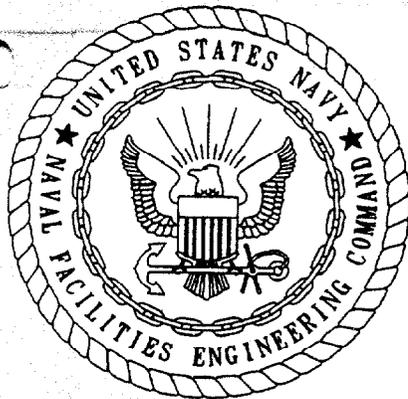


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FINAL BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING  
REPORTS STUDY AREA 26 NTC ORLANDO FL  
6/1/1997  
ABB ENVIRONMENTAL

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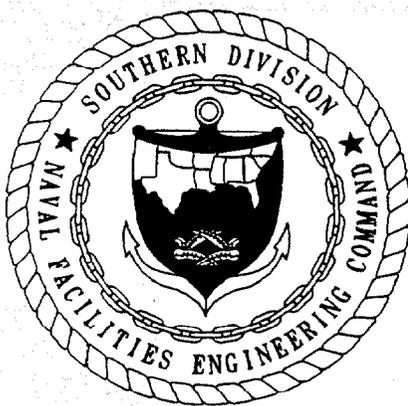
**BASE REALIGNMENT AND CLOSURE  
ENVIRONMENTAL SITE SCREENING REPORT**

**STUDY AREA 26**

**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**

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

**STUDY AREA 26**

**NAVAL TRAINING CENTER  
ORLANDO, FLORIDA**

**Unit Identification Code: N65928**

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

**Prepared by:**

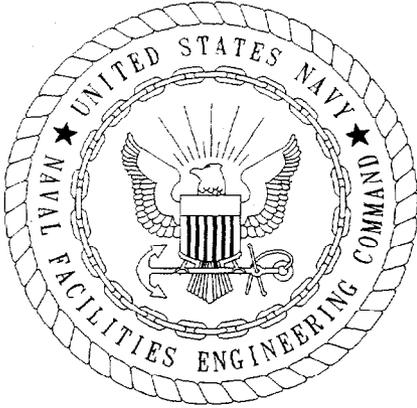
**ABB Environmental Services, Inc.  
2590 Executive Center Circle, East  
Tallahassee, Florida 32301**

**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**

**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 2, 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 26  
Naval Training Center  
Orlando, Florida

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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
AST	aboveground storage tank
bls	below land surface
CLP	Contract Laboratory program
DQO	data quality objective
FDEP	Florida Department of Environmental Protection
FID	flame ionization detector
FOSL	Finding of Suitability to Lease
FOST	Finding of Suitability to Transfer
mg/kg	milligrams per kilogram
$\mu\text{g}/\ell$	micrograms per liter
OPT	Orlando Partnering Team
PAH	polynuclear aromatic hydrocarbons
pCi/ $\ell$	picocuries per liter
RBC	risk-based concentration
SCG	soil cleanup goal
TAL	target analyte list
TCL	target compound list
USEPA	U.S. Environmental Protection Agency

## 1.0 STUDY AREA 26, FAMILY CAMP (FORMER AIRSTRIP)

This report contains information gathered as a result of site screening activities conducted at Study Area 26. In March of 1996, after the review of site screening results, the Orlando Partnering Team (OPT) concluded that the site required no further action, and was transferable under the conditions of a Finding of Suitability to Lease (FOSL) or a Finding of Suitability to Transfer (FOST). The OPT did observe that two surface soil samples collected adjacent to Study Area 26 during the background sampling investigation (S09 and S016) (ABB Environmental Services, Inc. [ABB-ES], 1995, Background Sampling Report) contained levels of polynuclear aromatic hydrocarbons (PAHs) that were of concern, and recommended that additional studies be completed to evaluate the extent of PAH contamination near Study Area 26.

1.1 STUDY AREA 26, BACKGROUND AND CONDITIONS. This section includes a brief background summary for Study Area 26 (Figure 1). Further details can be found in the Site Screening Plan (ABB-ES, 1995a) and the Technical Memorandum, U.S. Air Force Records Search (ABB-ES, 1995c). Study Area 26 includes the following buildings: Camp Bath House (RV Park) (Building 7351), Camp Laundry (Building 7352), Family Camp Office (Building 7357), and Family Camp (7358) (Figure 2). The family camp was once a small airstrip called the Pinecastle Aero Club. There was an aircraft hangar and several other buildings associated with this club. The airstrip was operated in the 1950s.

Buildings 7351, 7352, 7357, and 7358 are located in an area that is presently used as a family campground (Figure 2). It is located on the airstrip that had also been used for equipment and vehicle maintenance.

Historical aerial photographs indicate that the area has been used as a campground prior to 1965 and up to 1984, but portions may also have been used during this period for parking, a storage area for large pieces of equipment, and possibly a staging area for 55-gallon drums.

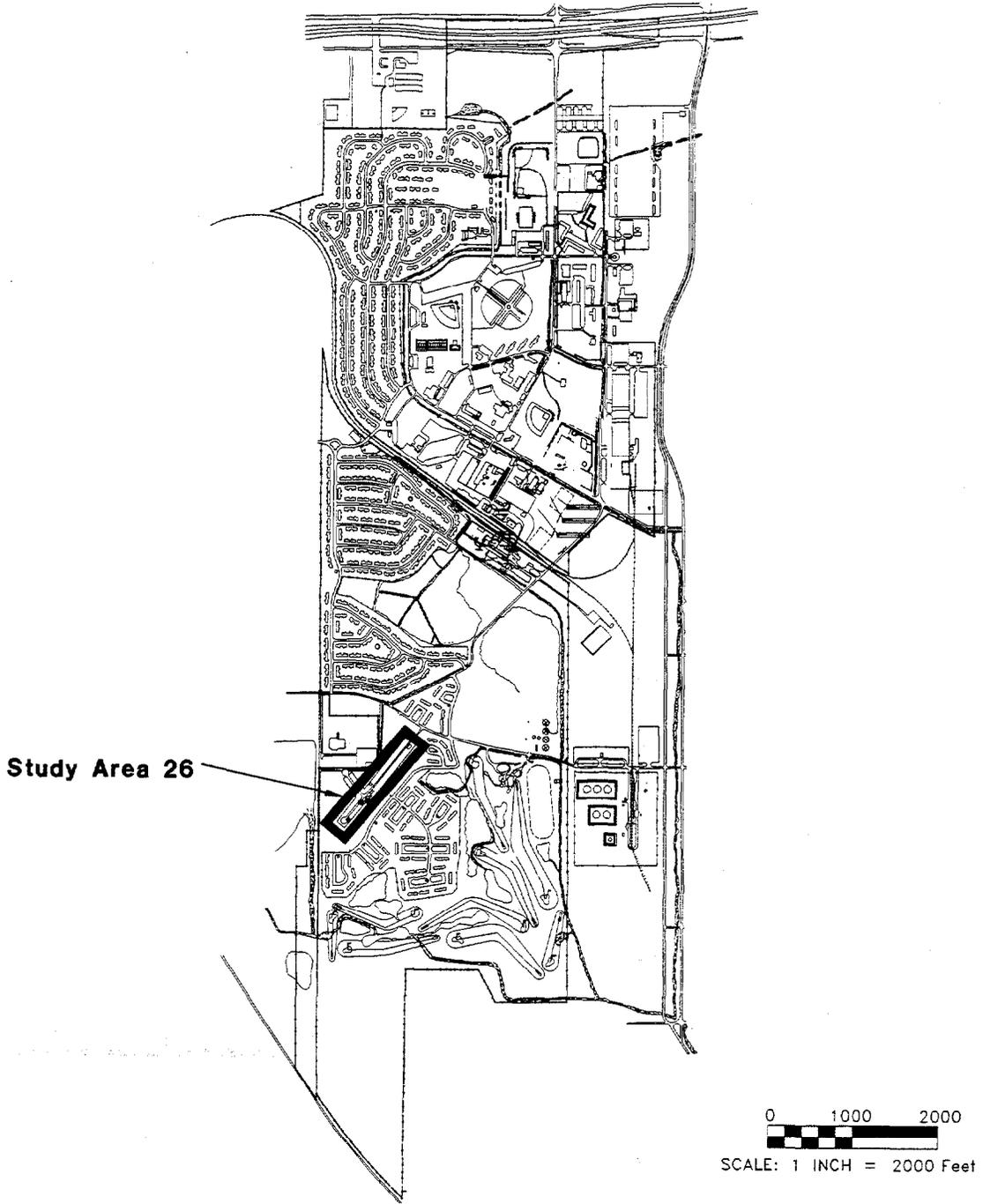
Building 7351. Building 7351, which was constructed in 1966, is a 900-square-foot concrete block wall structure on a concrete slab. The facility is used as a bathhouse. One 250-gallon aboveground storage tank (AST) supplies the building with propane for heating water.

Building 7352. Building 7352 was constructed in 1980 and is a 536-square-foot metal frame building with metal siding. The facility is used by patrons to wash laundry. One 1,000-gallon AST supplies the building with propane for heating water. A monitoring well (OLM-05), which was installed during the Verification Study (Geraghty & Miller, 1986) near this structure, was resampled during this investigation.

Building 7357. Building 7357 was constructed in 1983 and is a 240-square-foot wood frame structure on a concrete slab with wooden siding. It is used as a campground administrative building. One 500-gallon AST containing propane is located north of the building.

Building 7358. The facility was constructed in 1983 and is a picnic pavilion used for group picnics.

# McCOY ANNEX



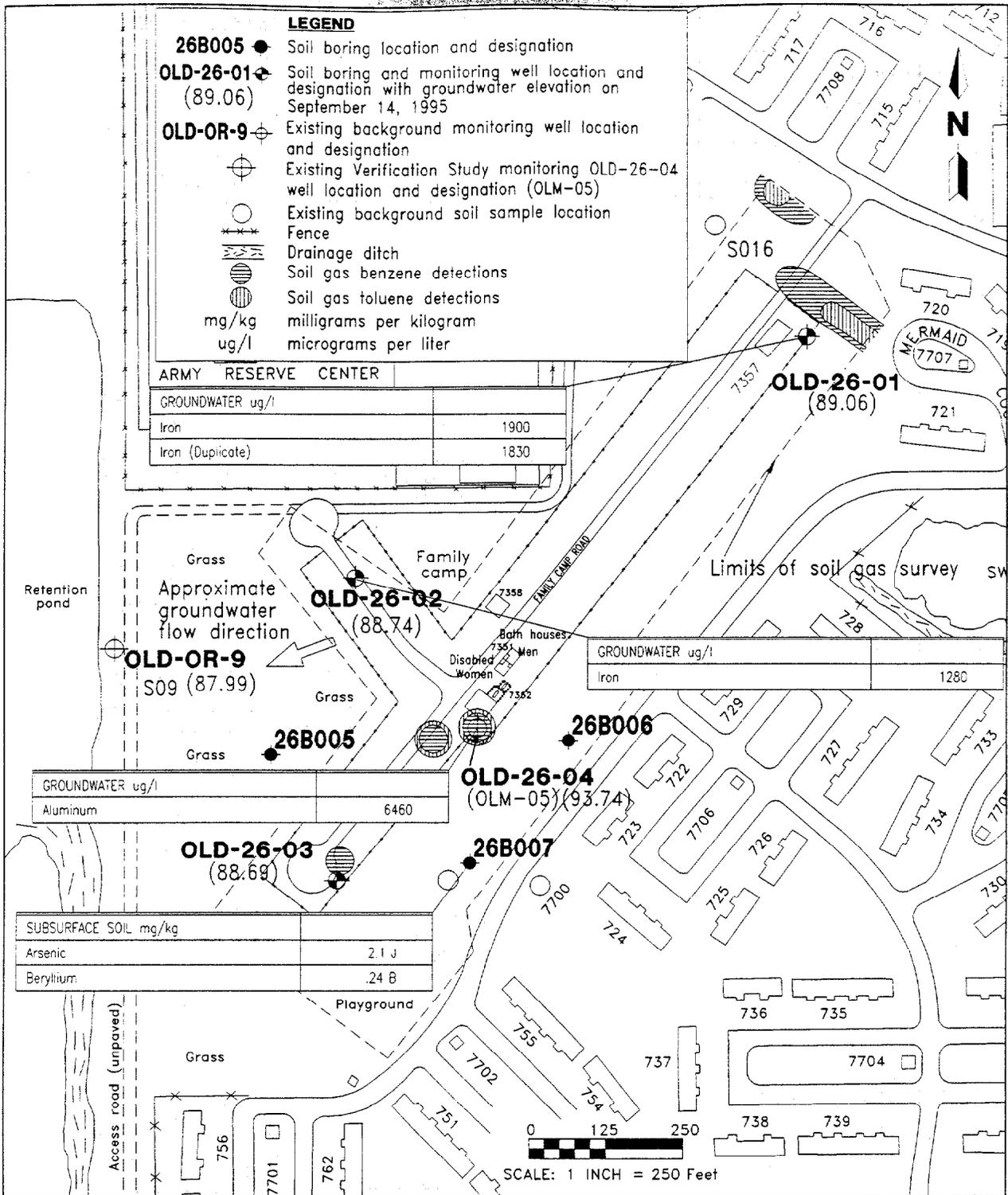
**FIGURE 1  
LOCATION OF STUDY AREA 26**



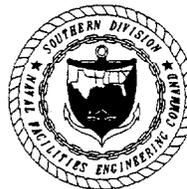
**BASE REALIGNMENT AND  
CLOSURE ENVIRONMENTAL SITE  
SCREENING REPORT**

**NAVAL TRAINING CENTER  
ORLANDO, FLORIDA**

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**FIGURE 2**  
**SOIL GAS AND SOIL BORING**  
**MONITORING WELL LOCATIONS, MCCOY ANNEX**  
**BUILDINGS 7351, 7352, 7357, AND 7358, FAMILY**  
**CAMP AREA, STUDY AREA 26**



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

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

**1.2 STUDY AREA 26, INVESTIGATION SUMMARY.** The investigation at Study Area 26 consisted of a passive soil gas survey, surface and subsurface soil sampling, monitoring well installation, and groundwater sampling.

