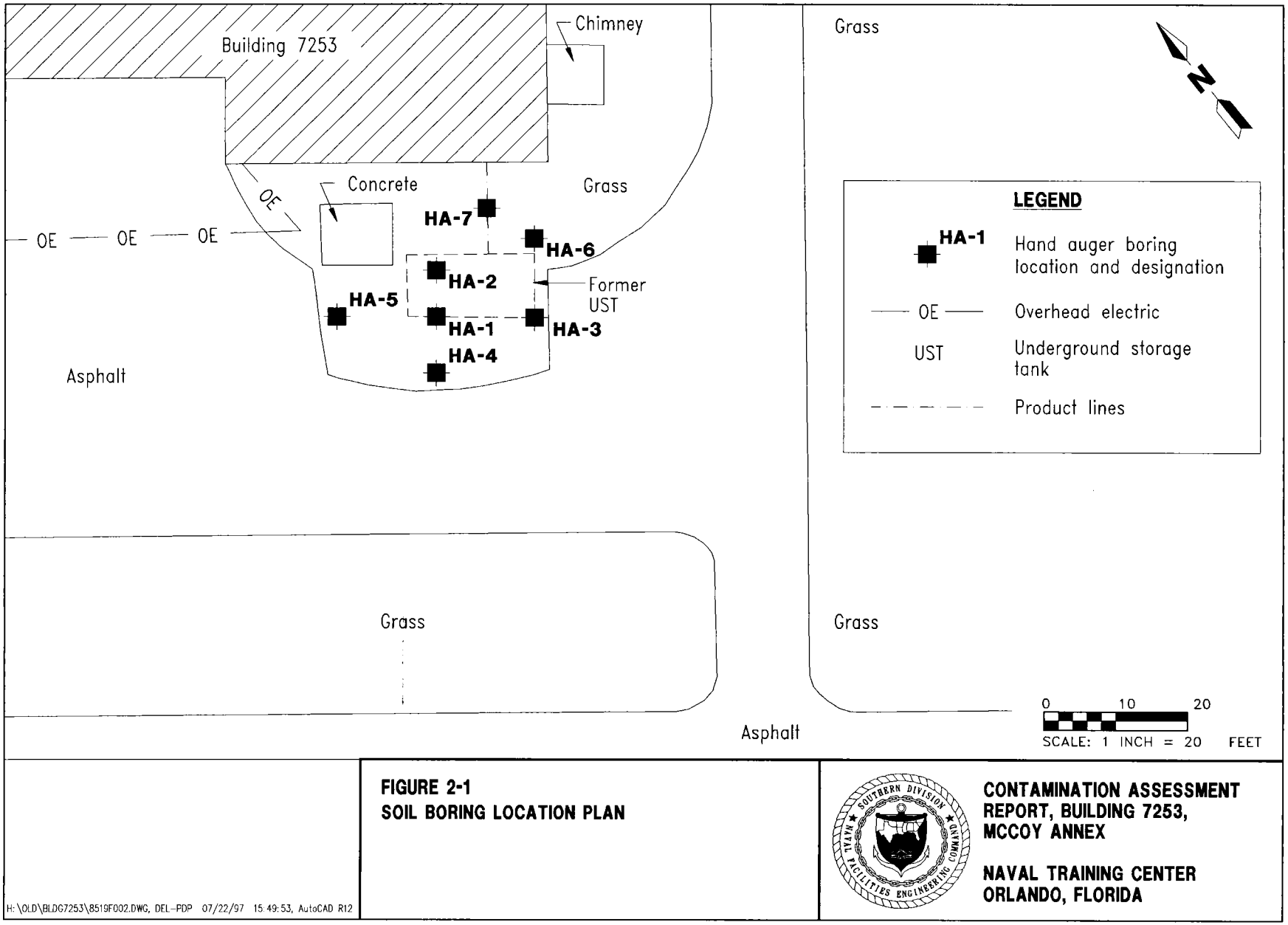


**FIGURE 2-1**
**SOIL BORING LOCATION PLAN**

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**CONTAMINATION ASSESSMENT REPORT, BUILDING 7253, MCCOY ANNEX**

**NAVAL TRAINING CENTER ORLANDO, FLORIDA**

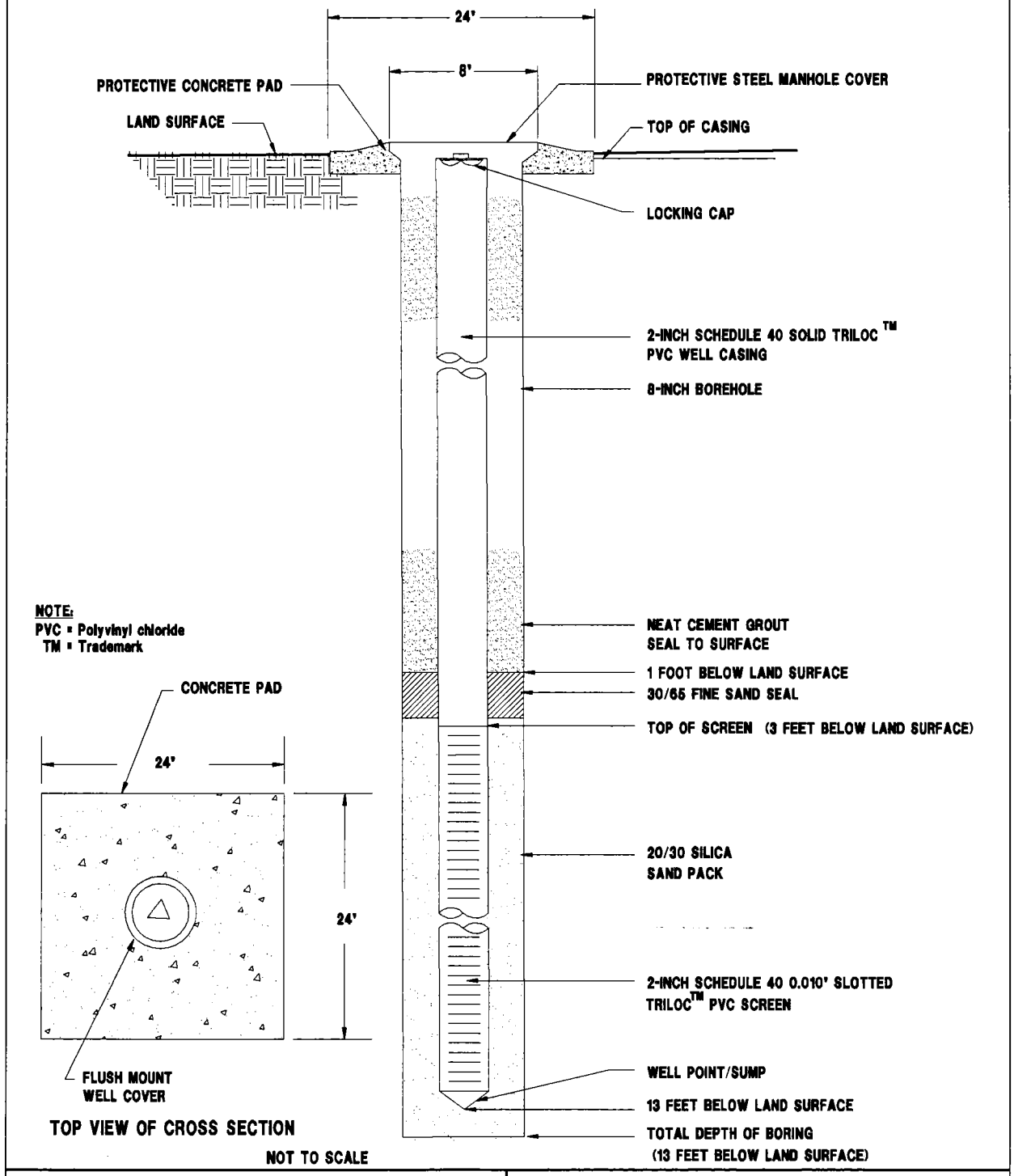


**FIGURE 2-2**
**TYPICAL SHALLOW MONITORING WELL CONSTRUCTION DETAIL**

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**CONTAMINATION ASSESSMENT REPORT, BUILDING 7253, MCCOY ANNEX**

**NAVAL TRAINING CENTER ORLANDO, FLORIDA**

**Table 2-1**
**Groundwater Monitoring Well Construction**
**Data Summary**

Contamination Assessment Report
Building 7253, McCoy Annex
Naval Training Center
Orlando, Florida

| Well Number | Date Installed | Total Depth (ft bls) | Well Diameter (inches) | Screened Interval (ft bls) | Slot Size (inches) | Comments |
|---|---|---|---|---|---|---|
| MW-1 | 4/9/97 | 13 | 2 | 3 to 13 | 0.01 | Installed by Groundwater Protection, Inc. |
| MW-2 | 4/9/97 | 13 | 2 | 3 to 13 | 0.01 | Installed by Groundwater Protection, Inc. |
| MW-3 | 4/9/97 | 13 | 2 | 3 to 13 | 0.01 | Installed by Groundwater Protection, Inc. |

Note: ft bls = feet below land surface.

for U.S. Environmental Protection Agency (USEPA) Methods 610 (PAH) and 602 (volatile organic aromatics [VOA]). Groundwater samples collected from monitoring wells MW-1, MW-2, and MW-3 were analyzed for the sampling requirements established in Chapter 62-770, FAC, for sites with petroleum discharges defined under the kerosene analytical group, which includes the following USEPA methods: 504 (ethylene dibromide), 601 (volatile halocarbons), 602 (VOA), 239.2 (total lead), 610 (PAH), and 418.1 (total recoverable petroleum hydrocarbons [TRPH]).

2.4 GROUNDWATER ELEVATION SURVEY. The elevation and slope of the water table was calculated using the field-surveyed top-of-well casing data for each monitoring well and piezometer and correlating the elevation data to a common datum. On April 4, April 25, and May 29, 1997, depth to groundwater was measured from the top of casing (TOC) to the nearest hundredth of a foot in each of the monitoring wells with an electronic water-level indicator. The groundwater depths were subtracted from the TOC elevation to obtain relative water table elevations. The wells were checked for the presence of free product by visual inspection of groundwater samples taken from each well and the use of an oil-water interface probe.

# 3.0 GEOLOGY AND HYDROGEOLOGY

3.1 SITE STRATIGRAPHY. For purposes of this investigation, site stratigraphy and aquifer evaluation were limited to the surficial aquifer beneath the site. The soil profile for the Building 7253 site is based on visual examination of soil samples collected from soil borings and drill cuttings obtained during the investigation. A typical stratigraphic soil profile consists of white to brown to black, fine-grained sand down to a depth of 13 feet bls. Lithologic logs for monitoring wells installed during this investigation are included as Appendix D, Lithologic Logs.

3.2 SITE HYDROGEOLOGY AND GROUNDWATER FLOW DIRECTION. Groundwater elevations across the site were calculated by measuring water levels on April 4, April 25, and May 29, 1997, in the site's monitoring wells and piezometers and by surveying the relative TOC elevations. The hydraulic gradient across the site was calculated by measuring the change in elevation head between monitoring wells MW-3 (upgradient well) and MW-2 (downgradient well) and dividing this head difference by the horizontal distance between these two wells. The scaled horizontal distance is 60 feet, and the change in elevation head between the wells, as measured on May 29, 1997, was 0.13 foot. The calculated hydraulic gradient is equal to $2.2 \times 10^{-3}$ feet per foot. The site groundwater flow direction, based on the water table surface map, is from west to east. Table 3-1 is a summary of groundwater elevation data for the April 4, April 25, and May 29, 1997 sampling events. Figures 3-1, 3-2, and 3-3 are the water table contour maps for April 4, April 25, and May 29, 1997, respectively.

3.3 AQUIFER CHARACTERISTICS. Due to the lack of groundwater contamination, no slug tests were performed at this site.

3.4 POTABLE WELL SURVEY. A potable well survey for the surrounding area is included in the McCoy Annex CAR (ABB-ES, 1996). No active potable wells are reported in the site vicinity. Five potable wells, currently not in service, are located in the site vicinity, including WW-1, 3500 feet north-northeast; WW-2, 2900 feet north-northeast; WW-3, 2500 feet northeast; WW-4, 2900 northeast; and, WW-5, 1900 feet northeast. In addition, six irrigation wells are located between .75-mile and a 1-mile radius of the site, in a south-southwest direction. See Figure 5-1, Potable and Irrigation Well Locations, of the McCoy Annex CAR (ABB-ES, 1996).

3.5 SURFACE WATER. There are no surface water bodies in the site vicinity. The nearest standing water is located in the drainage ditch running along the southwest side of Binnacle Way, approximately 480 feet northeast of the site. A seasonal drainage ditch is located approximately 160 feet southwest of the site. No standing water was observed during this investigation.

