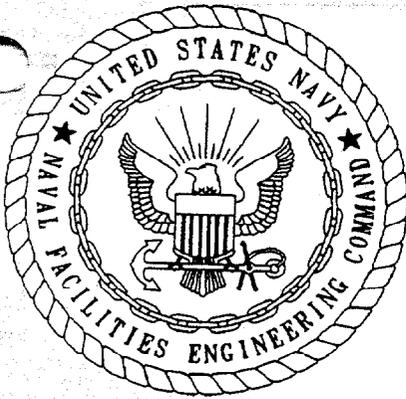


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FINAL BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING
REPORTS STUDY AREA 31 NTC ORLANDO FL
12/1/1997
ABB ENVIRONMENTAL

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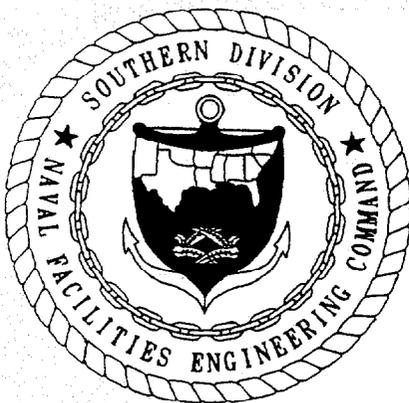
**BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING REPORT**

STUDY AREA 31

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

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

DECEMBER 1997



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

**BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING REPORT**

STUDY AREA 31

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

Unit Identification Code: N65928

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

Prepared by:

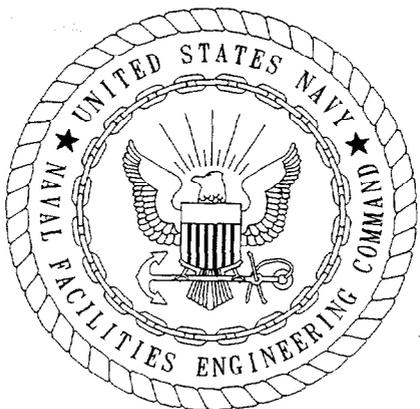
**ABB Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, Florida 32301**

Prepared for:

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

Barbara Nwokike, Code 1873, Engineer-in-Charge

December 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: December 10, 1997

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

NAME AND TITLE OF CERTIFYING OFFICIAL: Richard Allen
Project Technical Lead

(DFAR 252.227-7036)

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Study Area 31
Naval Training Center
Orlando, Florida

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1.2	STUDY AREA 31, INVESTIGATION SUMMARY	1
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1.2.2	Oil-Water Separator Assessment	1
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- Appendix B: Oil-Water Separator Assessment Report, Building 354

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BRAC Environmental Site Screening Report
Study Area 31
Naval Training Center
Orlando, Florida

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GLOSSARY

ABB-ES ABB Environmental Services, Inc.
NTC Naval Training Center
OWS Oil-water separator
OWSAR Oil-water separator assessment report
OVA Organic vapor analyzer

ppm parts per million

TCAR tank closure assessment report
TMP Tank Management Plan

UST underground storage tank

1.0 STUDY AREA 31, NUCLEAR POWER SCHOOL, BUILDING 354

This report contains information gathered during Tank Management Plan (TMP) assessment activities conducted at Study Area 31. The rationale for this approach to site screening activities was presented in the Site Screening Plan (ABB Environmental Services, Inc. [ABB-ES], 1995). A Tank Closure Assessment Report (TCAR) describing the removal and assessment of an Underground Storage Tank (UST) was issued in May 1997 (Navy Public Works Center Pensacola, 1997). The TCAR is included as Appendix A. An Oil-Water Separator (OWS) assessment was conducted during May and April 1997 (ABB-ES, 1997). The OWS assessment report (OWSAR) is included as Appendix B.

1.1 STUDY AREA 31, BACKGROUND AND CONDITIONS. This section includes a brief background summary for Study Area 31 (Figure 1). Further details can be found in the Site Screening Plan (ABB-ES, 1995).

Building 354 is an applied instruction facility for the Nuclear Power School located east of Grace Hopper Avenue at the intersection with Maguire Boulevard (Figure 2). In 1980, Building 354 was constructed to house classrooms for the Navy Nuclear Power Training Command. The site was previously occupied by buildings used as barracks and lavatories. Current site activities include training for maintenance of lube oil handling equipment. The OWS associated with Building 354 handles waste from these training activities.

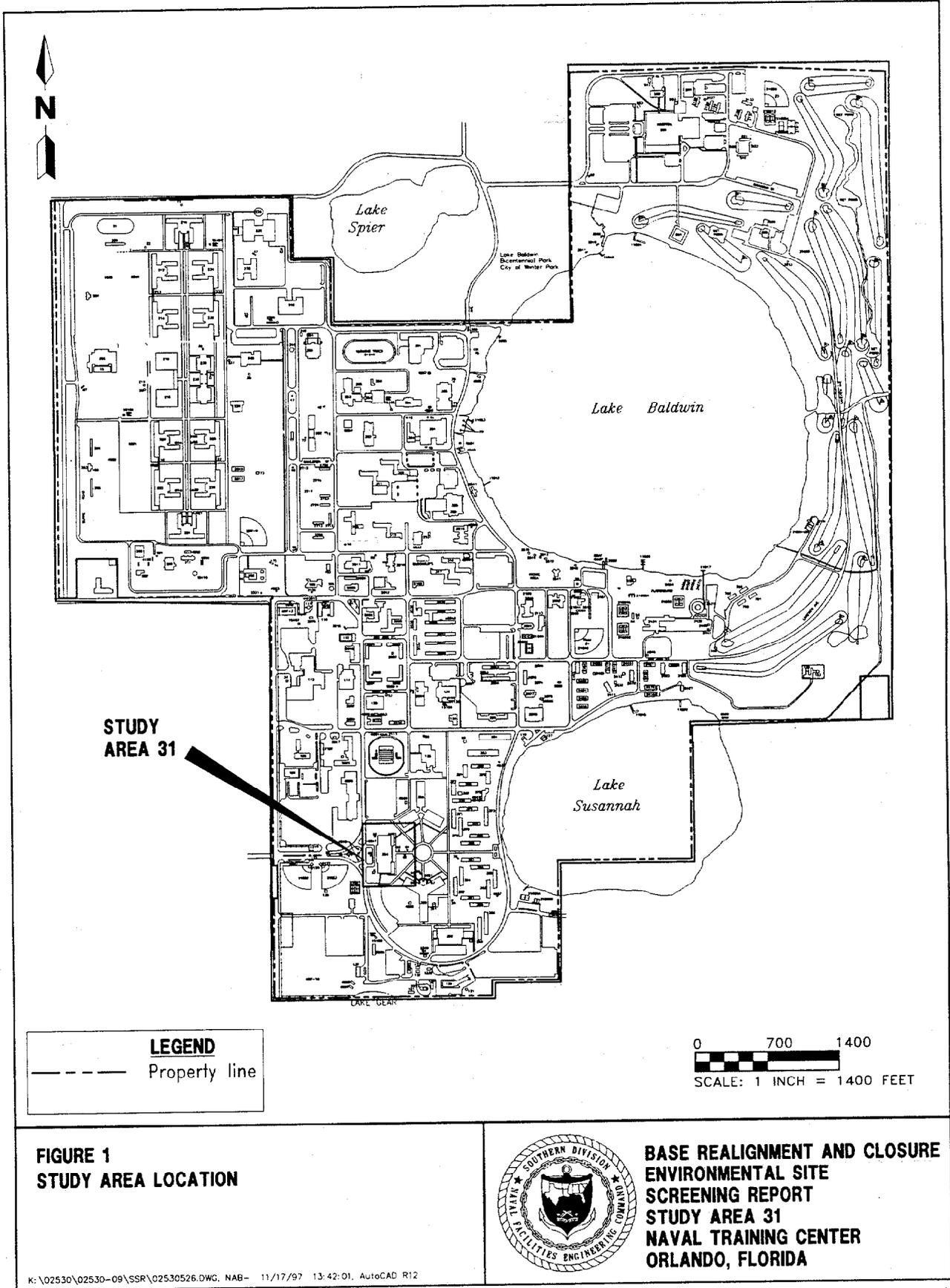
1.2 STUDY AREA 31, INVESTIGATION SUMMARY. The site investigations conducted as part of the TMP at Study Area 31 are described below.

1.2.1 Tank Closure Assessment A 2,000-gallon UST was removed from the east side of Building 354 on February 1, 1997. As part of the tank closure assessment, six soil samples were collected in the vicinity of the tank excavation for headspace screening. One soil sample was collected at the fill port, the remaining five samples were collected from approximately 7 feet below ground surface in the tank excavation. A temporary monitoring well was installed at the center of the tank excavation and sampled.

1.2.2 Oil-Water Separator Assessment The OWS east of Building 354 was assessed as part of the TMP. Hand auger soil borings were advanced at five locations around the OWS. Each boring was advanced from ground surface to the water table, approximately 7.5 feet below ground surface. Four soil samples were collected from each boring at 2-foot intervals for headspace screening. Two piezometers and a temporary well were installed at the site as part of the groundwater assessment. A groundwater sample was collected from the temporary well for analysis using the used-oil analytical group methods.

1.3 STUDY AREA 31, RESULTS. The results of the UST and OWS assessments at Study Area 31 are discussed below.

1.3.1 TCAR Organic vapor analyzer (OVA) responses ranged from zero to 2 parts per million (ppm) in the samples tested. The two samples collected from the north side of the tank excavation had OVA responses of 2 ppm total hydrocarbons.