**1.2.1 Passive Soil Gas Survey** The purpose for the passive soil gas survey was to identify any areas with elevated concentrations of volatile organic compounds and semivolatile organic compounds so that the investigation could be focused to a smaller area for confirmatory soil and groundwater sampling.

Soil gas data are always semiquantitative, as multiple sources in soil and/or groundwater cannot be differentiated. Further, compound concentrations in each collector are compared on a relative basis, depending on whether or not the data are interpreted to be of high, moderate to high, moderate, etc., intensity. These qualitative soil gas values do not represent actual concentrations of the reported compounds. Efforts to relate soil gas response directly to groundwater or soil contaminant concentrations are generally not regarded as productive owing to the assumptions that are required for heterogeneity and source distribution.

Two hundred and nine soil gas samplers were deployed on 50-foot centers (Figure 2).

**1.2.2 Soil Boring Investigation** Three soil borings (26B001, 26B002, and 26B003) were advanced to a depth of approximately 14 feet below land surface (bls) using a hollow-stem auger drilling technique. Three additional borings (26B004, 26B005, and 26B006) were installed using hand augers. Boring locations were biased toward former aircraft parking aprons or soil gas detections of benzene and toluene (Figure 2). Two soil samples were collected from each soil boring and consisted of a surface soil sample from the interval 0 to 1 foot bls (26B00101, 26B00201, 26B00301, 26B00501, 26B00601, and 26B00701) and a subsurface sample (26B00102 [4 to 6 feet bls], 26B00202 [4 to 6 feet bls], 26B00302 [4 to 6 feet bls], 26B00502 [3.5 to 4 feet bls], 26B00602 [4.5 to 5 feet bls], and 26B00702 [4.5 to 5 feet bls]). No flame ionization detector (FID) detections were noted during sample collection. Groundwater samples were collected from the three monitoring wells and an existing monitoring well (former well OLM-05, which was designated OLD-26-04).

Twelve soil samples (two from each boring) were submitted for Contract Laboratory program (CLP) target compound list (TCL) and target analyte list (TAL) laboratory analyses in accordance with U.S. Environmental Protection Agency (USEPA) Level IV data quality objectives (DQOs).

Soil boring logs are included in Appendix A.

**1.2.3 Groundwater Monitoring Well Installation and Sampling** Borings 26B001, 26B002, and 26B003 were completed as monitoring wells OLD-26-01, OLD-26-02, and OLD-26-03, respectively. Well screens were installed across the water table. One groundwater sample was collected from each new well and from an existing monitoring well (former well OLM-05, now designated OLD-26-04) installed during the Verification Study (Geraghty & Miller, 1986). All wells were sampled using a low-flow technique. The four groundwater samples were submitted for total suspended solids, gross alpha, gross beta, and full suite CLP TCL and TAL laboratory analyses in accordance with USEPA Level IV DQOs.

Monitoring well installation diagrams are included in Appendix A.

**1.3 STUDY AREA 26, RESULTS.** The results of site screening investigations at Study Area 26 are discussed below. Analytical results from the surface soil, subsurface soil, and groundwater collected from Study Area 26 are presented as Positive Hits Tables in Appendix B (Tables B-1 to B-3). A complete set of analytical results for these media is presented in Appendix C. Exceedances of background or regulatory guidance concentrations (shaded on the positive hits tables) are displayed in chem-boxes near their respective explorations on Figure 2.

**1.3.1 Passive Soil Gas Survey** The results of the passive soil gas survey indicate that there are very low levels of benzene in a few samples from the northeastern end of the survey area and at three isolated locations toward the southwestern end of the area (Figure 2). Toluene was present in low concentrations in several isolated locations across the survey area. Ethylbenzene and xylenes were present at low levels in only one sample each. The very low levels of volatile hydrocarbons observed at scattered locations at this site do not suggest the presence of a volatile organic contamination problem in the shallow subsurface. Additional information on the passive soil gas survey is included in Appendix D.

**1.3.2 Surface Soil Analytical Results** Detections in surface soil samples included pesticides and inorganics (Table B-1). The pesticides alpha-chlordane and gamma-chlordane were detected at location 26B002 at levels below the residential risk-based concentration (RBC) and soil cleanup goal (SCG). Likewise, all inorganic detections in surface soil did not exceed their respective residential RBCs and SCGs. It should be noted that the Background Sampling Report (ABB-ES, 1995b) has reported analytical results for two surface soil sample locations (S009 and S016, Figure 2) and a background monitoring well (OLD-OR-09, Figure 2). Both soil samples had detections of PAHs, and one of pesticides. Analytical results for the surface soil samples at S009 and S016 have indicated PAHs of 41 milligrams per kilogram (mg/kg) and 83 mg/kg, respectively. Several PAH compounds in this study area exceeded their respective SCGs and RBCs. These locations were believed to be located beyond the boundaries of the storage areas visible on aerial photographs.

Leachability-based SCG values do not apply, as no organic compounds were present in groundwater above Florida Department of Environmental Protection (FDEP) groundwater guidance concentrations (see below).

**1.3.3 Subsurface Soil Analytical Results** Detections in subsurface soil samples included volatile organics and inorganics (Table B-2). Volatile organic compounds detected included acetone and methylene chloride in 26B001, 26B002, and 26B003, but appear to be artifacts of the sampling and/or laboratory analytical process. Their concentrations did not exceed their respective residential RBCs. Inorganic detections did not exceed their respective residential RBCs, except for arsenic and beryllium concentrations in 26B00702, which exceeded their respective residential carcinogenic RBCs.

Leachability-based SCG values do not apply, as no organic compounds were present in groundwater above FDEP groundwater guidance concentrations (see below).

**1.3.4 Groundwater Analytical Results** Detections in groundwater samples included chloroform, bis(2-ethylhexyl)phthalate, and inorganics (Table B-3). All organic concentrations were below their respective FDEP groundwater concentrations. The

bis(2-ethylhexyl)phthalate detection appears to be an artifact of the sampling and/or laboratory analytical process.

The concentration of aluminum in groundwater from well OLD-26-04 exceeded the FDEP secondary standard of 200 micrograms per liter ( $\mu\text{g}/\ell$ ). Iron in groundwater from wells OLD-26-01 and OLD-26-02 also exceeded the FDEP secondary standard of 300  $\mu\text{g}/\ell$ . All other inorganic concentrations did not exceed FDEP groundwater concentrations.

Secondary standards have been established for Class G-I and G-II aquifers by the State of Florida, largely along Federal guidelines, to ensure that groundwater meets at least minimum criteria for taste, odor, and color, and does not pose a health risk.

Based on records reviews and interviews, there have been no known site activities that may have contributed to the observed exceedances of the secondary standards for aluminum in well OLD-26-04 and iron in wells OLD-26-01 and OLD-26-2. The reported concentration of aluminum in well OLD-26-04 was 6,460  $\mu\text{g}/\ell$  versus a background screening concentration of 4,067  $\mu\text{g}/\ell$ . The concentrations of iron in wells OLD-26-01 and OLD-26-02 were 1,900  $\mu\text{g}/\ell$  and 1,280  $\mu\text{g}/\ell$ , respectively, versus a background screening concentration of 1,227  $\mu\text{g}/\ell$ . Surface and subsurface soil concentrations of these analytes did not exceed residential RBCs and SCGs.

Analytes exceeding Florida secondary standards should also be compared with RBCs for tapwater published by the USEPA, Region III. The tapwater guidance concentrations for aluminum and iron are 37,000 and 11,000  $\mu\text{g}/\ell$ , respectively. There were no other TAL metals exceedances, and groundwater parameters measured during sampling were within normal limits: pH varied from 4.96 to 5.19, temperature was 77 degrees Fahrenheit, conductivity varied from 45 to 82 micromhos per centimeter, and turbidity from 1.3 to 1.7 nephelometric turbidity units. ABB-ES concludes that the aluminum and iron exceeding secondary standards are naturally occurring, are not related to past site activities, and do not pose a risk to human health or the environment.

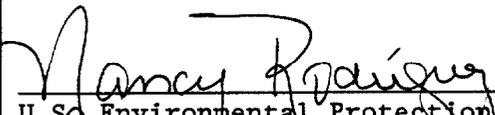
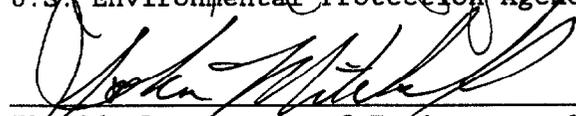
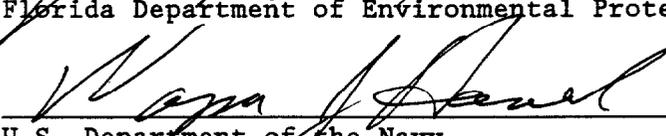
Radiological activity in monitoring well OLM-5 (OLD-26-04) during the Verification Study (Geraghty & Miller, 1986) exceeded maximum contaminant levels for gross alpha ( $22\pm 10$  picocuries per liter [ $\text{pCi}/\ell$ ]). Gross beta concentrations ( $30\pm 7$   $\text{pCi}/\ell$ ) exceeded the current background screening concentration for beta. However, radiological activity (gross alpha and gross beta) for all groundwater samples collected at Study Area 26 was below background screening concentrations, including the sample from OLD-26-04.

**1.4 STUDY AREA 26, CONCLUSIONS AND RECOMMENDATIONS** Based on available information and site screening data, the presence of significant PAH contamination in background surface soil samples adjacent to this study area should be further evaluated. Otherwise, there is minimal contamination existing in the soil and groundwater of Study Area 26. The concentrations of arsenic and beryllium in subsurface soil sample 26B00702 are barely above the background screening concentrations and have been compared to residential RBCs, despite the depth (4.5 feet bls) of the sample. Aluminum and iron concentrations in groundwater above FDEP groundwater secondary standards may be related to suspended solids.

Due to the aluminum and iron concentrations, future users of this property should be aware that the presence of these analytes at the measured concentrations may render the groundwater from the surficial aquifer objectionable as a potable or irrigation water source.

ABB-ES recommends that Study Area 26 be made eligible for transfer, with no further requirement for evaluation, and that it be reclassified from 7/Gray to 1/White.

The undersigned members of the Base Realignment and Closure Cleanup Team concur with the findings of the preceding investigation.

<u>STUDY AREA 26</u>	
 _____ U.S. Environmental Protection Agency, Region IV	<u>6/19/97</u> Date
 _____ Florida Department of Environmental Protection	<u>6-19-97</u> Date
 _____ U.S. Department of the Navy	<u>6-19-97</u> Date

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES), 1995a, Background Sampling Report, Naval Training Center (NTC), Orlando, Florida: prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina, August (Final).
- ABB-ES, 1995b, Site Screening Plan, Groups I through V Study Areas and Miscellaneous Additional Sites, NTC, Orlando, Florida: prepared for (SOUTHNAVFACENGCOM), North Charleston, South Carolina, September (Final).
- ABB-ES, 1995c, Technical Memorandum, U.S. Air Force Records Search, NTC, Orlando, Florida: prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina, September (Final).
- Geraghty & Miller, 1986, Verification Study, Assessment of Potential Soil and Groundwater contamination at NTC, Orlando, Florida: Tampa, Florida, December.