## Table 3-1
## Groundwater Elevation Summary

Contamination Assessment Report
Building 7253, McCoy Annex
Naval Training Center
Orlando, Florida

| Well Number | Date | Depth to Product (ft btoc) | Depth to Water (ft btoc) | Product Thickness (feet) | Top-of-Casing* Elevation (feet) | Water-Level* Elevation (feet) |
|---|---|---|---|---|---|---|
| MW-1 | 04/04/97 | -- | NA | -- | 96.86 | NA |
| | 04/25/97 | -- | 4.39 | -- | | 92.47 |
| | 05/29/97 | -- | 4.39 | -- | | 92.47 |
| MW-2 | 04/04/97 | -- | NA | -- | 97.10 | NA |
| | 04/25/97 | -- | 4.72 | -- | | 92.38 |
| | 05/29/97 | -- | 4.70 | -- | | 92.40 |
| MW-3 | 04/04/97 | -- | NA | -- | 97.03 | NA |
| | 04/25/97 | -- | 4.53 | -- | | 92.50 |
| | 05/29/97 | -- | 4.50 | -- | | 92.53 |
| PZ-1 | 04/04/97 | -- | 7.82 | -- | 100.00 | 92.18 |
| | 04/25/97 | -- | 7.52 | -- | | 92.48 |
| | 05/29/97 | -- | 7.51 | -- | | 92.49 |
| PZ-2 | 04/04/97 | -- | 6.78 | -- | 99.03 | 92.25 |
| | 04/25/97 | -- | 6.46 | -- | | 92.57 |
| | 05/29/97 | -- | 6.45 | -- | | 92.58 |
| PZ-3 | 04/04/97 | -- | 6.86 | -- | 99.06 | 92.20 |
| | 04/25/97 | -- | 6.55 | -- | | 92.51 |
| | 05/29/97 | -- | 6.52 | -- | | 92.54 |

Notes: ft btoc = feet below top of casing.
* = referenced to arbitrary datum.
-- = not applicable.
NA = not available.

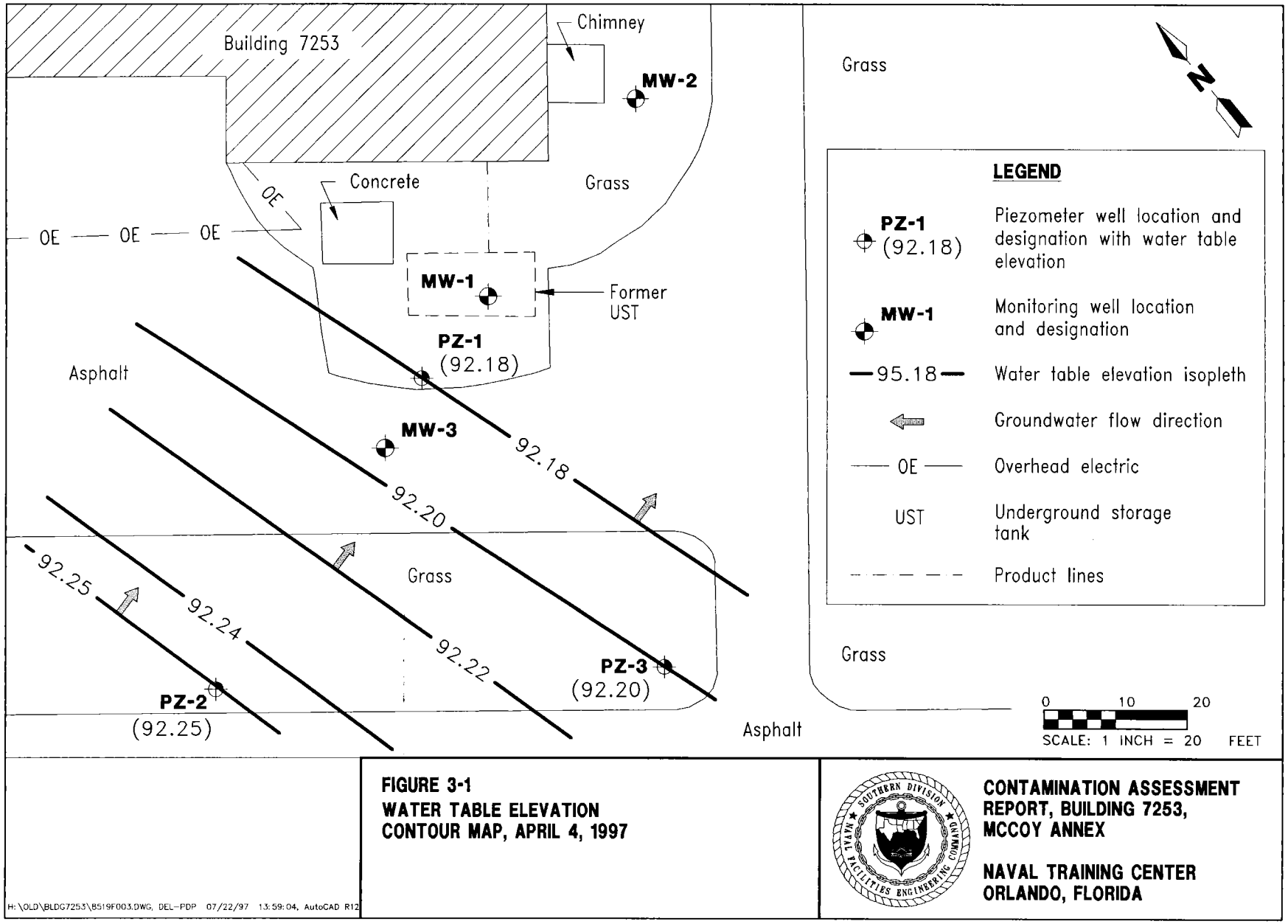


**FIGURE 3-1**
**WATER TABLE ELEVATION CONTOUR MAP, APRIL 4, 1997**

**CONTAMINATION ASSESSMENT REPORT, BUILDING 7253, MCCOY ANNEX**

**NAVAL TRAINING CENTER ORLANDO, FLORIDA**

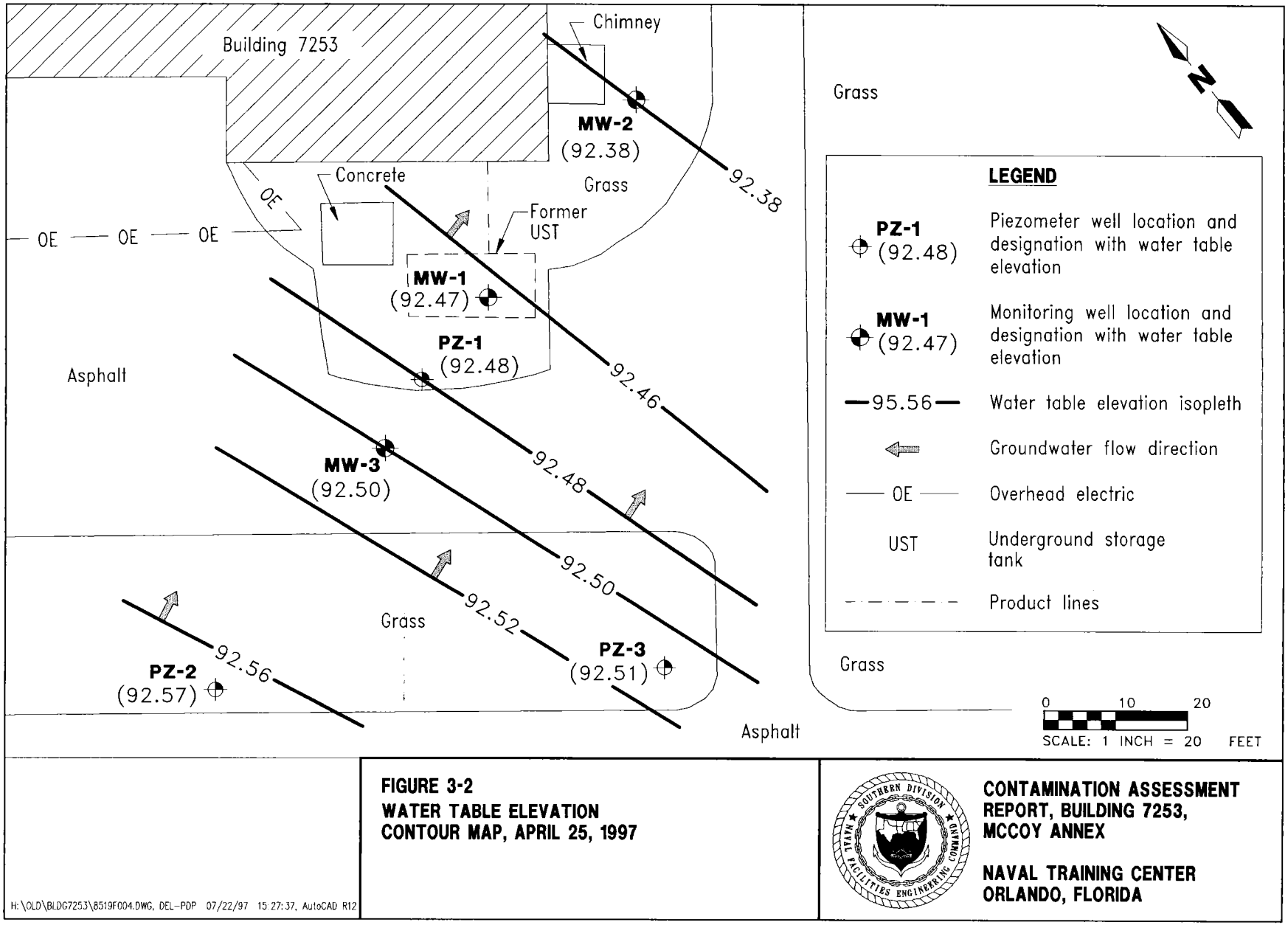


**FIGURE 3-2**
**WATER TABLE ELEVATION CONTOUR MAP, APRIL 25, 1997**

**CONTAMINATION ASSESSMENT REPORT, BUILDING 7253, MCCOY ANNEX**

**NAVAL TRAINING CENTER ORLANDO, FLORIDA**

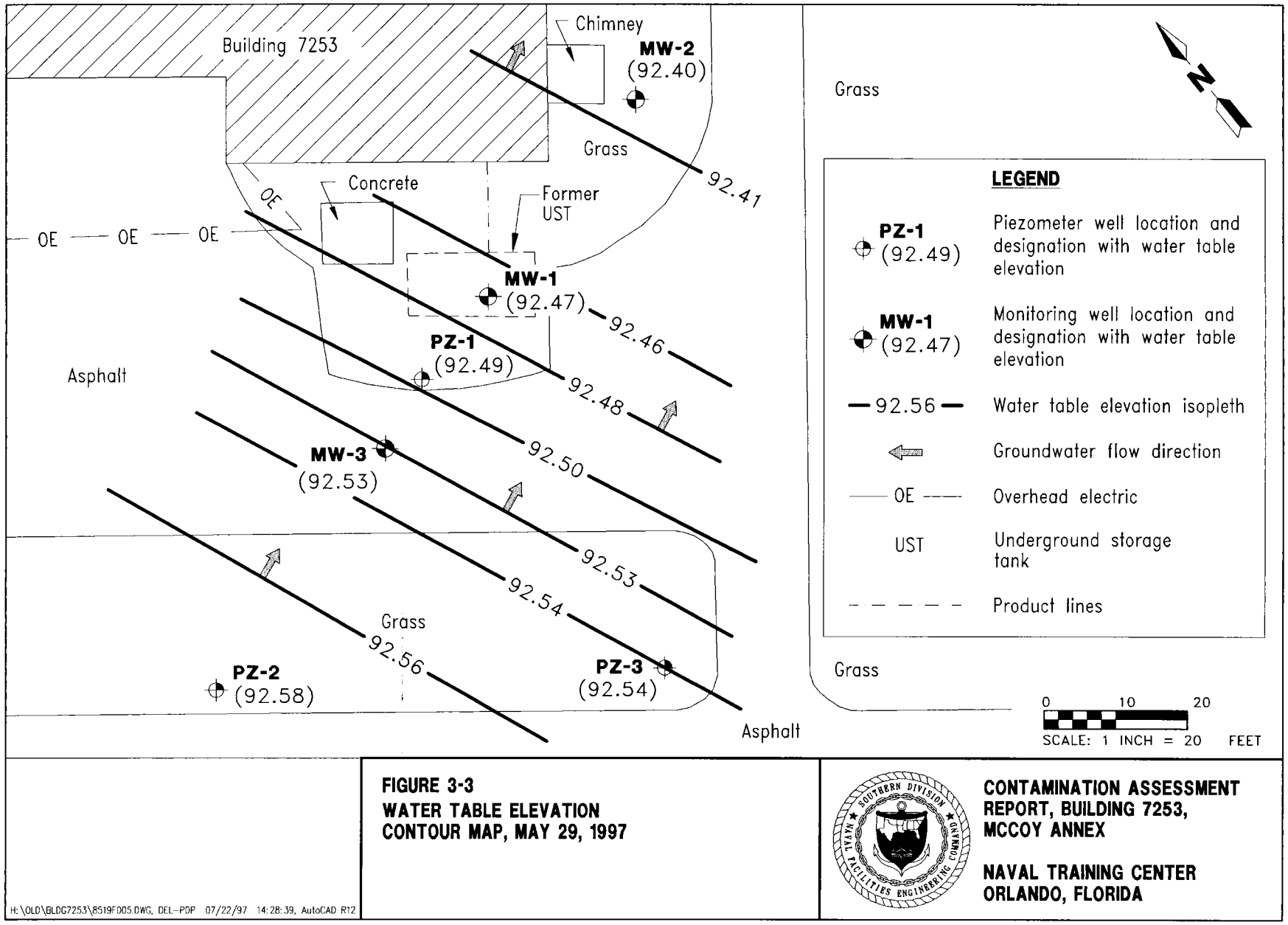


**FIGURE 3-3**
**WATER TABLE ELEVATION CONTOUR MAP, MAY 29, 1997**

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**CONTAMINATION ASSESSMENT REPORT, BUILDING 7253, MCCOY ANNEX**

**NAVAL TRAINING CENTER ORLANDO, FLORIDA**

# 4.0 CONTAMINATION ASSESSMENT RESULTS

**4.1 SOIL CONTAMINATION**. Seven hand-augered soil borings (HA-1 through HA-7) were advanced using a 3.25-inch ID stainless-steel bucket auger on June 23 and July 15, 1997. Figure 2-1 shows the hand-augered soil boring locations. Twenty-one soil samples were collected at discrete intervals for OVA analysis. A summary of OVA results is presented in Table 4-1.