**FIGURE 1
STUDY AREA LOCATION**



**BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE
SCREENING REPORT
STUDY AREA 31
NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

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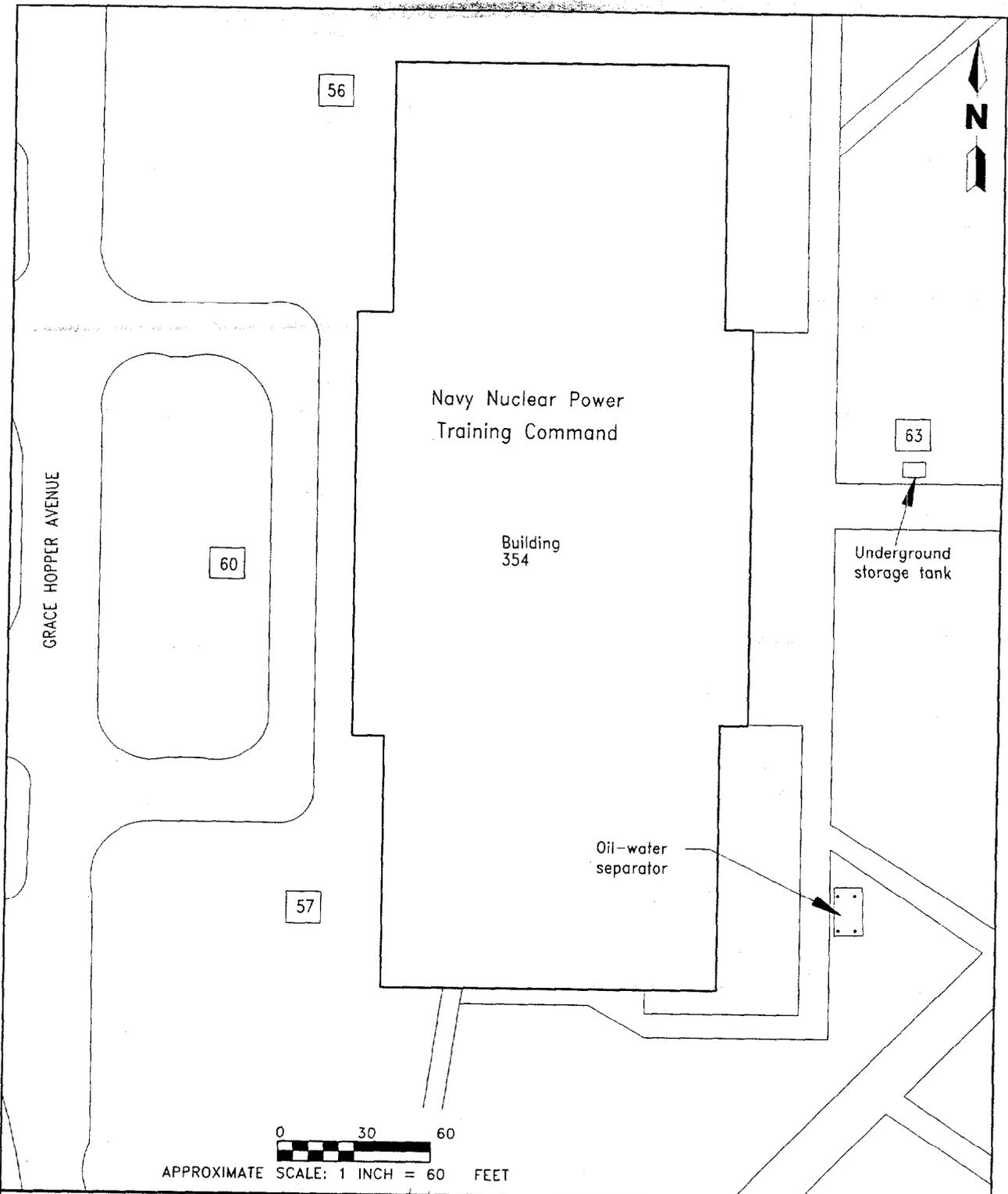


FIGURE 2
BUILDING 354, NUCLEAR POWER SCHOOL
MAIN BASE, STUDY AREA 31,
GROUP IV STUDY AREAS



BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE
SCREENING REPORT
STUDY AREA 31
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

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The remaining samples were reported as producing no OVA response. Laboratory analysis of the groundwater sample detected benzo(a)pyrene.

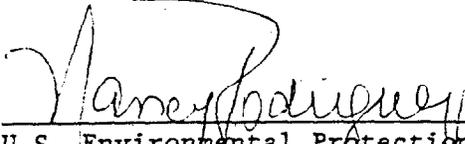
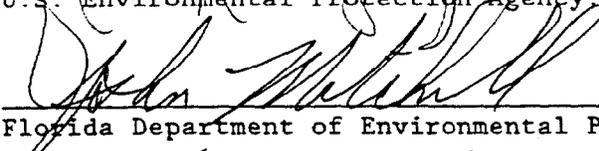
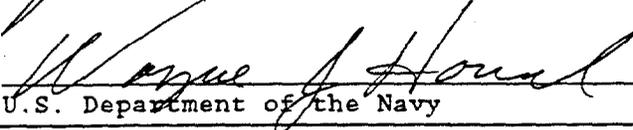
1.3.2 OWSAR During the headspace analysis of soil from the hand auger borings, OVA responses were less than 1 ppm in each of the samples tested. Laboratory analysis of the groundwater sample detected chloroform, bromodichloromethane, and chlorodibromomethane, which were interpreted as laboratory artifacts. The monitoring well was resampled and the previously detected compounds were not detected.

1.4 STUDY AREA 31, CONCLUSIONS AND RECOMMENDATIONS. Based on available information and site screening data, environmental concerns at Study Area 31 are petroleum related and are being evaluated under the Naval Training Center (NTC), Orlando Tank Management Plan.

The 2,000-gallon UST was removed February 1, 1997, and the TCAR was issued in May 1997. A contamination assessment will be conducted to address hydrocarbons detected in groundwater at the site.

Since environmental concerns at the site are petroleum related, ABB-ES recommends that the site be reclassified from 7/Grey to 2/Blue and that the site be made eligible for transfer. Any further evaluation should be conducted as part of the TMP.

The undersigned members of the Orlando Partnering Team concur with the findings and recommendations of the preceding investigation and agree that Study Area 31 is eligible for transfer.

<u>STUDY AREA 31</u>	
 _____ U.S. Environmental Protection Agency, Region IV	<u>12/16/97</u> _____ Date
 _____ Florida Department of Environmental Protection	<u>12/16/97</u> _____ Date
 _____ U.S. Department of the Navy	<u>12/16/97</u> _____ Date

REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1995. *Site Screening Plan, Groups I through IV Study Areas and Miscellaneous Additional Sites, Naval Training Center (NTC), Orlando, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina.
- ABB Environmental Services, Inc. (ABB-ES). 1997. *Oil-Water Separator Assessment Report, Building 354, NTC, Orlando, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina.
- Navy Public Works Center [PWC] Pensacola. 1997. *Closure Assessment - Underground Storage Tank, Building 354, NTC, Orlando, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina.

APPENDIX A
CLOSURE ASSESSMENT, UNDERGROUND STORAGE TANK,
BUILDING 354

CLOSURE ASSESSMENT
UNDERGROUND STORAGE TANK
BUILDING 354

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Unit Identification Code: N65928

Prepared by:

**Navy Public Works Center
Environmental Department
310 John Tower Road
Pensacola, Florida, 32508**

Prepared for:

**Naval Facilities Engineering Command
Southern Division
2155 Eagle Drive
Charleston, South Carolina 29418**

Nick Ugolini, Code 1843, Engineer-in-Charge

May 1997

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Underground Storage Tank
Building 354
Naval Training Center
Orlando, Florida

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7.0	Tank Condition	1
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10.0	Groundwater Analysis	2
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12.0	Recommendations	2
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FIGURES

Figure 1:	Regional Map
Figure 3 :	Vicinity Map
Figure 3:	Site Map

ATTACHMENTS

Attachment A:	Photographs
Attachment B:	Application for Closure of Pollutant Storage Tank System
Attachment C:	Underground Storage Tank Installation and Removal Form
Attachment D:	Closure Assessment Form, Groundwater Analysis, & OVA Readings
Attachment E:	Disposal Document - Scrap Metal
Attachment F:	Decontamination Certification

GLOSSARY

FAC	Florida Administrative Code
OVA	Organic Vapor Analyzer
AST	Aboveground Storage Tank
UST	Underground Storage Tank
USEPA	U.S. Environmental Protection Agency

CLOSURE ASSESSMENT REPORT
UNDERGROUND STORAGE TANK
BUILDING 354

1.0 Facility

Building 354
Naval Training Center
Orlando, Orange County, Florida

2.0 Operator

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

3.0 Site Location

See Figure 1.

4.0 Date of Closure

1 February 1997

5.0 Tank Status

There was one 2000 gallon underground storage tank (UST) removed from the east side of Building 354 by the Public Works Center (PWC) as depicted by Figure 3. A photograph of the removal is provided in Attachment A. The UST was emptied prior to commencement of work by International Oil Service. The UST was completely decontaminated and rendered unuseable by PWC. The UST was properly disposed by the Defense Reutilization and Marketing Office (DRMO).

6.0 Tank Contents

Heating Fuel

7.0 Tank Condition

The UST was in good condition at the time of removal.

8.0 Tank Area

The size of the excavation was approximately ten (10) feet wide by twenty (20) feet long and seven (7) feet deep. The excavation was filled with clean fill, compacted to grade, and sodded.

9.0 Soil Screening

- Six (6) soil samples were collected for headspace screening with an organic vapor analyzer (OVA). The samples were extracted at the fill port, at each corner and under the middle of the UST as depicted by Figure 3.
- The soil screening was conducted in accordance with the headspace screening criteria in Chapter 62-770 FAC and PWC's Comprehensive Quality Assurance Plan.

10.0 Groundwater Analysis

A temporary groundwater monitoring well was placed at the center of the UST excavation, the well was developed and groundwater samples were collected on 19 March 1997. The samples were transported to the PWC Laboratory in Pensacola, Florida. The samples were analyzed using U.S. Environmental Protection Agency (EPA) Methods 8260 and 8270.

11.0 Conclusions

There were low levels of benzopyrene in the groundwater analysis and low OVA readings from the soil samples. However, there were no indications of petroleum contamination noted above the state target levels for storage tank closures.

12.0 Recommendations

No further action.

13.0 Closure Assessment

Performed by the Public Works Center (PWC) Pensacola, Florida.

14.0 Project Manager

Mr. Paul R. Semmes, P.E.

