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NAS CECIL FIELD, FL  
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CONFIRMATORY SAMPLING REPORT FOR BUILDING 502 TANK 502 BASE  
REALIGNMENT AND CLOSURE UNDERGROUND STORAGE TANK AND ABOVEGROUND  
STORAGE TANK GREY SITES NAS CECIL FIELD FL  
10/1/1997  
ABB ENVIRONMENTAL SERVICES INC

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 502, TANK 502**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GREY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

**Prepared by:**

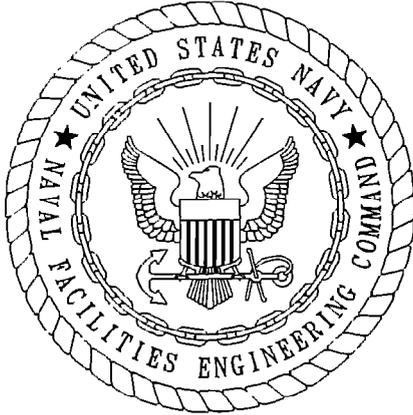
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**Prepared for:**

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**October 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-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: October 17, 1997

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(DFAR 252.227-7036)

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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc
BEI	Bechtel Environmental Incorporated
bls	below land surface
$\mu\text{g}/\ell$	micrograms per liter
$\text{mg}/\ell$	milligrams per liter
OVA	organic vapor analyzer
ppm	parts per million.
TRPH	total recoverable petroleum hydrocarbons
UST	underground storage tank

## 1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank 502 at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 502 was an underground storage tank (UST) located at Building 502, which originally served as a maintenance facility for equipment and vehicles associated with the Aviation Ordnance Area (Figure 1). The UST, which was installed in 1957, had a 1,000-gallon capacity and was used to supply fuel oil to a hot-water boiler (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank 502 was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

Tank 502 was removed by Bechtel Environmental, Inc. (BEI), on April 16, 1997. Five tons of excessively contaminated soil were removed at that time. A Closure Report was prepared for Tank 502 and submitted to the Florida Department of Environmental Protection in July of 1997 (BEI, 1997).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling for Tank 502 was initiated in February 1997 (before the UST was removed) and included

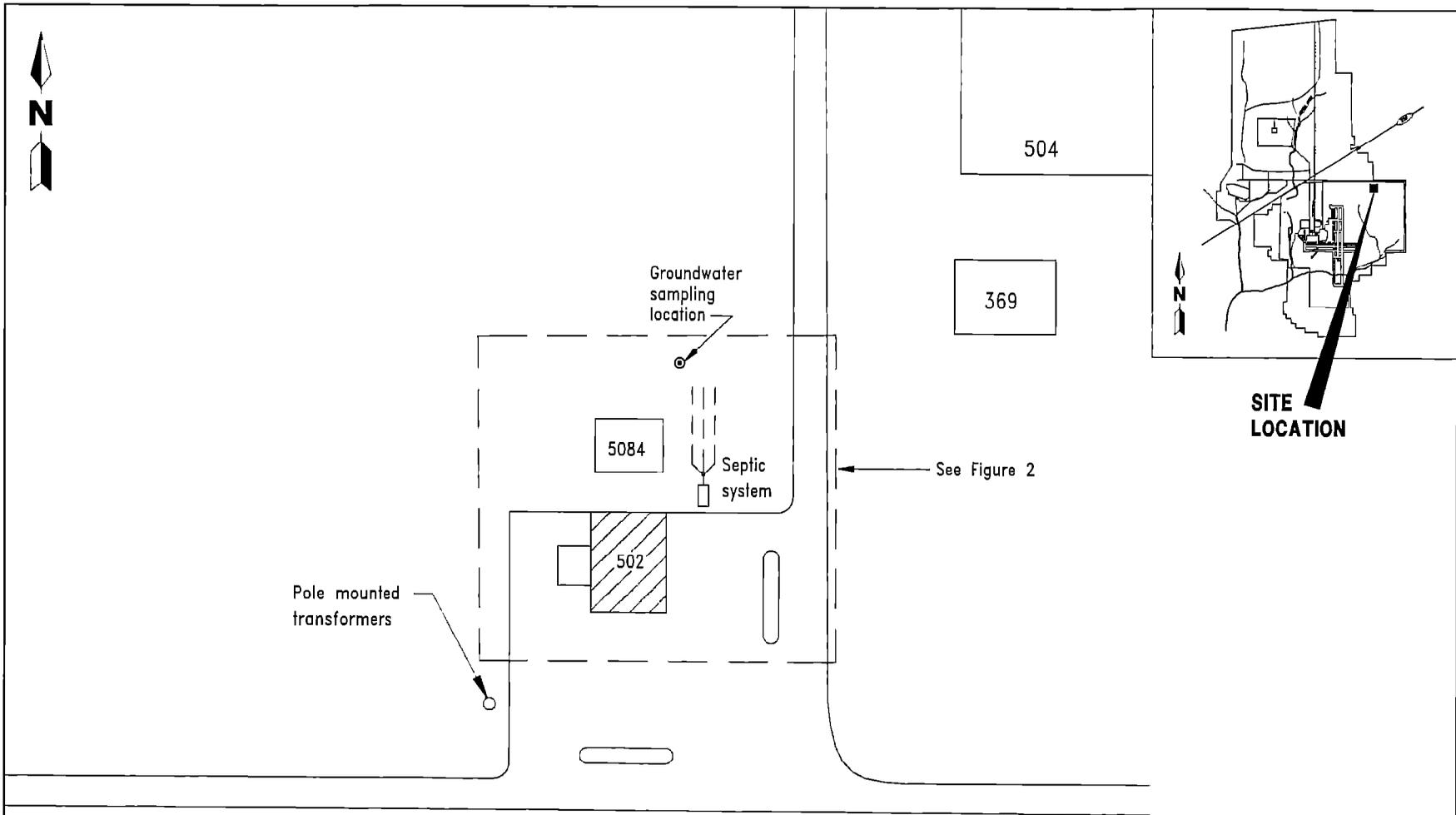
- the advancement of three soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