No excessively contaminated soil was encountered during the contamination assessment activities. All results from the OVA fall below Chapter 62-770.200(2), FAC, defined readings of 50 ppm. Readings of 35 ppm, 44 ppm, and 27 ppm total hydrocarbons all occurred just above or below the water table.

**4.2 FREE-PRODUCT OCCURRENCE**. During the sampling of TW-1 on February 6, 1996, no product sheen was detected on the groundwater. No free product was detected during the remaining contamination assessment activities.

**4.3 GROUNDWATER CONTAMINATION**. As part of the tank closure activities, one temporary well (TW-1) was installed within the former UST area on February 6, 1996. In addition, three shallow monitoring wells (MW-1, MW-2, and MW-3) were installed at the site on April 9, 1997, and sampled on April 25, 1997. These monitoring wells were installed to assess the groundwater flow direction and the horizontal extent of hydrocarbon contamination. Locations of the monitoring wells are shown on Figure 4-1.

Groundwater samples were collected from temporary well TW-1 on February 6, 1996, and analyzed for USEPA Method 610 (PAH) and 602 (VOA). Laboratory analytical results reported acenaphthene at 10 micrograms per liter ($\mu g/\ell$), fluorene at 6 $\mu g/\ell$, phenanthrene at 8 $\mu g/\ell$, anthracene at 3 $\mu g/\ell$, fluoranthene at 3 $\mu g/\ell$, and pyrene at 2 $\mu g/\ell$.

Groundwater samples were collected from monitoring wells MW-1, MW-2, and MW-3 on April 25, 1997. Groundwater samples were analyzed for the kerosene analytical group, which includes the following USEPA Methods: 504 (ethylene dibromide), 601 (volatile halocarbons), 602 (VOA), 6010 (total lead), 610 (PAH), and 418.1 (TRPH). Laboratory analytical results indicate that dissolved petroleum contamination above Chapter 62-770, FAC, target cleanup levels was not detected in any of the monitoring wells during the sampling event. Laboratory analytical results for monitoring well MW-1 reported 8 $\mu g/\ell$ of naphthalene, well below the State of Florida's target cleanup levels. The laboratory analytical reports are included in Appendix E, and the results are summarized in Table 4-2.

## Table 4-1
## Summary of Organic Vapor Analyses, June 23 and July 15, 1997

Contamination Assessment Report
Building 7253, McCoy Annex
Naval Training Center
Orlando, Florida

| Soil Boring Designation | Sample Depth (ft bls) | Unfiltered (ppm) | Filtered (ppm) | Total Hydrocarbons (ppm) | Physical Observations |
|---|---|---|---|---|---|
| HA-1 | 0 to 2 | <1 | <1 | <1 | No staining, no petroleum odor. |
| | 2 to 4 | 60 | 25 | 35 | No staining, no petroleum odor. |
| | 4 to 5 | 70 | 26 | 44 | No staining, no petroleum odor. |
| HA-2 | 0 to 2 | <1 | <1 | <1 | No staining, no petroleum odor. |
| | 2 to 4 | 3 | <1 | 3 | No staining, no petroleum odor. |
| | 4 to 6 | 14 | 2 | 12 | No staining, no petroleum odor. |
| HA-3 | 0 to 2 | <1 | <1 | <1 | No staining, no petroleum odor. |
| | 2 to 4 | 5 | 3 | 2 | No staining, no petroleum odor. |
| | 4 to 6 | 6 | 2 | 4 | No staining, no petroleum odor. |
| HA-4 | 0 to 2 | 3 | 1 | 2 | No staining, no petroleum odor. |
| | 2 to 4 | 3 | 1 | 2 | No staining, no petroleum odor. |
| | 4 to 6 | 48 | 21 | 27 | No staining, slight petroleum odor. |
| HA-5 | 0 to 2 | <1 | <1 | <1 | No staining, no petroleum odor. |
| | 2 to 4 | <1 | <1 | <1 | No staining, no petroleum odor. |
| | 4 to 6 | <1 | <1 | <1 | No staining, no petroleum odor. |
| HA-6* | 0 to 2 | <1 | <1 | <1 | No staining, no petroleum odor. |
| | 2 to 4 | <1 | <1 | <1 | No staining, no petroleum odor. |
| | 4 to 6 | <1 | <1 | <1 | No staining, no petroleum odor. |
| HA-7* | 0 to 2 | <1 | <1 | <1 | No staining, no petroleum odor. |
| | 2 to 4 | <1 | <1 | <1 | No staining, no petroleum odor. |
| | 4 to 6 | <1 | <1 | <1 | No staining, no petroleum odor. |

Notes: Water table present at approximately 4 feet below land surface.

ft bls = feet below land surface.
ppm = parts per million.
<1 = nondetectable limit for organic vapor analyzer.
* = organic vapor analyses completed on July 15, 1997.

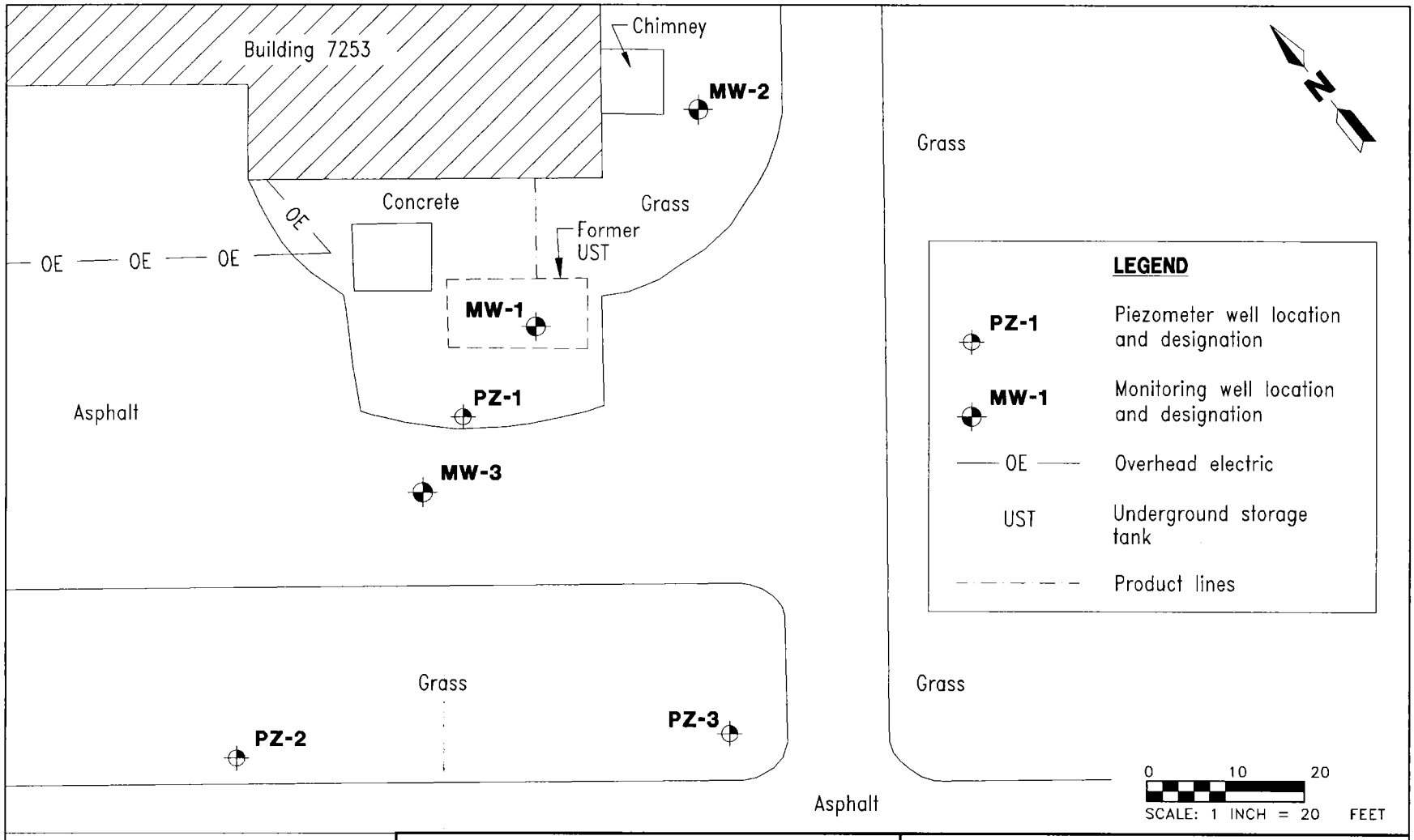



**FIGURE 4-1**
**MONITORING WELL LOCATION PLAN**

**CONTAMINATION ASSESSMENT REPORT, BUILDING 7253, MCCOY ANNEX**

**NAVAL TRAINING CENTER ORLANDO, FLORIDA**

H:\OLD\BLDG7253\8519FD06.DWG, DEL-PDP 07/22/97 14:40:24, AutoCAD R12

## Table 4-2
## Summary of Groundwater Analytical Results

Contamination Assessment Report
Building 7253, McCoy Annex
Naval Training Center
Orlando, Florida

| Parameter | Chapter 62-770, FAC Target Cleanup Levels | Monitoring Well/Sample Date | | | |
|---|---|---|---|---|---|
| | | TW-1 2/7/96 | MW-1 4/25/97 | MW-2 4/25/97 | MW-3 4/25/97 |
| Benzene | 1 | <1 | <1 | <1 | <1 |
| Toluene | NA | <1 | <1 | <1 | <1 |
| Ethylbenzene | NA | <1 | <1 | <1 | <1 |
| Xylenes | NA | <1 | <1 | <1 | <1 |
| Total VOAs | 50 | <1 | <1 | <1 | <1 |
| MTBE | 50 | NA | <5 | <5 | <5 |
| EDB | 0.02 | NA | <0.02 | <0.02 | <0.02 |
| Total lead | 50 | NA | 5 | <3 | 22 |
| TRPH | 5,000 | NA | <1 | <1 | <1 |
| Total Naphthalene | 100 | 20 | 8 | <5 | <5 |
| Acenaphthene | 2* | **10** | <5 | <5 | <5 |
| Fluorene | 2* | **6** | <5 | <5 | <5 |
| Phenanthrene | 2* | **8** | <5 | <5 | <5 |
| Anthracene | 2* | **3** | <5 | <5 | <5 |
| Fluoranthene | 2* | **3** | <5 | <5 | <5 |
| Pyrene | 2* | **2** | <5 | <5 | <5 |

Notes: All concentrations in micrograms per liter, unless otherwise noted.
Bold indicates that the parameters exceed Chapter 62-700, FAC Target Cleanup Levels.

FAC = Florida Administrative Code.
< = less than.
NA = not available.
Total VOAs = sum of the concentrations of benzene, toluene, ethylbenzene, and xylenes.
VOAs = volatile organic aromatics.
MTBE = methyl tert-butyl ether.
EDB = ethylene dibromide.
TRPH = total recoverable petroleum hydrocarbons.
* = Best achievable laboratory standard detection limit; therefore, the Chapter 62.770, FAC, Target Cleanup Level is 2.0 micrograms per liter on 2/7/96 and 5.0 micrograms per liter on 4/25/97.

# 5.0 SOURCE OF HYDROCARBONS

5.1 HYDROCARBON TYPE. The hydrocarbon type stored in the UST at Building 7253 is heating fuel. The laboratory analytical data and the type of product previously stored onsite support this assessment.

5.2 SOURCE OF HYDROCARBON PLUME. The suspected source of the small amounts of hydrocarbons in the groundwater is the former UST. Petroleum discharges could be attributed to overfill and/or overspills while filling the UST.

5.3 MECHANISM OF TRANSPORT. None of the drainage ditches or utility lines near the source of petroleum contamination appears to influence groundwater flow in the surficial aquifer of the study area. The lack of petroleum contamination in groundwater does not give insight into the possible mechanisms of transport.

# 6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of this investigation, ABB-ES recommends a No Further Action proposal for this site.

## 7.0 PROFESSIONAL REVIEW CERTIFICATION

This document, *Contamination Assessment Report, Building 7253, McCoy Annex, Naval Training Center, Orlando, Florida,* has been prepared under the direction of a professional geologist registered in the state of Florida. The work and professional opinions rendered in this report were conducted or developed in accordance with commonly accepted procedures consistent with applicable standards of practice. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report or referenced in public literature. Recommendations are based upon interpretations of the applicable regulatory requirements, guidelines, and relevant issues discussed with regulatory personnel during the site investigation. If conditions that differ from those described are determined to exist, the undersigned geologist should be notified to evaluate the effects of any additional information on this assessment or the recommendations made in this report. This report meets the criteria set forth in Chapter 492 of the Florida Statutes with regard to good professional practices as applied to Chapter 62-770, FAC. This CAR was developed for the Building 7253 site at the McCoy Annex, NTC, Orlando, in Orlando, Florida, and should not be construed to apply to any other site.