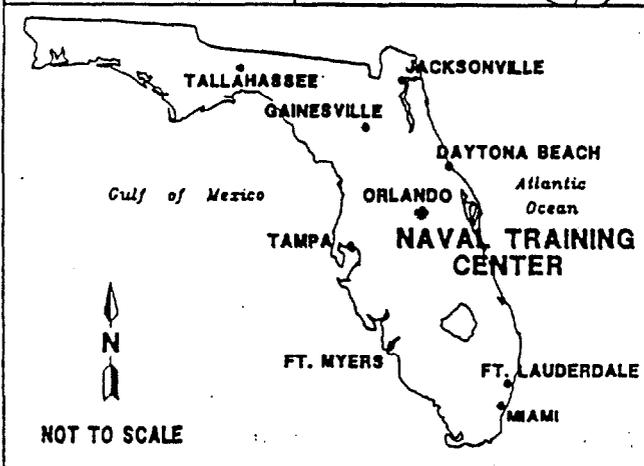
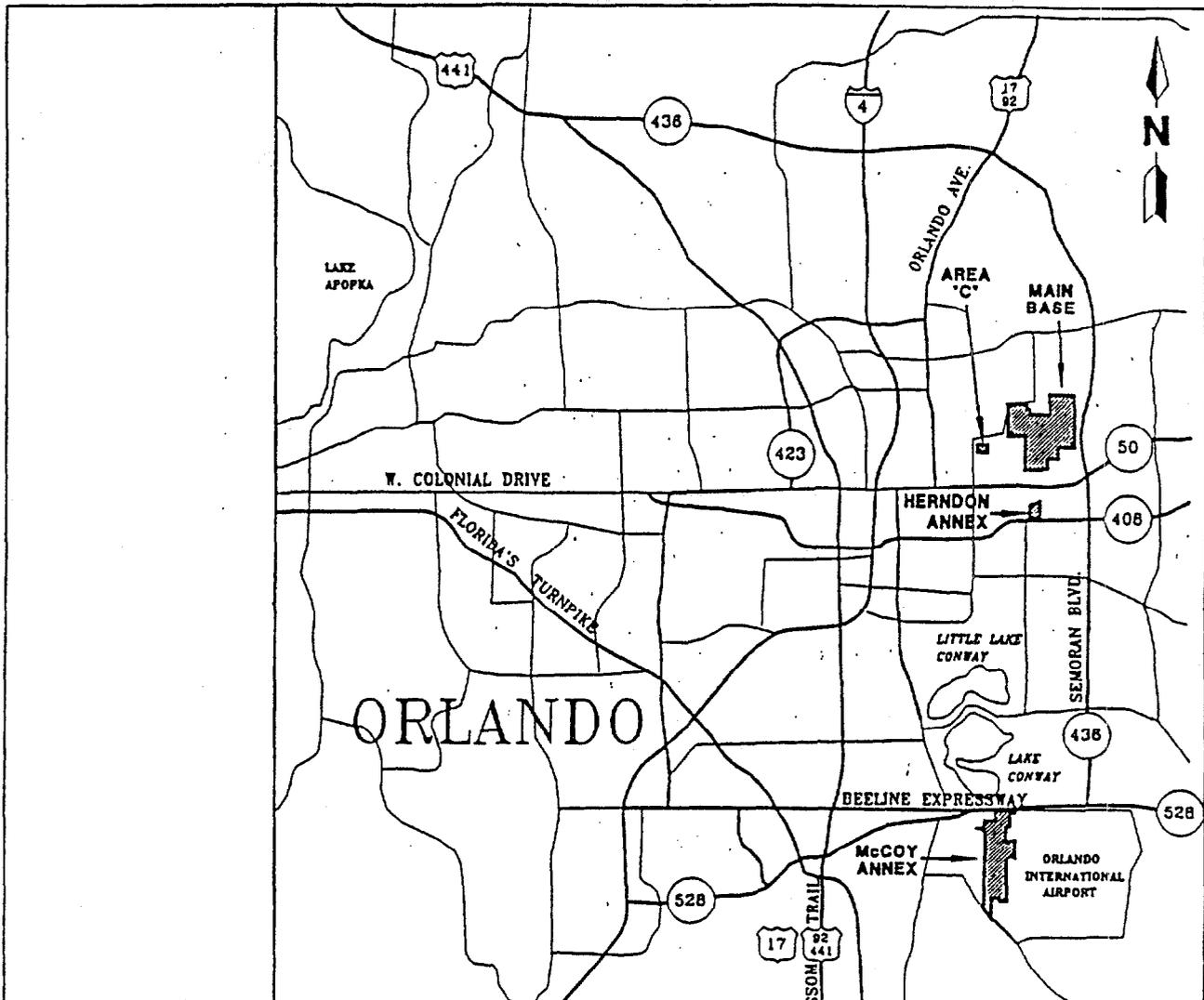
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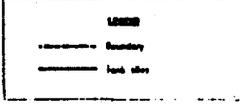
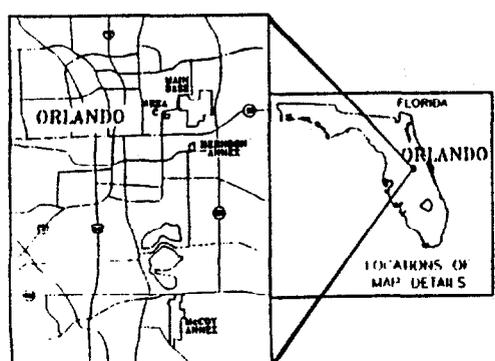
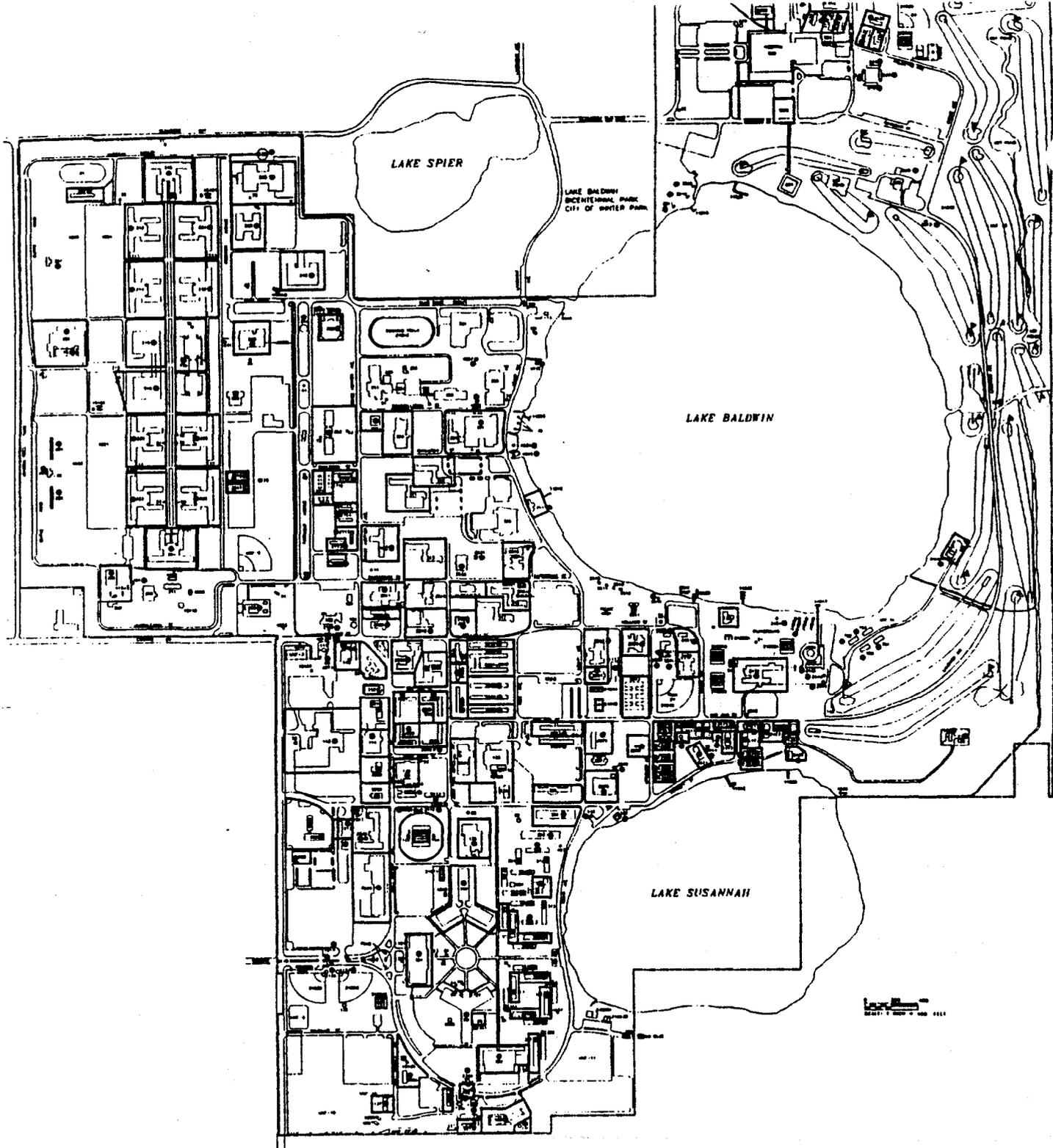
16.0 Report Date

8 May 1997

FIGURES

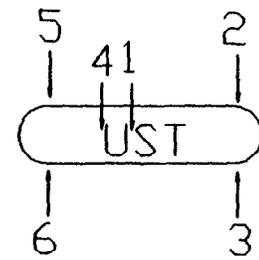


**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**



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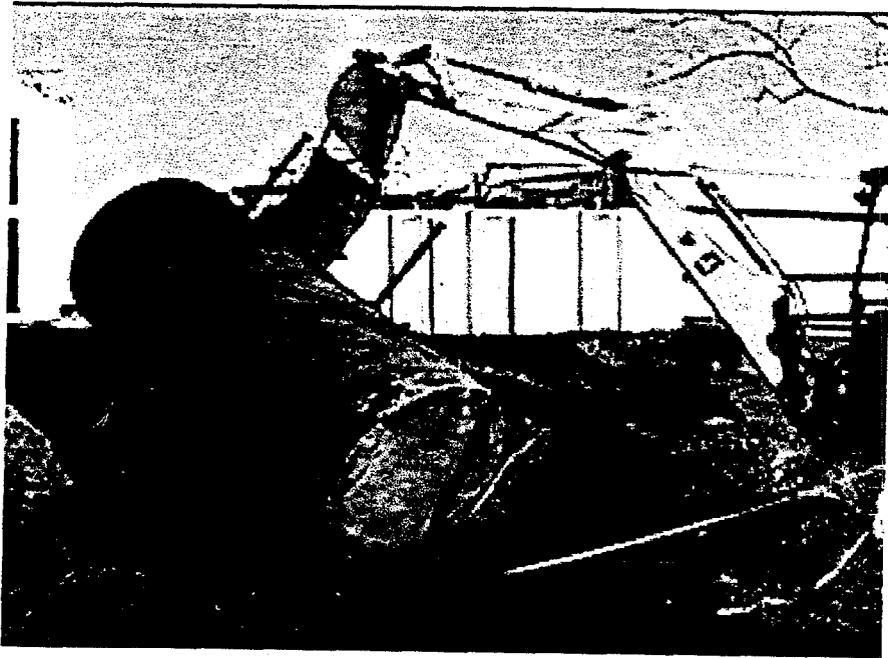
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OVA READINGS
1- 1'BLS, 0 PPM
2- 7'BLS, 2 PPM
3- 7'BLS, 0 PPM
4- 7'BLS, 0 PPM
5- 7'BLS, 2 PPM
6- 7'BLS, 0 PPM

REF: BLDG 354	DEPARTMENT OF THE NAVY, NAVAL FACILITIES ENGINEERING COMMAND NAVY PUBLIC WORKS CENTER NAVAL AIR STATION PENSACOLA, FLORIDA		
DESIGNED _____	NAVAL TRAINING CENTER		
DRAWN _____	ORLANDO, MCCOY ANNEX		
CHECKED _____	ORLANDO, FLORIDA		
DIV. DIR. _____			
LOG. DIV. DIR. _____			
ENGRG. DEPT. HD. _____			
APPROVED _____ DATE _____	SIZE CODE DEPT. NO.	ENVIRON. DEPT. NO.	PWC DRAWING NO.
ENVIRONMENTAL DEPARTMENT APPROVED _____ DATE _____	900		
PAUL R. BRIGGS, P.E.	SCALE AS SHOWN	SPEC.	SHEET 1 OF 1

ATTACHMENTS



APPLICATION FOR CLOSURE OF POLLUTANT STORAGE TANK SYSTEM

Provide the facility information requested below.