**APPENDIX A**

**BORING LOGS AND MONITORING WELL INSTALLATION DIAGRAMS**

Project: BRAC NTC, Group III Site Screening		Well ID: S.A. 26	Boring ID: OLD-26-01
Client: SOUTHDIYNAVFACENGCOM		Contractor: GEOTEK	Job No.: CTO-107
Northing:		Easting:	Date started: 05/17/95
Method: Hollow stem auger		Casing dia.: 6.25"	Screened int.: 10 ft.
TOC elev.: Ft.		Type of OVM: Porta FID	Total dpth: 14Ft.
ABB Rep.: M. Hawes		Well development date: PVC	Site:

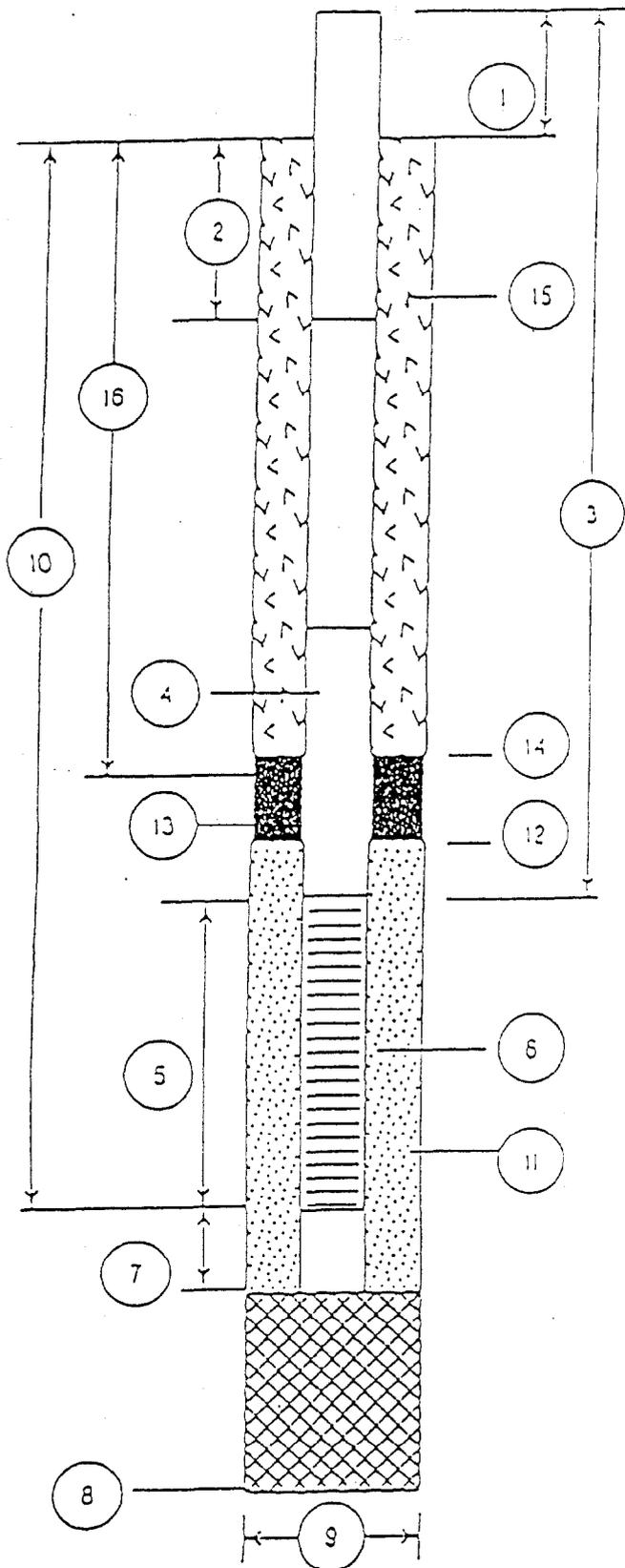
Depth Ft.	Laboratory Sample ID.	Sample Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.	
				QUARTZ SAND: Light gray, silty, fine		SM			
				QUARTZ SAND: Dark brown, silty, fine, trace organics					
				QUARTZ SAND: Light gray, silty, fine					
5	26B00102 (4-6')	90%	0	QUARTZ SAND: Dark brown, silty, fine				10,11	
		90%	0					40,42	
		90%	0					1,0	
		90%	0	QUARTZ SAND: Tan, silty, fine		1,0			
10		80%	0			9,12			
		60%	0			20,21			
						9,9			
						10,16			
						10,16			
15						20,21			

DEPARTMENT OF THE NAVY  
 SOUTHERN DIVISION  
 NAVAL FACILITIES ENGINEERING COMMAND  
 CHARLESTON, SC.

WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-26-01

DATE OF INSTALLATION: 5/17/95



1. Height of Casing above ground: 0

2. Depth to first Coupling: 3'

Coupling Interval Depths: 10'

3. Total Length of Riser Pipe: 3'

4. Type of Riser Pipe: 2"  $\phi$  Schedule 40 PVC

5. Length of Screen: 10'

6. Type of Screen: 2"  $\phi$  schedule 40 PVC .010 slot screen

7. Length of Sump: 6"

8. Total Depth of Boring: 14'

9. Diameter of Boring: 6.25"

10. Depth to Bottom of Screen: 12.5'

11. Type of Screen Filter: 20/30 Silica Sand

Quantity Used: 450 Size:     

12. Depth to Top of Filter: 2'

13. Type of Seal: Bentonite

Quantity Used: 20

14. Depth to Top of Seal: 1.5'

15. Type of Grout: Portland Cement

Grout Mixture:     

Method of Placement:     

16. Tot. Depth of 6 in. Steel Casing: N/A

<b>Project:</b> BRAC NTC, Group III Site Screening		<b>Well ID:</b> S.A. 26		<b>Boring ID:</b> OLD-26-02	
<b>Client:</b> SOUTHDIVNAVFACENCOM		<b>Contractor:</b> GEOTEK		<b>Job No.:</b> CTO-107	
<b>Northing:</b>		<b>Easting:</b>		<b>Date started:</b> 05/17/95	<b>Compltd:</b> 05/17/95
<b>Method:</b> Hollow stem auger		<b>Casing dia.:</b> 6.25"		<b>Screened int.:</b> 10 ft.	<b>Protection level:</b> D
<b>TOC elev.:</b> Ft.		<b>Type of OVM:</b> Porta FID		<b>Total dpth:</b> 14Ft.	<b>Dpth to</b> ∇ 6 Ft.
<b>ABB Rep.:</b> M. Hawes		<b>Well development date:</b> PVC		<b>Site:</b>	

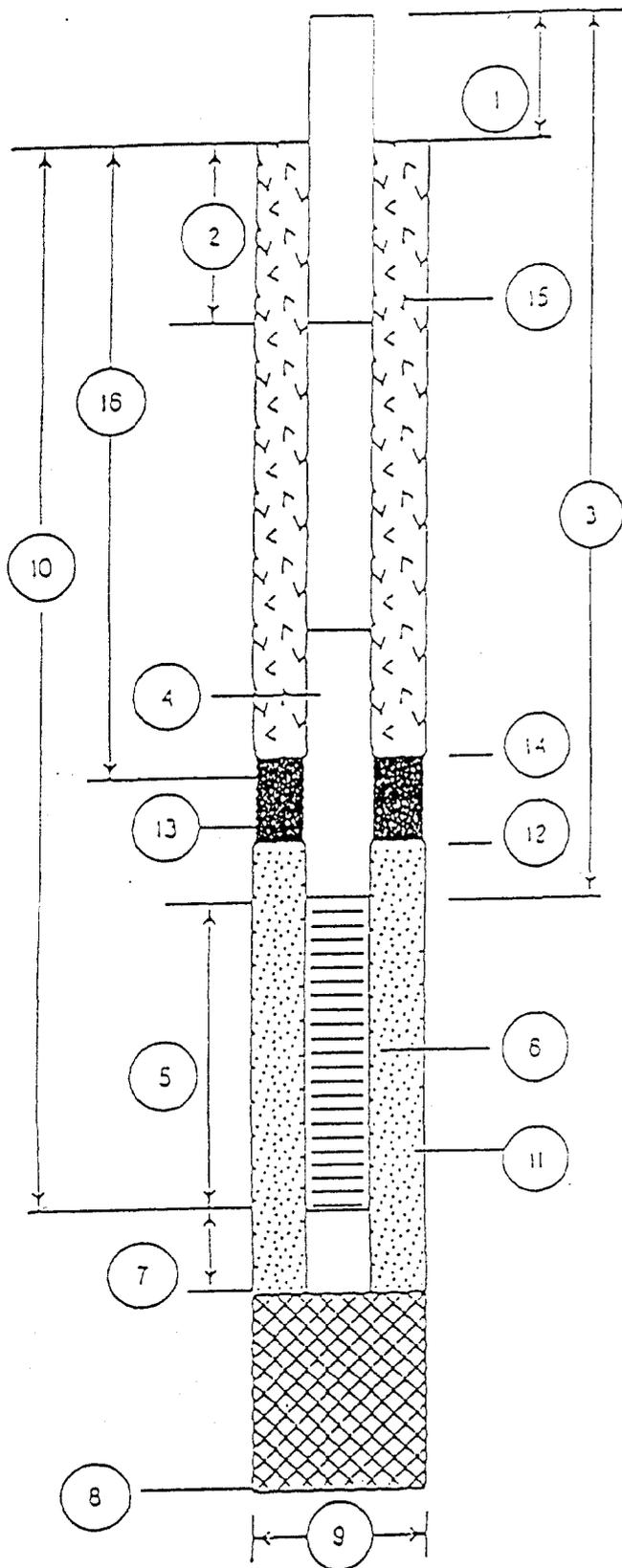
Depth Ft.	Laboratory Sample ID.	Sample Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.	
				QUARTZ SAND: Gray, silty, fine, trace organics		SM			
				QUARTZ SAND: Tan, fine, silty					
				QUARTZ SAND: Dark brown, fine, silty, good to moderate rounding, trace organics					
5	26B00202 (4-6')	90%	0					6,8	
		90%	0					10,11	
		90%	0					6,8	
		90%	0			13,20			
		90%	0			6,8			
10		90%	0			13,11			
		90%	0			9,7			
		90%	0	QUARTZ SAND: Tan, fine, silty, trace organics		9,11			
		90%	0			6,7			
		90%	0			6,11			
15									

DEPARTMENT OF THE NAVY  
 SOUTHERN DIVISION  
 NAVAL FACILITIES ENGINEERING COMMAND  
 CHARLESTON, SC.

WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-26-02

DATE OF INSTALLATION: 5/17/95



1. Height of Casing above ground: 0
2. Depth to first Coupling: 3'  
Coupling Interval Depths: 10'
3. Total Length of Riser Pipe: 3'
4. Type of Riser Pipe: 2"  $\phi$  Schedule 40 PVC
5. Length of Screen: 10'
6. Type of Screen: 2"  $\phi$  Schedule 40 PVC .010 Slot Screen
7. Length of Sump: 6"
8. Total Depth of Boring: 14'
9. Diameter of Boring: 6.25"
10. Depth to Bottom of Screen: 12.5'
11. Type of Screen Filter: 20/30 Silica Sand  
Quantity Used: 625 lb Size:
12. Depth to Top of Filter: 2'
13. Type of Seal: Bentonite  
Quantity Used: 20 lb
14. Depth to Top of Seal: 1.5'
15. Type of Grout: Portland Cement  
Grout Mixture:       
Method of Placement:
16. Tot. Depth of 6 in. Steel Casing: N/A

Project: BRAC NTC, Group III Site Screening		Well ID: S.A. 26	Boring ID: OLD-26-03
Client: SOUTHDIYNAVFACENGCOM		Contractor: GEOTEK	Job No.: CTO-107
Northing:	Easting:	Date started: 05/17/95	Compltd: 05/17/95
Method: Hollow stem auger	Casing dia.: 6.25"	Screened int.: 10 ft.	Protection level: □
TOC elev.: Ft.	Type of OVM: Porta FID	Total dpth: 14Ft.	Dpth to γ 6 Ft.
ABB Rep.: M. Hawes	Well development date: PVC		Site:

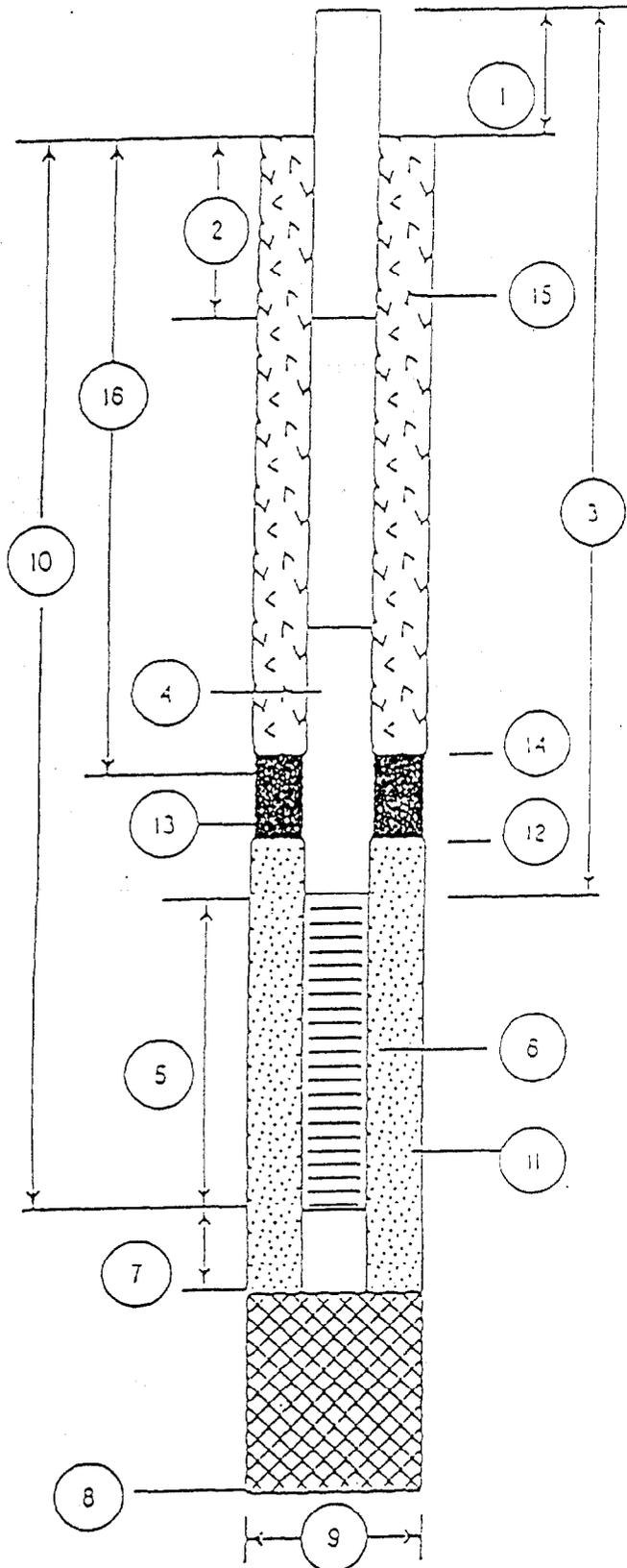
Depth Ft.	Laboratory Sample ID.	Sample Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
				SAND: Gray, silty, fine, trace organics		SM		
				QUARTZ SAND: Tan, fine, silty				
	26B00302 (4-6')		0	QUARTZ SAND: Dark brown, dense, fine, silty, good to moderate rounding			29,30	
5		90%	0				33,30	
			0				4,6	
		90%	0				8,6	
			0	QUARTZ SAND: Tan, fine, silty, good to moderate rounding			8,8	
		90%	0				10,9	
10			0				5,6	
		90%	0				8,10	
			0				5,7	
		70%	0				6,8	
15								

DEPARTMENT OF THE NAVY  
 SOUTHERN DIVISION  
 NAVAL FACILITIES ENGINEERING COMMAND  
 CHARLESTON, SC.

WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-26-03

DATE OF INSTALLATION: 5/17/95



1. Height of Casing above ground: 0

2. Depth to first Coupling: 3'

Coupling Interval Depths: 10'

3. Total Length of Riser Pipe: 3'

4. Type of Riser Pipe: 2"  $\phi$  Schedule 40 PVC

5. Length of Screen: 10'

6. Type of Screen: 2"  $\phi$  schedule 40 pvc .010 slot screen

7. Length of Sump: 6"

8. Total Depth of Boring: 14'

9. Diameter of Boring: 6.25"

10. Depth to Bottom of Screen: 12.5'

11. Type of Screen Filler: 20/30 Silica Sand

Quantity Used: 500 lb

Size: \_\_\_\_\_

12. Depth to Top of Filter: 2'

13. Type of Seal: Bentonite

Quantity Used: 20 lb

14. Depth to Top of Seal: 1.5'

15. Type of Grout: Portland Cement

Grout Mixture: \_\_\_\_\_

Method of Placement: \_\_\_\_\_

16. Tot. Depth of 6 in. Steel Casing: N/A

**APPENDIX B**  
**POSITIVE HITS TABLES**

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 26

Naval Training Center, Orlando  
Orlando, FL

Identifier	Background Screening <sup>1</sup>	SCG <sup>2</sup>	RBC <sup>3</sup> for Residential Soil	RBC <sup>3</sup> for Industrial Soil	26B00101	26B00101D	26B00201	26B00301	26B00501	26B00601	26B00701
Sampling Date					6/5/95	6/5/95	6/5/95	6/5/95	6/5/95	6/5/95	6/5/95
Feet bls					1	1	1	1	1	1	1
<b>Pesticides/PCBs, ug/kg</b>											
alpha-Chlordane		800	490 c	4,400 c			1.1 J				
gamma-Chlordane		800	490 c	4,400 c			0.89 J				
<b>Inorganics, mg/kg</b>											
Aluminum	4,870	75,000	78,000 n	1,000,000 n	1,420 J	943 J	185 J	1,730 J	48.1 J	3310 J	2680 J
Arsenic	1.9	0.8	0.43 c/23 n	3.8 c/610 n						0.48 B	
Barium	21.6	5,200	5500 n	140,000 n	0.76 B	0.8 B	1.2 B	4.2 B	1.1 B	2 B	1.1 B
Beryllium	0.46	0.2	0.15 c	1.3 c							
Calcium	33,568	ND	1,000,000	1,000,000	32.5 B	43.5 B	713 B	6,170	42.5 B	441 B	21.7 B
Chromium	7.7	290	390 n	10,000 n	1.3 B	1.2 B		1.7 B		2.1 B	2.7
Cobalt		4,700	4,700,000 n	120,000,000							
Iron	843	ND	23,000 n	610,000 n	49.8 J	46.4 J	104 J	208 J	34.3 J	523 J	543 J
Lead	21.3	500	400	400	2.2 J	1.4 J	1.3 J	2.9 J	0.72 J	1.8 J	1.6 J
Magnesium	381	ND	460,468	460,468	9.3 B	11.9 B	8.9 B	65.1 B	9.2 B	25.8 B	41.2 B
Manganese	10.8	370	1,800 n	47,000 n	0.2 B	0.2 B	0.34 B	3 B	0.27 B	0.73 B	0.91 B
Mercury	0.05	23	23 n	610 n				0.03 B		0.03 B	
Nickel		1,500	1,600 n	41,000 n							
Selenium	1.1	390	390 n	10,000 n							
Sodium		ND	1,000,000	1,000,000					9.1 B		
Vanadium	4.9	490	550 n	14,000 n	0.81 B	0.7 B	0.62 B	1.6 B	0.77 B	2.4 B	2 B
Zinc	4.6	23,000	23,000 n	610,000 n	0.49 B	0.42 B	0.61 B	1.9 B	0.29 B	0.41 B	0.49 B

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 26

Naval Training Center, Orlando  
Orlando, FL

**NOTES:**

<sup>1</sup> The background screening value is twice the average of detected concentrations for inorganic analytes.

<sup>2</sup> SCG = Soil Cleanup Goals for Florida (Florida Department of Environmental Protection memorandum, September 29, 1995). Arsenic value is as revised in Applicability of Soil Cleanup Goals for Florida (FDEP memorandum, January 19, 1996). Values indicated are from a residential scenario. Chromium values are for Chromium VI.

<sup>3</sup> RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites (OSWER directive 9355-4-12). For essential nutrients (calcium, magnesium, potassium, and sodium) screening values were derived based on recommended daily allowances (RDAs). RBC for alpha and gamma-chlordane are based on chlordane.

n = noncarcinogenic pathway

c = carcinogenic pathway

ND = Not determined.

bls = below land surface

mg/kg = milligrams per kilogram.

ug/kg = micrograms per kilogram.

PCB = polychlorinated biphenyl.

OSWER = Office of Solid Waste and Emergency Response.

USEPA = U.S. Environmental Protection Agency.

B = Reported concentration is between the instrument detection limit (IDL) and Contract Required Detection Limit (CRDL).

J = Reported concentration is an estimated quantity.

All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight; organics in micrograms per kilogram (ug/kg) soil dry weight.

Blank space indicates analyte/compound was not detected at the reporting limit.

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Study Area 26

Naval Training Center, Orlando  
Orlando, FL

Identifier	Background Screening <sup>1</sup>	SCG <sup>2</sup>	RBC <sup>3</sup> for Residential Soil	RBC <sup>3</sup> for Industrial Soil	26B00102	26B00202	26B00302	26B00502	26B00602	26B00602D	26B00702
Sampling Date					5/17/95	5/17/95	5/17/95	6/5/95	6/5/95	6/5/95	6/5/95
Feet bls					4	4	4	3.5	4.5	4.5	4.5
<b>Volatile Organics, ug/kg</b>											
Acetone		NA	7,800,000 n	200,000,000 n	27	16	32				
Methylene chloride		NA	85,000 c	760,000 c			4 J				
<b>Inorganics, mg/kg</b>											
Aluminum	11,130	NA	78,000 n	1,000,000 n	7,610	8,960	15,300	7880 J	6190 J	7490 J	25700 J
Arsenic	2.0	NA	0.43 c/23 n	3.8 c/610 n	0.82 B	1.1 B	1.6 B	0.63 B	0.99 B	0.64 B	2.1 J
Barium	11.3	NA	5,500	140,000 n	45.6 J	72 J	10.4 J	49.2	16.4 B	13.4 B	118
Beryllium	0.18	NA	0.15 c	1.3 c	0.08 J	0.05 J	0.16 B	0.11 B			0.24 B
Calcium	321	NA	1,000,000	1,000,000	163 B	562 B	236 B	189 B	112 B	89.5 B	259 B
Chromium	11.3	NA	390 n	10,000 n	8.7	11.4	12.4	10.9	6.6	7.1	18.6
Cobalt	1.3	NA	4,700,000 n	120,000,000				0.86 B			
Iron	829	NA	23,000 n	610,000 n	318	341	363	642 J	318 J	305 J	1390 J
Lead	7.0	NA	400	400	15.1 J	7.6 J	11 J	13.2 J	4.2 J	3.1 J	11.3 J
Magnesium	38.9	NA	460,468	460,468	101 B	119 B	16.4 B	125 B	6.5 B	15 B	25.7 B
Manganese	0.69	NA	1,800 n	47,000 n	0.83 B	1.2 B	0.64 B	0.58 B	0.19 B	0.33 B	0.62 B
Mercury	0.12	NA	23 n	610 n	0.15	0.15	0.13	0.1	0.04 B	0.04 B	0.15
Nickel	11.3	NA	1,600 n	41,000 n							7.9 B
Selenium	1.4	NA	390 n	10,000 n	0.61 B		0.93 B				13.3
Sodium		NA	1,000,000	1,000,000	6.8 B	6.8 B					
Vanadium	5.9	NA	550 n	14,000 n	3.4 B	3.9 B	2.1 B	4.9 B	2 B	1.7 B	15.1 B
Zinc	0.66	NA	23,000 n	610,000 n				0.71 B	0.03 B		

Appendix B  
Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Study Area 26

Naval Training Center, Orlando  
Orlando, FL

**NOTES:**

<sup>1</sup> The background screening value is twice the average of detected concentrations for inorganic analytes.

<sup>2</sup> SCG = Soil Cleanup Goals for Florida (Florida Department of Environmental Protection memorandum, September 29, 1995).

<sup>3</sup> RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites (OSWER directive 9355-4-12). For essential nutrients (calcium, magnesium, and sodium) screening values were derived based on recommended daily allowances (RDAs).

n = noncarcinogenic pathway

c = carcinogenic pathway

NA = Not applicable.

bls = below land surface

mg/kg = milligrams per kilogram.

ug/kg = micrograms per kilogram.

PCB = polychlorinated biphenyl.

OSWER = Office of Solid Waste and Emergency Response.

USEPA = U.S. Environmental Protection Agency.

B = Reported concentration is between the instrument detection limit (IDL) and Contract Required Detection Limit (CRDL).

J = Reported concentration is an estimated quantity.

All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight; organics in micrograms per kilogram (ug/kg) soil dry weight.

Bold/shaded values indicate exceedance of regulatory guidance and background.

Blank space indicates analyte/compound was not detected at the reporting limit.

Appendix B

Table B-3. Summary of Positive Detections in Groundwater Analytical Results, Study Area 26

Naval Training Center, Orlando  
Orlando, FL

Well ID	Background Screening <sup>1</sup>	FDEPG	FEDMCL	RBC <sup>2</sup> for Tap Water	OLD-26-01 26G00101 6/2/95	OLD-26-01 26G00101D 6/2/95	OLD-26-02 26G00201 6/2/95	OLD-26-03 26G00301 6/2/95	OLD-26-04 26G00401 4/18/95
Identifier									
Sampling Date									
<b>Volatile Organics, ug/L</b>									
Chloroform		100 <sup>5</sup> / 6 <sup>7</sup>	100	0.15 c				0.2 J	
<b>Semivolatile Organics, ug/L</b>									
bis(2-Ethylhexyl)phthalate		6 <sup>6</sup>	6	4.8 c	4	1		5	
<b>Inorganics, ug/L</b>									
Aluminum	4,067	200 <sup>3</sup>	ND	37,000 n	796	716	716	441	6,460
Barium	31.4	2,000 <sup>5</sup>	2,000	2,600 n	8 J	8.3 J	20.9 J	8 J	35.9 B
Beryllium		4	4	0.016 c					0.21 B
Calcium	36,830	ND	ND	1,000,000	1,260 B	1,230 B	4,650 B	14,700	6,510
Chromium	7.8	100 <sup>5</sup>	100	180 n					7.8 B
Copper	5.4	1,000 <sup>3</sup>	1300 <sup>7</sup>	1,500 n					7.6 B
Iron	1,227	300 <sup>3</sup>	ND	11,000 n	1,900	1,830	1,280	39.8 B	768
Lead	4	15 <sup>5</sup>	15	15					2.9 B
Magnesium	4,560	ND	ND	118,807	1,080 B	1,060 B	2,090 B	745 B	628 B
Manganese	17	50 <sup>3</sup>	ND	840 n	12.1 B	12 B	17.3	4.9 B	5.6 B
Potassium	5,400	ND	ND	297,016		553 J	834 J	458 J	5,910
Sodium	18,222	160,000 <sup>5</sup>	ND	396,022	2,070 B	1,990 B	3,160 B	1,500 B	2,560 B
Vanadium	20.6	49 <sup>4</sup>	ND	260 n	3.7 B	3.5 B		4.1 B	6 B
Zinc	4	5,000 <sup>3</sup>	ND	11,000 n	6.3 B	7 B	4.6 B	1.9 B	2.8 B
<b>Radiological, pCi/L</b>									
Gross Alpha	13	15	15	ND	3.7 J	5.4 J	8.6 J	2 J	8.3 J
Gross Beta	9.5	ND	ND	ND			4.3 J		8.9 J
<b>General chemistry, mg/L</b>									
Total Suspended Solids	ND	ND	ND	ND	38	22	1	6	70

Appendix B  
Table B-3. Summary of Positive Detections in Groundwater Analytical Results, Study Area 26

Naval Training Center, Orlando  
Orlando, FL

**NOTES:**

<sup>1</sup> Groundwater background screening value is twice the average of detected concentrations for inorganic analytes.

<sup>2</sup> RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is treatment technology action limit for lead in drinking water distribution system identified in Drinking Water Standards and Health Advisories (USEPA, 1995). For essential nutrients (calcium, magnesium, potassium, and sodium) screening values were derived based on recommended daily allowances (RDAs).

<sup>3</sup> Secondary Standard.

<sup>4</sup> Systemic Toxicant

<sup>5</sup> Primary Standard

<sup>6</sup> Organoleptic

<sup>7</sup> Action level

n = noncarcinogenic pathway

c = carcinogenic pathway

ND = Not determined.