_____

Manuel Alonso
Professional Geologist
P.G. No. 0001256

_____

Date

## REFERENCES

ABB Environmental Services, Inc. 1996. *Contamination Assessment Report, McCoy Annex, Naval Training Center, Orlando, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina (February).

# APPENDIX A

# SITE PHOTOGRAPHS


Photograph 1: View of the former UST at Building 7253, following removal of UST facing east.

Photograph 2: View of the former UST area at Building 7253, following the removal of the UST facing north.

**Photograph 3:** View of former UST area at Building 7253, facing southwest.

**Photograph 4:** View of former UST area at Building 7253, facing northwest.

# APPENDIX B

# TANK CLOSURE ASSESSMENT REPORT

# TANK CLOSURE ASSESSMENT REPORT
# BUILDING 7253
# McCOY ANNEX

# NAVAL TRAINING CENTER
# ORLANDO, FLORIDA

# UNIT IDENTIFICATION CODE: N65928
# CONTRACT NO.: N62467-89-D-0317/107

# APRIL 1996

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA
29419-9010

# TANK CLOSURE ASSESSMENT REPORT
# BUILDING 7253
# McCOY ANNEX

# NAVAL TRAINING CENTER
# ORLANDO, FLORIDA

**Unit Identification Code: N65928**

**Contract No. N62467-89-D-0317/107**

**Prepared by:**

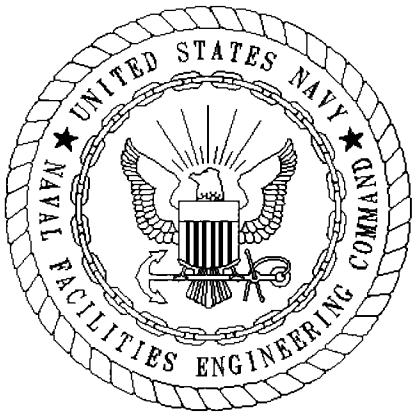
**ABB Environmental Services, Inc.**
**2590 Executive Center Circle, East**
**Tallahassee, Florida 32301**

**Prepared for:**

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

**Nick Ugolini, Code 1843, Engineer-in-Charge**

**April 1996**




CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/107 are complete and accurate and comply with all requirements of this contract.

DATE: April 15, 1996

NAME AND TITLE OF CERTIFYING OFFICIAL: John Kaiser
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Manuel Alonso, P.G.
Project Technical Lead

(DFAR 252.227-7036)

# TABLE OF CONTENTS

Tank Closure Assessment Report
Building 7253, McCoy Annex
Naval Training Center
Orlando, Florida

## LIST OF FIGURES

Tank Closure Assessment Report
Building 7253, McCoy Annex
Naval Training Center
Orlando, Florida



## LIST OF TABLES

## GLOSSARY

| | |
|---|---|
| ABB-ES | ABB Environmental Services, Inc. |
| bls | below land surface |
| FAC | Florida Administrative Code |
| OVA | organic vapor analysis |
| ppm | parts per million |
| $\mu g/\ell$ | micrograms per liter |
| UST | underground storage tank |

# TANK CLOSURE ASSESSMENT REPORT
# BUILDING 7253, McCOY ANNEX

## 1.0 Facility

Building 7253, McCoy Annex
Naval Training Center, Orlando
Orlando, Orange County, Florida

## 2.0 Operator

Naval Training Center, Orlando
1350 Grace Hopper Avenue
Suite 010E
Orlando, Florida 32813-8405

## 3.0 Site Location

See Figure 1.

## 4.0 Date of Closure

January 8, 1996

## 5.0 Tank Status

A 10,000-gallon underground storage tank (UST) was removed by Florida Petroleum Services, Inc. (State Certificate # PCC045046). The UST was removed from the south side of Building 7253 as depicted on Figure 1. Photographs of the excavation are provided in Attachment A. The UST was cleaned by Florida Petroleum Services, Inc., and transported to Aaron Scrap Metals for disposal. Attachment B contains the tank's decontamination and recycling certificates. The UST installation and removal form is included in Attachment C.

## 6.0 Tank Contents

The UST contained heating fuel used for heating on the premises (non-regulated per Chapter 62-762, Florida Administrative Code [FAC]).

## 7.0 Tank Condition

The condition of the tank at the time of removal was good.

## 8.0 Tank Area

The approximate size of the excavation is shown on Figure 2. The excavation was 19 feet wide by 36 feet long by 13 feet deep. Following removal of the tank, the excavation was filled to grade with clean fill. Groundwater was encountered at an approximate depth of 5.5 feet below land surface.

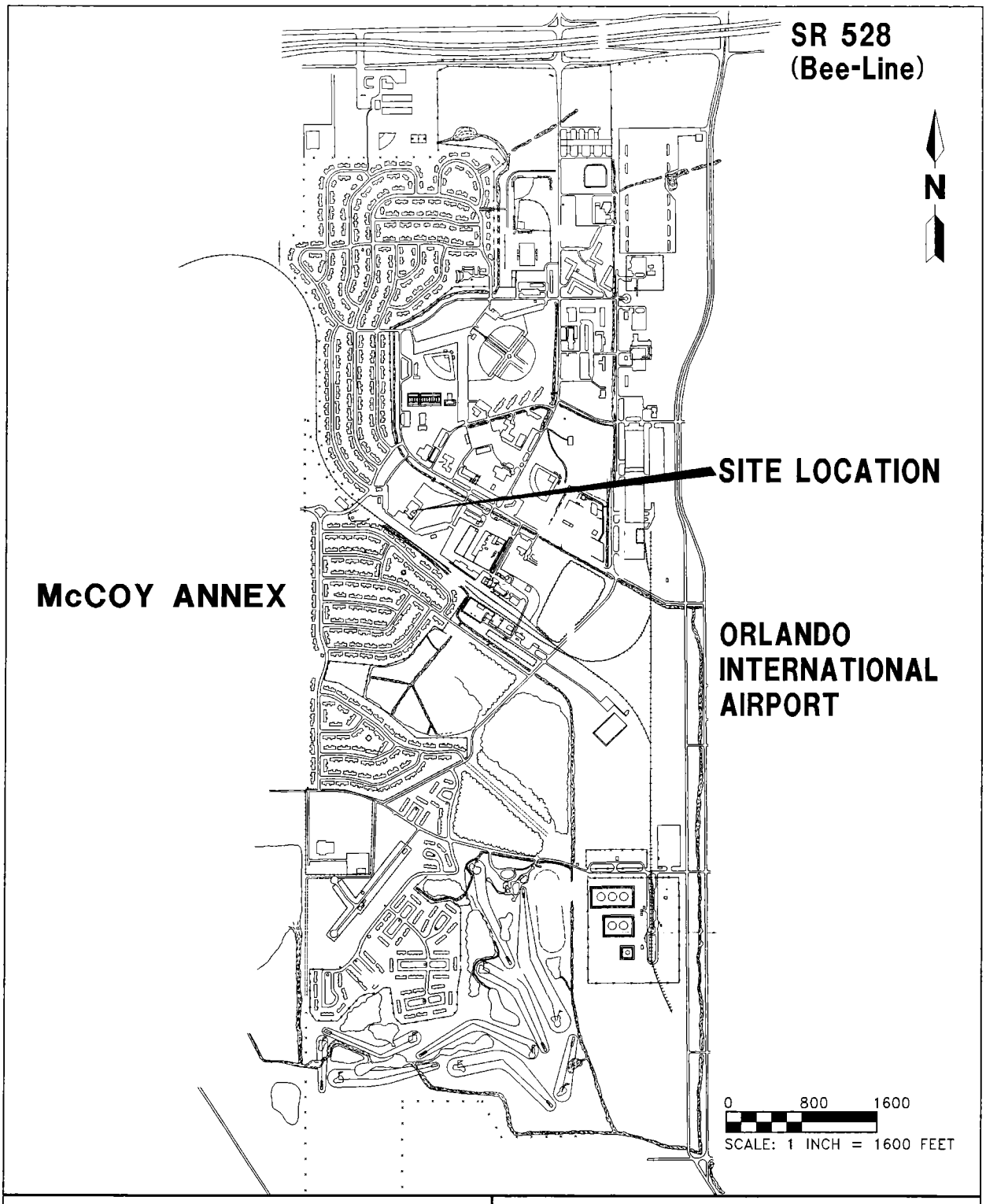



**FIGURE 1**
**SITE VICINITY MAP**

H:\OLD\BRAC\TCAR\VICMAP2\NP-NAB\04-17-96

**TANK CLOSURE ASSESSMENT REPORT, BASE REALIGNMENT AND CLOSURE, TANK MANAGEMENT PLAN, BUILDING 7253**
**NAVAL TRAINING CENTER**
**ORLANDO, FLORIDA**

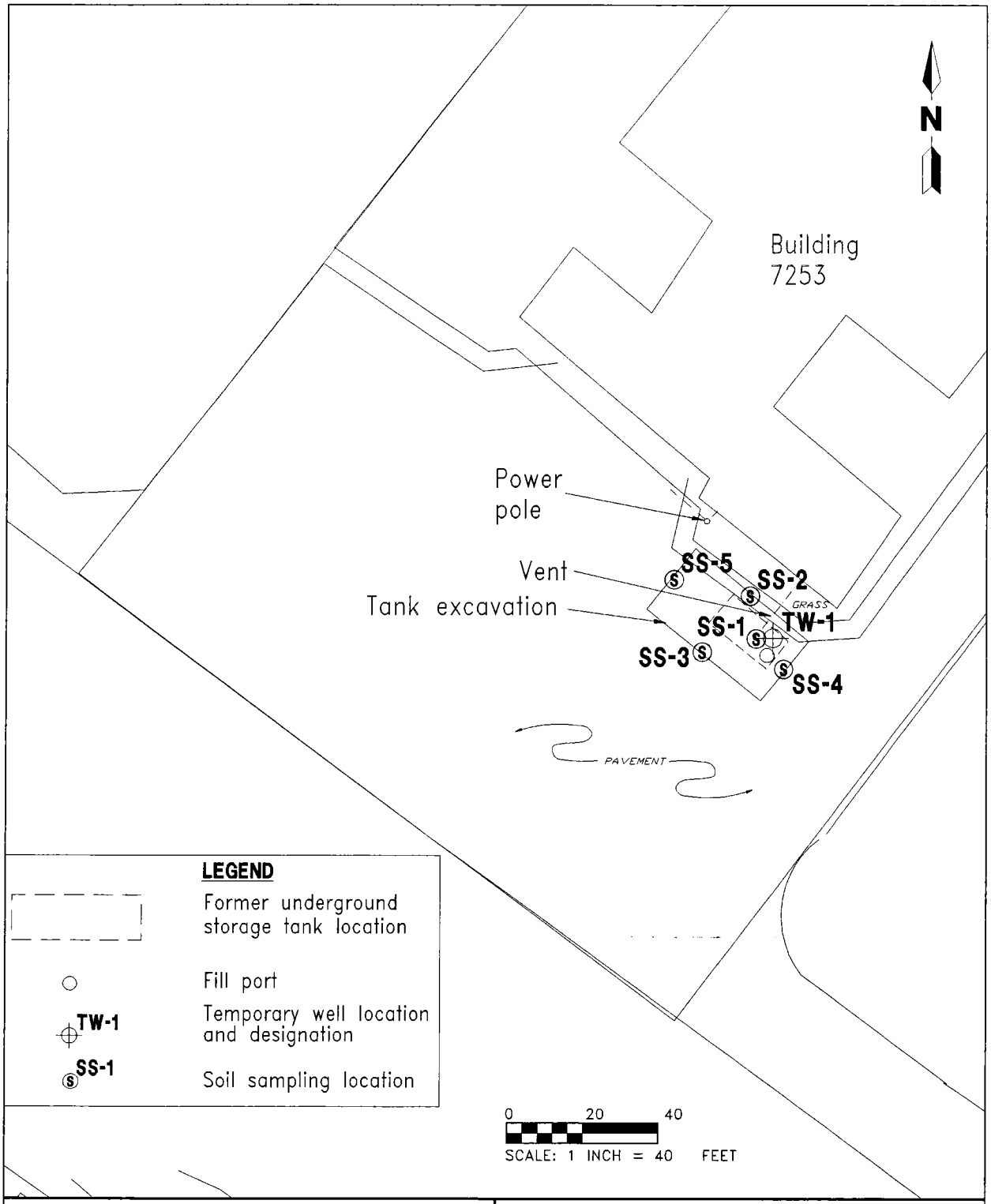



**FIGURE 2**
**SITE PLAN**

OLD\BRAC\TCAR\MCCOY\JMK\03-26-96

**TANK CLOSURE ASSESSMENT REPORT, BASE REALIGNMENT AND CLOSURE, TANK MANAGEMENT PLAN, BUILDING 7253 NAVAL TRAINING CENTER ORLANDO, FLORIDA**

## 9.0 Soil Screening

- Five soil samples were taken for organic vapor analysis (OVA) from the following locations: near the fill port (SS-1), the north (SS-2), the south (SS-3), the east (SS-4), and the west (SS-5) of the excavated area (Table 1).

- Soil screening was conducted following criteria for headspace method in Chapter 62-770, FAC, and ABB Environmental Services, Inc.'s (ABB-ES'), Comprehensive Quality Assurance Plan.