FDEP Facility # 48/8631018 Facility Name U. S. Navy

Facility Location Naval Training Center, Building 354

Property Owner Commander, Naval Training Center

Property Owner Address Code 010E, 1350 Grace Hopper Ave, Orlando, FL 32813-8405

Phone (407) 646-4663

Method of Tank Closure Removal

Pollutant Storage Systems Specialty Contractor (PSSSC) who will be on site supervising closure activities. Attach copy of PSSSC license.

Individual Licensed as PSSSC N/A PSSSC # N/A

Firm U.S. Navy - Public Works Center (PWC)

Address 310 John Tower Road, Pensacola, FL 32508

Indicate the firm (s) that will degas, remove, and transport the tank(s), and the method of degassification.

Degassification Method Air Eduction

Firm Removing Tanks U.S. Navy - Public Works Center (PWC)

Contact Mr. Paul Semmes, P.E. Phone (904) 293-0635

Firm Transporting Tanks U. S. Navy - Public Works Center (PWC)

Contact Mr. Paul Semmes, P.E. Phone (904) 293-0635

Firm Receiving Tanks for Ultimate Disposal U.S. Navy - DRMO

Contact Mr. Edward Walker Phone (407) 646-4420

Indicate the laboratory that will conduct groundwater analysis.

Contracted Laboratory U.S. Navy - PWC Phone (904) 452-4728

Contact Mr. Joe Moore FDEP QA/QC 920121G

Indicate firm(s) transporting and disposing of contaminated soils.

Firm Transporting Soils C. A. Meyer

Contact Mr. Frank Cox Phone (407) 849-0770

Firm Remediating/Disposing Soils C. A. Meyers

Contact Mr. Frank Cox Phone _____

Disposal/Remediation Method Thermal Treatment

Indicate the firm(s) that will transport and ultimately dispose of residual product and sludge from the tanks.

Firm Transporting Residual Product and Sludge International Oil Service

Contact Mr. Garry Allen Phone (800) 282-9585

Firm Receiving/Disposal Residual Product and Sludge International Oil Service

Contact Mr. Garry Allen Phone (800) 282-9585

Indicate the firm and names of personnel that will conduct field sampling.

Contracted Firm U.S. Navy - Public Works Center (PWC)

Contact Mr. Paul Semmes, P.E. Phone (904) 293-0635

Person (s) Sampling Mr. Paul Semmes, P.E.

Equipment used for soil screening (Specific Make and Model) Organic Vapor Analyzer

(OVA) Thermo Environmental (680 HVM) equipped w/Flame Ionization Detector (FID).



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 Administrative 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

- DER Facility Identification No.: 48/8631018
- Facility Name: US Navy - Naval Training Center Telephone: (407) 646-4663
- Street Address (physical location): Building 354, Naval Training Center
- Owner Name: Commander, Naval Training Center Telephone: (407) 646-4663
- Owner Address: Code 010E, 1350 Grace Hopper Avenue, Orlando, Florida 32813-8405
- Number of Tanks: a. Installed at this time _____ b. Removed at this time _____
- Tank(s) Manufactured by: Unknown
- Date Work Initiated: 2/1/97 9. Date Work Completed: 2/1/97

Underground Pollutant Tank Installation Checklist

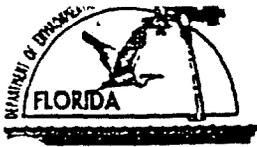
Please certify the completion of the following installation requirements by placing an (X) in the appropriate box.

- The tanks and piping are corrosion resistant and approved for use by State and Federal Laws.
- 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.
- Tanks and piping pretested and installed in accordance with NFPA 30(87), API 1615, PEI/RP100(87) and the manufacturers' specifications.
- 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.
- Tanks and piping tested for tightness after installation in accordance with NFPA 30(87) and PEI/RP100-87.
- Monitoring well(s) or other leak detection devices installed and tested in accordance with Section 17-761.640, Florida Administrative Code (F.A.C.)
- Spill and overflow protection devices installed in accordance with Section 17-761.500, F.A.C.
- 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 institutions.

Underground Pollutant Tank Removal Checklist

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



Closure Assessment Form

Users of storage tank systems that are replacing, removing or closing in place storage tanks shall use this form to demonstrate that a storage system closure assessment was performed in accordance with Rule 62-761.800(3) or 62-762.800(3), Florida Administrative Code.

Please Print or Type
Complete All Applicable Blanks

- 1. Date 4/18/97
2. DEP Facility ID Number: 48/8631018 3. County Orange
4. Facility Name: US Navy - Naval Training Center
5. Facility Owner: Commander, Naval Training Center (Code 010E)
6. Facility Address: Building 354, Naval Training Center
7. Mailing Address: 1350 Grace Hopper Avenue, Orlando, Florida 32813-8405
8. Telephone Number: (407) 646-4663 9. Facility Operator: Mr. Mark Zill
10. Are the Storage Tank(s): (Circle one or both) A. Aboveground or B. Underground
11. Type of Product(s) Stored: Heating Fuel
12. Were the Tank(s): (Circle one) A. Replaced B. Removed C. Closed in Place D. Upgraded (aboveground tanks only)
13. Number of Tanks closed: One 14. Age of Tanks: 17

Facility Assessment Information

- Table with columns: Yes, No, Not Applicable
1. Was a Discharge Reporting Form submitted to the Department? If yes, When: Where:
2. Is the depth to ground water less than 20 feet?
3. Are monitoring wells present around the storage system? If yes, please specify Vapor Monitoring Water Monitoring
4. Is there free product present in the monitoring wells or within the excavation?
5. Were the petroleum hydrocarbon vapor levels in the soil greater than 500 parts per million for gasoline? Specify sample type: Vapor Monitoring wells Soil sample(s)
6. Were the petroleum hydrocarbon vapor levels in the soils greater than 50 parts per million for diesel/kerosene? Specify sample type: Vapor Monitoring wells Soil sample(s)
7. Were the analytical laboratory results of the ground water sample(s) greater than the allowable state target levels? (See target levels on reverse side of this form and supply laboratory data sheet(s).)
8. If a used oil storage system, did a visual inspection detect any discolored soil indicating a release?
9. Are any potable wells located within 1/4 of a mile radius of the facility?
10. Is there a surface water body within 1/4 mile radius of the site? If yes, indicate distance:
11. A detailed drawing or sketch of the facility that includes the storage system location, monitoring wells, buildings, storm drains, sample locations, and dispenser locations must accompany this form.
12. If a facility has a pollutant storage tank system that has both gasoline and kerosine/diesel stored on site, both EPA method 602 and EPA method 610 must be performed on the ground water samples.

Navy Public Works Center Environmental Laboratory

Bldg. 3887, Code 920
 NAS Pensacola, FL 32508 - 6500
 Phone (904) 452-4728/3642
 DSN 922-4728/3642
 FAX 922-2783

Client: NPWC Environmental
 Address: Bldg. 3887, Code 910
 NAS Pensacola, FL 32508
 Phone #: 452-8587
 Contact: Paul Semmes

Analytical Report

Total Volatiles by Method 8260

Lab Report Number: 71135
 Sample Date: 03/19/97
 Received Date: 03/20/97
 Sample Site: NTC Orlando, FL
 Job Order No.: 102 4021

LAB Sample ID#	1- 71135			
Sample Name / Location	# 354			
Collector's Name	B. Weimer			
Date & Time Collected	03/19/97 @ 1025			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	03/24/97 JM			
Date of Analysis	03/24/97			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 71135	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromobenzene	BDL	ug/L	1	
Bromochloromethane	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
n-Butylbenzene	BDL	ug/L	1	
sec-Butylbenzene	BDL	ug/L	1	
tert-Butylbenzene	BDL	ug/L	2	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
2-Chlorotoluene *	BDL	ug/L	1	
4-Chlorotoluene *	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dibromo-3-chloropropane *	BDL	ug/L	5	
1,2-Dibromoethane	BDL	ug/L	1	
Dibromomethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodifluoromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
cis-1,2-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
1,3-Dichloropropane	BDL	ug/L	1	
2,2-Dichloropropane	BDL	ug/L	1	
1,1-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Ethyl ether *	BDL	ug/L	1	
Hexachlorobutadiene	BDL	ug/L	2	
2-Hexanone *	BDL	ug/L	1	
Isopropylbenzene	BDL	ug/L	1	
p-isopropyltoluene	BDL	ug/L	1	

**Navy PUBLIC WORKS CENTER
Environmental Laboratory**

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-8587
Contact: Paul Semmes

Total Volatiles by Method 8260
Lab Report Number: 71135
Sample Date: 03/19/97
Received Date: 03/20/97
Sample Site: NTC Orlando, FL
Job Order No.: 102 4021

Compound Name	1- 71135	units	Det. Limit	Flags
Methylene Chloride	BDL	ug/L	1	
Methyl ethyl ketone (MEK) *	BDL	ug/L	2	
Methyl isobutyl ketone (MIBK) *	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE)	BDL	ug/L	1	
Naphthalene	BDL	ug/L	1	
n-Propylbenzene	BDL	ug/L	1	
Styrene	BDL	ug/L	1	
1,1,1,2-Tetrachloroethane	BDL	ug/L	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,2,3-Trichlorobenzene	BDL	ug/L	1	
1,2,4-Trichlorobenzene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichlorofluoromethane	BDL	ug/L	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane *	BDL	ug/L	1	
1,2,3-Trichloropropane	BDL	ug/L	1	
1,2,4-Trimethylbenzene	BDL	ug/L	1	
1,3,5-Trimethylbenzene	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
m,p-Xylene	BDL	ug/L	1	
o-Xylene	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

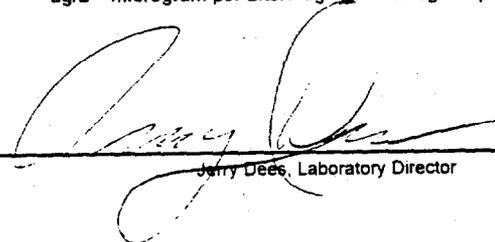
	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	99
Toluene-d8	86-119	102
Bromofluorobenzene	85-116	100

Explanation of Flags:

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by :



Jerry Dees, Laboratory Director

Date:

4/1/97

Report Generated

**Navy Public Works Center
Environmental Laboratory**

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
FSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-8587
Contact: Paul Semmes

Analytical Report

610 PAH's by Method 8270

Lab Report Number: 71135
Sample Date: 03/19/97
Received Date: 03/20/97
Sample Site: NTC Orlando, FL
Job Order No.: 102 4021

LAB Sample ID#	1- 71135			
Sample Name / Location	# 354			
Collector's Name	B. Weimer			
Date & Time Collected	03/19/97 @ 1025			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	03/27/97 JJ			
Date of Analysis	04/01/97			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 71135	units	MDL	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	9	ug/L	2	
Benzo(b)fluoranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)fluoranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Fluoranthene	BDL	ug/L	2	
fluorene	BDL	ug/L	2	
fluoro(1,2,3-cd)pyrene	BDL	ug/L	2	
fluoranthene	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

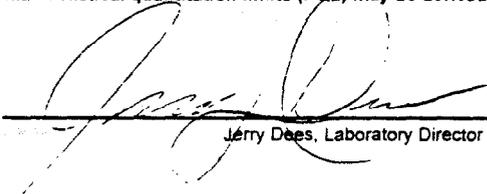
	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	73
2-Fluorobiphenyl	43-116	84
Terphenyl -d14	33-141	82

Explanation of Flags:

 COMMENTS : Surrogate recovery limits derived from EPA OLM01.0 SOW 3/90.