ID = identifier

USEPA = U.S. Environmental Protection Agency.

FDEPG = Florida Department of Environmental Protection, Groundwater Guidance Concentrations, June 1994.

FEDMCL = Federal Maximum Contaminant Levels, Primary Drinking Water Regulations and Health Advisories, October 1996.

B = Reported concentration is between the instrument detection limit (IDL) and the contract required detection limit (CRDL).

J = Reported concentration is an estimated quantity.

ug/l = micrograms per liter.

pCi/l = picocuries per liter.

mg/l = milligrams per liter.

Bold/shaded numbers indicate exceedance of groundwater guidance and background.

Blank space indicates analyte/compound was not detected at the reporting limit.

**APPENDIX C**  
**ANALYTICAL RESULTS**

Appendix C  
Table C-1. Summary of Soil Boring Analytical Results  
Study Area 26

Naval Training Center, Orlando  
Orlando, FL

Sample ID	26B00101	26B00101D	26B00102	26B00201	26B00202	26B00301	26B00302	26B00501	26B00502	26B00601	26B00602	
Lab ID	G7747001	G7747002	G7608001	G7747012	G7608002	G7747003	G7608003	G7747004	G7747005	G7747006	G7747007	G7747007RE
Sampling Date	5-Jun-95	5-Jun-95	17-May-95	5-Jun-95	17-May-95	5-Jun-95	17-May-95	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95
<b>Volatile organics, ug/kg</b>												
1,1,1-Trichloroethane	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
1,1,2,2-Tetrachloroethane	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
1,1,2-Trichloroethane	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
1,1-Dichloroethane	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
1,1-Dichloroethene	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
1,2-Dichloroethane	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
1,2-Dichloroethene (total)	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
1,2-Dichloropropane	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
2-Butanone	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
2-Hexanone	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
4-Methyl-2-pentanone	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Acetone	11 U	11 U	27	11 U	16	11 U	32	11 U	22 U	11 U	12 U	NA
Benzene	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Bromodichloromethane	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Bromoform	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Bromomethane	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Carbon disulfide	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Carbon tetrachloride	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Chlorobenzene	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Chloroethane	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Chloroform	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Chloromethane	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
cis-1,3-Dichloropropene	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Dibromochloromethane	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Ethylbenzene	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Methylene chloride	11 U	11 U	12 U	11 U	12 U	11 U	4 J	11 U	12 U	11 U	12 U	NA
Styrene	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Tetrachloroethene	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Toluene	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
trans-1,3-Dichloropropene	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Trichloroethene	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Vinyl chloride	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA
Xylene (total)	11 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	11 U	12 U	NA

Appendix C  
Table C-1. Summary of Soil Boring Analytical Results  
Study Area 26

Naval Training Center, Orlando  
Orlando, FL

Sample ID	26B00101	26B00101D	26B00102	26B00201	26B00202	26B00301	26B00302	26B00501	26B00502	26B00601	26B00602	
Lab ID	G7747001	G7747002	G7608001	G7747012	G7608002	G7747003	G7608003	G7747004	G7747005	G7747006	G7747007	G7747007RE
Sampling Date	5-Jun-95	5-Jun-95	17-May-95	5-Jun-95	17-May-95	5-Jun-95	17-May-95	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95
<b>Semivolatile organics, ug/kg</b>												
1,2,4-Trichlorobenzene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
1,2-Dichlorobenzene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
1,3-Dichlorobenzene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
1,4-Dichlorobenzene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
2,2'-oxybis(1-Chloropropane)	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
2,4,5-Trichlorophenol	950 U	950 U	1000 U	920 U	980 U	920 U	1000 U	900 U	970 U	900 U	980 UR	980 U
2,4,6-Trichlorophenol	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
2,4-Dichlorophenol	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
2,4-Dimethylphenol	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
2,4-Dinitrophenol	950 U	950 U	1000 U	920 U	980 U	920 U	1000 U	900 U	970 U	900 U	980 UR	980 U
2,4-Dinitrotoluene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
2,6-Dinitrotoluene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
2-Chloronaphthalene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
2-Chlorophenol	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
2-Methylnaphthalene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
2-Methylphenol	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
2-Nitroaniline	950 U	950 U	1000 U	920 U	980 U	920 U	1000 U	900 U	970 U	900 U	980 UR	980 U
2-Nitrophenol	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
3,3'-Dichlorobenzidine	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
3-Nitroaniline	950 U	950 U	1000 U	920 U	980 U	920 U	1000 U	900 U	970 U	900 U	980 UR	980 U
4,6-Dinitro-2-methylphenol	950 U	950 U	1000 U	920 U	980 U	920 U	1000 U	900 U	970 U	900 U	980 UR	980 U
4-Bromophenyl-phenylether	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
4-Chloro-3-methylphenol	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
4-Chloroaniline	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
4-Chlorophenyl-phenylether	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
4-Methylphenol	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
4-Nitroaniline	950 U	950 U	1000 U	920 U	980 U	920 U	1000 U	900 U	970 U	900 U	980 UR	980 U
4-Nitrophenol	950 U	950 U	1000 U	920 U	980 U	920 U	1000 U	900 U	970 U	900 U	980 UR	980 U
Acenaphthene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Acenaphthylene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Anthracene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Benzo(a)anthracene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Benzo(a)pyrene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U

Appendix C  
Table C-1. Summary of Soil Boring Analytical Results  
Study Area 26

Naval Training Center, Orlando  
Orlando, FL

Sample ID	26B00101	26B00101D	26B00102	26B00201	26B00202	26B00301	26B00302	26B00501	26B00502	26B00601	26B00602	
Lab ID	G7747001	G7747002	G7608001	G7747012	G7608002	G7747003	G7608003	G7747004	G7747005	G7747006	G7747007	G7747007RE
Sampling Date	5-Jun-95	5-Jun-95	17-May-95	5-Jun-95	17-May-95	5-Jun-95	17-May-95	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95
Benzo(b)fluoranthene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Benzo(g,h,i)perylene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Benzo(k)fluoranthene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
bis(2-Chloroethoxy)methane	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
bis(2-Chloroethyl)ether	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
bis(2-Ethylhexyl)phthalate	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Butylbenzylphthalate	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Carbazole	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Chrysene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Di-n-butylphthalate	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Di-n-octylphthalate	380 UJ	380 UJ	410 U	370 U	390 U	370 UJ	420 U	360 UJ	390 UJ	360 UJ	390 UR	390 U
Dibenz(a,h)anthracene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Dibenzofuran	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Diethylphthalate	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Dimethylphthalate	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Fluoranthene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Fluorene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Hexachlorobenzene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Hexachlorobutadiene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Hexachlorocyclopentadiene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Hexachloroethane	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Indeno(1,2,3-cd)pyrene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Isophorone	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
N-Nitroso-di-n-propylamine	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
N-Nitrosodiphenylamine (1)	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Naphthalene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Nitrobenzene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Pentachlorophenol	950 U	950 U	1000 U	920 U	980 U	920 U	1000 U	900 U	970 U	900 U	980 UR	980 U
Phenanthrene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Phenol	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
Pyrene	380 U	380 U	410 U	370 U	390 U	370 U	420 U	360 U	390 U	360 U	390 UR	390 U
<b>Pesticides/PCBs, ug/kg</b>												
4,4'-DDD	3.7 U	3.7 UJ	4.6 U	3.6 U	3.9 U	3.7 U	4.1 U	3.8 UJ	3.5 U	3.6 U	3.9 U	NA
4,4'-DDE	3.7 U	3.7 UJ	4.6 U	3.6 U	3.9 U	3.7 U	4.1 U	3.8 UJ	3.5 U	3.6 U	3.9 U	NA

Appendix C  
Table C-1. Summary of Soil Boring Analytical Results  
Study Area 26

Naval Training Center, Orlando  
Orlando, FL

Sample ID	26B00101	26B00101D	26B00102	26B00201	26B00202	26B00301	26B00302	26B00501	26B00502	26B00601	26B00602	
Lab ID	G7747001	G7747002	G7608001	G7747012	G7608002	G7747003	G7608003	G7747004	G7747005	G7747006	G7747007	G7747007RE
Sampling Date	5-Jun-95	5-Jun-95	17-May-95	5-Jun-95	17-May-95	5-Jun-95	17-May-95	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95
4,4'-DDT	3.7 U	3.7 UJ	4.6 U	3.6 U	3.9 U	3.7 U	4.1 U	3.8 UJ	3.5 U	3.6 U	3.9 U	NA
Aldrin	1.9 U	1.9 UJ	2.4 U	1.9 U	2 U	1.9 U	2.1 U	2 UJ	1.8 U	1.9 U	2 U	NA
alpha-BHC	1.9 U	1.9 UJ	2.4 U	1.9 U	2 U	1.9 U	2.1 U	2 UJ	1.8 U	1.9 U	2 U	NA
alpha-Chlordane	1.9 U	1.9 UJ	2.4 U	1.1 J	2 U	1.9 U	2.1 U	2 UJ	1.8 U	1.9 U	2 U	NA
Aroclor-1016	37 U	37 UJ	46 U	36 U	39 U	37 U	41 U	38 UJ	35 U	36 U	39 U	NA
Aroclor-1221	76 U	76 UJ	94 U	74 U	79 U	75 U	83 U	78 UJ	72 U	74 U	80 U	NA
Aroclor-1232	37 U	37 UJ	46 U	36 U	39 U	37 U	41 U	38 UJ	35 U	36 U	39 U	NA
Aroclor-1242	37 U	37 UJ	46 U	36 U	39 U	37 U	41 U	38 UJ	35 U	36 U	39 U	NA
Aroclor-1248	37 U	37 UJ	46 U	36 U	39 U	37 U	41 U	38 UJ	35 U	36 U	39 U	NA
Aroclor-1254	37 U	37 UJ	46 U	36 U	39 U	37 U	41 U	38 UJ	35 U	36 U	39 U	NA
Aroclor-1260	37 U	37 UJ	46 U	36 U	39 U	75 U	41 U	38 UJ	35 U	36 U	39 U	NA
beta-BHC	1.9 U	1.9 UJ	2.4 U	1.9 U	2 U	1.9 U	2.1 U	2 UJ	1.8 U	1.9 U	2 U	NA
delta-BHC	1.9 U	1.9 UJ	2.4 U	1.9 U	2 U	1.9 U	2.1 U	2 UJ	1.8 U	1.9 U	2 U	NA
Dieldrin	3.7 U	3.7 UJ	4.6 U	3.6 U	3.9 U	3.7 U	4.1 U	3.8 UJ	3.5 U	3.6 U	3.9 U	NA
Endosulfan I	1.9 U	1.9 UJ	2.4 U	1.9 U	2 U	1.9 U	2.1 U	2 UJ	1.8 U	1.9 U	2 U	NA
Endosulfan II	3.7 U	3.7 UJ	4.6 U	3.6 U	3.9 U	3.7 U	4.1 U	3.8 UJ	3.5 U	3.6 U	3.9 U	NA
Endosulfan sulfate	3.7 U	3.7 UJ	4.6 U	3.6 U	3.9 U	3.7 U	4.1 U	3.8 UJ	3.5 U	3.6 U	3.9 U	NA
Endrin	3.7 U	3.7 UJ	4.6 U	3.6 U	3.9 U	3.7 U	4.1 U	3.8 UJ	3.5 U	3.6 U	3.9 U	NA
Endrin aldehyde	3.7 U	3.7 UJ	4.6 U	3.6 U	3.9 U	3.7 U	4.1 U	3.8 UJ	3.5 U	3.6 U	3.9 U	NA
Endrin ketone	3.7 U	3.7 UJ	4.6 U	3.6 U	3.9 U	3.7 U	4.1 U	3.8 UJ	3.5 U	3.6 U	3.9 U	NA
gamma-BHC (Lindane)	1.9 U	1.9 UJ	2.4 U	1.9 U	2 U	1.9 U	2.1 U	2 UJ	1.8 U	1.9 U	2 U	NA
gamma-Chlordane	1.9 U	1.9 UJ	2.4 U	0.89 J	2 U	1.9 U	2.1 U	2 UJ	1.8 U	1.9 U	2 U	NA
Heptachlor	1.9 U	1.9 UJ	2.4 U	1.9 U	2 U	1.9 U	2.1 U	2 UJ	1.8 U	1.9 U	2 U	NA
Heptachlor epoxide	1.9 U	1.9 UJ	2.4 U	1.9 U	2 U	1.9 U	2.1 U	2 UJ	1.8 U	1.9 U	2 U	NA
Methoxychlor	19 U	19 UJ	24 U	19 U	20 U	19 U	21 U	20 UJ	18 U	19 U	20 U	NA
Toxaphene	190 U	190 UJ	240 U	190 U	200 U	190 U	210 U	200 UJ	180 U	190 U	200 U	NA
<b>Inorganics, ug/kg</b>												
Aluminum	1420 J	943 J	7610	185 J	8960	1730 J	15300	48.1 J	7880 J	3310 J	6190 J	NA
Antimony	6.6 U	6.7 U	7.2 UJ	6.4 U	7 UJ	6.7 U	7 UJ	6.3 U	6.9 U	6.4 U	7 U	NA
Arsenic	0.42 U	0.43 U	0.82 B	0.41 U	1.1 B	0.43 U	1.6 B	0.41 U	0.63 B	0.48 B	0.99 B	NA
Barium	0.76 B	0.8 B	45.6 J	1.2 B	72 J	4.2 B	10.4 J	1.1 B	49.2	2 B	16.4 B	NA
Beryllium	0.02 U	0.02 U	0.08 J	0.02 U	0.05 J	0.05 U	0.16 B	0.02 U	0.11 B	0.02 U	0.07 U	NA
Cadmium	0.7 U	0.7 U	0.75 U	0.68 U	0.73 U	0.7 U	0.74 U	0.66 U	0.72 U	0.67 U	0.73 U	NA
Calcium	32.5 B	43.5 B	163 B	713 B	562 B	6170	236 B	42.5 B	189 B	441 B	112 B	NA