- The OVA data have been summarized in Table 1. Figure 2 shows the location where the soil samples were collected.

## 10.0 Groundwater Analysis

A temporary well (TW-1) was placed in the center of the excavation, and groundwater sample was collected for analysis using U.S. Environmental Protection Agency Methods 602 and 610. On February 7, 1996, groundwater samples were transported to Quality Analytical Laboratories, Inc., in Montgomery, Alabama. The laboratory's analytical results indicated that petroleum discharge had impacted the groundwater. Total naphthalene was reported at 20 micrograms per liter ($\mu g/\ell$). In addition, acenaphthene, fluorene, and phenanthrene were reported at 10 $\mu g/\ell$, 6 $\mu g/\ell$, and 8 $\mu g/\ell$, respectively. Also, anthracene and fluoranthene were reported at 3 $\mu g/\ell$, and pyrene was reported at 2 $\mu g/\ell$. The groundwater was encountered at approximately 3.77 feet below land surface (bls) during the sampling of TW-1. A copy of the laboratory analytical reports and chain-of-custody records can be found in Attachment D of this report. A discharge reporting form has been submitted; a copy is enclosed for review in Attachment E.

## 11.0 Conclusions

ABB-ES has screened the soil from the excavation and found signs of petroleum-impacted soil (OVA readings of 30 parts per million (ppm) and 40 ppm at 4 and 5 feet bls). Groundwater analytical results show that there is evidence of petroleum impact to groundwater with polynuclear aromatic hydrocarbons exceeding State cleanup levels, and total naphthalene concentration above standard laboratory detection limits.

## 12.0 Recommendations

Based on the results of this investigation, ABB-ES recommends that a contamination assessment be conducted to determine the petroleum impact.

## 13.0 Closure Assessment

Closure assessment performed by ABB-ES.

## 14.0 Project Manager

John Kaiser

## Table 1
## Summary of Organic Vapor Analyses, January 8, 1996

Tank Closure Assessment Report
Building 7253, McCoy Annex
Naval Training Center
Orlando, Florida

| Hand Auger Sample No. | Depth (feet) | Unfiltered (ppm) | Filtered (ppm) | Total Hydrocarbons (ppm) | Soil Profile and Comments |
|---|---|---|---|---|---|
| SS-1 | 2-3 | <1 | <1 | <1 | Well-sorted, fine-grained, medium brown sand, no odor. |
| SS-2 | 5-6 | 2 | <1 | 2 | Well-sorted, fine-grained, medium brown sand, no odor. |
| SS-3 | 5-6 | 30 | <1 | 30 | Well-sorted, fine-grained, dark black sand with organics, organic odor. |
| SS-4 | 4-5 | <1 | <1 | <1 | Well-sorted, fine-grained, medium brown sand with gravel, no odor. |
| SS-5 | 4-5 | 40 | <1 | 40 | Well-sorted, fine-grained, medium brown sand, no odor. |
| | | | | | Water table found at 5.5 feet bls. |

Notes: Readings for unfiltered samples are total hydrocarbon readings including methane; readings for filtered samples are methane only.

ppm = parts per million.
<1 = nondetectable limit for organic vapor analyzer.
bls = below land surface.

## 15.0 Project Number

08519

## 16.0 Report Date

April 15, 1996

# ATTACHMENT A

# PHOTOGRAPHS

**Photograph 1:** View of former UST area at Building 7253, facing northeast.

**Photograph 2:** View of former UST area at Building 7253 facing east-southeast.

# ATTACHMENT B

# TANK DECONTAMINATION AND RECYCLING CERTIFICATES

448213
448212

1-16-96
No. 298

# DECONTAMINATION CERTIFICATE

1. Seller hereby sells or otherwise conveys to Commercial Metals Company the following material in return for valuable consideration, the receipt and sufficiency of which is hereby acknowledged:

1 - 10,000 Gallon Tank 10'x 18' UST-7253 UST
Width Length Height
1 - 280 Gallon Tank 2'3"x 5'6"x3'4" 7184-0 UST
1 - 440 Gallon Tank 3'5"x 4' 7201 AST
Hauled from McCoy

2. Notwithstanding any other warranty or limitation of warranty herein or otherwise, Seller warrants and represents to Commercial Metals Company that the materials delivered hereunder do not contain any "hazardous substance" (which shall be defined as those substances included in Sec. 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act, 42, U.S.C., Sec. 9601(14), and those substances that are toxic, ignitable, corrosive, and/or reactive, as those terms are defined at 40 CFR 261, Subpart C), except those "hazardous substances" which are integral constituents of the metallic fraction of the scrap metal or which are contained in the electrolytic fluid in a spent lead-acid battery. Seller will indemnify, defend, and hold Commercial Metals Company harmless from any and all claims, demands and liabilities, including reasonable attorney's fees, resulting in whole or in part from a breach of the foregoing warranty. "Seller" shall be defined herein as any person, corporation, partnership or other entity that sells, transfers, gives, or otherwise conveys materials to Commercial Metals Company.

SELLER:
Fla. Petroleum Serv. Inc.
2078 S. 441 Apopka Fla.
Name Tom's Trucking
Title _____

COMMERCIAL METALS COMPANY
_____
_____
Name Susan Brown
Title Scale person

No. 448212

DATE 1-16 19 96

**Aaron Scrap Metals**
A Division of
**Commercial Metals Company**

P.O. Box 607066
Orlando, FL 32860-7066
Phone: 407-293-6584
FAX: 407-295-4908

3000 Gamson Road
Orange County Industrial Park
Apopka, FL 32703

2

CUSTOMER Jim Petroleum

ADDRESS

MATERIAL Dirt Trucking

| VERIFIED BY | REFERENCE | DRIVER ON | DRIVER OFF |
|---|---|---|---|
| DC | 448213 | ✓ | |
| WEIGHER | CHECK NO. | PAID BY CHECK | PAID BY CASH |
| | 011 | | |
| CASHIER | REMARKS | | |
| | #298 | | |

CUSTOMER

LOOP # 1:07PM 1-16-96 26300 lb Gross

LOOP # 1:07PM 1-16-96 ~~18060 lb~~ Tare

3938 Net @ Per

| SIGNATURE | VEHICLE LIC.# | STATE |
|---|---|---|
| Jim Petroleum | UQB2413 | |

$

Vendor warrants full title to or authority to sell listed materials; represents that listed materials are not, and are free from all, hazardous wastes (as defined in Federal or state regulations); and acknowledges receipt of stated funds.

---

No. 448213

DATE 1-16 19 96

**Aaron Scrap Metals**
A Division of
**Commercial Metals Company**

P.O. Box 607066
Orlando, FL 32860-7066
Phone: 407-293-6584
FAX: 407-295-4908

3000 Gamson Road
Orange County Industrial Park
Apopka, FL 32703

CUSTOMER Jim Petroleum

ADDRESS

MATERIAL Dirt Trucking

| VERIFIED BY | REFERENCE | DRIVER ON | DRIVER OFF |
|---|---|---|---|
| DC | 448212 | | |
| WEIGHER | CHECK NO. | PAID BY CHECK | PAID BY CASH |
| | 011330 | ✓ | |
| CASHIER | REMARKS | | |
| | #298 | | |

CUSTOMER

LOOP # 12:54PM 1-16-96 31240 lb Gross

LOOP # 12:54PM 1-16-96 ~~18000 lb~~ Tare

49240 Net @ 125 Per ton

| SIGNATURE | VEHICLE LIC.# | STATE |
|---|---|---|
| Jim Petroleum | UQB2415 | |

$ 193.25

Vendor warrants full title to or authority to sell listed materials; represents that listed materials are not, and are free from all, hazardous wastes (as defined in Federal or state regulations); and acknowledges receipt of stated funds.

# ATTACHMENT C

# UST INSTALLATION AND REMOVAL FORM

| | |
|---|---|
| DER Form # | 17-761.900(5) |
| Form Title | Underground Storage Tank Installation & Removal Form for Certified Contractors |
| Effective Date | 'December 10, 1990 |
| DER Application # | (Filled in by DER) |

*Florida Department of Enviromental Regulation*

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

# Underground Storage Tank Installation and Removal Form For Certified Contractors

Pollutant Storage System Specialty Contractors as defined in Section 489.113, Florida Statutes(Certified contractors as defined in Section 17-761.200, Florida Adiministrative Code) shall use this form to certify that the installation, replacement or removal of the storage tank system(s) located at the address listed below was performed in accordance with Department Reference Standards.

## General Facility Information

1. DER Facility Identification No.: _____
2. Facility Name: **NAVAL TRAINING CENTER ( CODE 010E )** Telephone : **407-646-4663**
3. Street Address (physical location): **NAVAL TRAINING CENTER ORLANDO , FLA**
   **SITE # 7253 ( 1 ea.10,000 Gal u/g ) Site #7184-d (1 ea. 280 gal A/g ) Site #7201 (1ea 440gal. a/g)**
4. Owner Name: Commanding Officer, Naval Training Center(Code 010E) Telephone : **407-646-4663**
5. Owner Address: **1350 Grace Hopper Ave.**
6. Number of Tanksa: Installed at this time _____ b: Removed at this time **three**
7. Tank(s) Manufactured by: **UNKNOWN**
8. Date Work Initiated: **1/1/96** 9. Dated Work Completed: **2-30-96**

## Underground Pollutant Tank Installation Checklist

Please certify the completion of the following installation requirement by placing an (x) in the appropriate box.

1. The Tanks and piping are corrosion resistant and approved for use by State and Federal Laws ☐
2. Excavation,backfill and compaction completed in accordance with NFPA(National Fire Protection Association)30(87),API (American Petroleum Institute)1615,PEI(Petroleum Equipment Institute)RP100-87 and the manufacturers' specifications. ☐
3. Tanks and piping pretested and installed in accordance with NFPA 30(87), API 1615, PEI/RP100(87) and the Manufacturers' specifications. ☐
4. Steel tanks and piping are cathodically protected in accordance with NFPA 30(87), API 1632, UL (Underwriters Laboratory) 1746, STI (steel Tank Institute) R892-89 and the manufacturer's specifications. ☐
5. Tanks and piping tested for tightness after installation in accordance with NFPA 30(87) and PEI/RP100-87. ☐
6. Monitoring well(s) or other leak detection devices installed and tested in accordance with Section 17-761.640, Florida Administrative Code (F.A.C.) ☐
7. Spill and overfill protection devices installed in accordance with Section 17-761.500, F.A.C. ☐
8. Secondary containment installed for tanks and piping as applicable in accordance with Section 17-761.500, F.A.C. ☐

Please Note: The numbers following the abbreviations (e.g. API 1615) are publication or specification numbers issued by these instututions.

## Underground Pollutant Tank Removal Checklist

1. Closure assessment performed in accordance with Section 17-761.800, F.A.C. ☐
2. Underground tank removed and disposed of as specified in API 1604 in accordance with Section 17-761.800, F.A.C. ☒

| | |
|---|---|
| DER Form # | 17-761.900(5) |
| Form Title | Underground Storage Tank Installation & Removal Form for Certified Contractors |
| Effective Date | 'December 10, 1990 |
| DER Application # | (Filled in by DER) |

# Certification

I hereby certify and attest that I am familiar with the facility that is registered with the Florida Department of of Environmental Regulation; that to the best of my knowledge and belief, the tank installation, replacement or removal at this facility was conducted in accordance with Chapter 489 and Section 376.303, Florida Statutes and Chapter 17-761, Florida Administrative Code and its adopted reference sources from publications and standards of the National Fire Protection Association (NFPA), the American Petroleum Institute (API), the National Association of Corrosion Engineers (NACE), American society of Testing and Materials (ASTM); Petroleum Equipment Institute (PEI); Steel Tank Institute (STI); Underwriters Laboratory (UL); and the tank and integral piping manufactrers' specifications; and that the operations on the checklist were performed accordingly.

**Florida Petroleum Services, Inc.**
**2078 S Orange Blossom Tr.**
**Apopka, Fla. 32703**

(Type or Print)
Certified Pollutant Tank Contractor Name

**PC - C045046**
PSSSC Number
Pollutant Storage System Specialty Contractor License Number (PSSSC)

Certified Tank Contractor Signature

2-1-96
Date

John Thompson
(Type or Print)
Field Supervisor Name

2-1-96
Date

Field Supervisor Signature

2-1-96
Date

The owner or operator of the facilty must register the tanks with the Department at least 10 days before the installation. The installer must submit this form no more than 30 days after the completion of installation to the department of Environmental Regulation at the address printed at the top of page one.

# ATTACHMENT D

# GROUNDWATER LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY RECORDS

METHOD: 602(MOD)
PURGEABLE AROMATICS

| | | | |
|---|---|---|---|
| Client: | QAL, Inc./LMG | Lab Sample ID: | MA199001 |
| Project: | NTC Orlando | Date Sampled: | 02/06/96 |
| Client Sample ID: | 061GT101/7253 TW-1 * | Date Received: | 02/09/96 |
| Sample Matrix: | Water | Date Extracted: | N/A |
| Dilution Factor: | 1.0 | Date Analyzed: | 02/14/96 |

| Compound | Reporting Limit | Sample Result | Units |
|---|---|---|---|
| 1,2-Dichlorobenzene | 1.0 | U | ug/L |
| 1,3-Dichlorobenzene | 1.0 | U | ug/L |
| 1,4-Dichlorobenzene | 1.0 | U | ug/L |
| Benzene | 1.0 | U | ug/L |
| Chlorobenzene | 1.0 | U | ug/L |
| Ethylbenzene | 1.0 | U | ug/L |
| Toluene | 1.0 | U | ug/L |
| Xylenes (Total) | 1.0 | U | ug/L |
| tert-Butyl methyl ether | 1.0 | U | ug/L |
| Fluorobenzene-SS | | 95 | % rec. |

U = Not detected above the reporting limit.
SS = Surrogate Standard reported as percent recovery.