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.
 MDL = Method detection limit. Practical quantitation limits (PQL) may be derived by multiplying the MDL by 4.

Approved by :

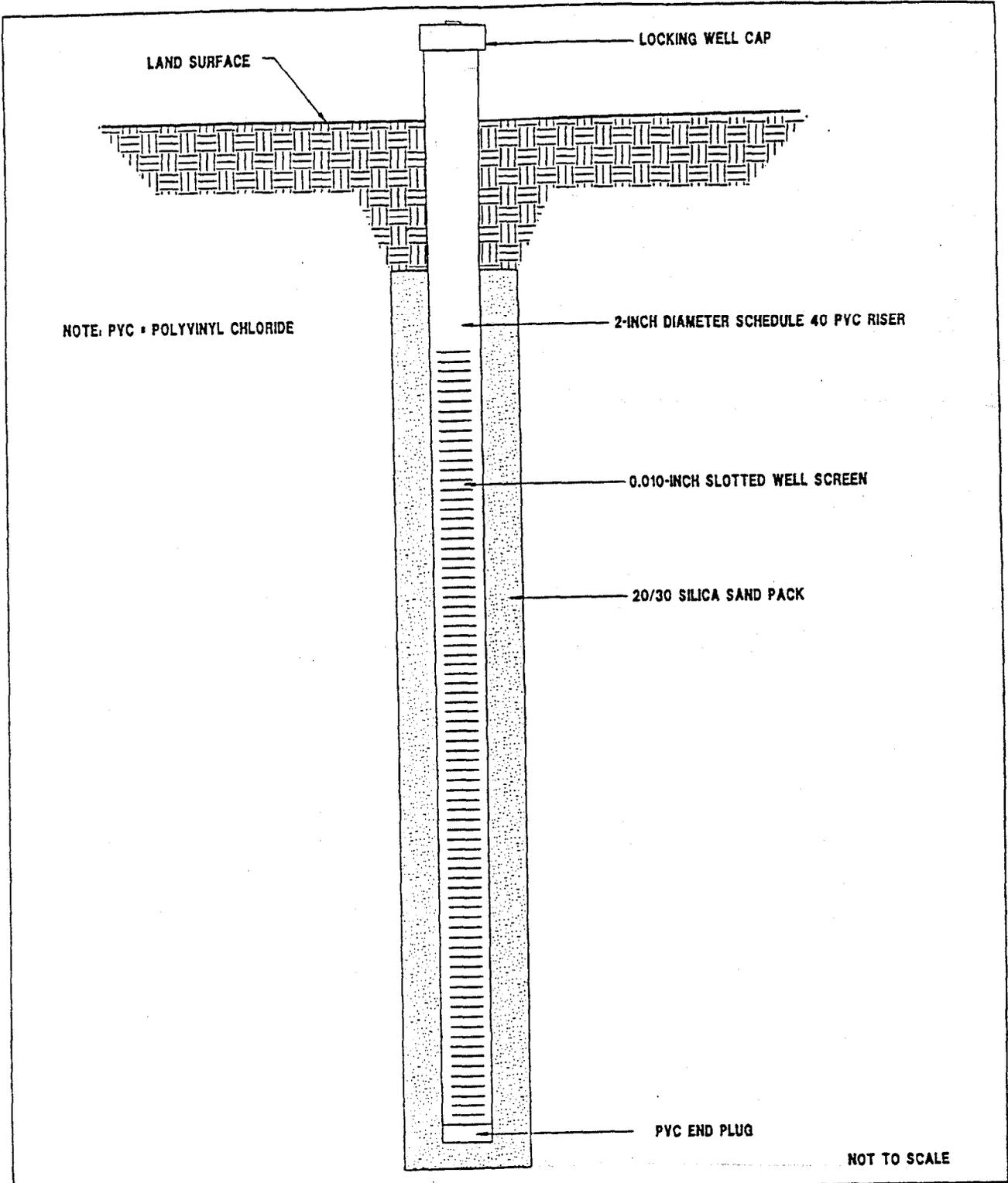


 Jerry Dees, Laboratory Director

Date:

4/1/97

Report Generated



TYPICAL TEMPORARY MONITORING WELL
INSTALLATION DETAIL



NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Summary of OVA Readings

Closure Assessment Report Underground Storage Tank Building 354 Naval Training Center Orlando, Florida

Hand Auger Sample No.	Depth (Feet)	Unfiltered (ppm)	Filtered (ppm)
SS-1	1	<1	N/A
SS-2	7	2	N/A
SS-3	7	<1	N/A
SS-4	7	<1	N/A
SS-5	7	2	N/A
SS-6	7	<1	N/A

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

Notes: ppm = parts per million.



DEPARTMENT OF THE NAVY
NAVY PUBLIC WORKS CENTER
310 JOHN TOWER ROAD
PENSACOLA, FLORIDA 32508-5303

IN REPLY REFER TO

CERTIFICATE OF DECONTAMINATION

It is hereby certified that the following Storage Tanks have been decontaminated by PWC Pensacola AST/UST Storage System Tank Team:

106	129	351
354	356	358
361	363	364
366	369	371
375	384	2010
2035	2122	7182

The Storage Tanks listed above have been triple rinsed and cleaned in accordance with 40 CFR 261.7(b)(3)(i) and have been rendered unuseable.

Signature 

Paul R Semmes, PE
Environmental Engineer
Title

Date 5/0/97

APPENDIX B

**OIL-WATER SEPARATOR ASSESSMENT REPORT
BUILDING 354**

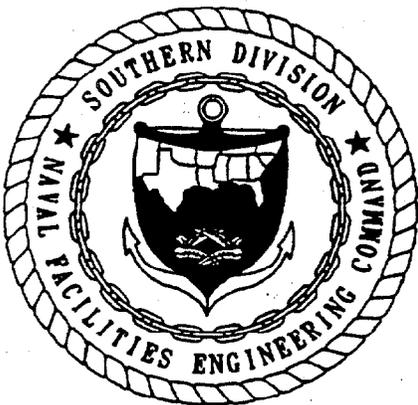


**OIL-WATER SEPARATOR ASSESSMENT REPORT
BUILDING 354**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

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

JUNE 1997



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

DISTRIBUTION

Southern Division, Naval Facilities Engineering Command	2
Naval Training Center, Orlando, Florida	3
Florida Department of Environmental Protection	1
ABB Environmental Services, Inc.	2

**OIL-WATER SEPARATOR ASSESSMENT REPORT
BUILDING 354**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

Unit Identification Code: N65928

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

Prepared by:

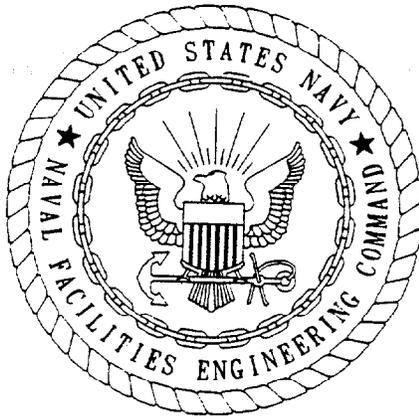
**AE3 Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, Florida 32301**

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

June 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: June 13, 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)

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Oil-Water Separator Assessment Report
Building 354
Naval Training Center
Orlando, Florida

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4.0	GROUNDWATER ASSESSMENT	1-4
5.0	CONCLUSIONS	1-4
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APPENDICES

- Appendix A: Photographs
- Appendix B: Groundwater Laboratory Analytical Reports and Chain-of-Custody Records

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Oil-Water Separator Assessment Report
Building 354
Naval Training Center
Orlando, Florida

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2	Groundwater Elevation Summary	1-6

GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
$\mu\text{g}/\ell$	micrograms per liter
NTC	Naval Training Center
OVA	organic vapor analyzer

**OIL-WATER SEPARATOR ASSESSMENT REPORT
BUILDING 354**

1.0 INTRODUCTION

Building 354 (Nuclear Field "A" School) is located in the south-central part of the Naval Training Center (NTC), Orlando, Main Base in Orange County, Florida. Figure 1 shows the site location and a map of the surrounding area.

One oil-water separator is operated at the site. The exact date of installation is not known, though the building was constructed in 1981. The oil-water separator is located near the southeast corner of Building 354 and is used to recycle hydraulic oil used in the lube-oil laboratory (see Figure 2). Photographs of the oil-water separator are provided in Attachment A.

This report summarizes the data gathered during the contamination assessment of the oil-water separator serving Building 354.