Soil samples were collected from each boring at depth intervals of 1-foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

A monitoring well, CEF-502-1S, was installed west of the UST near the location of soil boring CEF-502-SB1 to a depth of 12 feet bls. One groundwater sample was collected from the well and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and monitoring well CEF-502-1S is presented on Figure 2. The monitoring well installation detail is included in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was detected in one of the three soil borings. The highest OVA reading (130 ppm) was detected at 5 feet bls in soil boring SB-1. The soil OVA data are summarized in Table 1 and presented on Figure 2.



0 50 100  
 SCALE: 1 INCH = 100 FEET

**FIGURE 1**  
**TANK 502**  
**ORDNANCE ADMINISTRATION**  
**ARMORY BUILDING**



**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 502, TANK 502**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

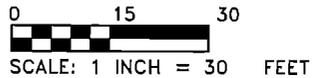
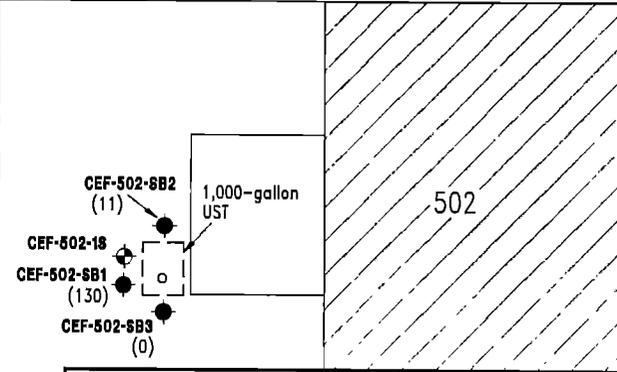
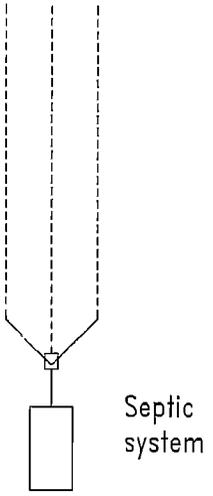
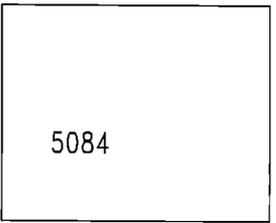
**LEGEND**

- 
**CEF-502-18** Monitoring well location and designation
- 
**CEF-502-8B1** Soil boring location and designation
- 
 UST fill port
- 
 OVA reading in ppm