Comments: * Amended to show extended client sample ID.

Approved by: Brian Folks

FORM I

kdl.038

## ORGANICS ANALYSIS DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| Laboratory Name: | CH2M HILL/QAL | Concentration: | LOW | Date Extracted: | 02/08/96 |
| Lab Sample ID: | MA199001 | Sample Matrix: | WATER | Date Analyzed: | 02/15/96 |
| Client Sample ID: | 061GT101 | Volume Extracted: | 850mL | Dilution Factor: | 1.0 |
| | 7253 TW-1 | | | | |

### PNA COMPOUNDS

| CAS Number | | ug/L | |
|---|---|---|---|
| 91-20-3 | Naphthalene | 14 | |
| 91-57-6 | 2-Methylnaphthalene | 4 | |
| 90-12-0 | 1-Methylnaphthalene | 2 | |
| 208-96-8 | Acenaphthylene | 2 | U |
| 83-32-9 | Acenaphthene | 10 | |
| 86-73-7 | Fluorene | 6 | |
| 85-01-8 | Phenanthrene | 8 | |
| 120-12-7 | Anthracene | 3 | |
| 206-44-0 | Fluoranthene | 3 | |
| 129-00-0 | Pyrene | 2 | |
| 56-55-3 | Benzo(a)anthracene | 2 | U |
| 218-01-9 | Chrysene | 2 | U |
| 205-99-2 | Benzo(b)fluoranthene | 2 | U |
| 207-08-9 | Benzo(k)fluoranthene | 2 | U |
| 50-32-8 | Benzo(a)pyrene | 2 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 2 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 2 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 2 | U |
| | Terphenyl-d14 - SS | 78 | % |

U - Analyzed for but not detected.
B - Detected in QC blank.
J - Detected, concentration estimated.
SS - Surrogate Standard reported as percent recovery.

Comments:

Form I

QUALITY ANALYTICAL LABORATORIES, INC.

# CHAIN OF CUSTODY RECORD AND AGREEMENT TO PERFORM SERVICES

**Project #:** 8519-54

**Purchase Order #:**

**Project Name:** NTC ORLANDO - TMP

**Company Name:** ABB. ENVIRONMENTAL SERVICES

**Project Manager or Contact & Phone #:** JOHN KAISER 407-895-8845

**Report Copy to:** MANUEL ALONSO

**Requested Completion Date:** 2-21-96

**Site ID:**

**Sample Disposal:** Dispose [X] Return [ ]

☐ LGN
One Innovation Drive, Suite C
Alachua, FL 32615-9586
(904) 462-3050 FAX (904) 462-1670

☐ LRD
5090 Caterpillar Road
Redding, CA 96003-1412
(916) 244-5227 FAX (916) 244-4109

☒ LMG
2567 Fairlane Drive
Montgomery, AL 36116-1622
(205) 271-2440 FAX (205) 271-3428

☐ LKW
Canviro Analytical Laboratories, Inc.
50 Bathurst, Unit 12
Waterloo, Ontario, Canada N2V 2C5
(519) 747-2575 FAX (519) 747-3806

**THIS AREA FOR LAB USE ONLY**

Lab # 11A199 | Page 1 | of 1

Client Service | Price Source: A P Q S

Acct Code: A ABB | Test Group

Project Code: A ABB ORLANDO UST 527 | Ack. Gen.

LIMS Ver | Login | Mult.

COC Review

| Sampling Date | Sampling Time | Type COMP | Type GRAB | Matrix WATER | Matrix SOIL | CLIENT SAMPLE ID (9 CHARACTERS) | QC ID (3 CHAR) | # OF CONTAINERS | EPA 610 SGT | EPA 602+MTBE ARET | GOA EDGS | SAMPLE REMARKS | LAB 1 ID | LAB 2 ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-6-96 | 1107 | | X | X | | 061GT101 | | 5 | 2 | 3 | | 7253 TW-1 | 1 | |
| | 1131 | | X | X | | 059GT101 | | 5 | 2 | 3 | | 7244 TW-1 | 2 | |
| | 1149 | | X | X | | 058GT101 | | 5 | 2 | 3 | | 7242 TW-1 | 3 | |
| | 1224 | | X | X | | 056GT101 | | 5 | 2 | 3 | | 7239 TW-1 | 4 | |
| | 1251 | | X | X | | 054GT101 | | 5 | 2 | 3 | | 7201 TW-1 | 5 | |
| | 1315 | | X | X | | 055GT101 | | 5 | 2 | 3 | | 7202 TW-1 | 6 | |
| | 1347 | | X | X | | 060GT101 | | 5 | 2 | 3 | | 7247 TW-1 | 7 | |
| 2-7-96 | 1232 | | X | X | | 046GT101 | | 5 | 2 | 3 | | 2092 TW-1 | 8 | |
| | 1312 | | X | X | | 045GT101 | | 5 | 2 | 3 | | 400 TW-1 | 9 | |
| | 1340 | | X | X | | 045GTZ01 | | 5 | 2 | 3 | | 1100 TW-2 | 10 | |
| | | | X | X | | 038GT101 | | 5 | 2 | 3 | | 2450 TW-1 | 11 | |

Add to SA1

ANALYSIS ARET MTBE

QC LEVEL 1 DATE DUE 2/20

REPORT TO LISA EVANS/LMG

SHIP # FX LAB LRD INT dj

279 0622 405

**Sampled By & Title** (Please sign and print name): Scott Donecick (Scott Donecick - FOL) — Date/Time: 2-7-96 / 1700

**Received By** (Please sign and print name): Paul Hernandez — Date/Time: 2/8/96 0915

**Received By** (Please sign and print name) — Date/Time

**Received By** (Please sign and print name) — Date/Time

**Relinquished By** (Please sign and print name): Scott Donecick — Date/Time: 1700 2-7-96

**Relinquished By** (Please sign and print name) — Date/Time

**Relinquished By** (Please sign and print name) — Date/Time

**Shipped Via:** UPS Fed-Ex Other — **Shipping #:** 875741256 5

HAZWRAP/NESSA: Y N

EDATA: Y N

QC LEVEL 1 2 3 OTHER

pH ✓ | Ice ✓

Custody Seal ✓ | Temp 3°C

**Batch Remarks:** COMMENT: 602 + MTBE

Instructions and Agreement/Pricing on Back

0000037

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

DER Form # 17-770.900(1)
Form Title Petroleum or Petroleum Product Contamination Report Form
Effective Date February 20, 1990
DER Application No. _____ (Filled in by DER)

# Petroleum or Petroleum Product Contamination Report Form

ER Facility ID: _____

acility Name: NAVAL TRAINING CENTER

acility Address: COMMANDER, NAVAL TRAINING CENTER (Code 010E)
1350 Grace Hopper Ave., Orlando FL 32813-8405

ounty: Orange

ther Names for this Site: #7253, 10000 gal heating oil UST, located at the NTC McCoy Annex

ontact Person's Name: Mark S. Zill

ontact Person's Phone No.: 407-646-4663

ontact Person's Address: COMMANDER, NAVAL TRAINING CENTER (Code 010E)
350 Grace Hopper Ave., Orlando, FL 32813-8405

ate of Discovery: 11 Mar 96

pe of Product Discharged: Heating oil

timated Amount of Product Lost: Unknown

w did Discharge occur? (Tank leak, Pipe leak, Truck Accident, Explosion, etc.) Unknown

at has been done to prevent a further Discharge? Tank was removed 8 Jan 96.

the best of my knowledge, all information on this form is true, accurate, and complete.

Carl J. Ballinger
ignature of Owner, Authorized Representative, Operator

Catherine A. Ballinger
Print Name of Owner or Operator

Date 13 Mar 96

Submit this form to the appropriate district office at the address below

KEEP A COPY OF THIS FORM FOR YOUR RECORDS.

Northwest District 160 Governmental Center | Northeast District 3426 Bills Rd | Central District 3319 Maguire Blvd, Suite 232 | Southwest District 4520 Oak Fair Blvd | South District 2269 Bay St | Southeast District 1900 S Congress Ave, Suite A

# APPENDIX C

# WELL CONSTRUCTION DETAILS

# WELL COMPLETION LOG

Water Mgmt. Dist.: South Florida
Permit Number:

Work Order: 6178
Type of Well: Monitoring
Well Number: 7253 MW-1
Method Used: 4.25 HSA
Borehole Dia. 8"

**Site Information:**
Name: NTC
Address: McCoy Annex
C,S,Z: Orlando, Florida
S/T/R:

**Client / Consultant Information**
Consultant: ABB Environmental Services, Inc.
Field Rep: Scott Donelick

| Well Diameter | Well Type | Well Depth | Screen Length | Casing Length | Bags Grout | Sand Bags/Weight | Filter Type | Well Seal |
|---|---|---|---|---|---|---|---|---|
| 2" | PVC | 13 | 10 | 3 | 0.5 | 6X50lb. | 20/30 | FIne Sand |
| 40 ← | Schedule | Slot Size: → | .010 | | 1 | ← Feet → | 11 | 1 |


**Surface Completion**
8" Flush

**Surface Casing**

| | |
|---|---|
| Diameter: | |
| Type: | |
| Schedule: | |
| Depth: | |

**Intermediate Casing**

| | |
|---|---|
| Diameter: | |
| Type: | |
| Schedule: | |
| Depth: | |

**Well Casing**

| | |
|---|---|
| Diameter: | 2" |
| Type: | PVC |
| Schedule: | 40 |
| Length | 3 Ft. |

**Grout Seal**

| | |
|---|---|
| Type: | II Portland |
| Feet: | 1 |
| Amount: | 0.5 Bags |

**Well Seal**

| | |
|---|---|
| Type: | FIne Sand |
| Feet: | 1 |

**Well Screen**

| | |
|---|---|
| Diameter: | 2" |
| Type: | PVC |
| Slot: | .010 |
| Length: | 10 Ft. |

**Fliter Pack**

| | |
|---|---|
| Type: | 20/30 |
| Feet: | 11 |
| No. of Bags: | 6X50lb. |

**Sump**

| | |
|---|---|
| Length: | 0' |

**Well Development**

| | | | |
|---|---|---|---|
| Water Level: | 5' | | |
| Method: | Centrifugal | | |
| Start: → | Cloudy | Finish: → | Clear |
| Time: | 30 min. | | |
| GPM: | 2 | | |

**Contractor Information**

| | |
|---|---|
| Contractor #: | 6178 |
| Completion: | 04/09/97 |
| Driller: | Charles Bucher |
| Lead Hand: | Odis Johnson |
| 3rd Man: | Robert Detweiler |
| Drill Rig: | Diedrich D-120A |


**Company:** Groundwater Protection, Inc.
**Address:** 4315 S.W. 34th Street
**C,S,Z:** Orlando, Florida 32811
**Phone/FAX:** (407) 426-7885 / (407) 426-7586

# WELL COMPLETION LOG

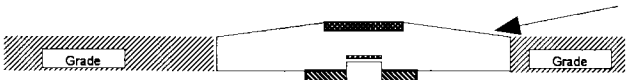
Water Mgmt. Dist.: South Florida
Permit Number:

Work Order: 6178
Type of Well: Monitoring
Well Number: 7253 MW-2
Method Used: 4.25 HSA
Borehole Dia. 8"

**Site Information:**
Name: NTC
Address: McCoy Annex
C,S,Z: Orlando, Florida
S/T/R:

**Client / Consultant Information**
Consultant: ABB Environmental Services, Inc.
Field Rep: Scott Donelick

| Well Diameter | Well Type | Well Depth | Screen Length | Casing Length | Bags Grout | Sand Bags/Weight | Filter Type | Well Seal |
|---|---|---|---|---|---|---|---|---|
| 2" | PVC | 13 | 10 | 3 | 0.5 | 6X50lb. | 20/30 | Fine Sand |
| 40 ← | Schedule | Slot Size: → | .010 | | 1 | ← Feet → | 11 | 1 |




**Surface Completion**
8" Flush

**Surface Casing**

| | |
|---|---|
| Diameter: | |
| Type: | |
| Schedule: | |
| Depth: | |

**Intermediate Casing**

| | |
|---|---|
| Diameter: | |
| Type: | |
| Schedule: | |
| Depth: | |

**Well Casing**

| | |
|---|---|
| Diameter: | 2" |
| Type: | PVC |
| Schedule: | 40 |
| Length | 3 Ft. |

**Grout Seal**

| | |
|---|---|
| Type: | II Portland |
| Feet: | 1 |
| Amount: | 0.5 Bags |

**Well Seal**

| | |
|---|---|
| Type: | Fine Sand |
| Feet: | 1 |

**Well Screen**

| | |
|---|---|
| Diameter: | 2" |
| Type: | PVC |
| Slot: | .010 |
| Length: | 10 Ft. |