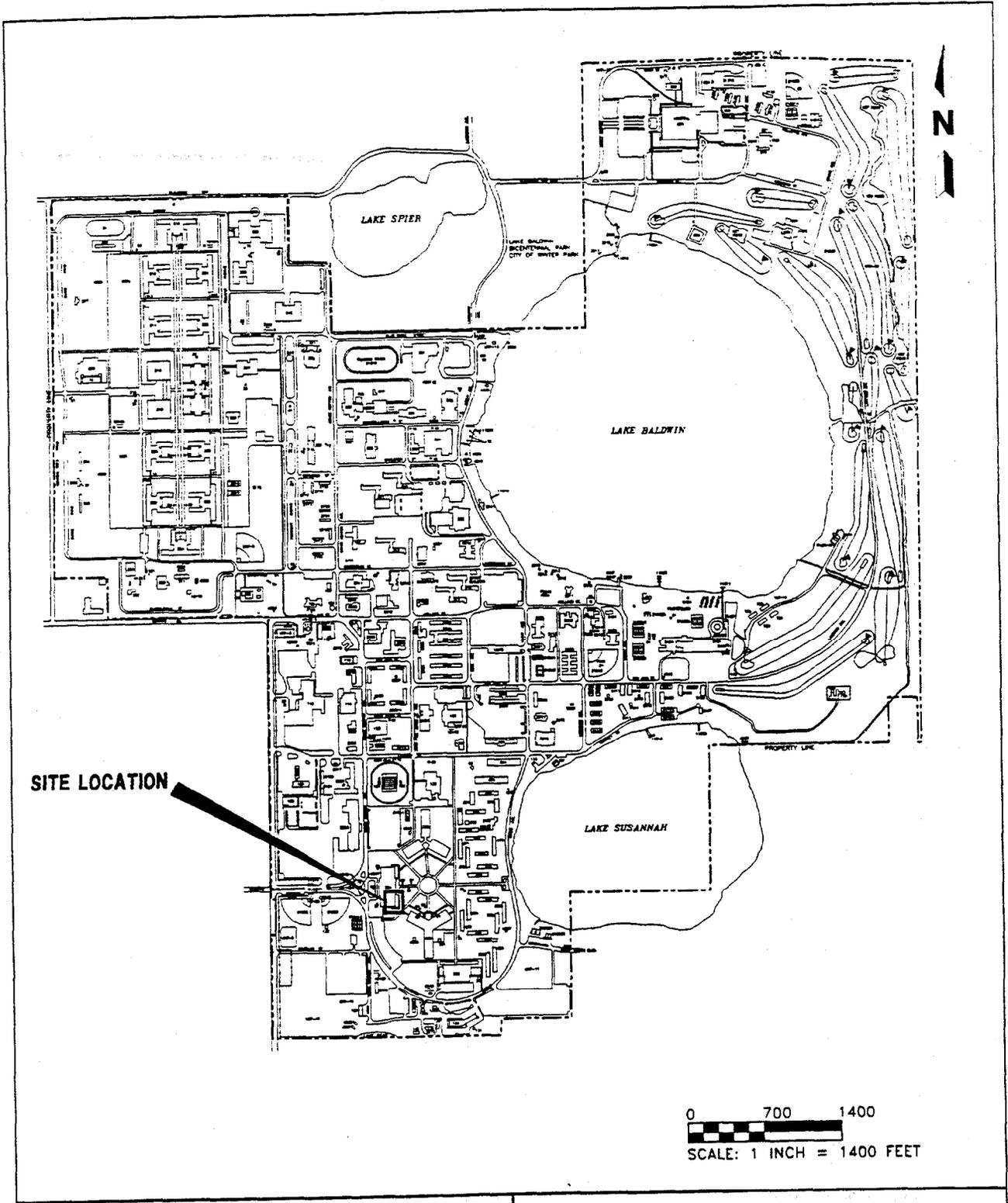
2.0 OPERATION AND MAINTENANCE

Building 354 is used as the NTC, Orlando, Main Base Nuclear Field "A" School. One oil-water separator is in service at Building 354. The oil-water separator is designed to capture fluids from the lube-oil laboratory and recycle the hydraulic oil for future use. Used hydraulic oil from the lab is directed into the oil-water separator via an underground pipe. Hydraulic oil from the oil-water separator is pumped back into a storage tank inside the building for reuse while the water is reportedly pumped into the sanitary sewer. Because no as-built drawings could be located, the construction of the oil-water separator is not known. In addition, the oil-water separator is contained underground with no cleanout or cover to remove for inspection.

During the assessment activities, a visual inspection of the oil-water separator revealed no obvious problems, but because the oil-water separator is contained underground, a detailed inspection was not possible. The oil-water separator area is 9 feet by 13 feet and is covered with gravel. The construction of the oil-water separator is not known, but it reportedly has a 40-gallon capacity. According to the NTC, Orlando Environmental Coordinator, the oil-water separator receives no known maintenance because the hydraulic oil is recycled and the discharge point to the sanitary sewer is not known.

3.0 SOIL ASSESSMENT

On May 16, 1997, ABB Environmental Services, Inc. (ABB-ES), advanced five hand-augered soil borings, HA-1 through HA-5, and collected 20 soil samples for organic vapor analysis (OVA) to determine the presence of organic vapors in the soil. All soil borings were performed using a stainless-steel bucket auger, which was extended to the groundwater, encountered at approximately 7.5 feet below land surface (bls). Discrete samples were collected from depths of 0 to 2 feet, 2 to 4 feet, 4 to 6 feet, and 6 to 8 feet bls and retained for OVA



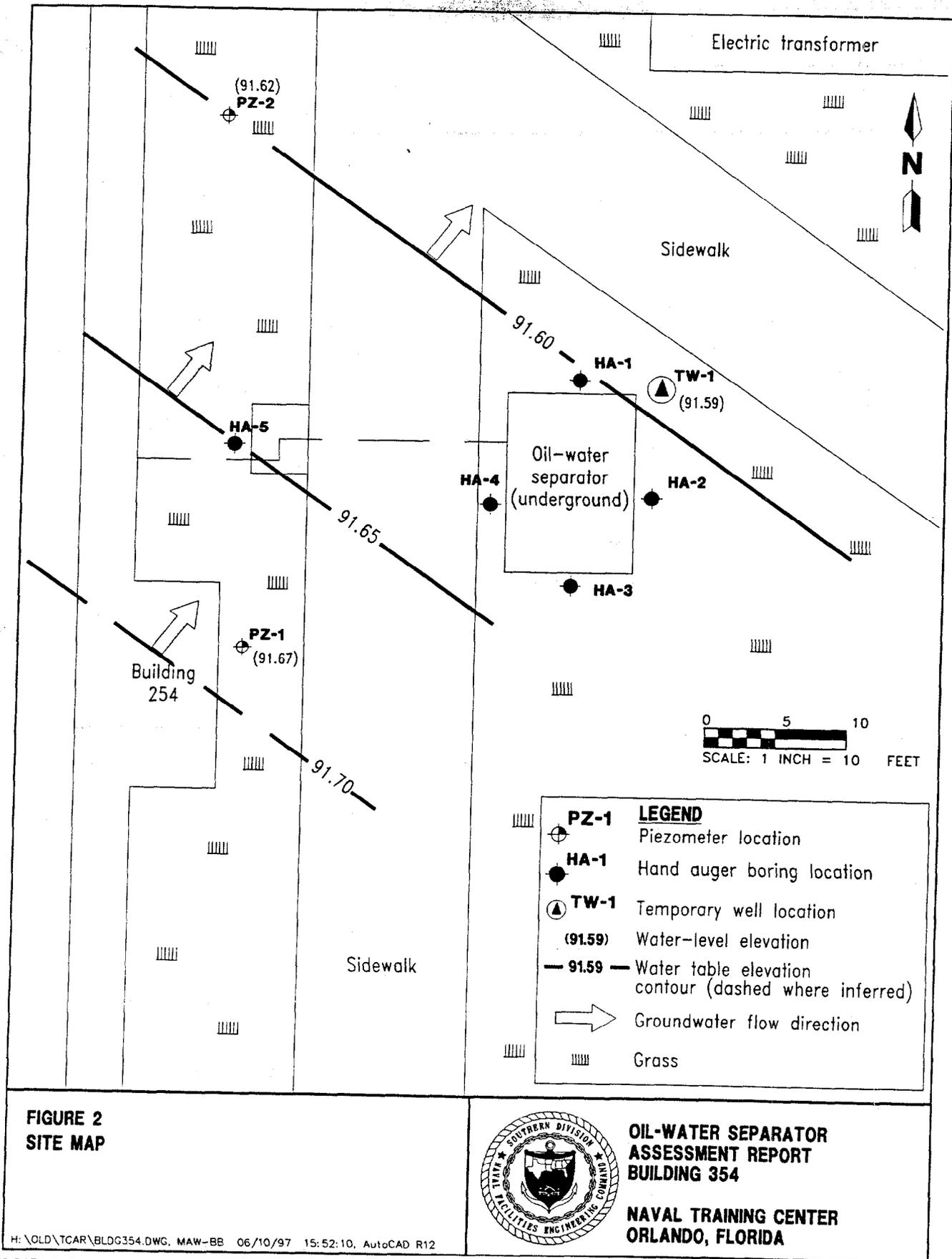
**FIGURE 1
SITE VICINITY MAP**



**OIL-WATER SEPARATOR
ASSESSMENT REPORT
BUILDING 354**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

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0 5 10
SCALE: 1 INCH = 10 FEET

LEGEND

- PZ-1** Piezometer location
- HA-1** Hand auger boring location
- TW-1** Temporary well location
- (91.59)** Water-level elevation
- 91.59 -** Water table elevation contour (dashed where inferred)
- Groundwater flow direction
- Grass

**FIGURE 2
SITE MAP**



**OIL-WATER SEPARATOR
ASSESSMENT REPORT
BUILDING 354**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

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analysis. All soil samples were analyzed following guidelines in ABB-ES's Florida Department of Environmental Protection-approved Comprehensive Quality Assurance Plan. The five soil borings were installed surrounding the oil-water separator. Locations of the borings are shown on Figure 2, Site Plan.

The OVA results indicate that all soil samples reported total hydrocarbon values of less than 1 part per million. A summary of the OVA results, including soil sample descriptions, is summarized in Table 1.

4.0 GROUNDWATER ASSESSMENT

On April 16, 1997, two piezometers (PZ-1 and PZ-2) and one temporary well (TW-1) were installed into the water table to determine the direction of groundwater flow and to assess groundwater quality at the site. Using the piezometers and temporary well, the direction of groundwater flow was determined to be from southwest to northeast. A summary of the groundwater elevations is included in Table 2, and the direction of groundwater flow is shown on Figure 2.

Based on the groundwater flow direction and OVA results, temporary well TW-1 was sampled on May 21, 1997, to assess groundwater quality. The samples were transported to PC&B Environmental Laboratories, Inc., in Oviedo, Florida, to be analyzed using the used-oil analytical group (U.S. Environmental Protection Agency Methods 624, 625, 418, and metals, including arsenic, cadmium, chromium, and lead) as described in Chapter 62-770, Florida Administrative Code. The locations of the piezometers and temporary well are shown on Figure 2.

Laboratory analytical results indicate the presence of chloroform at 44.7 micrograms per liter ($\mu\text{g}/\ell$), and bromodichloromethane at 13.4 $\mu\text{g}/\ell$, and chlorodibromomethane at 2.8 $\mu\text{g}/\ell$. These analytes are believed to be the result of laboratory-introduced contamination. The rest of the parameters tested were found below standard laboratory detection limits. Laboratory groundwater analytical results are included as Attachment B.

5.0 CONCLUSIONS

No compounds were detected at concentrations exceeding the State of Florida Target Cleanup Levels. No petroleum-impacted soil was identified at the site.