Appendix C  
 Table C-1. Summary of Soil Boring Analytical Results  
 Study Area 26

Naval Training Center, Orlando  
 Orlando, FL

Sample ID	26B00101	26B00101D	26B00102	26B00201	26B00202	26B00301	26B00302	26B00501	26B00502	26B00601	26B00602	
Lab ID	G7747001	G7747002	G7608001	G7747012	G7608002	G7747003	G7608003	G7747004	G7747005	G7747006	G7747007	G7747007RE
Sampling Date	5-Jun-95	5-Jun-95	17-May-95	5-Jun-95	17-May-95	5-Jun-95	17-May-95	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95
Chromium	1.3 B	1.2 B	8.7	0.68 U	11.4	1.7 B	12.4	0.66 U	10.9	2.1 B	6.6	NA
Cobalt	0.65 U	0.65 U	0.7 U	0.63 U	0.68 U	0.65 U	0.69 U	0.62 U	0.86 B	0.63 U	0.69 U	NA
Copper	0.36 U	0.65 U	0.64 U	0.69 U	0.35 U	1.2 U	0.54 U	0.56 U	1 U	0.3 U	0.58 U	NA
Iron	49.8 J	46.4 J	318	104 J	341	208 J	363	34.3 J	642 J	523 J	318 J	NA
Lead	2.2 J	1.4 J	15.1 J	1.3 J	7.6 J	2.9 J	11 J	0.72 J	13.2 J	1.8 J	4.2 J	NA
Magnesium	9.3 B	11.9 B	101 B	8.9 B	119 B	65.1 B	16.4 B	9.2 B	125 B	25.8 B	6.5 B	NA
Manganese	0.2 B	0.2 B	0.83 B	0.34 B	1.2 B	3 B	0.64 B	0.27 B	0.58 B	0.73 B	0.19 B	NA
Mercury	0.03 U	0.03 U	0.15	0.03 U	0.15	0.03 B	0.13	0.02 U	0.1	0.03 B	0.04 B	NA
Nickel	3.2 U	3.2 U	3.4 U	3.1 U	3.3 U	3.2 U	3.4 U	3 U	3.3 U	3.1 U	3.4 U	NA
Potassium	99.6 U	100 U	108 U	96.6 U	105 U	100 U	105 U	95 U	103 U	96.3 U	105 U	NA
Selenium	0.51 U	0.52 U	0.61 B	0.5 UJ	0.54 U	0.52 U	0.93 B	0.49 UJ	0.53 U	0.5 U	0.54 U	NA
Silver	0.58 U	0.59 U	0.63 U	0.57 U	0.61 U	0.59 U	0.62 U	0.56 U	0.61 U	0.56 U	0.61 U	NA
Sodium	7.9 U	10.7 U	6.8 B	9.7 U	6.8 B	13.3 U	4 U	9.1 B	19.2 U	10.9 U	10.2 U	NA
Thallium	0.41 U	0.41 U	0.44 U	0.39 U	0.43 U	0.41 U	0.43 U	0.39 U	0.42 U	0.39 U	0.43 U	NA
Vanadium	0.81 B	0.7 B	3.4 B	0.62 B	3.9 B	1.6 B	2.1 B	0.77 B	4.9 B	2.4 B	2 B	NA
Zinc	0.49 B	0.42 B	0.33 U	0.61 B	0.56 U	1.9 B	0.54 U	0.29 B	0.71 B	0.41 B	0.03 B	NA

Appendix C  
 Table C-1. Summary of Soil Boring Analytical Results  
 Study Area 26

Naval Training Center, Orlando  
 Orlando, FL

Sample ID	26B00602D		26B00701	26B00702
Lab ID	G7747008	G7747008RE	G7747009	G7747010
Sampling Date	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95
<b>Volatile organics, ug/kg</b>				
1,1,1-Trichloroethane	12 U	NA	11 U	12 U
1,1,2,2-Tetrachloroethane	12 U	NA	11 U	12 U
1,1,2-Trichloroethane	12 U	NA	11 U	12 U
1,1-Dichloroethane	12 U	NA	11 U	12 U
1,1-Dichloroethene	12 U	NA	11 U	12 U
1,2-Dichloroethane	12 U	NA	11 U	12 U
1,2-Dichloroethene (total)	12 U	NA	11 U	12 U
1,2-Dichloropropane	12 U	NA	11 U	12 U
2-Butanone	12 U	NA	11 U	12 U
2-Hexanone	12 U	NA	11 U	12 U
4-Methyl-2-pentanone	12 U	NA	11 U	12 U
Acetone	16 U	NA	11 U	16 U
Benzene	12 U	NA	11 U	12 U
Bromodichloromethane	12 U	NA	11 U	12 U
Bromoform	12 U	NA	11 U	12 U
Bromomethane	12 U	NA	11 U	12 U
Carbon disulfide	12 U	NA	11 U	12 U
Carbon tetrachloride	12 U	NA	11 U	12 U
Chlorobenzene	12 U	NA	11 U	12 U
Chloroethane	12 U	NA	11 U	12 U
Chloroform	12 U	NA	11 U	12 U
Chloromethane	12 U	NA	11 U	12 U
cis-1,3-Dichloropropene	12 U	NA	11 U	12 U
Dibromochloromethane	12 U	NA	11 U	12 U
Ethylbenzene	12 U	NA	11 U	12 U
Methylene chloride	12 U	NA	11 U	12 U
Styrene	12 U	NA	11 U	12 U
Tetrachloroethene	12 U	NA	11 U	12 U
Toluene	12 U	NA	11 U	12 U
trans-1,3-Dichloropropene	12 U	NA	11 U	12 U
Trichloroethene	12 U	NA	11 U	12 U
Vinyl chloride	12 U	NA	11 U	12 U
Xylene (total)	12 U	NA	11 U	12 U

Appendix C  
 Table C-1. Summary of Soil Boring Analytical Results  
 Study Area 26

Naval Training Center, Orlando  
 Orlando, FL

Sample ID	26B00602D		26B00701		26B00702	
	Lab ID	G7747008	G7747008RE	G7747009	G7747010	
Sampling Date	5-Jun-95		5-Jun-95		5-Jun-95	
<b>Semivolatile organics, ug/kg</b>						
1,2,4-Trichlorobenzene	390	UR	390	U	360	410 UR
1,2-Dichlorobenzene	390	UR	390	U	360	410 UR
1,3-Dichlorobenzene	390	UR	390	U	360	410 UR
1,4-Dichlorobenzene	390	UR	390	U	360	410 UR
2,2'-oxybis(1-Chloropropane)	390	UR	390	U	360	410 UR
2,4,5-Trichlorophenol	980	UR	980	U	900	1000 UR
2,4,6-Trichlorophenol	390	UR	390	U	360	410 UR
2,4-Dichlorophenol	390	UR	390	U	360	410 UR
2,4-Dimethylphenol	390	UR	390	U	360	410 UR
2,4-Dinitrophenol	980	UR	980	U	900	1000 UR
2,4-Dinitrotoluene	390	UR	390	U	360	410 UR
2,6-Dinitrotoluene	390	UR	390	U	360	410 UR
2-Chloronaphthalene	390	UR	390	U	360	410 UR
2-Chlorophenol	390	UR	390	U	360	410 UR
2-Methylnaphthalene	390	UR	390	U	360	410 UR
2-Methylphenol	390	UR	390	U	360	410 UR
2-Nitroaniline	980	UR	980	U	900	1000 UR
2-Nitrophenol	390	UR	390	U	360	410 UR
3,3'-Dichlorobenzidine	390	UR	390	U	360	410 UR
3-Nitroaniline	980	UR	980	U	900	1000 UR
4,6-Dinitro-2-methylphenol	980	UR	980	U	900	1000 UR
4-Bromophenyl-phenylether	390	UR	390	U	360	410 UR
4-Chloro-3-methylphenol	390	UR	390	U	360	410 UR
4-Chloroaniline	390	UR	390	U	360	410 UR
4-Chlorophenyl-phenylether	390	UR	390	U	360	410 UR
4-Methylphenol	390	UR	390	U	360	410 UR
4-Nitroaniline	980	UR	980	U	900	1000 UR
4-Nitrophenol	980	UR	980	U	900	1000 UR
Acenaphthene	390	UR	390	U	360	410 UR
Acenaphthylene	390	UR	390	U	360	410 UR
Anthracene	390	UR	390	U	360	410 UR
Benzo(a)anthracene	390	UR	390	U	360	410 UR
Benzo(a)pyrene	390	UR	390	U	360	410 UR

Appendix C  
Table C-1. Summary of Soil Boring Analytical Results  
Study Area 26

Naval Training Center, Orlando  
Orlando, FL

Sample ID	26B00602D		26B00701	26B00702			
	Lab ID	G7747008	G7747008RE	G7747009	G7747010		
Sampling Date	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95			
Benzo(b)fluoranthene	390	UR	390	U	410	UR	
Benzo(g,h,i)perylene	390	UR	390	U	410	UR	
Benzo(k)fluoranthene	390	UR	390	U	410	UR	
bis(2-Chloroethoxy)methane	390	UR	390	U	410	UR	
bis(2-Chloroethyl)ether	390	UR	390	U	410	UR	
bis(2-Ethylhexyl)phthalate	390	UR	390	U	410	UR	
Butylbenzylphthalate	390	UR	390	U	410	UR	
Carbazole	390	UR	390	U	410	UR	
Chrysene	390	UR	390	U	410	UR	
Di-n-butylphthalate	390	UR	390	U	410	UR	
Di-n-octylphthalate	390	UR	390	U	410	UR	
Dibenz(a,h)anthracene	390	UR	390	U	410	UR	
Dibenzofuran	390	UR	390	U	410	UR	
Diethylphthalate	390	UR	390	U	410	UR	
Dimethylphthalate	390	UR	390	U	410	UR	
Fluoranthene	390	UR	390	U	410	UR	
Fluorene	390	UR	390	U	410	UR	
Hexachlorobenzene	390	UR	390	U	410	UR	
Hexachlorobutadiene	390	UR	390	U	410	UR	
Hexachlorocyclopentadiene	390	UR	390	U	410	UR	
Hexachloroethane	390	UR	390	U	410	UR	
Indeno(1,2,3-cd)pyrene	390	UR	390	U	410	UR	
Isophorone	390	UR	390	U	410	UR	
N-Nitroso-di-n-propylamine	390	UR	390	U	410	UR	
N-Nitrosodiphenylamine (1)	390	UR	390	U	410	UR	
Naphthalene	390	UR	390	U	410	UR	
Nitrobenzene	390	UR	390	U	410	UR	
Pentachlorophenol	980	UR	980	U	1000	UR	
Phenanthrene	390	UR	390	U	410	UR	
Phenol	390	UR	390	U	410	UR	
Pyrene	390	UR	390	U	410	UR	
<b>Pesticides/PCBs, ug/kg</b>							
4,4'-DDD	3.9	U	NA	3.5	U	4.1	U
4,4'-DDE	3.9	U	NA	3.5	U	4.1	U

Appendix C  
Table C-1. Summary of Soil Boring Analytical Results  
Study Area 26

Naval Training Center, Orlando  
Orlando, FL

Sample ID	26B00602D		26B00701	26B00702
	Lab ID	G7747008	G7747008RE	G7747009
Sampling Date	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95
4,4'-DDT	3.9 U	NA	3.5 U	4.1 U
Aldrin	2 U	NA	1.8 U	2.1 U
alpha-BHC	2 U	NA	1.8 U	2.1 U
alpha-Chlordane	2 U	NA	1.8 U	2.1 U
Aroclor-1016	39 U	NA	35 U	41 U
Aroclor-1221	80 U	NA	72 U	84 U
Aroclor-1232	39 U	NA	35 U	41 U
Aroclor-1242	39 U	NA	35 U	41 U
Aroclor-1248	39 U	NA	35 U	41 U
Aroclor-1254	39 U	NA	35 U	41 U
Aroclor-1260	39 U	NA	35 U	41 U
beta-BHC	2 U	NA	1.8 U	2.1 U
delta-BHC	2 U	NA	1.8 U	2.1 U
Dieldrin	3.9 U	NA	3.5 U	4.1 U
Endosulfan I	2 U	NA	1.8 U	2.1 U
Endosulfan II	3.9 U	NA	3.5 U	4.1 U
Endosulfan sulfate	3.9 U	NA	3.5 U	4.1 U
Endrin	3.9 U	NA	3.5 U	4.1 U
Endrin aldehyde	3.9 U	NA	3.5 U	4.1 U
Endrin ketone	3.9 U	NA	3.5 U	4.1 U
gamma-BHC (Lindane)	2 U	NA	1.8 U	2.1 U
gamma-Chlordane	2 U	NA	1.8 U	2.1 U
Heptachlor	2 U	NA	1.8 U	2.1 U
Heptachlor epoxide	2 U	NA	1.8 U	2.1 U
Methoxychlor	20 U	NA	18 U	21 U
Toxaphene	200 U	NA	180 U	210 U
<b>Inorganics, ug/kg</b>				
Aluminum	7490 J	NA	2680 J	25700 J
Antimony	7 U	NA	6.3 U	9.4 U
Arsenic	0.64 B	NA	0.41 U	2.1 J
Barium	13.4 B	NA	1.1 B	118
Beryllium	0.06 U	NA	0.03 U	0.24 B
Cadmium	0.73 U	NA	0.66 U	0.99 U
Calcium	89.5 B	NA	21.7 B	259 B