**Fliter Pack**

| | |
|---|---|
| Type: | 20/30 |
| Feet: | 11 |
| No. of Bags: | 6X50lb. |

**Sump**

| | |
|---|---|
| Length: | 0' |

**Well Development**

| | | | |
|---|---|---|---|
| Water Level: | 5' | | |
| Method: | Centrifugal | | |
| Start: ▶ | Cloudy | Finish: ▶ | Clear |
| Time: | 30 min. | | |
| GPM: | 2 | | |

**Contractor Information**

| | |
|---|---|
| Contractor #: | 6178 |
| Completion: | 04/09/97 |
| Driller: | Charles Bucher |
| Lead Hand: | Odis Johnson |
| 3rd Man: | Robert Detweiler |
| Drill Rig: | Diedrich D-120A |


**Company:** Groundwater Protection, Inc.
**Address:** 4315 S.W. 34th Street
**C,S,Z:** Orlando, Florida 32811
**Phone/FAX:** (407) 426-7885 / (407) 426-7586

# WELL COMPLETION LOG

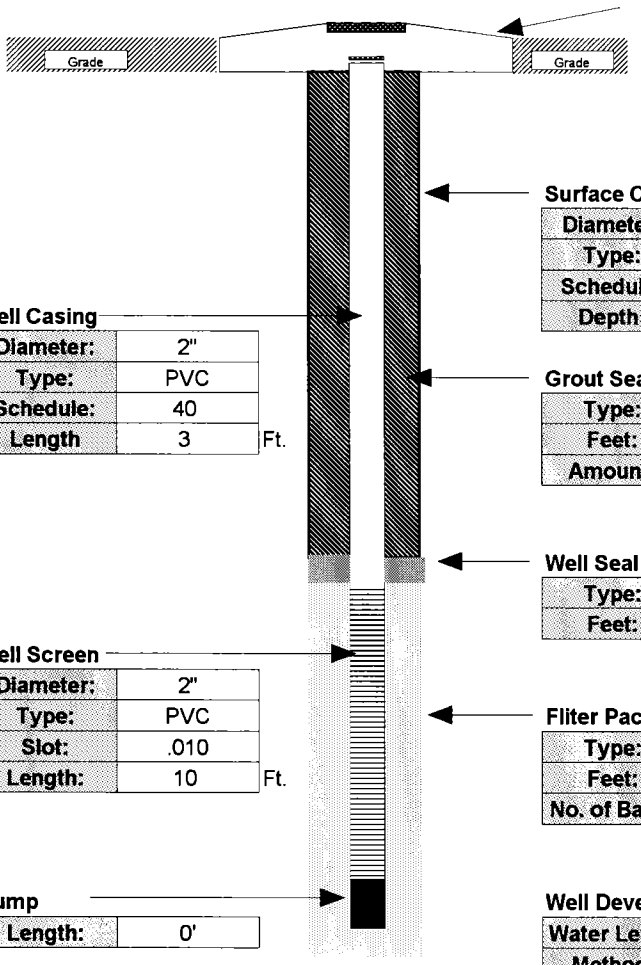
Water Mgmt. Dist.: South Florida
Permit Number: -

Work Order: 6178
Type of Well: Monitoring
Well Number: 7253 MW-3
Method Used: 4.25 HSA
Borehole Dia. 8"

**Site Information:**
Name: NTC
Address: McCoy Annex
C,S,Z: Orlando, Florida
S/T/R: -

**Client / Consultant Information**
Consultant: ABB Environmental Services, Inc.
Field Rep: Scott Donelick

| Well Diameter | Well Type | Well Depth | Screen Length | Casing Length | Bags Grout | Sand Bags/Weight | Filter Type | Well Seal |
|---|---|---|---|---|---|---|---|---|
| 2" | PVC | 13 | 10 | 3 | 0.5 | 6X50lb. | 20/30 | FIne Sand |
| 40 ← | Schedule | Slot Size: → | .010 | | 1 | ← Feet → | 11 | 1 |




**Surface Completion**
8" Flush

**Surface Casing**

| | |
|---|---|
| Diameter: | |
| Type: | |
| Schedule: | |
| Depth: | |

**Intermediate Casing**

| | |
|---|---|
| Diameter: | |
| Type: | |
| Schedule: | |
| Depth: | |

**Well Casing**

| | |
|---|---|
| Diameter: | 2" |
| Type: | PVC |
| Schedule: | 40 |
| Length | 3 Ft. |

**Grout Seal**

| | |
|---|---|
| Type: | II Portland |
| Feet: | 1 |
| Amount: | 0.5 Bags |

**Well Seal**

| | |
|---|---|
| Type: | FIne Sand |
| Feet: | 1 |

**Well Screen**

| | |
|---|---|
| Diameter: | 2" |
| Type: | PVC |
| Slot: | .010 |
| Length: | 10 Ft. |

**Fliter Pack**

| | |
|---|---|
| Type: | 20/30 |
| Feet: | 11 |
| No. of Bags: | 6X50lb. |

**Sump**

| | |
|---|---|
| Length: | 0' |

**Well Development**

| | | | |
|---|---|---|---|
| Water Level: | 5' | | |
| Method: | Centrifugal | | |
| Start: → | Cloudy | Finish: → | Clear |
| Time: | 30 min. | | |
| GPM: | 2 | | |

**Contractor Information**

| | |
|---|---|
| Contractor #: | 6178 |
| Completion: | 04/09/97 |
| Driller: | Charles Bucher |
| Lead Hand: | Odis Johnson |
| 3rd Man: | Robert Detweiler |
| Drill Rig: | Diedrich D-120A |


**Company:** Groundwater Protection, Inc.
**Address:** 4315 S.W. 34th Street
**C,S,Z:** Orlando, Florida 32811
**Phone/FAX:** (407) 426-7885 / (407) 426-7586

# APPENDIX D

# LITHOLOGIC LOGS

| | | |
|---|---|---|
| TITLE: NTC. ORLANDO, BUILDING 7253 | LOG of WELL: MW-1 | BORING NO. NA |
| CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM | | PROJECT NO: 8545.54 |
| CONTRACTOR: GROUNDWATER PROTECTION, INC. | DATE STARTED: 4/9/97 | COMPLTD: 4/9/97 |
| METHOD: 4.25-INCH ID HSA | CASE SIZE: 2-INCH | SCREEN INT.: 3-13 FEET |
| PROTECTION LEVEL: D | | |
| TOC ELEV.: NM FEET. | MONITOR INST.: OVA | TOT DPTH: 13 FEET. |
| DPTH TO ▽ 4 FEET. | | |
| LOGGED BY: S. DONELICK | WELL DEVELOPMENT DATE: 4/9/97 | SITE: BUILDING 7253 |

| DEPTH FT. | LABORATORY SAMPLE ID. | SAMPLE | RECOVERY | HEADSPACE (ppm) | SOIL/ROCK DESCRIPTION AND COMMENTS | LITHOLOGIC SYMBOL | SOIL CLASS | BLOWS/6-IN | WELL DATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | <1 | 0'-4' SAND, fine grained, tan to white, no odor, dry (backfill for UST) | | SP | | |
| | | | | <1 | 4'-8' SAND, fine grained w/gravel, dark brown, no odor, saturated | | | | |
| | | | | <1 | 8'-13' As above, no gravel | | | | |

| | | |
|---|---|---|
| TITLE: NTC. ORLANDO, BUILDING 7253 | LOG of WELL: MW-2 | BORING NO. NA |
| CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM | | PROJECT NO: 8545.54 |
| CONTRACTOR: GROUNOWATER PROTECTION, INC. | DATE STARTED: 4/9/97 | COMPLTD: 4/9/97 |
| METHOD: 4.25-INCH ID HSA | CASE SIZE: 2-INCH | SCREEN INT.: 3-13 FEET |
| TOC ELEV.: NM FEET. | MONITOR INST.: OVA | TOT DPTH: 13 FEET. |
| LOGGED BY: S. DONELICK | WELL DEVELOPMENT DATE: 4/9/97 | SITE: BUILDING 7253 |

| DEPTH FT. | LABORATORY SAMPLE ID. | SAMPLE | RECOVERY | HEADSPACE (ppm) | SOIL/ROCK DESCRIPTION AND COMMENTS | LITHOLOGIC SYMBOL | SOIL CLASS | BLOWS/6-IN | WELL DATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 21 | 0'-4' SAND, fine grained, brown, no odor, dry | | SP | | |
| | | | | 21 | 4'-13' As above, saturated | | | | |
| 5 | | | | | | | | | |
| 10 | | | | | | | | | |
| 15 | | | | | | | | | |
| 20 | | | | | | | | | |



ABB ENVIRONMENTAL SERVICES, INC.

| | | | |
|---|---|---|---|
| TITLE: NTC. ORLANDO, BUILDING 7253 | LOG of WELL: MW-3 | | BORING NO. NA |
| CLIENT: U.S. NAVY, SOUTHNAVFACENGCOM | | | PROJECT NO: 8545.54 |
| CONTRACTOR: GROUNDWATER PROTECTION, INC. | | DATE STARTED: 4/9/97 | COMPLTD: 4/9/97 |
| METHOD: 4.25-INCH ID HSA | CASE SIZE: 2-INCH | SCREEN INT.: 3-13 FEET | PROTECTION LEVEL: D |
| TOC ELEV.: NM FEET. | MONITOR INST.: OVA | TOT DPTH: 13 FEET. | DPTH TO ▽ 4 FEET. |
| LOGGED BY: S. DONELICK | WELL DEVELOPMENT DATE: 4/9/97 | | SITE: BUILDING 7253 |

| DEPTH FT | LABORATORY SAMPLE ID. | SAMPLE | RECOVERY | HEADSPACE (ppm) | SOIL/ROCK DESCRIPTION AND COMMENTS | LITHOLOGIC SYMBOL | SOIL CLASS | BLOWS/6-IN | WELL DATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 21 | 0'-1' Asphalt and rock fill | | SP | | |
| | | | | 21 | 1'-2' SAND, fine grained, dark brown, no odor, dry | | | | |
| | | | | 21 | 2'-4' SAND, fine grained, brown to gray, no odor, moist | | | | |
| | | | | 21 | 4'-13' SAND, fine grained, brown, no odor, saturated | | | | |
| 5 | | | | | | | | | |
| 10 | | | | | | | | | |
| 15 | | | | | | | | | |
| 20 | | | | | | | | | |

# APPENDIX E

# GROUNDWATER LABORATORY ANALYTICAL REPORTS

07/18/97 BUILDING 7253 14:34:38
MCCOY ANNEX, NTC ORLANDO, FLORIDA

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab Sample Number: | | 97040170-1 | | | 97040171-1 | | | 97040171-2 | | | 97040171-3 | | |
| Site | | 7153 | | | 7253 | | | 7253 | | | 7253 | | |
| Locator | | 048RB101/7153 RB-1 | | | 061GM101/7253 MW-1 | | | 061GM201/7253 MW-2 | | | 061GM301/7253 MW-3 | | |
| Collect Date: | | 25-APR-97 | | | 25-APR-97 | | | 25-APR-97 | | | 25-APR-97 | | |
| | | VALUE | QUAL | UNITS | VALUE | QUAL | UNITS | VALUE | QUAL | UNITS | VALUE | QUAL | UNITS |
| EDB | ug/l | | | | | | | | | | | | |
| Ethylene dibromide | | .02 | U | ug/l | .02 | U | ug/l | .02 | U | ug/l | .02 | U | ug/l |
| EPA 601/602 | ug/l | | | | | | | | | | | | |
| Chloromethane | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Bromomethane | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Dichlorodifluoromethane | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Vinyl chloride | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Chloroethane | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Methylene chloride | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Trichlorofluoromethane | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| 1,1-Dichloroethene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| 1,1-Dichloroethane | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| trans-1,2-Dichloroethene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Chloroform | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| 1,2-Dichloroethane | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| 1,1,1-Trichloroethane | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Carbon tetrachloride | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Bromodichloromethane | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| 1,2-Dichloropropane | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| cis-1,3-Dichloropropene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Trichloroethene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Dibromochloromethane | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| 1,1,2-Trichloroethane | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| trans-1,3-Dichloropropene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Bromoform | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| 1,1,2,2-Tetrachloroethane | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Tetrachloroethene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Chlorobenzene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| 1,3-Dichlorobenzene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| 1,2-Dichlorobenzene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| 1,4-Dichlorobenzene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Methyl tert-butyl ether | | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l |
| Benzene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Toluene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Chlorobenzene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Ethylbenzene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| Xylenes (total) | | - | | ug/l | - | | ug/l | - | | ug/l | - | | ug/l |
| o-Xylene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| m,p-Xylene | | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l | 1 | U | ug/l |
| PNA COMPDS | ug/l | | | | | | | | | | | | |
| Naphthalene | | 5 | U | ug/l | 8 | | ug/l | 5 | U | ug/l | 5 | U | ug/l |
| 2-Methylnaphthalene | | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l |
| 1-Methylnaphthalene | | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l |
| Acenaphthylene | | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l |
| Acenaphthene | | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l |
| Fluorene | | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l |
| Phenanthrene | | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l |
| Anthracene | | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l |
| Fluoranthene | | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l | 5 | U | ug/l |