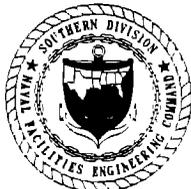
**NOTES**

UST = Underground storage tank  
 OVA = Organic vapor analyzer  
 ppm = parts per million  
 OVA readings taken during monitoring well installation

sampling location 



**FIGURE 2  
TANK 502  
SOIL BORING AND MONITORING WELL  
LOCATIONS**



**CONFIRMATORY SAMPLING REPORT  
BUILDING 502, TANK 502**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 502, Tank 502  
Naval Air Station Cecil Field  
Jacksonville, Florida

Boring Number	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-502-SB1	1	0	–	0
	3	60	0	60
	5	130	0	130
	6.5 (wet)	1,000	0	1,000
CEF-502-SB2	1	0	–	0
	3	0	–	0
	5	11	0	11
	6.5 (wet)	1,400	0	1,400
CEF-502-SB3	1	0	--	0
	3	0	–	0
	5	0	–	0
	6.5 (wet)	130	0	130

Notes: All soil samples were collected on February 3, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.  
OVA readings were not taken during monitoring well installation.

OVA = organic vapor analyzer.  
ppm = parts per million.  
bls = below land surface.  
wet = soil sample was completely saturated when analyzed.  
-- = filtered readings were not collected.

Volatile organic aromatics, polynuclear aromatic hydrocarbons, and total recoverable petroleum hydrocarbons (TRPH) were detected in the groundwater sample collected from monitoring well CEF-502-1S. Naphthalene (160 micrograms per liter [ $\mu\text{g}/\ell$ ]) exceeded the requirement of 20  $\mu\text{g}/\ell$ , and TRPH (7.5 milligrams per liter) exceeded the requirement of 5  $\text{mg}/\ell$  specified in Chapter 62-770 of the Florida Administrative Code (FAC). A summary of the groundwater analytical results is presented in Table 2. The complete analytical data set is presented in Appendix B.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank 502 site did not provide an adequate assessment of the horizontal and vertical extent of excessively contaminated soil. The subsequent removal of Tank 502 did not remove all the excessively contaminated soil and did not address groundwater contamination. Therefore, it is recommended that a site assessment be conducted to assess the extent of excessively contaminated soil and groundwater contamination at the Tank 502 site.

**Table 2**  
**Summary of Groundwater Analytical Results**

Confirmatory Sampling Report  
Building 502, Tank 502  
Naval Air Station Cecil Field  
Jacksonville, Florida

Compound	CEF-502-1S	Groundwater Cleanup Target Levels <sup>1</sup>
<b><u>Volatile Organic Aromatics (USEPA Method 601/602) (<math>\mu\text{g}/\text{l}</math>)</u></b>		
Ethylbenzene	19	30
Xylenes	7.9	20
<b><u>Polynuclear Aromatic Hydrocarbons (USEPA Method 625) (<math>\mu\text{g}/\text{l}</math>)</u></b>		
1-Methylnaphthalene	150	NA
2-Methylnaphthalene	200	NA
Naphthalene	160	20
<b><u>Total Recoverable Petroleum Hydrocarbons (TRPH) (Florida Pro) (mg/l)</u></b>		
TRPH	7.5	5

<sup>1</sup> Chapter 62-770, Florida Administrative Code.

Notes: Groundwater sample was collected on March 20, 1997.

USEPA = U.S. Environmental Protection Agency.

$\mu\text{g}/\text{l}$  = micrograms per liter.

NA = not applicable.

$\text{mg}/\text{l}$  = milligrams per liter.

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).
- ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).
- Bechtel Environmental Incorporated. 1997. DO #59: *Closure Report for Above Storage Tank/Underground Storage Tank Removals, Naval Air Station Cecil Field, Jacksonville, Florida*. (July).

**APPENDIX A**

**MONITORING WELL INSTALLATION DETAIL**

TITLE: NAS Cecil Field		LOG of WELL: CEF-502-19	BORING NO. CEF-502-19
CLIENT: SOUTHDIIVNAVFACENGCOM			PROJECT NO: 8542-03
CONTRACTOR: GEOTEK		DATE STARTED: 3-17-97	COMPLTD: 3-17-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 5.5-10.5	PROTECTION LEVEL: D
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 10.5 FEET.	DPTH TO $\nabla$ 6.50 FEET.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 3-17-97		SITE: Building 502

DEPTH F.T.	LABORATORY SAMPLE ID.	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0   5   10   15   20			0	SANDY GRAVEL (FILL MATERIAL): Light Brown, gravel with sand and silt, well graded.		GM	posthole	
			60	SILTY SAND: Grey to brown, fine grain, poorly graded, strong petroleum odor.		SM	posthole	
			1,400	SILTY SAND: Light brown to black, very brittle, hard pan, petroleum odor.			Hand Auger	
			1,000	SILTY SAND: Light brown to black, very brittle, hard pan, petroleum odor.			Hand Auger	

**APPENDIX B**

**GROUNDWATER ANALYTICAL DATA**

MAS CECIL FIELD -- TANK 502  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9396

Lab Sample Number: B7C2201010  
 Site: BRACGREY  
 Locator: CEF5021S  
 Collect Date: 20-MAR-97

VALUE QUAL UNITS DL

BRACGREY ANALYTICAL PARAMETERS

1,1,1-Trichloroethane	1 U	ug/l	1
1,1,2,2-Tetrachloroethane	1 U	ug/l	1
1,1,2-Trichloroethane	1 U	ug/l	1
1,1-Dichloroethane	1 U	ug/l	1
1,1-Dichloroethene	1 U	ug/l	1
1,2-Dichlorobenzene	1 U	ug/l	1
1,3-Dichlorobenzene	1 U	ug/l	1
1,4-Dichlorobenzene	1 U	ug/l	1
1,2-Dichloroethane	1 U	ug/l	1
1,2-Dichloropropane	1 U	ug/l	1
1-Methylnaphthalene	150	ug/l	20
2-Methylnaphthalene	200	ug/l	20
Acenaphthene	20 U	ug/l	20
Acenaphthylene	20 U	ug/l	20
Anthracene	20 U	ug/l	20
Benzene	1 U	ug/l	1
Benzo (a) anthracene	1 U	ug/l	1
Benzo (a) pyrene	1 U	ug/l	1
Benzo (b) fluoranthene	1 U	ug/l	1
Benzo (g,h,i) perylene	2 U	ug/l	2
Benzo (k) fluoranthene	1.5 U	ug/l	1.5
Bromodichloromethane	1 U	ug/l	1
Bromoform	1 U	ug/l	1
Bromomethane	1 U	ug/l	1
Carbon tetrachloride	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1
Chloromethane	1 U	ug/l	1
Chloroform	1 U	ug/l	1
Chloromethane	1 U	ug/l	1
Chrysene	1 U	ug/l	1
Dibenzo (a,h) anthracene	2 U	ug/l	2
Dibromochloromethane	1 U	ug/l	1
Dichlorodifluoromethane	1 U	ug/l	1
Ethylbenzene	19	ug/l	1
Ethylene dibromide	.02 U	ug/l	.02
Fluoranthene	2 U	ug/l	2
Fluorene	20 U	ug/l	20
Indeno (1,2,3-cd) pyrene	1 U	ug/l	1
Lead	5 U	ug/l	5
Methyl tert-butyl ether	1 U	ug/l	1
Methylene chloride	1 U	ug/l	1
Naphthalene	160	ug/l	20
Phenanthrene	20 U	ug/l	20
Pyrene	2 U	ug/l	2
Tetrachloroethene	1 U	ug/l	1
Toluene	1 U	ug/l	1
Total petroleum hydrocarbons	7.5	mg/l	.5
Trichloroethene	1 U	ug/l	1
Trichlorofluoromethane	1 U	ug/l	1
Vinyl chloride	1 U	ug/l	1

NAS CECIL FIELD -- TANK 502  
UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9396

Lab Sample Number: B7C2201010  
Site BRACGREY  
Locator CEF5021S  
Collect Date: 20-MAR-97

VALUE QUAL UNITS DL

Xylenes (total)	7.9	ug/l	1
cis-1,3-Dichloropropene	1 U	ug/l	1
trans-1,2-Dichloroethene	1 U	ug/l	1
trans-1,3-Dichloropropene	1 U	ug/l	1
Lead-DISS	-		

U = NOT DETECTED J = ESTIMATED VALUE  
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
R = RESULT IS REJECTED AND UNUSABLE