Appendix C  
 Table C-1. Summary of Soil Boring Analytical Results  
 Study Area 26

Naval Training Center, Orlando  
 Orlando, FL

Sample ID	26B00602D		26B00701	26B00702
	Lab ID	G7747008	G7747008RE	G7747009
Sampling Date	5-Jun-95	5-Jun-95	5-Jun-95	5-Jun-95
Chromium	7.1	NA	2.7	18.6
Cobalt	0.68 U	NA	0.62 U	0.93 U
Copper	0.33 U	NA	0.5 U	1.2 U
Iron	305 J	NA	543 J	1390 J
Lead	3.1 J	NA	1.6 J	11.3 J
Magnesium	15 B	NA	41.2 B	25.7 B
Manganese	0.33 B	NA	0.91 B	0.62 B
Mercury	0.04 B	NA	0.02 U	0.15
Nickel	3.3 U	NA	3 U	7.9 B
Potassium	104 U	NA	95.1 U	141 U
Selenium	0.54 U	NA	0.49 UJ	13.3
Silver	0.61 U	NA	0.56 U	0.83 U
Sodium	9.9 U	NA	8.4 U	15.5 U
Thallium	0.43 U	NA	0.39 U	0.58 U
Vanadium	1.7 B	NA	2 B	15.1 B
Zinc	0.26 U	NA	0.49 B	0.35 U

Appendix C  
 Table C-2. Summary of Groundwater Analytical Results  
 Study Area 26

Naval Training Center, Orlando  
 Orlando, FL

Sample_ID	26G00101	26G00101D	26G00201	26G00301	26G00401
Lab_ID	G7731001	G7731002	G7731003	G7731004	G7396001
Sampling Date	2-Jun-95	2-Jun-95	2-Jun-95	2-Jun-95	18-Apr-95
<b>Volatile Organics, ug/L</b>					
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U
2-Butanone	5 UR	5 UR	5 UR	5 UR	5 UR
2-Hexanone	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	5 U
Acetone	2 UR	3 UR	0.8 UR	5 UR	0.9 UR
Benzene	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	0.2 J	1 U
Chloromethane	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U
Methylene chloride	2 U	2 U	2 U	2 U	2 U
Styrene	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U	1 U
Xylene (total)	1 U	1 U	1 U	1 U	1 U
<b>Semivolatile Organics, ug/L</b>					
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U
2,2'-oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 UJ	25 UJ	25 UJ	25 UJ	25 U

Appendix C  
Table C-2. Summary of Groundwater Analytical Results  
Study Area 26

Naval Training Center, Orlando  
Orlando, FL

Sample_ID	26G00101	26G00101D	26G00201	26G00301	26G00401
Lab_ID	G7731001	G7731002	G7731003	G7731004	G7396001
Sampling Date	2-Jun-95	2-Jun-95	2-Jun-95	2-Jun-95	18-Apr-95
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	1 U	1	1 U	5	1 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine (1)	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U

Appendix C  
Table C-2. Summary of Groundwater Analytical Results  
Study Area 26

Naval Training Center, Orlando  
Orlando, FL

Sample_ID	26G00101	26G00101D	26G00201	26G00301	26G00401
Lab_ID	G7731001	G7731002	G7731003	G7731004	G7396001
Sampling Date	2-Jun-95	2-Jun-95	2-Jun-95	2-Jun-95	18-Apr-95
Nitrobenzene	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1 U	1 U	1 U	1 U	1 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U
<b>Pesticides/PCBs, ug/L</b>					
4,4'-DDD	0.1 UJ	0.1 U	0.1 U	0.1 UJ	NA
4,4'-DDE	0.1 UJ	0.1 U	0.1 U	0.1 UJ	NA
4,4'-DDT	0.1 UJ	0.1 U	0.1 U	0.1 UJ	NA
Aldrin	0.05 UJ	0.05 U	0.05 U	0.05 UJ	NA
alpha-BHC	0.05 UJ	0.05 U	0.05 U	0.05 UJ	NA
alpha-Chlordane	0.05 UJ	0.05 U	0.05 U	0.05 UJ	NA
Aroclor-1016	0.5 UJ	0.5 U	0.5 U	0.5 UJ	NA
Aroclor-1221	0.5 UJ	0.5 U	0.5 U	0.5 UJ	NA
Aroclor-1232	0.5 UJ	0.5 U	0.5 U	0.5 UJ	NA
Aroclor-1242	0.5 UJ	0.5 U	0.5 U	0.5 UJ	NA
Aroclor-1248	0.5 UJ	0.5 U	0.5 U	0.5 UJ	NA
Aroclor-1254	0.5 UJ	0.5 U	0.5 U	0.5 UJ	NA
Aroclor-1260	0.5 UJ	0.5 U	0.5 U	0.5 UJ	NA
beta-BHC	0.05 UJ	0.05 U	0.05 U	0.05 UJ	NA
delta-BHC	0.05 UJ	0.05 U	0.05 U	0.05 UJ	NA
Dieldrin	0.1 UJ	0.1 U	0.1 U	0.1 UJ	NA
Endosulfan I	0.05 UJ	0.05 U	0.05 U	0.05 UJ	NA
Endosulfan II	0.1 UJ	0.1 U	0.1 U	0.1 UJ	NA
Endosulfan sulfate	0.1 UJ	0.1 U	0.1 U	0.1 UJ	NA
Endrin	0.1 UJ	0.1 U	0.1 U	0.1 UJ	NA
Endrin aldehyde	0.1 UJ	0.05 U	0.1 U	0.1 UJ	NA
Endrin ketone	0.1 UJ	0.1 U	0.1 U	0.1 UJ	NA
gamma-BHC (Lindane)	0.05 UJ	0.05 U	0.05 U	0.05 UJ	NA
gamma-Chlordane	0.05 UJ	0.05 U	0.05 U	0.05 UJ	NA
Heptachlor	0.05 UJ	0.05 U	0.05 U	0.05 UJ	NA
Heptachlor epoxide	0.05 UJ	0.05 U	0.05 U	0.05 UJ	NA
Methoxychlor	0.5 UJ	0.5 U	0.5 U	0.5 UJ	NA
Toxaphene	5 UJ	5 U	5 U	5 UJ	NA
<b>Inorganics, ug/L</b>					
Aluminum	796	716	716	441	6460
Antimony	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Arsenic	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	1.9 U
Barium	8 J	8.3 J	20.9 J	8 J	35.9 B
Beryllium	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.21 B
Cadmium	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Calcium	1260 B	1230 B	4650 B	14700	6510
Chromium	3.1 U	3.1 U	3.1 U	3.1 U	7.8 B
Cobalt	2.9 UJ	2.9 UJ	2.9 UJ	2.9 UJ	2.9 U
Copper	1.4 U	3.2 U	3.2 U	1.4 U	7.6 B
Iron	1900	1830	1280	39.8 B	768
Lead	1.5 U	1.5 U	1.5 U	1.5 U	2.9 B
Magnesium	1080 B	1060 B	2090 B	745 B	628 B
Manganese	12.1 B	12 B	17.3	4.9 B	5.6 B

Appendix C  
 Table C-2. Summary of Groundwater Analytical Results  
 Study Area 26

Naval Training Center, Orlando  
 Orlando, FL

Sample_ID	26G00101	26G00101D	26G00201	26G00301	26G00401
Lab_ID	G7731001	G7731002	G7731003	G7731004	G7396001
Sampling Date	2-Jun-95	2-Jun-95	2-Jun-95	2-Jun-95	18-Apr-95
Mercury	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Nickel	14.2 U	14.2 U	14.2 U	14.2 U	14.2 U
Potassium	444 UJ	553 J	834 J	458 J	5910
Selenium	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Silver	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Sodium	2070 B	1990 B	3160 B	1500 B	2560 B
Thallium	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 U
Vanadium	3.7 B	3.5 B	2.5 U	4.1 B	6 B
Zinc	6.3 B	7 B	4.6 B	1.9 B	2.8 B
<b>Radiological, pCi/L</b>					
Gross Alpha	3.7 J	5.4 J	8.6 J	2 J	8.3 J
Gross Beta	3 UJ	3 UJ	4.3 J	3 UJ	8.9 J
<b>General chemistry, mg/L</b>					
Total Suspended Solids	38	22	1	6	70

Notes for Analytical Results Tables  
Study Area 26

Naval Training Center, Orlando  
Orlando Florida

NA = Identified parameter not analyzed.  
Sample ID = Sample Identifier  
Lab ID = Laboratory identifier

Units:

mg/kg milligram per kilogram  
ug/kg microgram per kilogram  
mg/L milligram per liter  
ug/L microgram per liter

The following standard validation qualifiers have the following definitions:

- U The analyte/compound was analyzed for but was not detected above the reported sample quantitation limit. The number preceding the U qualifier is the reported sample quantitation limit.
- J The analyte/compound was positively identified and the associated numerical value is an estimated concentration of the analyte/compound in the sample.
- B The inorganic analyte was positively identified and the associated numerical value is an estimated concentration because the detection was below the contract required detection limit (CRDL) and above the instrument detection limit.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. The reported quantitation limit, however, is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte/compound in the sample.
- R The sample results are rejected during data validation because of serious deficiencies in meeting quality control criteria.

**APPENDIX D**  
**SOIL GAS SURVEY FINDINGS**

FINAL REPORT ON THE FINDINGS OF  
PASSIVE SOIL GAS SURVEYS  
STUDY AREA 26  
NAVAL TRAINING CENTER (NTC)  
ORLANDO, FLORIDA

### 1.0 Executive Summary

The information contained herein has been extracted from the Target Environmental Services, Inc. (TARGET) report so that only information pertinent to Study Area 26 at NTC, Orlando is included. The complete report contains detailed information on quality assurance and quality control (QA/QC) and laboratory procedures, and data tables. The complete report may be obtained from ABB Environmental Services, Inc. (ABB-ES), Orlando, Florida.

On April 18-23, 26, and May 1, 1995, TARGET conducted a soil gas survey at NTC, Orlando. Two hundred and nine passive soil gas samples were collected from Study Area 26 (not including QA/QC samples) from depths of 2 to 3 feet. The samples were analyzed on a gas chromatograph equipped with an electron capture detector (GC/ECD) for halogenated hydrocarbons and a flame ionization detector (GC/FID) for petroleum hydrocarbons. The objective of the survey was to identify and possibly delineate the extent of volatile organic contamination within the shallow subsurface of the survey areas.

Very low levels of petroleum hydrocarbons are present at scattered locations within the survey area, but do not suggest the presence of a significant petroleum hydrocarbon contamination problem in the shallow subsurface of Study Area 26. Chlorinated hydrocarbon contamination was not evident in the shallow subsurface of Study Area 26.

### 2.0 Introduction

ABB-ES contracted TARGET to perform a passive soil gas survey of Study Area 26 at NTC, Orlando in Orlando, Florida. The objective of the survey was to identify and delineate the extent of possible volatile organic contamination within the shallow subsurface.

The survey sampling grids were designed by ABB-ES, and onsite changes to the sampling plan were directed by ABB-ES in response to site conditions encountered by TARGET during sampling. The proposed sampling plan included passive soil gas samples to be collected from the sites at depths of 2 to 3 feet and at an approximate grid spacing of 50 feet. The depth to groundwater was expected to be approximately 5 feet, but varying at some locations from 3 feet to 10 feet. The field phase of the survey was conducted on April 18-23, 26, and May 1, 1995.

### 3.0 Sample Collection and Analysis

Two hundred and nine passive soil gas samples were collected from the survey area at depths of 2 to 3 feet at the locations shown on Figure 1D.

All of the samples collected during the field phase of the survey were subjected to dual analyses. One analysis was conducted according to U.S. Environmental

Protection Agency (USEPA) Method 8010 (modified) on a GC/ECD, and using direct injection. Specific analytes standardized for this analysis were as follows:

- 1,1-dichloroethene (11DCE)
- methylene chloride ( $\text{CH}_2\text{Cl}_2$ )
- trans-1,2-dichloroethene (t12DCE)
- 1,1-dichloroethane (11DCA)
- cis-1,2-dichloroethene (c12DCE)
- chloroform ( $\text{CHCl}_3$ )
- 1,1,1-trichloroethane (111TCA)
- carbon tetrachloride ( $\text{CCl}_4$ )
- trichloroethene (TCE)
- 1,1,2-trichloroethane (112TCA)
- tetrachloroethene (PCE)

The chlorinated hydrocarbons in this suite were chosen because of their common usage in industrial solvents and/or their degradational relationship to commonly used compounds.

The second analysis was conducted according to USEPA Method 8020 (modified) on a GC/FID, and using direct injection. The analytes selected for standardization in this analysis were as follows:

- benzene
- toluene
- ethylbenzene
- meta- and para-xylene
- ortho-xylene

These compounds were chosen because of their utility in evaluating the presence of fuel products or petroleum-based solvents.

The tabulated results of the laboratory analyses of the soil gas samples are reported in micrograms per liter-vapor, not to be confused with "micrograms per liter" in water analyses. The two are not equivalent in gas analyses, due to the difference in the mass of equal volumes of water and gas matrices.

#### 4.0 Results and Interpretation

In order to provide graphic presentation of the results, selected data have been mapped and contoured to produce Figures 6 and 7. Dashed contours are used where patterns are extrapolated into areas of less complete data, or as auxiliary contours. Map sample points with no data shown indicate that the analyte concentrations in the sample were below the reporting limit.

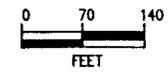
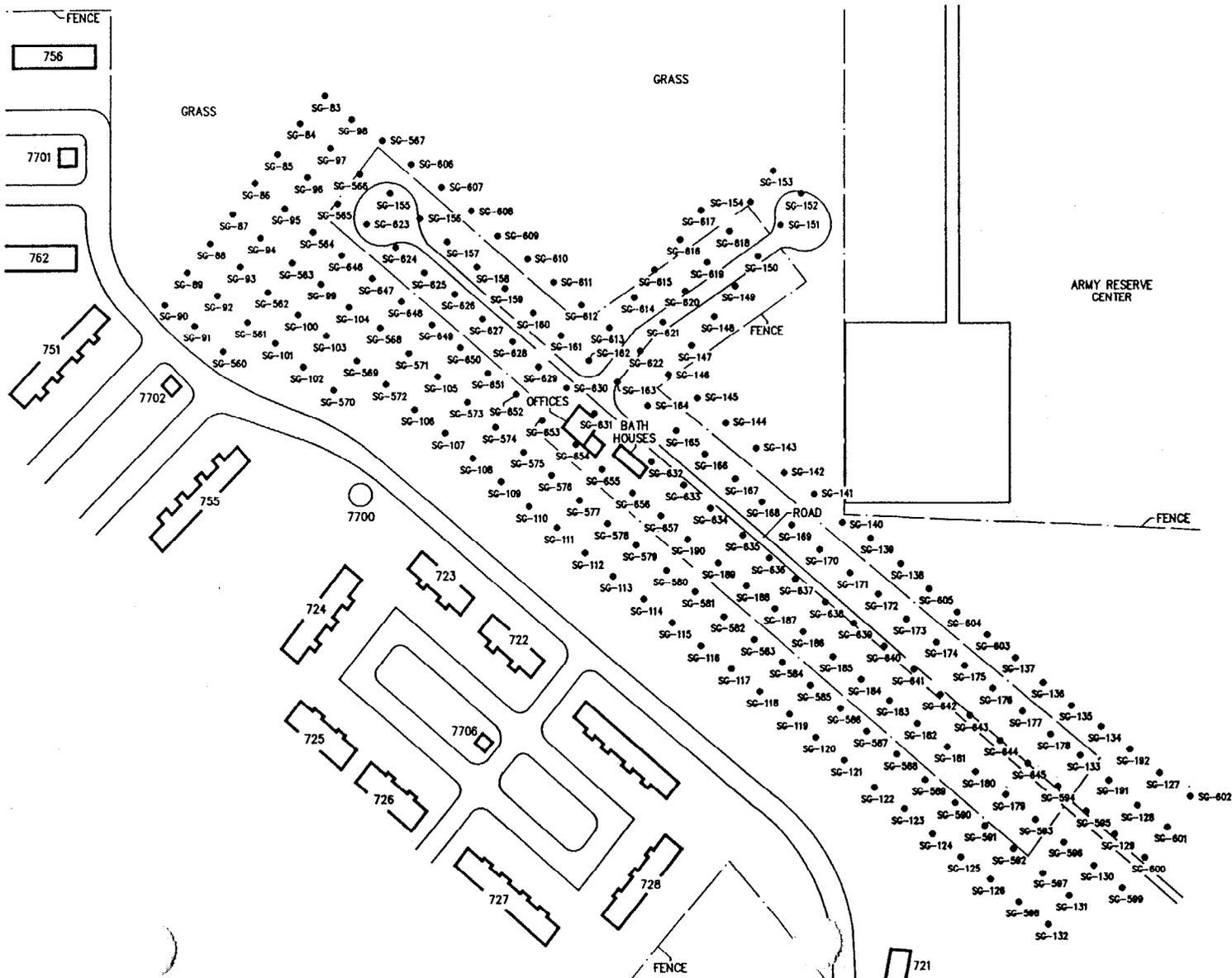
GC/FID analysis of the soil gas samples revealed very low levels of benzene (Figure 6) in a few samples from the northeastern end of the survey area and at three isolated locations toward the southwestern end of the area. Toluene (Figure 7) was present in low concentrations at several scattered locations across the survey area. A low level of ethylbenzene occurred only in Sample SG-618, while xylenes were present only in Sample SG-641. Total FID as naphtha was below the reporting limit for all of the soil gas samples collected in Study Area 26. The FID chromatogram signatures of the samples with detectable levels of volatiles revealed only very small peaks representing very low levels of

petroleum hydrocarbons, which are insufficient to allow chromatographic interpretation of the original product. The very low levels of volatile hydrocarbons observed at scattered locations at this site do not suggest the presence of a significant petroleum hydrocarbon contamination problem in the shallow subsurface of Study Area 26.

GC/ECD analysis revealed that none of the standardized chlorinated compounds were present above their respective reporting limits in any of the passive soil gas samples collected from Study Area 26.

#### 5.0 Conclusions

- ▶ Very low levels of petroleum hydrocarbons are present at scattered locations, but these levels do not suggest the presence of a significant petroleum hydrocarbon contamination problem in the shallow subsurface of Study Area 26.
- ▶ Chlorinated hydrocarbon contamination was not evident in the shallow subsurface of Study Area 26.



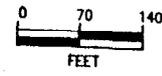
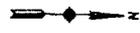
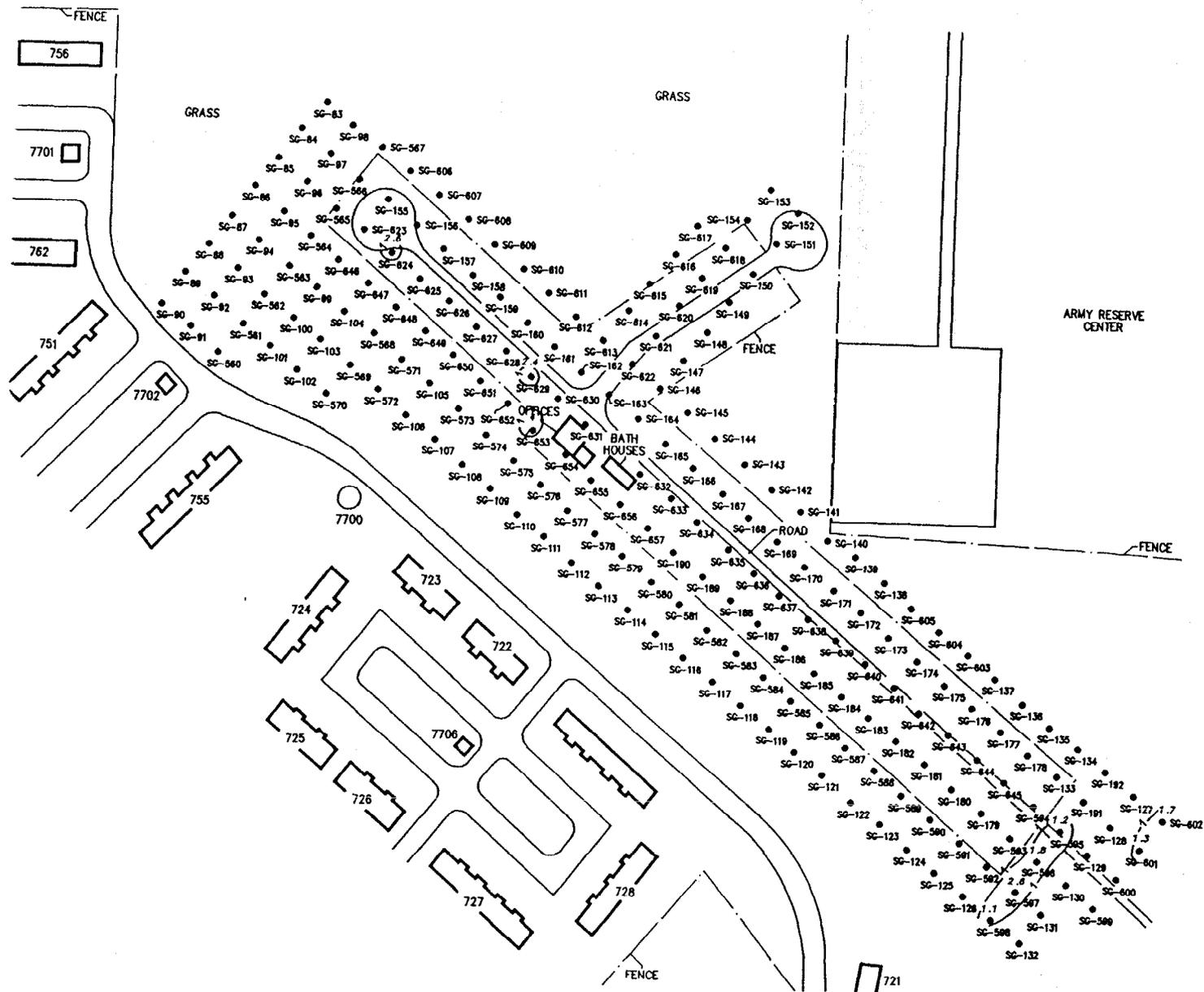
● SOIL GAS SAMPLE LOCATION

FIGURE 1D. Sample Locations

STUDY AREA 26  
NAVAL TRAINING CENTER ORLANDO  
ORLANDO, FLORIDA

 ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report  
and should be viewed in that



● SOIL GAS SAMPLE LOCATION

FIGURE 6. Benzene ( $\mu\text{g/l}$ )

STUDY AREA 26  
 NAVAL TRAINING CENTER ORLANDO  
 ORLANDO, FLORIDA

**TARGET** ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report  
 and should be viewed in that context.

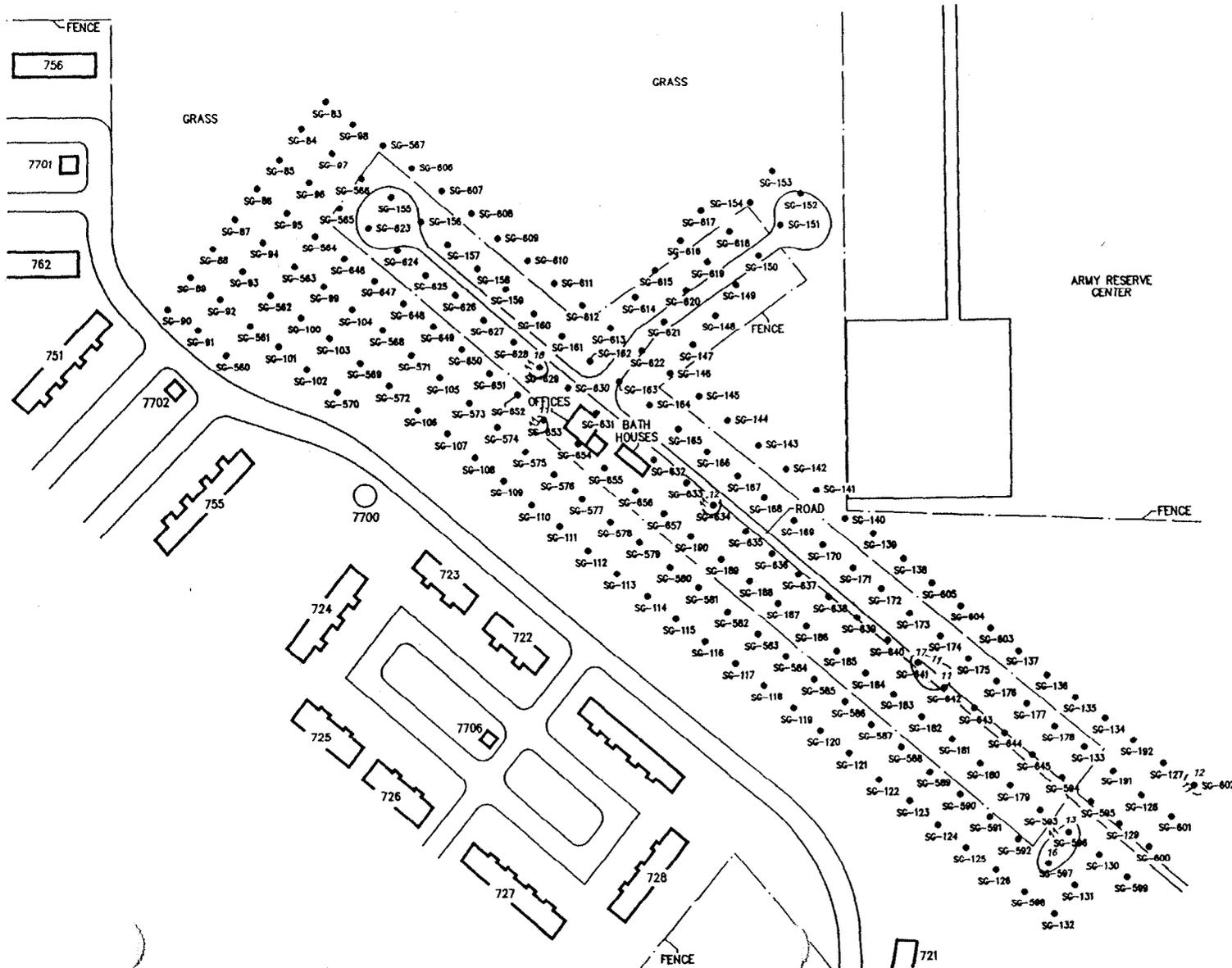


FIGURE 7. Toluene ( $\mu\text{g/l}$ )

STUDY AREA 26  
 NAVAL TRAINING CENTER ORLANDO  
 ORLANDO, FLORIDA

 ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report  
 and should be viewed in that context.