07/18/97 BUILDING 7253 14:34:38
MCCOY ANNEX, NTC ORLANDO, FLORIDA

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab Sample Number: | | 97040170-1 | | | | 97040171-1 | | | | 97040171-2 | | | | 97040171-3 | | | |
| Site | | 7153 | | | | 7253 | | | | 7253 | | | | 7253 | | | |
| Locator | | 048RB101/7153 RB-1 | | | | 061GM101/7253 MW-1 | | | | 061GM201/7253 MW-2 | | | | 061GM301/7253 MW-3 | | | |
| Collect Date: | | 25-APR-97 | | | | 25-APR-97 | | | | 25-APR-97 | | | | 25-APR-97 | | | |
| | | VALUE | QUAL | UNITS | | VALUE | QUAL | UNITS | | VALUE | QUAL | UNITS | | VALUE | QUAL | UNITS | |
| Pyrene | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | |
| Benzo (a) anthracene | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | |
| Chrysene | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | |
| Benzo (b) fluoranthene | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | |
| Benzo (k) fluoranthene | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | |
| Benzo (a) pyrene | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | |
| Indeno (1,2,3-cd) pyrene | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | |
| Dibenzo (a,h) anthracene | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | |
| Benzo (g,h,i) perylene | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | | 5 | U | ug/l | |
| LEAD | ug/l | | | | | | | | | | | | | | | | |
| Lead | | 3 | U | ug/l | | 5 | | ug/l | | 3 | U | ug/l | | 22 | | ug/l | |
| TOTAL PETROLEUM HYDROCARBON | mg/l | | | | | | | | | | | | | | | | |
| Total petroleum hydrocarbon | | 1 | U | mg/l | | 1 | U | mg/l | | 1 | U | mg/l | | 1 | U | mg/l | |

07/18/97 BUILDING 7253 14:36:37
MCCOY ANNEX, NTC ORLANDO, FLORIDA

Lab Sample Number: MA199001
Site 7253
Locator 061GT101/7253 TW-1
Collect Date: 06-FEB-96

| | | VALUE | QUAL | UNITS |
|---|---|---|---|---|
| EDB | ug/L | | | |
| Ethylene dibromide | | - | | ug/L |
| EPA 601/602 | ug/L | | | |
| Chloromethane | | - | | ug/L |
| Bromomethane | | - | | ug/L |
| Dichlorodifluoromethane | | - | | ug/L |
| Vinyl chloride | | - | | ug/L |
| Chloroethane | | - | | ug/L |
| Methylene chloride | | - | | ug/L |
| Trichlorofluoromethane | | - | | ug/L |
| 1,1-Dichloroethene | | - | | ug/L |
| 1,1-Dichloroethane | | - | | ug/L |
| trans-1,2-Dichloroethene | | - | | ug/L |
| Chloroform | | - | | ug/L |
| 1,2-Dichloroethane | | - | | ug/L |
| 1,1,1-Trichloroethane | | - | | ug/L |
| Carbon tetrachloride | | - | | ug/L |
| Bromodichloromethane | | - | | ug/L |
| 1,2-Dichloropropane | | - | | ug/L |
| cis-1,3-Dichloropropene | | - | | ug/L |
| Trichloroethene | | - | | ug/L |
| Dibromochloromethane | | - | | ug/L |
| 1,1,2-Trichloroethane | | - | | ug/L |
| trans-1,3-Dichloropropene | | - | | ug/L |
| Bromoform | | - | | ug/L |
| 1,1,2,2-Tetrachloroethane | | - | | ug/L |
| Tetrachloroethene | | - | | ug/L |
| Chlorobenzene | | 1 | U | ug/L |
| 1,3-Dichlorobenzene | | 1 | U | ug/L |
| 1,2-Dichlorobenzene | | 1 | U | ug/L |
| 1,4-Dichlorobenzene | | 1 | U | ug/L |
| Methyl tert-butyl ether | | 1 | U | ug/L |
| Benzene | | 1 | U | ug/L |
| Toluene | | 1 | U | ug/L |
| Chlorobenzene | | 1 | U | ug/L |
| Ethylbenzene | | 1 | U | ug/L |
| Xylenes (total) | | 1 | U | ug/L |
| o-Xylene | | - | | ug/L |
| m,p-Xylene | | - | | ug/L |
| PNA COMPDS | ug/L | | | |
| Naphthalene | | 14 | | ug/L |
| 2-Methylnaphthalene | | 4 | | ug/L |
| 1-Methylnaphthalene | | 2 | | ug/L |
| Acenaphthylene | | 2 | U | ug/L |
| Acenaphthene | | 10 | | ug/L |
| Fluorene | | 6 | | ug/L |
| Phenanthrene | | 8 | | ug/L |
| Anthracene | | 3 | | ug/L |
| Fluoranthene | | 3 | | ug/L |

Lab Sample Number: MA199001
Site 7253
Locator 061GT101/7253 TW-1
Collect Date: 06-FEB-96

| | | VALUE | QUAL | UNITS |
|---|---|---|---|---|
| Pyrene | | 2 | | ug/L |
| Benzo (a) anthracene | | 2 | U | ug/L |
| Chrysene | | 2 | U | ug/L |
| Benzo (b) fluoranthene | | 2 | U | ug/L |
| Benzo (k) fluoranthene | | 2 | U | ug/L |
| Benzo (a) pyrene | | 2 | U | ug/L |
| Indeno (1,2,3-cd) pyrene | | 2 | U | ug/L |
| Dibenzo (a,h) anthracene | | 2 | U | ug/L |
| Benzo (g,h,i) perylene | | 2 | U | ug/L |
| LEAD | ug/L | | | |
| Lead | | - | | ug/L |
| TOTAL PETROLEUM HYDROCARBON | mg/l | | | |
| Total petroleum hydrocarbon | | - | | mg/l |

07/18/97 BUILDING 7253 ----- HITS ONLY 14:42:06
MCCOY ANNEX, NTC ORLANDO, FLORIDA

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab Sample Number: | | 97040170-1 | | | 97040171-1 | | | 97040171-2 | | | 97040171-3 | | |
| Site | | 7153 | | | 7253 | | | 7253 | | | 7253 | | |
| Locator | | 048RB101/7153 RB-1 | | | 061GM101/7253 MW-1 | | | 061GM201/7253 MW-2 | | | 061GM301/7253 MW-3 | | |
| Collect Date: | | 25-APR-97 | | | 25-APR-97 | | | 25-APR-97 | | | 25-APR-97 | | |
| | | VALUE | QUAL | UNITS | VALUE | QUAL | UNITS | VALUE | QUAL | UNITS | VALUE | QUAL | UNITS |
| PNA COMPDS | ug/l | | | | | | | | | | | | |
| Naphthalene | | - | U | ug/l | 8 | | ug/l | - | U | ug/l | - | U | ug/l |
| LEAD | ug/l | | | | | | | | | | | | |
| Lead | | - | U | ug/l | 5 | | ug/l | - | U | ug/l | 22 | | ug/l |

07/18/97 BUILDING 7253 -----HITS ONLY----- 14:50:40
MCCOY ANNEX, NTC ORLANDO, FLORIDA

Lab Sample Number: MA199001
Site 7253
Locator 061GT101/7253 TW-1
Collect Date: 06-FEB-96

| | | VALUE | QUAL | UNITS |
|---|---|---|---|---|
| PNA COMPDS | ug/L | | | |
| Naphthalene | | 14 | | ug/L |
| 2-Methylnaphthalene | | 4 | | ug/L |
| 1-Methylnaphthalene | | 2 | | ug/L |
| Acenaphthene | | 10 | | ug/L |
| Fluorene | | 6 | | ug/L |
| Phenanthrene | | 8 | | ug/L |
| Anthracene | | 3 | | ug/L |
| Fluoranthene | | 3 | | ug/L |
| Pyrene | | 2 | | ug/L |

# PC&B Laboratories, Inc.

210 Park Road, Oviedo, Fl 32765
407-359-7194 (FAX) 407-359-7197

## Chain of Custody

**Work Order:** 9704171

Date: 4-25-97 Page 1 of 1

COMPANY ABB-EVS
ADDRESS 1080 WOODCOCK RD. SUITE 100
ORLANDO, FL 32803
SAMPLED BY Scott Donelick
SIGN Scott Donelick PHONE NO: 895-8845

| # | SAMPLE ID. | DATE/TIME | MATRIX | EPA 601/602 | EPA SOY EDB | EPA 610 | EPA 418.1 | EPA 239.2 Pb | NUMBER OF CONTAINERS |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0616M101 / 7253 MW-1 | 4-25-97 0933 | $H_2O$ | 2 | 2 | 1 | 1 | 1 | 7 |
| 2 | 0616M201 / 7253 MW-2 | 1000 | | 2 | 2 | 1 | 1 | 1 | 7 |
| 3 | 0616M301 / 7253 MW-3 | 0907 | | 2 | 2 | 1 | 1 | 1 | 7 |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | |
| 13 | | | | | | | | | |

| RELINQUISHED BY | DATE/TIME | RECEIVED BY | DATE/TIME |
|---|---|---|---|
| 1: Scott Donelick | 4-25-97 1400 | 1: [signature] | 4/25/97 1530 |
| 2: | | 2: | |
| 3: | | 3: | |

SPECIAL INSTRUCTIONS/COMMENTS:

**PROJECT INFORMATION**

PROJECT NAME: NTC ORLANDO
PROJECT #: 8545-58
SITE ADDRESS: BUILDING 7253
PROJECT MANAGER: JOHN KAISER
INVOICE TO: (IF DIFFERENT FROM ABOVE) ATTN: LORENA KANDT

**SAMPLE RECEIPT**

Total No. of Containers
Chain of Custody Seals
Rec'd Good Condition/Cold
PO#:
SHIPPED VIA

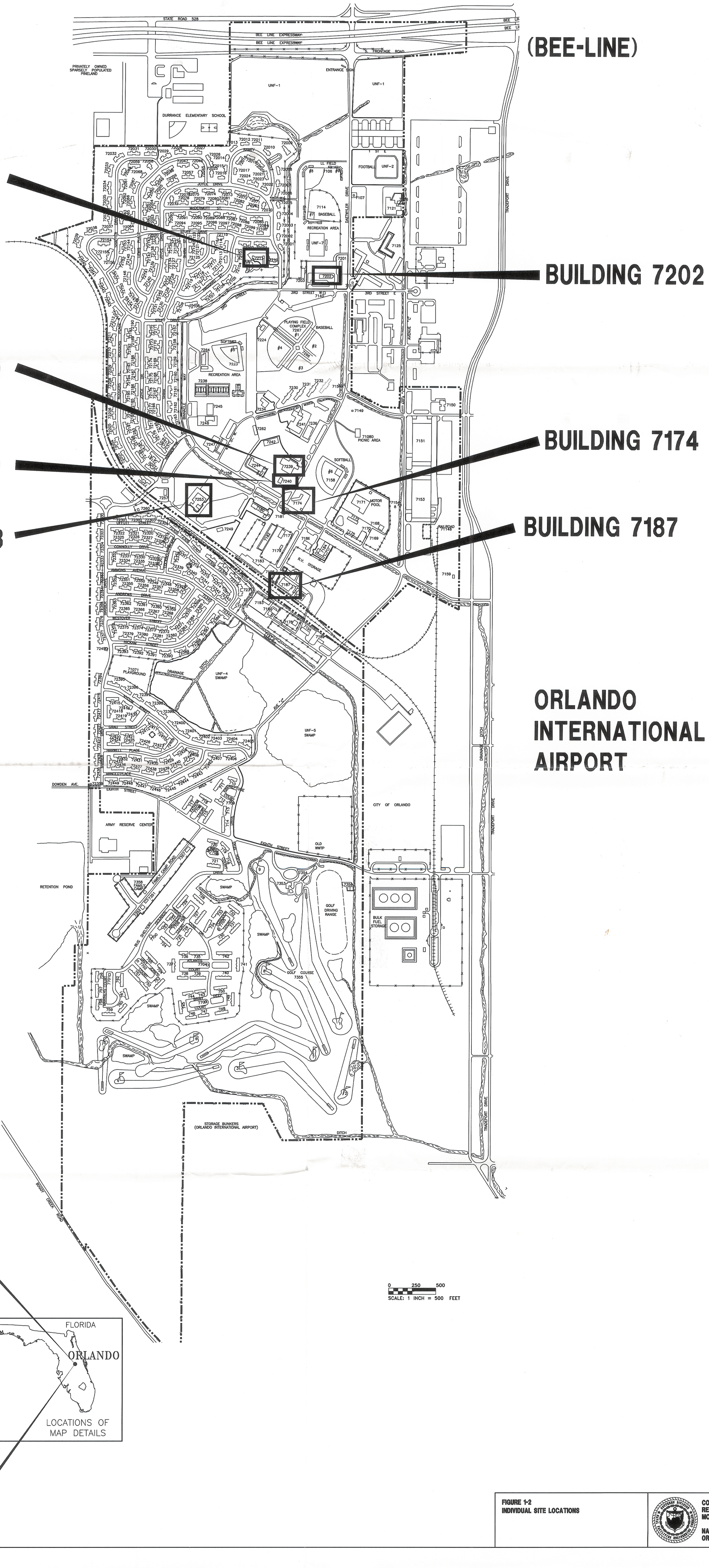



**FIGURE 1-2**
**INDIVIDUAL SITE LOCATIONS**

**CONTAMINATION ASSESSMENT REPORT**
**MCCOY ANNEX PROPERTY**

**NAVAL TRAINING CENTER**
**ORLANDO, FLORIDA**

H:\OLD\MCOYCAR.DWG, PDP-NP 07/14/97 14:39:30, AutoCAD R12