6.0 RECOMMENDATIONS

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

Table 1
Summary of Organic Vapor Analyses,
May 1997

Oil-Water Separator Assessment Report
 Building 354
 Naval Training Center
 Orlando, Florida

Soil Boring Designation	Sample Depth (feet bls)	Unfiltered (ppm)	Filtered (ppm)	Total Hydrocarbons (ppm)	Physical Observations
HA-1	0-2	<1	<1	<1	No staining, no petroleum odor.
	2-4	<1	<1	<1	No staining, no petroleum odor.
	4-6	<1	<1	<1	No staining, no petroleum odor.
	6-8 ¹	<1	<1	<1	No staining, no petroleum odor.
HA-2	0-2	<1	<1	<1	No staining, no petroleum odor.
	2-4	<1	<1	<1	No staining, no petroleum odor.
	4-6	<1	<1	<1	No staining, no petroleum odor.
	6-8	<1	<1	<1	No staining, no petroleum odor.
HA-3	0-2	<1	<1	<1	No staining, no petroleum odor.
	2-4	<1	<1	<1	No staining, no petroleum odor.
	4-6	<1	<1	<1	No staining, no petroleum odor.
	6-8	<1	<1	<1	No staining, no petroleum odor.
HA-4	0-2	<1	<1	<1	No staining, no petroleum odor.
	2-4	<1	<1	<1	No staining, no petroleum odor.
	4-6	<1	<1	<1	No staining, no petroleum odor.
	6-8	<1	<1	<1	No staining, no petroleum odor.
HA-5	0-2	<1	<1	<1	No staining, no petroleum odor.
	2-4	<1	<1	<1	No staining, no petroleum odor.
	4-6	<1	<1	<1	No staining, no petroleum odor.
	6-8	<1	<1	<1	No staining, no petroleum odor.

¹ Water table encountered at approximately 7.5 feet bls.

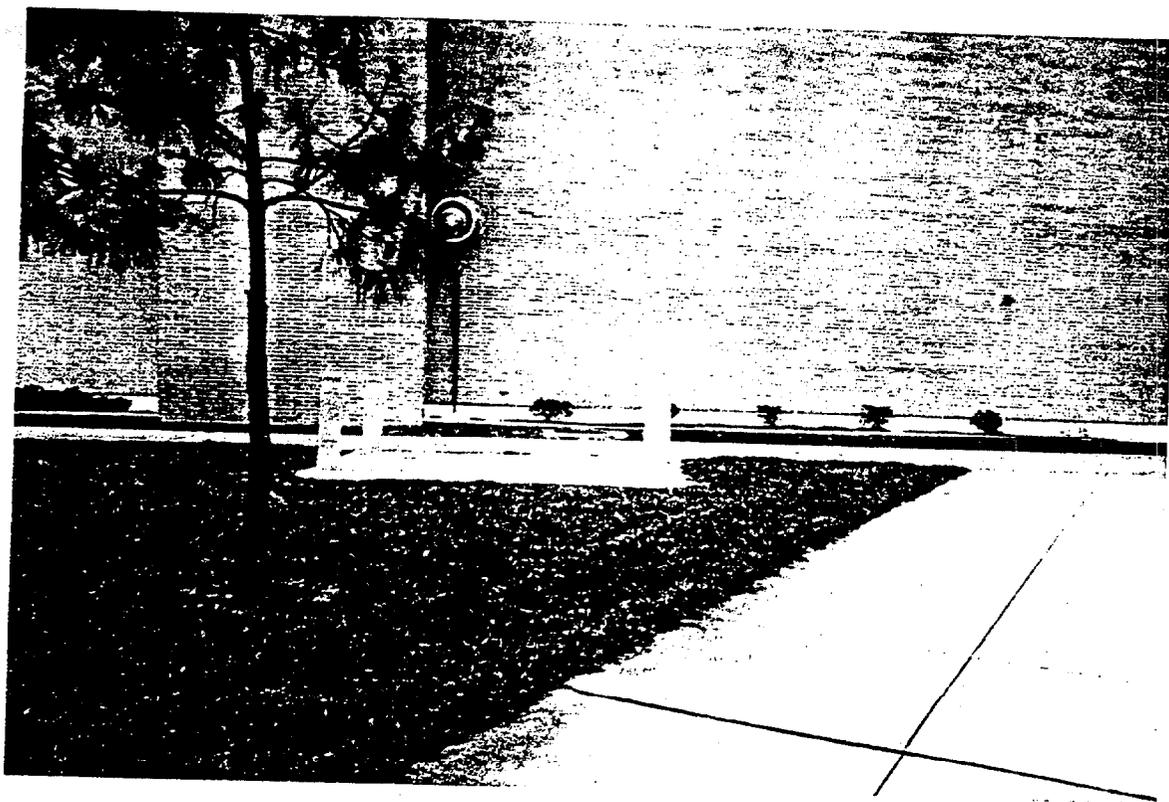
Notes: bls = below land surface.
 ppm = parts per million.
 <1 = nondetectable limit for organic vapor analyzer.

ATTACHMENT A

PHOTOGRAPHS



Photograph 1: View of the oil-water separator at Building 354, facing west.



Photograph 2: View of the oil-water separator at Building 354, facing south.

APPENDIX B
GROUNDWATER LABORATORY ANALYTICAL REPORTS
AND CHAIN-OF-CUSTODY RECORDS



PC&B Environmental Laboratories, Inc.

210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

05-29-1997

John Kaiser
ABB Environmental Services
1080 Woodcock Road, Suite 100
Orlando, FL 32803-

Dear John Kaiser:

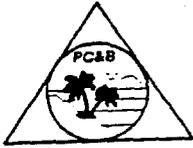
Enclosed are the results of the analysis of your samples received 05/22/1997.

Our laboratory is certified by the Florida DHRS (Lab #E83239) and operates under an FDEP approved Comprehensive Quality Assurance Plan (#900134G). Unless otherwise noted, all results are reported as wet weight. All data were determined in accordance with published procedures (EPA-600/4-79-020), Methods for Chemical Analysis of Water and Wastes, Revised March 1983 and/or Standard Methods for the examination of Water and Wastewater, 18th Edition 1989 and/or Test Methods for Evaluating Solid Waste (EPA-SW-846, Revised January 1995), unless stated otherwise in our CompQapp under method modifications.

If you have any questions, please do not hesitate to give me a call.

Sincerely,

Declan Cowley
Laboratory Director



PC&B Environmental Laboratories, Inc.

210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

Client : ABB Environmental Services
1080 Woodcock Road, Suite 100
Orlando, FL 32803-

Contact : John Kaiser
Phone : (407) 895-8845

Laboratory Reference Number : 97050153

Project Name : NTC Orlando
Project Number : 8545-58
Sample temperature at time of receipt: 4 degrees C

Chain of Custody : 6213

Laboratory ID	Matrix	Client ID	Status	Date/Time Sampled
97050153-1	Water	072GT101/354 TW-1	RUN	05/22/1997 08:59

Number	Parameter	Description
1	Group Test	Waste Oil Group for FAC 17-770
1	EPA 418.1/9073	TRPH by IR

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo, FL 32765
PHONE: 407-359-7194
FAX: 359-7197

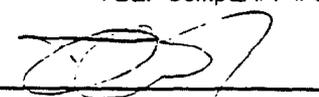
Volatile Organics by GCMS

CLIENT NAME: ABB Environmental Services
PROJECT NAME: NTC Orlando
PROJECT NUMBER: 8545-58
DATE RECEIVED: 05/22/1997
ANALYTICAL PROTOCOL: EPA 624/8240

Lab Reference Number	97050153-1
Client Sample ID	072GT101/354 TW-1
Date Sampled	05/22/1997
Date Extracted	05/22/1997
Date Analyzed	05/22/1997
Sample Matrix (as Received)	Water
Analysis Confirmed	GCMS
Dilution Factor	1
Result Units	ug/l
Benzene	1.0 U
Bromodichloromethane	13.4
Bromoform	1.0 U
Bromomethane	1.0 U
Carbon tetrachloride	1.0 U
Chlorobenzene	1.0 U
Chlorodibromomethane	2.8
Chloroethane	1.0 U
2-Chloroethyl vinyl ether	1.0 U
Chloroform	44.7
Chloromethane	1.0 U
Dibromomethane	1.0 U
1,2-Dibromomethane	1.0 U
Dichlorodifluoromethane	1.0 U
1,1-Dichloroethane	1.0 U
1,2-Dichloroethane	1.0 U
1,1-Dichloroethene	1.0 U
1,2-Dichlorobenzene	1.0 U
1,3-Dichlorobenzene	1.0 U
1,4-Dichlorobenzene	1.0 U
trans-1,2-Dichloroethene	1.0 U
cis-1,2-Dichloroethene	1.0 U
1,2-dichloropropane	1.0 U
cis-1,3-Dichloropropene	1.0 U
trans-1,3-Dichloropropene	1.0 U
Ethylbenzene	1.0 U
Methylene chloride	1.0 U
Styrene	1.0 U
1,1,2,2-Tetrachloroethane	1.0 U
1,1,1,2-Tetrachloroethane	1.0 U
Tetrachloroethene	1.0 U
Toluene	1.0 U
1,1,1-Trichloroethane	1.0 U
1,1,2-Trichloroethane	1.0 U
Trichloroethene	1.0 U
Trichlorofluoromethane	1.0 U
1,2,3-trichloropropane	1.0 U
Vinyl chloride	1.0 U
Xylenes (total)	1.0 U
Acetone	25 U
Acetonitrile	25 U
Acrolein	25 U
Acrylonitrile	25 U
Carbon disulfide	25 U
2-Butanone	25 U
2-Hexanone	25 U
4-Methyl-2-pentanone	25 U
Vinyl acetate	25 U
MTBE	5.0 U
(Surr) 1,2-Dichloroethane (%)	111
(Surr) Toluene-d8 (%)	105
(Surr) 4-Bromofluorobenzene (%)	108

U = Undetected. The value preceding the 'U' is the MDL for the analyte, based on dilution. Results reported on a Wet Weight basis.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by: 

Quality Control Report for Spike/Spike Duplicate Analysis

Volatile Organics by GCMS

Matrix: Water

Lab Sample ID: 9705153-1

QC Batch ID: 9705MS1048

Spike Units: ug/l

Analysis Date: 05/22/1997

Preparation Date: 05/22/1997

Method: EPA 624

Analyst: NM

Analyte	Spike Amount	Sample Result	Spike Result	Spike Percent Recovery	MSD Result	MSD Percent Recovery	RPD
Benzene	50.0	0.0	53.0	106	49.0	98	8
Carbon tetrachloride	50.0	0.0	43.0	86	40.0	80	7
Chlorobenzene	50.0	0.0	49.0	98	46.0	92	6
1,1-Dichloroethene	50.0	0.0	58.0	116	53.0	106	9
1,4-Dichlorobenzene	50.0	0.0	47.0	94	47.0	94	0
Ethylbenzene	50.0	0.0	49.0	98	45.0	90	9
Toluene	50.0	0.0	50.0	100	46.0	92	8
Trichloroethene	50.0	0.0	53.0	106	48.0	96	10

Quality Control Limits

Analyte	Lower Limit	Upper Limit	RPD
Benzene	66	142	12
Carbon tetrachloride	65	138	12
Chlorobenzene	73	123	8
1,1-Dichloroethene	53	156	16
1,4-Dichlorobenzene	53	136	15
Ethylbenzene	68	123	10
Toluene	68	127	10
Trichloroethene	69	133	11

Quality Control Report for LCS Analysis

Volatile Organics by GCMS

Matrix: Water
Lab Sample ID: LCS
QC Batch ID: 9705MS1048
LCS Units: ug/l

Analysis Date: 05/22/1997
Preparation Date: 05/22/1997
Method: EPA 624
Analyst: NM

Analyte	LCS Conc	LCS Result	Percent Recovery	Lower Control Limit	Upper Control Limit
Benzene	20.0	22.0	110	75	120
Carbon tetrachloride	20.0	18.0	90	75	120
Chlorobenzene	20.0	20.0	100	75	120
1,1-Dichloroethene	20.0	22.0	110	75	120
1,4-Dichlorobenzene	20.0	24.0	120	75	120
Ethylbenzene	20.0	17.0	85	75	120
Toluene	20.0	21.0	105	75	120
Trichloroethene	20.0	20.0	100	75	120

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Semivolatile Organics by GCMS

CLIENT NAME: ABB Environmental Services
PROJECT NAME: NTC Orlando
PROJECT NUMBER: 8545-58
DATE RECEIVED: 05/22/1997
ANALYTICAL PROTOCOL: EPA 625/8270

Lab Reference Number	97050153-1
Client Sample ID	072GT101/354 TW-1
Date Sampled	05/22/1997
Date Extracted	05/27/1997
Date Analyzed	05/27/1997
Sample Matrix (as Received)	Water
Analysis Confirmed	GCMS
Dilution Factor	1
Result Units	ug/l
Acenaphthene	5 U
Acenaphthylene	5 U
Anthracene	5 U
Benzidine	10 U
Benzoic Acid	25 U
Benzo(a)anthracene	5 U
Benzo(b)fluoranthene	5 U
Benzo(k)fluoranthene	5 U
Benzo(ghi)perylene	5 U
Benzo(a)pyrene	5 U
Benzyl alcohol	10 U
Bis(2-chloroethyl)ether	5 U
Bis(2-chloroethoxy)methane	5 U
Bis(2-chloroisopropyl)ether	5 U
Bis(2-ethylhexyl)phthalate	5 U
4-Bromophenyl phenyl ether	5 U
Butyl benzyl phthalate	5 U
1-Chloronaphthalene	5 U
2-Chloronaphthalene	5 U
4-Chloro-3-methylphenol	5 U
2-Chlorophenol	5 U
4-Chlorophenyl phenyl ether	5 U
Chrysene	5 U
Dibenz(a,h)anthracene	5 U
Dibenzofuran	5 U
Di-n-butyl phthalate	5 U
1,3-Dichlorobenzene	5 U
1,4-Dichlorobenzene	5 U
1,2-Dichlorobenzene	5 U
3,3'-Dichlorobenzidine	10 U
2,4-Dichlorophenol	5 U
2,6-Dichlorophenol	5 U
Diethylphthalate	5 U
2,4-Dimethylphenol	5 U
Dimethylphthalate	5 U
4,6-Dinitro-2-methylphenol	5 U
2,4-Dinitrophenol	25 U
2,4-Dinitrotoluene	5 U
2,6-Dinitrotoluene	5 U
Diphenylamine	5 U
1,2-Diphenylhydrazine	5 U
Di-n-octylphthalate	5 U
Fluoranthene	5 U
Fluorene	5 U
Hexachlorobenzene	5 U
Hexachlorobutadiene	5 U
Hexachlorocyclopentadiene	5 U
Hexachloroethane	5 U
Indeno(123-cd)pyrene	5 U
Isophorone	5 U
1-Methylnaphthalene	5 U
2-Methylnaphthalene	5 U

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Semivolatile Organics by GCMS

CLIENT NAME: ABB Environmental Services
PROJECT NAME: NTC Orlando
PROJECT NUMBER: 8545-58
DATE RECEIVED: 05/22/1997
ANALYTICAL PROTOCOL: EPA 625/8270

Lab Reference Number	97050153-1
Client Sample ID	072GT101/354 TW-1
Date Sampled	05/22/1997
Date Extracted	05/27/1997
Date Analyzed	05/27/1997
Sample Matrix (as Received)	Water
Analysis Confirmed	GCMS
Dilution Factor	1
Result Units	ug/l

2-Methylphenol	5 U
4-Methylphenol	5 U
Naphthalene	5 U
2-Nitroaniline	25 U
3-Nitroaniline	25 U
4-Nitroaniline	25 U
Nitrobenzene	5 U
2-Nitrophenol	5 U
4-Nitrophenol	5 U
N-Nitrosodiphenylamine	5 U
N-Nitroso-di-n-propylamine	5 U
Pentachlorophenol	15 U
Phenanthrene	5 U
Phenol	5 U
Pyrene	5 U
1,2,4-Trichlorobenzene	5 U
2,4,5-Trichlorophenol	5 U
2,4,6-Trichlorophenol	5 U
(Surr) 2-Fluorophenol (%)	69
(Surr) Phenol-d5 (%)	73
(Surr) Nitrobenzene-d5 (%)	58
(Surr) 2-Fluorobiphenyl (%)	68
(Surr) 2,4,6-Tribromophenol (%)	71
(Surr) Terphenyl-d14 (%)	46

U = Undetected. The value preceding the 'U' is the MDL for the analyte, based on dilution. Results reported on a Wet Weight basis.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by: 

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PHONE: 407-359-7194

Report of Analysis

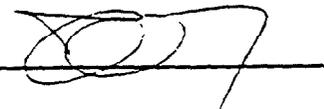
CLIENT NAME: ABB Environmental Services
PROJECT NAME: NTC Orlando
PROJECT NUMBER: 8545-58
DATE RECEIVED: 05/22/1997

Lab Reference Number	97050153-1
Client Sample ID	072GT101/354 TW-1
Date Sampled	05/22/1997
Sample Matrix (as Received)	Water

EPA 418.1/9073	TRPH	mg/l	1.0 U
EPA 6010	Arsenic, Total	ug/l	5.0 U
EPA 6010	Cadmium, Total	ug/l	1 U
EPA 6010	Chromium, Total	ug/l	5.0 U
EPA 6010	Lead, Total	ug/l	3 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte. Results reported on a Wet Weight basis.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by: 

Quality Control Report for Spike Analysis

INORGANICS

Matrix: Water

Lab Sample ID: 9705154-2

Analysis Date: 05/28/1997

Preparation Date: 05/28/1997

Analyte	Spike Amount	Sample Result	Spike Result	Percent Recovery	Lower Control Limit	Upper Control Limit
TRPH	10.0 mg/l	0.0	10.8	108	85	111

Quality Control Report for LCS Analysis

INORGANICS

Matrix: Water

Lab Sample ID: LCS

Analysis Date: 05/28/1997

Preparation Date: 05/28/1997

Analyte	LCS Conc		LCS Result	Percent Recovery	Lower Control Limit	Upper Control Limit
TRPH	10.0 mg/l	0.0	10.0	100	70	120

Quality Control Report for Spike Analysis

Semivolatile Organics by GCMS

Matrix: Water

Lab Sample ID: 9705164-5

QC Batch ID: 9705BNA068

Spike Units: ug/l

Analysis Date: 05/27/1997

Preparation Date: 05/27/1997

Method: EPA 625

Analyst: KN

Analyte	Spike Amount	Sample Result	Spike Result	Percent Recovery	Lower Control Limit	Upper Control Limit
Acenaphthene	100	0	64	64	34	111
4-Chloro-3-methylphenol	200	0	146	73	25	113
2-Chlorophenol	200	0	133	67	39	104
1,3-Dichlorobenzene	100	0	69	69	49	112
2,4-Dinitrotoluene	100	0	67	67	29	108
4-Nitrophenol	200	0	129	65	22	101
N-Nitroso-di-n-propylamine	100	0	67	67	28	111
Pentachlorophenol	200	0	175	88	38	124
Phenol	200	0	144	72	23	113
Pyrene	100	0	80	80	46	125
1,2,4-Trichlorobenzene	100	0	57	57	34	110

Quality Control Report for LCS Analysis

Semivolatile Organics by GCMS

Matrix: Water
Lab Sample ID: LCS
QC Batch ID: 9705BNA068
LCS Units: ug/l

Analysis Date: 05/27/1997
Preparation Date: 05/27/1997
Method: EPA 625
Analyst: KN

Analyte	LCS Conc	LCS Result	Percent Recovery	Lower Control Limit	Upper Control Limit
Acenaphthene	100	68	68	60	120
4-Chloro-3-methylphenol	200	121	61	50	120
2-Chlorophenol	200	136	68	50	120
1,3-Dichlorobenzene	100	77	77	60	120
2,4-Dinitrotoluene	100	64	64	50	120
4-Nitrophenol	200	128	64	50	120
N-Nitroso-di-n-propylamine	100	71	71	50	120
Pentachlorophenol	200	183	92	50	120
Phenol	200	145	73	50	120
Pyrene	100	95	95	60	120
1,2,4-Trichlorobenzene	100	67	67	50	120

Quality Control Report for LCS Analysis

INORGANICS

Matrix: Water

Lab Sample ID: LCS

Analysis Date: 05/23/1997

Preparation Date: 05/23/1997

Analyte	LCS Conc		LCS Result	Percent Recovery	Lower Control Limit	Upper Control Limit
Arsenic, Total	200 ug/l	0	209	105	70	120
Cadmium, Total	500 ug/l	0	511	102	70	120
Chromium, Total	100 ug/l	0	106	106	70	120
Lead, Total	100 ug/l	0	103	103	70	120

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Chain of Custody

Work Order: 9105153
 Date: 5-21-97 Page 1 of 1

COMPANY				ANALYSIS REQUEST										NUMBER OF CONTAINERS					
#	SAMPLE ID.	DATE/TIME	MATRIX	EPA 624	EPA 625	EPA 418.1	METALS	CO. CR. PB. AS											
1	0726-T101/354 TW-1	5-22-97 0859	H ₂ O	2	1	1	1												
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			

RELINQUISHED BY		DATE/TIME	RECEIVED BY		DATE/TIME	PROJECT INFORMATION			SAMPLE RECEIPT	
1:	<i>Scott Dmelik</i>	5-21-97	1:	<i>U. Bennett</i>	5/22/97	PROJECT NAME:	NTC ORLANDO		Total No. of Containers	
2:			2:		12/5	PROJECT #:	8545-58		Chain of Custody Seals	
3:			3:			SITE ADDRESS:	BUILDING 354		Rec'd Good Condition/Cold	
SPECIAL INSTRUCTIONS/COMMENTS:						PROJECT MANAGER:	John Kaiser		PO#:	
						INVOICE TO:	ATN: LUCOVA KANDT			SHIPPED VIA: