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FINAL BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING
REPORT STUDY AREA 12 NTC ORLANDO FL
7/1/1996
ABB ENVIRONMENTAL

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

00044

STUDY AREA 12

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

Unit Identification Code: N65928

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

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July 1996



CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

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

DATE: July 17, 1996

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

NAME AND TITLE OF CERTIFYING OFFICIAL: Mark Salvetti
Project Technical Lead

(DFAR 252.227-7036)

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
AST	aboveground storage tank
bls	below land surface
BRAC	Base Realignment and Closure
CLP	Contract Laboratory program
DQO	data quality objective
DRMO	Defense Reutilization and Marketing Office
EBS	environmental baseline survey
FDEP	Florida Department of Environmental Protection
FID	flame ionization detector
MCL	maximum contaminant level
mg/kg	milligrams per kilogram
µg/l	micrograms per liter
µg/kg	micrograms per kilogram
OPT	Orlando Partnering Team
OU	operable unit
PAH	polynuclear aromatic hydrocarbons
PCB	polychlorinated biphenyls
PCE	tetrachloroethene
ppm	parts per million
RBC	risk-based concentration
SCG	soil cleanup goal
TAL	target analyte list
TCE	trichloroethene
TCL	target compound list
TPH	total petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency

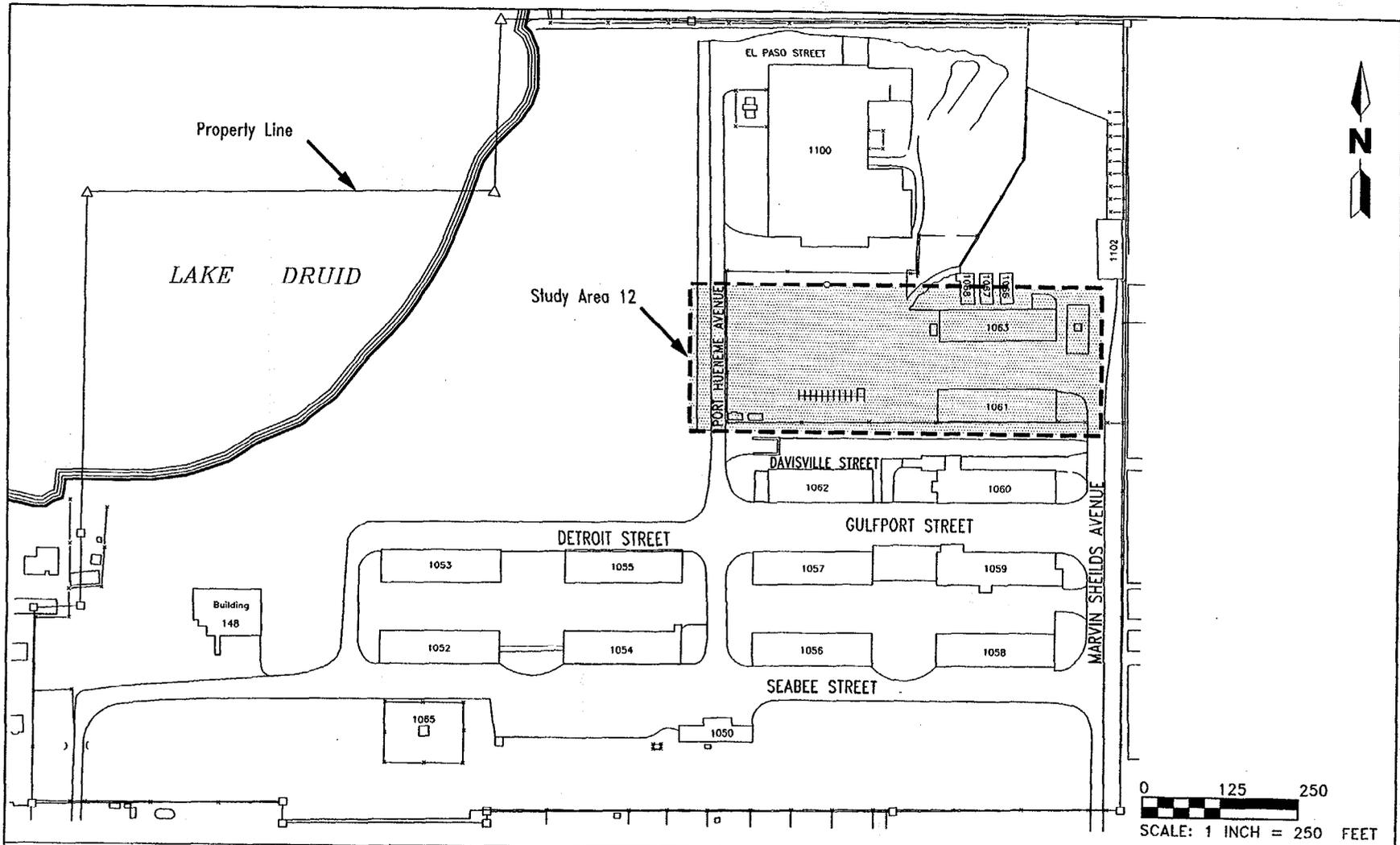
1.0 STUDY AREA 12, DEFENSE REUTILIZATION AND MARKETING OFFICE (DRMO)
WAREHOUSE AND TRUCK SCALES, AREA C, BUILDINGS 1063 AND 1069

This report contains information gathered as a result of site-screening activities conducted at Study Area 12. In the fall of 1995, after the review of site-screening results, the Orlando Partnering Team (OPT) assigned the contiguous Study Areas 12, 13, and 14 to operable unit status as Operable Unit (OU) 4. The results of subsequent investigations are not included in this document but may be found in the appropriate OU 4 reports as they become available.

1.1 STUDY AREA 12, BACKGROUND AND CONDITIONS. Study Area 12 includes DRMO warehouses and Salvage Yard (Building 1063), and the truck scales (Building 1069) (Figure 1). These buildings are located on Port Hueneme Avenue in the northcentral portion of Area C (Figure 2). The warehouse building was originally constructed in the early 1940s. Site use has reportedly remained consistent (i.e., salvage, scrap, and disposal yard) throughout its history. Based on review of aerial photographs, the original structure occupied approximately one-half the footprint of the current structure. The current warehouse (Figure 2), which is constructed of sheet metal walls and roof (i.e., a "Butler" building) on a concrete slab, was added to or replaced the original warehouse in 1962. The warehouse (Building 1063) has 9,600 square feet of floor space and steel racks for storing salvage materials. There is a flammables storage locker on the western side of the building. To the east of the building is a truck scale (Building 1069), consisting of a concrete slab on a weighing mechanism. The asphalt-paved salvage yard, located west of the warehouse (Figure 2), is occupied by rows of salvage scrap materials, concrete storage bins, and a drum storage area. There is also a transformer carcass storage area in the southwest corner of the study area. Salvage scrap items are also stored in this area, including desks, wheels, vehicles, transformers, and fencing. It is not known how long this area has been paved.

Historical records indicate this area was used to store small quantities (1 to 5 gallons) of hazardous waste between 1959 and 1985. These wastes were stored in the southwest corner of the salvage lot and included the following: paints, insecticides, asbestos, solvents including trichloroethene (TCE) and methyl-ethyl ketone, ammonium hydroxide, sodium sulfide, and mercury.

Several potential areas of environmental concern were identified during the Environmental Baseline Survey (EBS) (ABB Environmental Services, Inc. [ABB-ES], 1994a). The first issue concerns past and present waste storage and handling practices in this study area. Thirty-four electrical transformers and an undetermined number of drums were stored in the southwestern corner of the storage lot at the time of the EBS. The transformers present at the time of the EBS were reported to contain less than 2 inches of oil, and most were labeled as "Certified < 50 parts per million (ppm) polychlorinated biphenyl (PCB)." The contents of the drums are unknown. Historical records indicated that hazardous waste has been stored in the southwest corner of the lot for many years. There is also a record of an unquantified chemical spill in the salvage staging area on the north side of the warehouse building.



**FIGURE 1
LOCATION OF STUDY AREA 12
AREA C**



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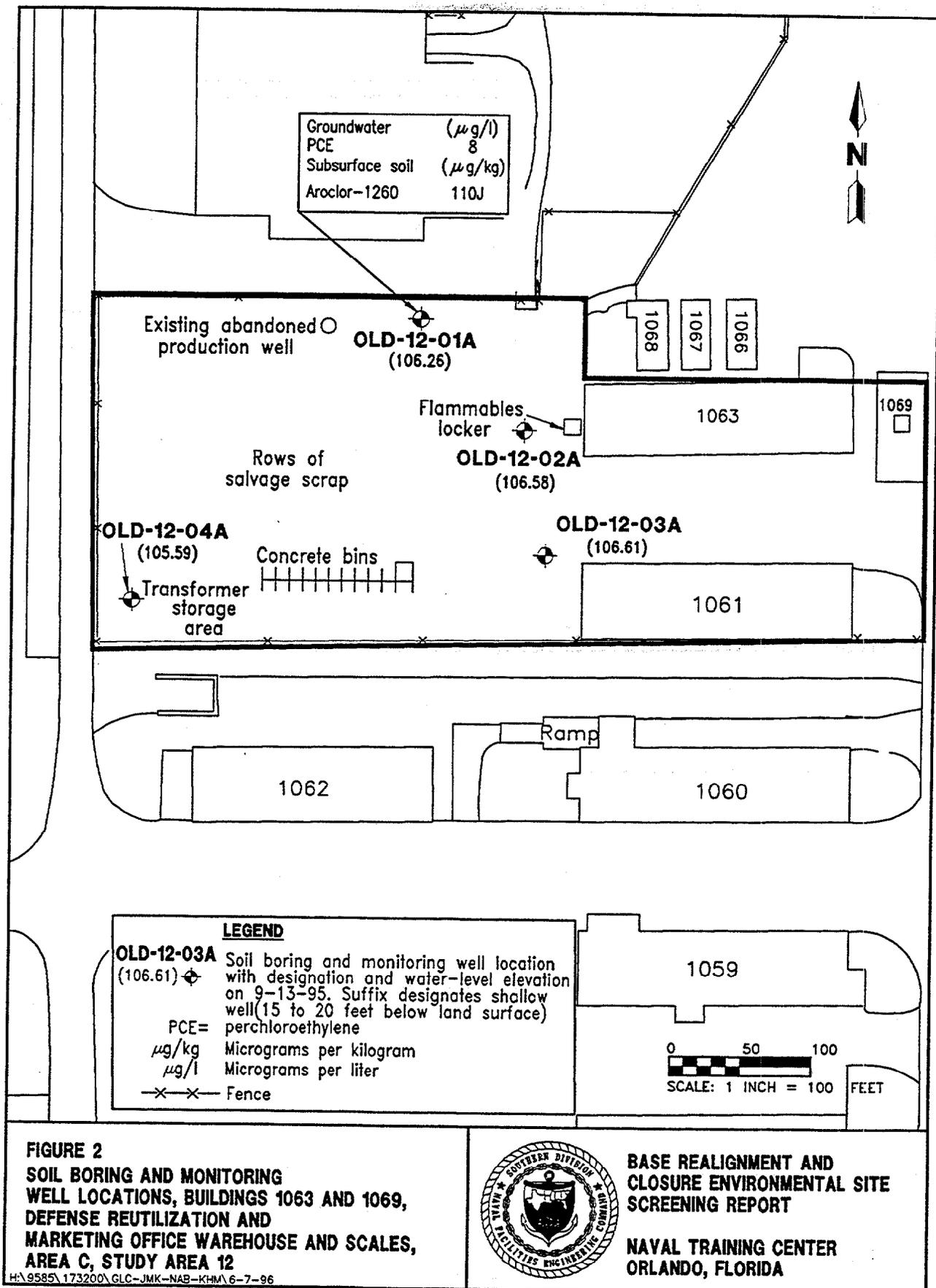


FIGURE 2
SOIL BORING AND MONITORING
WELL LOCATIONS, BUILDINGS 1063 AND 1069,
DEFENSE REUTILIZATION AND
MARKETING OFFICE WAREHOUSE AND SCALES,
AREA C, STUDY AREA 12



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The second potential area of concern was the discovery of a former production well. This well is located in the northern section of the storage lot (Figure 2) and consists of an 8-inch-diameter, 16-inch-high metal casing with the lid welded shut.

A 265-gallon fuel oil aboveground storage tank (AST) was formerly located near the northeast corner of the warehouse. No documentation of potential environmental impact from the tank has been identified. Potential impacts from releases related to the use or removal of the AST will be addressed in the Tank Management Plan (ABB-ES, 1994b).

The truck scale represents another potential source of contamination because of the potential leakage or spills associated with underground hydraulic lines or from other lubricating oils.

1.2 STUDY AREA 12, INVESTIGATION SUMMARY. The objectives of screening activities in Study Area 12 were to evaluate what chemical contaminants, if any, are associated with releases to the environment due to current or past waste storage and handling operations in the yard, as well as maintenance and use of the truck scales, and to determine the appropriate abandonment procedure for the production well structure. The site-screening program for this study area included collection and analysis of surface soil, subsurface soil, and groundwater samples at four locations (Figure 2).

1.2.1 Aerial Photograph Evaluation and Site Reconnaissance Walkover An aerial photographic review was conducted by ABB-ES prior to the initiation of the field activities to indicate areas of drum storage. Site reconnaissance walkovers were conducted on February 16, 1995, to observe material stored at this facility. The walkover was made to inventory the transformers and drums stored in the fenced area of the DRMO. Although there were numerous, apparently older stains on the paved surfaces, as might be anticipated in an area where storage of diverse items and vehicles over an extended period took place, no unusual or heavily stained areas were observed. Neither was there evidence of any recent spills.

During the site visit, drums were observed in two areas of the yard. In the northwest corner, three open-top drums coated inside with dried red paint were noted. Nineteen 30-gallon drums were stored immediately to the west of Building 1063. Most of the 30-gallon drums were olive drab and unlabeled. Four of the drums were yellow and labeled "salvage drum." No evidence of spills was noted in either of the drum storage areas.

Thirteen transformers of various sizes were located in the southwest corner of the yard. Eight of the transformers had blue labels indicating that the transformer oil contained no PCBs. Of the five nonlabeled units, two were identified as automatic reclosers with manufacturer's labels indicating that no PCB fluid was contained; the remaining three had no blue labels or any other indication of the presence or absence of PCBs. No evidence of spills was observed on the transformers or in the immediate area.

Other equipment stored in the yard included a dump truck, front-end loaders, trailers, and a sprayer labeled "toxic" and "triple rinsed." No evidence of spills was noted in the vicinity of this equipment.

The area in the vicinity of the truck scales was inspected, but no evidence of hydraulic mechanisms or associated spills was noted in this area.

Observations made during the walkover suggest that transformers, drums, and other equipment are shipped in and out of the storage yard on a regular basis. The inventory of such items changes frequently, so this inventory should be regarded solely as a representation of conditions in the DRMO at the time of the survey.

An 8-inch-diameter former production well is located in the north-central part of Study Area 12. It was necessary to detach a tack-welded plate steel cover in order to inspect the well. The field party noted the sound of running water at the well head, indicating that water from the surficial aquifer was entering the well through a breach in the steel casing, potentially providing a conduit for groundwater to enter the Floridan aquifer. The static water table in the surficial aquifer is approximately 8 feet below land surface (bls). The depth to groundwater in the well, which is cased into the Floridan aquifer, was 62.95 feet bls on February 14, 1995. The well is constructed with 8-inch steel casing, which sleeves down to 5-inch steel casing at 140 feet bls; the bottom of the casing is at 383 feet bls. The total depth of the well is approximately 655 feet bls.

Groundwater from the shallow portion of the well was sampled by a representative from the Environmental Control Section, City of Orlando, on October 6, 1995. The results of the analysis are described below.

On December 1, 1995, representatives from the City of Orlando returned to sample groundwater from the deeper portions of the production well. Several hundred gallons of water were purged from the well using a downhole pump. Three groundwater samples were collected by the City of Orlando representatives and analyzed by ABB-ES on a field gas chromatograph. No organic compounds were detected in any of the three samples.

1.2.2 Soil Boring Investigation Four soil borings, 12B001 through 12B004, were advanced with hollow-stem auger to a depth of 15 feet bls (Figure 2). Sample locations were selected based upon historical documentation of site activities, interpretation of aerial photographs, and observations made during the site walkover and field operations. Sample locations near the west end of Buildings 1061 and 1063 were sited near former drum storage areas identified on aerial photographs. The sample location near the southwest corner of the study area was sited within the transformer storage area. The fourth sample location was sited in the vicinity of the former production well. No hydraulic mechanisms were identified in association with the truck scale; therefore, no soil samples were collected at this location.

Soil samples were collected continuously with a split-spoon sampler and field screened with a flame ionization detector (FID) for volatile organic compounds. FID readings of between 1 ppm and 10 ppm were detected at each boring location, with the exception of 12B003. Surface and subsurface soil samples were collected at each soil boring location, including a sample duplicate from boring 12B004. Surface soil samples were collected from immediately below the asphalt at an interval of zero to 1 foot bls. Subsurface soil samples were collected from the interval immediately above the water table (4 to 6 feet bls). Eight soil samples (two from each boring) were collected and submitted for total petroleum hydrocarbons (TPH) and full suite Contract Laboratory program (CLP) target

analyte list (TCL) and target analyte list (TAL) analyses, in accordance with U.S. Environmental Protection Agency (USEPA) Level IV data quality objectives (DQOs). Soil boring logs are presented in Appendix A.

1.2.3 Groundwater Monitoring Well Installation and Sampling Each of the four soil borings was completed as a shallow monitoring well with screened intervals from 5 feet to 15 feet bls. Soil borings 12B001 through 12B004 correspond to monitoring wells OLD-12-01A through OLD-12-04A, respectively. One groundwater sample was collected from each of the four monitoring wells using low-flow sampling techniques. The pump intake during groundwater sampling was located approximately 1 foot below the water table. The soil boring logs and monitoring well installation diagrams for the four wells installed at Study Area 12 are presented in Appendix A.

Four groundwater samples (one from each well) were submitted for TPH and full suite CLP TCL and TAL analyses, in accordance with USEPA Level IV DQOs. All groundwater samples were also submitted for total suspended solids to aid in the evaluation of inorganic data and the effectiveness of the groundwater development technique.

A westerly groundwater flow direction, toward Lake Druid, was determined from groundwater elevations measured on September 13, 1995.

1.3 STUDY AREA 12, RESULTS. The positive detections in soil and groundwater are shown in Appendix B. A complete set of soil and groundwater analytical results for Study Area 12 is presented in Appendix C.

1.3.1 Surface Soil Acetone was detected in surface soil sample duplicate 12B00401D at 16 micrograms per kilogram ($\mu\text{g}/\text{kg}$); however, it was not detected in the original field sample or in the other three surface soil samples at Study Area 12. The presence of this compound is likely a result of sampling or laboratory contamination. No other organic compounds were detected in surface soils. Inorganic analytes in surface soil samples were all below the background screening levels and the corresponding Florida soil cleanup goals (SCGs) and residential risk-based concentrations (RBCs).

1.3.2 Subsurface Soil The analytical data indicate the presence of several polyaromatic hydrocarbons in two of the four subsurface soil samples (12B00102 and 12B00302). Compounds detected include fluoranthenes, pyrene, chrysene, benzo(a)anthracene, and benzo(g,h,i)perylene at concentrations ranging from 110 $\mu\text{g}/\text{kg}$ to 260 $\mu\text{g}/\text{kg}$. These two subsurface soil samples also contained detectable concentrations of TPH (209.7 milligrams per kilogram [mg/kg] and 21.7 mg/kg, respectively). TPH were also detected in subsurface soil samples 12B00202 and 12B00402 at 11.7 mg/kg and 4.9 mg/kg, respectively. Pesticides and PCBs including 4,4'-dichlorodiphenyldichloroethene, 4,4'-dichlorodiphenyltrichloroethane, and Aroclor-1260 were detected in sample 12B00102 at 5.2 $\mu\text{g}/\text{kg}$, 23 $\mu\text{g}/\text{kg}$, and 110 $\mu\text{g}/\text{kg}$, respectively. Tetrachloroethene (PCE) was also detected in subsurface soil sample 12B00102 at 11 $\mu\text{g}/\text{kg}$. Acetone was detected in three of the four subsurface soil samples* at concentrations ranging from 16 $\mu\text{g}/\text{kg}$ to 49 $\mu\text{g}/\text{kg}$. The lack of an apparent source area, low concentrations, and random distribution for acetone suggest that the presence of this compound in subsurface soil may be related to sampling or laboratory contamination.

Leachability-based SCGs apply only to PCE, as no other compound detected in Study Area 12 soils was also detected in groundwater above Florida Department of Environmental Protection (FDEP) groundwater guidance concentrations. PCE was detected in subsurface soil from boring 12B001 at a concentration of 11J $\mu\text{g}/\text{kg}$, below the leachability-based SCG of 30 $\mu\text{g}/\text{kg}$ and below the residential RBC. With the exception of Aroclor-1260, all other organic compounds in subsurface soils were detected at concentrations less than the corresponding residential RBCs. The concentration of Aroclor-1260 in sample 12B00102 (110J $\mu\text{g}/\text{kg}$) exceeded the residential RBC of 83 $\mu\text{g}/\text{kg}$, but was less than the industrial RBC of 740 $\mu\text{g}/\text{kg}$.

Inorganic analytes detected in subsurface soil above background screening concentrations included barium, beryllium, cadmium, calcium, lead, magnesium, manganese, mercury, nickel, sodium, and zinc. However, all concentrations of these analytes were less than the corresponding residential and industrial RBCs.

1.3.3 Groundwater Groundwater analytical data from the four monitoring wells at Study Area 12 indicate chlorinated solvent contamination in one groundwater sample (12G00101), consisting of PCE and TCE at 8 micrograms per liter ($\mu\text{g}/\text{l}$) and 2 $\mu\text{g}/\text{l}$, respectively. PCE was also detected in the subsurface soil sample collected from this location, as discussed above. In addition, the results from the passive soil gas survey conducted at the adjacent Study Area 13 showed low concentrations of PCE just to the north of this monitoring well location. Concentrations of PCE in groundwater were above the FDEP groundwater primary standard of 3 $\mu\text{g}/\text{l}$ and the Federal maximum contaminant level (MCL) of 5 $\mu\text{g}/\text{l}$. The TCE concentration was below the FDEP groundwater primary standard and the Federal MCL.

Evaluation of soil boring logs indicates that a significant FID reading of 10 ppm was recorded at 14 feet bls during installation of monitoring well OLD-12-02. This is within the screened interval of the well; however, no organics were detected in groundwater from this monitoring well.

The inorganic constituents detected in groundwater above background concentrations include beryllium, calcium, magnesium, manganese, and sodium. However, all inorganic concentrations are below the corresponding FDEP groundwater guidance concentrations and residential and industrial RBCs.

The City of Orlando sent a representative from their Environmental Control Section to obtain a groundwater sample for the production well on October 6, 1995. The sample was analyzed by USEPA Method 601/602 for volatile organics. The only contaminant detected was PCE at 0.61 $\mu\text{g}/\text{l}$, less than the FDEP groundwater primary standard of 3 $\mu\text{g}/\text{l}$.

1.4 STUDY AREA 12, CONCLUSIONS AND RECOMMENDATIONS. Analytical results for surface soil and groundwater samples collected in this study area did not indicate significant concentrations of organic contaminants, with the exception of one monitoring well in which chlorinated solvents were detected in groundwater in excess of the Florida criteria. Chlorinated solvents, also detected in subsurface soil at this location, may be related to the plume beneath Study Area 13 or from an additional source at Study Area 12. Contaminants detected in subsurface soil also include polynuclear aromatic hydrocarbons (PAHs), pesticides, and PCBs but were at concentrations below the regulatory guidance. The detection of PAHs and PCBs is likely related to historical storage and

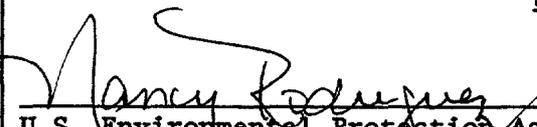
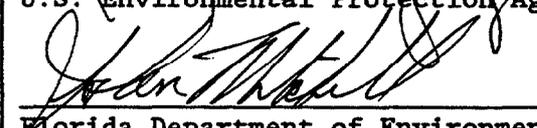
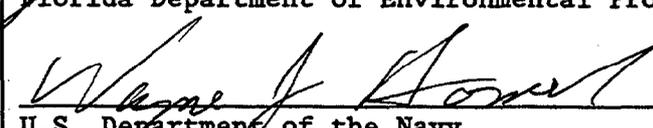
handling of transformers, drums, and other equipment that were reportedly shipped in and out of the storage yard and warehouse on a regular basis. PAHs detected in soil may also be related to dust control activities potentially used prior to paving Study Area 12. In addition, historical records indicate that the warehouse (Building 1063) burned in the 1960s. An unquantified chemical spill was reported north of Building 1063 and, as a result, water used in fire handling could have contributed to migration of contaminants at Study Area 12.

Based on these analytical results, ABB-ES recommends further evaluation of the groundwater beneath Study Area 12, to further define the chlorinated solvent plume, which may originate from areas within Study Area 13. Additional investigations of subsurface soil contamination and potential source areas for chlorinated solvents may also be required. These investigations will be performed during the remedial investigation for OU 4.

Further review of Naval Training Center, Orlando records indicates the production well at Study Area 12 was likely a water supply well for the laundry. A second water supply well was located to the north of Area C, in an area currently offbase. The production well at Study Area 12 will be properly abandoned, in order to prevent potentially contaminated groundwater from the surficial aquifers from entering the well and migrating into the Floridan aquifer. The abandonment will be coordinated with the St. Johns Water Management District.

Potential impacts from releases related to the use or removal of the AST at Study Area 12 will be addressed in the Tank Management Plan (ABB-ES, 1994b). The tank closure assessment is not scheduled to be completed until 1998.

The undersigned members of the OPT concur with the findings of the preceding investigation.

<u>STUDY AREA 12</u>	
 _____ U.S. Environmental Protection Agency, Region IV	<u>7/24/96</u> _____ Date
 _____ Florida Department of Environmental Protection	<u>7/27/96</u> _____ Date
 _____ U.S. Department of the Navy	<u>7-24-96</u> _____ Date

REFERENCES

ABB Environmental Services, Inc. (ABB-ES), 1994a, Final Draft Environmental Baseline Survey (EBS) Report, Naval Training Center (NTC), Orlando, Florida: prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), Charleston, South Carolina.

ABB-ES, 1994b, NTC, Orlando Tank Management Plan: prepared for SOUTHNAVFACENGCOM, Charleston, South Carolina, January.

APPENDIX A

**BORING LOGS AND GROUNDWATER MONITORING
WELL INSTALLATION DIAGRAMS**

Project: BRAC NTC, Group II, Site Screening		Well ID: OLD-12-01	Boring ID: 12B001
Client: SOUTHNAVFACENCOM		Contractor: Groundwater Protection, Inc.	Job No.: CTO-107
Northing: 1538540.37	Easting: 545087.55	Date started: 02/27/95	Compltd: 02/27/95
Method: 6.25" Hollow stem auger	Casing dia.: 2 in.	Screened Int.: 5-15 ft. bls	Protection level: D
TOC elev.: 110.97 Ft.	Type of OVM: Porta FID	Total dpth: 18Ft.	Dpth to ∇ 8 * Ft.
ABB Rep.: W. Olson	Well development date: 02/27/95		Site: Study Area 12

Depth Ft.	Laboratory Sample ID.	Sample Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
0				LIMESTONE SUBGRADE	GP		posthole	
	12B00101	ph	0	QUARTZ SAND: Gray to white mottled, slightly silty.	SP		posthole	
		ph	0					
			0				1,1,2,2	
5		80%		QUARTZ SAND: Brown, medium-grained, silty, damp.				
	12B00102		5				5,2,7,8	
		70%						
			0	SILTY QUARTZ SAND: Brown, saturated.	SM		2,3,4,5	
		90%						
10			0				2,2,4,8	
		90%						
			0	SILTY QUARTZ SAND: Black to Brown, fine-grained, phosphate clasts, wet, non plastic.			1,1,1,1	
		90%						
			0	QUARTZ SAND: Gray, medium-grained, some limestone concretions.	SP		5,14,14,22	
15		80%						
				SILT: Brown, some sand, stiff.	ML			
				* = approximate depth				

Project: BRAC NTC, Group II, Site Screening		Well ID: OLD-12-02		Boring ID: 12B002	
Client: SOUTHNAVFACENCOM		Contractor: Groundwater Protection, Inc.		Job No.: CTO-107	
Northing: 1538458.19		Easting: 545142.02		Date started: 02/27/95	
Method: 6.25" Hollow stem auger		Casing dia.: 2 in.		Screened Int.: 5-15 ft. bls	
TOC elev.: 112.90 Ft.		Type of OVM.: Porta FID		Total dpth: 18Ft.	
ABB Rep.: W. Olson		Well development date: 02/27/95		Site: Study Area 12	

Depth Ft.	Laboratory Sample ID.	Sample Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
	12B00201	ph	0	LIMESTONE SUBGRADE		GP	posthole	
		ph	0	QUARTZ SAND: Off-white, fine-to medium-grained, sub-rounded, dry, loose, non plastic.		SP	posthole	
			1				2,1,2,3	
5	12B00202	60%	1	SILTY QUARTZ SAND: Dark brown, fine-to medium-grained, sub-rounded, damp, non plastic.		SM	8,8,7,8	
		100%	0				1,2,3,3	
		80%	0				2,2,4,4	
10		80%	0				1,1,2,5	
		90%	10				2,2,3,3	
15		80%						
				* = approximate depth				
20								

Project: BRAC NTC, Group II, Site Screening		Well ID: OLD-12-03	Boring ID: 12B003
Client: SOUTHNAVFACENGCOM		Contractor: Groundwater Protection, Inc.	Job No.: CTO-107
Northing: 1538374.17	Easting: 545155.13	Date started: 02/28/95	Compltd: 02/28/95
Method: 8.25" Hollow stem auger	Casing dia.: 2 in.	Screened Int.: 5-15 ft. bis	Protection level: D
TOC elev.: 113.34 Ft.	Type of OVM.: Porta FID	Total dpth: 18Ft.	Dpth to ∇ @ * Ft.
ABB Rep.: W. Olson	Well development date: 02/28/95		Site: Study Area 12

Depth Ft.	Laboratory Sample ID.	Sample Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
			0	LIMESTONE SUBGRADE		GP		
	12B00301	ph	0	SILTY QUARTZ SAND: Dark gray.		SM		
			0	QUARTZ SAND: Off-white, fine-to medium-grained, sub-rounded, dry, non plastic.		SP		
		ph	0					
			0				1,2,1,2	
5		70%	0	QUARTZ SAND: Tan, fine-to medium-grained, damp, upper 3" mottled.				
	12B00302		0				1,2,2,2	
		80%	0					
			0				1,2,2,2	
		80%	0	SILTY QUARTZ SAND: Brown, non plastic, wet.		SM		
10			0				2,2,2,4	
		70%	0					
			0				1,2,1,2	
		70%	0					
			0				8,18,22,34	
15		90%	0	SANDY SILT: Dark brown, stiff, moist, slightly plastic.		ML		
				* = approximate depth				
20								

Project: BRAC NTC, Group II, Site Screening		Well ID: OLD-12-04		Boring ID: 12B004	
Client: SOUTHNAVFACENCOM		Contractor: Groundwater Protection, Inc.		Job No.: CT0-107	
Northing: 1538338.97		Easting: 544883.50		Date started: 02/25/95	
Method: 6.25" Hollow stem auger		Casing dia.: 2 in.		Screened Int.: 5-15 ft. bls	
TOC elev.: 112.47 Ft.		Type of OVM.: Porta FID		Total dpth: 18Ft.	
ABB Rep.: W. Olson		Well development date: 02/25/95		Site: Study Area 12	

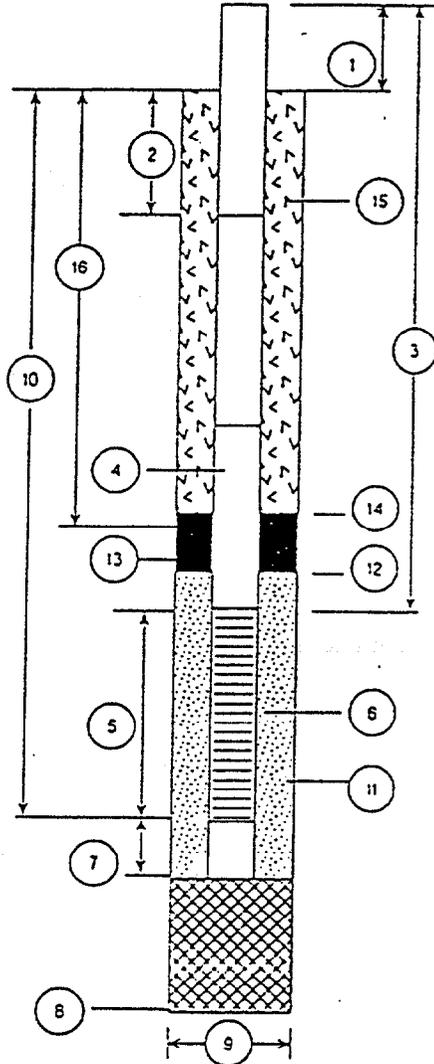
Depth Ft.	Laboratory Sample ID.	Sample Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
0	12B00401	ph	0	LIMESTONE SUBGRADE		GP	posthole	
0		ph	0	SILTY QUARTZ SAND: Gray.		SM	posthole	
0		ph	0				2,2,3,4	
5		80%	0	QUARTZ SAND: Off-white, fine-to medium-grained, some silt, moist, non plastic.		SP		
	12B00402	90%	0				3,4,3,5	
		60%	2	SILTY QUARTZ SAND: Brown, fine-grained, saturated.		SM	1,1,1	
10		60%	0				1,1,1	
		80%	0	SANDY SILT: Brown, fine-grained, stiff, slightly plastic.		ML	3,8,14,15	
15		50%	0				1,8,5,13	
				* = approximate depth				

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

WELL CONSTRUCTION DETAIL

WELL NUMBER: OL12-12-01

DATE OF INSTALLATION: 2/27/45



1. Height of Casing above ground: 0'
2. Depth to first Coupling: 5'
Coupling Interval Depths: 10'
3. Total Length of Riser Pipe: 5'
4. Type of Riser Pipe: 2" DIA. PVC
5. Length of Screen: 15'
6. Type of Screen: 2" DIA PVC, .010 SLOT
7. Length of Sump: 2"
8. Total Depth of Boring: 16'
9. Diameter of Boring: 6 1/4"
10. Depth to Bottom of Screen: 15'
11. Type of Screen Filter: SILICA SAND
Quantity Used: 40 lb.s Size: 20/30
40 lb.s Size: 30/65
12. Depth to Top of Filter: 2'
13. Type of Seat: BENTONITE
Quantity Used: 15 lb.s
14. Depth to Top of Seat: 1.5'
15. Type of Grout: HEAT CEMENT
Grout Mixture: 15% BENTONITE, 85% CEMENT
Method of Placement: POURED
16. Tot. Depth of 8 in. Steel Casing: N/A

COMMENTS ON INSTALLATION

VC-10

WELL CONSTRUCTION DETAIL



PROJECT OPERATIONS PLAN

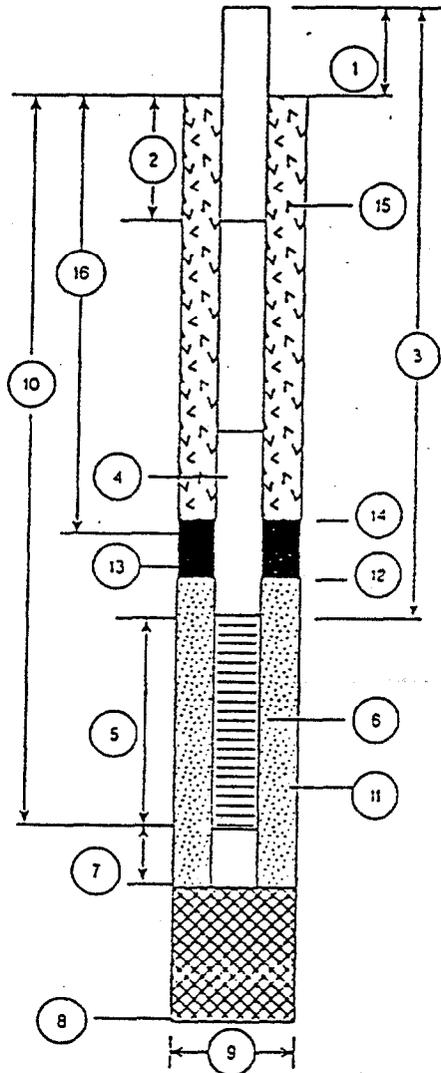
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

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

WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-12-02

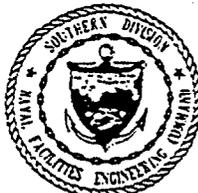
DATE OF INSTALLATION: 2/27/95



1. Height of Casing above ground: 0'
2. Depth to first Coupling: 5'
Coupling Interval Depths: 10'
3. Total Length of Riser Pipe: 5'
4. Type of Riser Pipe: 2" DIA PVC
5. Length of Screen: 10'
6. Type of Screen: 2" DIA PVC, .010 SLOT
7. Length of Sump: 2'
8. Total Depth of Boring: 16'
9. Diameter of Boring: 6 1/4"
10. Depth to Bottom of Screen: 15'
11. Type of Screen Filter: SILICA SAND
Quantity Used: 50/100 Size: 20/20
25/100 Size: 30/60
12. Depth to Top of Filter: 2'
13. Type of Seat: BENTONITE
Quantity Used: 12 lb.s
14. Depth to Top of Seat: 1.5'
15. Type of Grout: NEAT CEMENT
Grout Mixture: 1% BENTONITE, 8% CEMENT
Method of Placement: POURED
16. Tot. Depth of 8 in. Steel Casing: N/A

COMMENTS ON INSTALLATION

WELL CONSTRUCTION DETAIL



PROJECT OPERATIONS PLAN

NAVAL TRAINING CENTER
ORLANDO, FLORIDA



LEGEND

- ▲ 13B01301 Subsurface soil sampling location
- OLD-13-02C Monitoring well and designation
(106.17) Water-level elevation on 9/13/95
- A Suffix designates shallow (15 to 20 feet) below land surface (bls) well
- C Suffix designates deep (60 feet) bls well
- PCE perchloroethylene
- TCE trichloroethene
- DCE dichloroethene
- Dup Duplicate
- J estimated value
- µg/l micrograms per liter
- µg/kg micrograms per kilogram
- mg/kg milligrams per kilogram
- x-x- Fence

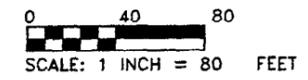
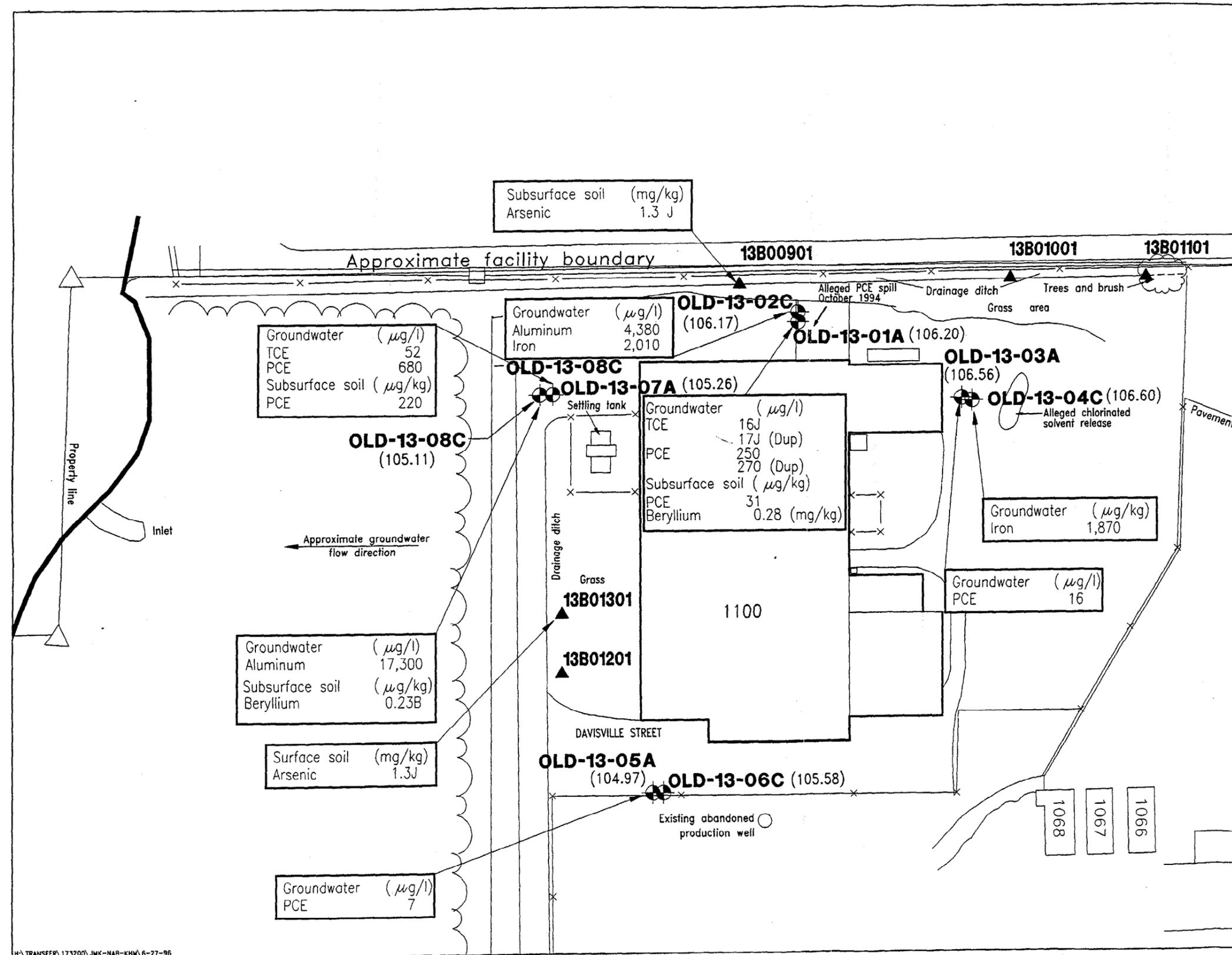


FIGURE 2
SOIL BORING, MONITORING WELL AND
SUBSURFACE SOIL SAMPLE LOCATIONS,
BUILDING 1100, AREA C, STUDY AREA 13

BASE REALIGNMENT AND
CLOSURE ENVIRONMENTAL SITE
SCREENING REPORT

NAVAL TRAINING CENTER
ORLANDO, FLORIDA



Subsurface soil (mg/kg)
 Arsenic 1.3 J

Groundwater (µg/l)
 TCE 52
 PCE 680
 Subsurface soil (µg/kg)
 PCE 220

Groundwater (µg/l)
 Aluminum 4,380
 Iron 2,010

Groundwater (µg/l)
 TCE 16J
 PCE 17J (Dup)
 250
 270 (Dup)
 Subsurface soil (µg/kg)
 PCE 31
 Beryllium 0.28 (mg/kg)

Groundwater (µg/kg)
 Iron 1,870

Groundwater (µg/l)
 PCE 16

Groundwater (µg/l)
 Aluminum 17,300
 Subsurface soil (µg/kg)
 Beryllium 0.23B

Surface soil (mg/kg)
 Arsenic 1.3J

Groundwater (µg/l)
 PCE 7

000442012

analyte list (TCL) and target analyte list (TAL) analyses, in accordance with U.S. Environmental Protection Agency (USEPA) Level IV data quality objectives (DQOs). Soil boring logs are presented in Appendix A.

1.2.3 Groundwater Monitoring Well Installation and Sampling Each of the four soil borings was completed as a shallow monitoring well with screened intervals from 5 feet to 15 feet bls. Soil borings 12B001 through 12B004 correspond to monitoring wells OLD-12-01A through OLD-12-04A, respectively. One groundwater sample was collected from each of the four monitoring wells using low-flow sampling techniques. The pump intake during groundwater sampling was located approximately 1 foot below the water table. The soil boring logs and monitoring well installation diagrams for the four wells installed at Study Area 12 are presented in Appendix A.

Four groundwater samples (one from each well) were submitted for TPH and full suite CLP TCL and TAL analyses, in accordance with USEPA Level IV DQOs. All groundwater samples were also submitted for total suspended solids to aid in the evaluation of inorganic data and the effectiveness of the groundwater development technique.

A westerly groundwater flow direction, toward Lake Druid, was determined from groundwater elevations measured on September 13, 1995.

1.3 STUDY AREA 12, RESULTS. The positive detections in soil and groundwater are shown in Appendix B. A complete set of soil and groundwater analytical results for Study Area 12 is presented in Appendix C.

1.3.1 Surface Soil Acetone was detected in surface soil sample duplicate 12B00401D at 16 micrograms per kilogram ($\mu\text{g}/\text{kg}$); however, it was not detected in the original field sample or in the other three surface soil samples at Study Area 12. The presence of this compound is likely a result of sampling or laboratory contamination. No other organic compounds were detected in surface soils. Inorganic analytes in surface soil samples were all below the background screening levels and the corresponding Florida soil cleanup goals (SCGs) and residential risk-based concentrations (RBCs).

1.3.2 Subsurface Soil The analytical data indicate the presence of several polyaromatic hydrocarbons in two of the four subsurface soil samples (12B00102 and 12B00302). Compounds detected include fluoranthenes, pyrene, chrysene, benzo(a)anthracene, and benzo(g,h,i)perylene at concentrations ranging from 110 $\mu\text{g}/\text{kg}$ to 260 $\mu\text{g}/\text{kg}$. These two subsurface soil samples also contained detectable concentrations of TPH (209.7 milligrams per kilogram [mg/kg] and 21.7 mg/kg , respectively). TPH were also detected in subsurface soil samples 12B00202 and 12B00402 at 11.7 mg/kg and 4.9 mg/kg , respectively. Pesticides and PCBs including 4,4'-dichlorodiphenyldichloroethene, 4,4'-dichlorodiphenyltrichloroethane, and Aroclor-1260 were detected in sample 12B00102 at 5.2 $\mu\text{g}/\text{kg}$, 23 $\mu\text{g}/\text{kg}$, and 110 $\mu\text{g}/\text{kg}$, respectively. Tetrachloroethene (PCE) was also detected in subsurface soil sample 12B00102 at 11 $\mu\text{g}/\text{kg}$. Acetone was detected in three of the four subsurface soil samples at concentrations ranging from 16 $\mu\text{g}/\text{kg}$ to 49 $\mu\text{g}/\text{kg}$. The lack of an apparent source area, low concentrations, and random distribution for acetone suggest that the presence of this compound in subsurface soil may be related to sampling or laboratory contamination.

Leachability-based SCGs apply only to PCE, as no other compound detected in Study Area 12 soils was also detected in groundwater above Florida Department of Environmental Protection (FDEP) groundwater guidance concentrations. PCE was detected in subsurface soil from boring 12B001 at a concentration of 11J $\mu\text{g}/\text{kg}$, below the leachability-based SCG of 30 $\mu\text{g}/\text{kg}$ and below the residential RBC. With the exception of Aroclor-1260, all other organic compounds in subsurface soils were detected at concentrations less than the corresponding residential RBCs. The concentration of Aroclor-1260 in sample 12B00102 (110J $\mu\text{g}/\text{kg}$) exceeded the residential RBC of 83 $\mu\text{g}/\text{kg}$, but was less than the industrial RBC of 740 $\mu\text{g}/\text{kg}$.

Inorganic analytes detected in subsurface soil above background screening concentrations included barium, beryllium, cadmium, calcium, lead, magnesium, manganese, mercury, nickel, sodium, and zinc. However, all concentrations of these analytes were less than the corresponding residential and industrial RBCs.

1.3.3 Groundwater Groundwater analytical data from the four monitoring wells at Study Area 12 indicate chlorinated solvent contamination in one groundwater sample (12G00101), consisting of PCE and TCE at 8 micrograms per liter ($\mu\text{g}/\text{l}$) and 2 $\mu\text{g}/\text{l}$, respectively. PCE was also detected in the subsurface soil sample collected from this location, as discussed above. In addition, the results from the passive soil gas survey conducted at the adjacent Study Area 13 showed low concentrations of PCE just to the north of this monitoring well location. Concentrations of PCE in groundwater were above the FDEP groundwater primary standard of 3 $\mu\text{g}/\text{l}$ and the Federal maximum contaminant level (MCL) of 5 $\mu\text{g}/\text{l}$. The TCE concentration was below the FDEP groundwater primary standard and the Federal MCL.

Evaluation of soil boring logs indicates that a significant FID reading of 10 ppm was recorded at 14 feet bls during installation of monitoring well OLD-12-02. This is within the screened interval of the well; however, no organics were detected in groundwater from this monitoring well.

The inorganic constituents detected in groundwater above background concentrations include beryllium, calcium, magnesium, manganese, and sodium. However, all inorganic concentrations are below the corresponding FDEP groundwater guidance concentrations and residential and industrial RBCs.

The City of Orlando sent a representative from their Environmental Control Section to obtain a groundwater sample for the production well on October 6, 1995. The sample was analyzed by USEPA Method 601/602 for volatile organics. The only contaminant detected was PCE at 0.61 $\mu\text{g}/\text{l}$, less than the FDEP groundwater primary standard of 3 $\mu\text{g}/\text{l}$.

1.4 STUDY AREA 12, CONCLUSIONS AND RECOMMENDATIONS. Analytical results for surface soil and groundwater samples collected in this study area did not indicate significant concentrations of organic contaminants, with the exception of one monitoring well in which chlorinated solvents were detected in groundwater in excess of the Florida criteria. Chlorinated solvents, also detected in subsurface soil at this location, may be related to the plume beneath Study Area 13 or from an additional source at Study Area 12. Contaminants detected in subsurface soil also include polynuclear aromatic hydrocarbons (PAHs), pesticides, and PCBs but were at concentrations below the regulatory guidance. The detection of PAHs and PCBs is likely related to historical storage and

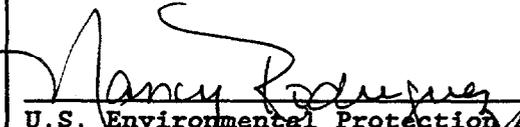
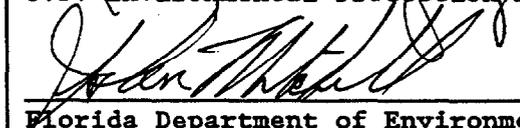
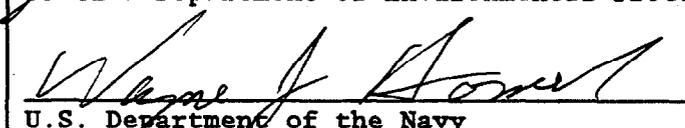
handling of transformers, drums, and other equipment that were reportedly shipped in and out of the storage yard and warehouse on a regular basis. PAHs detected in soil may also be related to dust control activities potentially used prior to paving Study Area 12. In addition, historical records indicate that the warehouse (Building 1063) burned in the 1960s. An unquantified chemical spill was reported north of Building 1063 and, as a result, water used in fire handling could have contributed to migration of contaminants at Study Area 12.

Based on these analytical results, ABB-ES recommends further evaluation of the groundwater beneath Study Area 12, to further define the chlorinated solvent plume, which may originate from areas within Study Area 13. Additional investigations of subsurface soil contamination and potential source areas for chlorinated solvents may also be required. These investigations will be performed during the remedial investigation for OU 4.

Further review of Naval Training Center, Orlando records indicates the production well at Study Area 12 was likely a water supply well for the laundry. A second water supply well was located to the north of Area C, in an area currently offbase. The production well at Study Area 12 will be properly abandoned, in order to prevent potentially contaminated groundwater from the surficial aquifers from entering the well and migrating into the Floridan aquifer. The abandonment will be coordinated with the St. Johns Water Management District.

Potential impacts from releases related to the use or removal of the AST at Study Area 12 will be addressed in the Tank Management Plan (ABB-ES, 1994b). The tank closure assessment is not scheduled to be completed until 1998.

The undersigned members of the OPT concur with the findings of the preceding investigation.

<u>STUDY AREA 12</u>	
 _____ U.S. Environmental Protection Agency, Region IV	<u>7/24/96</u> _____ Date
 _____ Florida Department of Environmental Protection	<u>7/27/96</u> _____ Date
 _____ U.S. Department of the Navy	<u>7-24-96</u> _____ Date

REFERENCES

ABB Environmental Services, Inc. (ABB-ES), 1994a, Final Draft Environmental Baseline Survey (EBS) Report, Naval Training Center (NTC), Orlando, Florida: prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), Charleston, South Carolina.

ABB-ES, 1994b, NTC, Orlando Tank Management Plan: prepared for SOUTHNAVFACENGCOM, Charleston, South Carolina, January.

APPENDIX A

**BORING LOGS AND GROUNDWATER MONITORING
WELL INSTALLATION DIAGRAMS**

Project: BRAC NTC, Group II, Site Screening		Well ID: OLD-12-01		Boring ID: 12B001	
Client: SOUTHNAVFACENCOM		Contractor: Groundwater Protection, Inc.		Job No.: CTO-107	
Northing: 1538540.37		Easting: 545087.55		Date started: 02/27/95	
Method: 6.25" Hollow stem auger		Casing dia.: 2 in.		Screened Int.: 5-15 ft. bls	
TOC elev.: 110.97 Ft.		Type of OVM: Porta FID		Total dpth: 18Ft.	
ABB Rep.: W. Olson		Well development date: 02/27/95		Site: Study Area 12	

Depth Ft.	Laboratory Sample ID.	Sample Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
0			0	LIMESTONE SUBGRADE		GP	posthole	
	12B00101	ph	0	QUARTZ SAND: Gray to white mottled, slightly silty.		SP	posthole	
		ph	0					
5		80%	0	QUARTZ SAND: Brown, medium-grained, silty, damp.			1,1,2,2	
	12B00102		5				5,2,7,8	
		70%	0					
10		90%	0	SILTY QUARTZ SAND: Brown, saturated.		SM	2,3,4,5	
		90%	0				2,2,4,8	
		90%	0	SILTY QUARTZ SAND: Black to Brown, fine-grained, phosphate clasts, wet, non plastic.			1,1,1,1	
15		80%	0	QUARTZ SAND: Gray, medium-grained, some limestone concretions.		SP	5,14,14,22	
				SILT: Brown, some sand, stiff.		ML		
				* = approximate depth				

Project: BRAC NTC, Group II, Site Screening		Well ID: OLD-12-02		Boring ID: 12B002	
Client: SOUTHNAVFACENCOM		Contractor: Groundwater Protection, Inc.		Job No.: CT0-107	
Northing: 1538458.18		Easting: 545142.02		Date started: 02/27/95	
Method: 6.25" Hollow stem auger		Casing dia.: 2 in.		Screened Int.: 5-15 ft. bis	
TOC elev.: 112.90 Ft.		Type of OVM: Porta FID		Total dpth: 18Ft.	
ABB Rep.: W. Olson		Well development date: 02/27/95		Site: Study Area 12	

Depth Ft.	Laboratory Sample ID.	Sample Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
0				LINESTONE SUBGRADE		GP	posthole	
0	12B00201	ph		QUARTZ SAND: Off-white, fine-to medium-grained, sub-rounded, dry, loose, non plastic.		SP	posthole	
1		ph					2,1,2,3	
5		60%						
1	12B00202	100%		SILTY QUARTZ SAND: Dark brown, fine-to medium-grained, sub-rounded, damp, non plastic.		SM	6,6,7,8	
0		80%					1,2,3,3	
10		80%					2,2,4,4	
0		90%					1,1,2,5	
10		80%					2,2,3,3	
15								
20								

* = approximate depth

Project: BRAC NTC, Group II, Site Screening		Well ID: OLD-12-03	Boring ID: 12B003
Client: SOUTHNAVFACENCOM	Contractor: Groundwater Protection, Inc.		Job No.: CTO-107
Northing: 1538374.17	Eastng: 545155.13	Date started: 02/28/95	Complt'd: 02/28/95
Method: 6.25" Hollow stem auger	Casing dia.: 2 in.	Screened Int.: 5-15 ft. bis	Protection level: D
TOC elev.: 113.34 Ft.	Type of OVM: Porta FID	Total dpth: 16Ft.	Dpth to ∇ 8 * Ft.
ABB Rep.: W. Olson	Well development date: 02/28/95		Site: Study Area 12

Depth Ft.	Laboratory Sample ID.	Sample Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
	12B00301	ph	0	LIMESTONE SUBGRADE		GP	posthole	
		ph	0	SILTY QUARTZ SAND: Dark gray.		SM	posthole	
		ph	0	QUARTZ SAND: Off-white, fine-to medium-grained, sub-rounded, dry, non plastic.		SP	1,2,1,2	
5		70%	0	QUARTZ SAND: Tan, fine-to medium-grained, damp, upper 3" mottled.			1,2,2,2	
	12B00302	80%	0				1,2,2,2	
		60%	0	SILTY QUARTZ SAND: Brown, non plastic, wet.		SM	2,2,2,4	
10		70%	0				1,2,1,2	
		70%	0				8,18,22,34	
15		90%	0	SANDY SILT: Dark brown, stiff, moist, slightly plastic.		ML		
				* = approximate depth				

Project: BRAC NTC, Group II, Site Screening		Well ID: OLD-12-04		Boring ID: 12B004	
Client: SOUTHNAVFACENGCOM		Contractor: Groundwater Protection, Inc.		Job No.: CTO-107	
Northing: 1538338.87		Easting: 544883.50	Date started: 02/25/95	Complt'd: 02/25/95	
Method: 8.25" Hollow stem auger		Casing dia.: 2 in.	Screened Int.: 5-15 ft. bls	Protection level: D	
TOC elev.: 112.47 Ft.		Type of OVM: Porta FID	Total dpth: 18Ft.	Dpth to ∇ 8 * Ft.	
ABB Rep.: W. Olson		Well development date: 02/25/95		Site: Study Area 12	

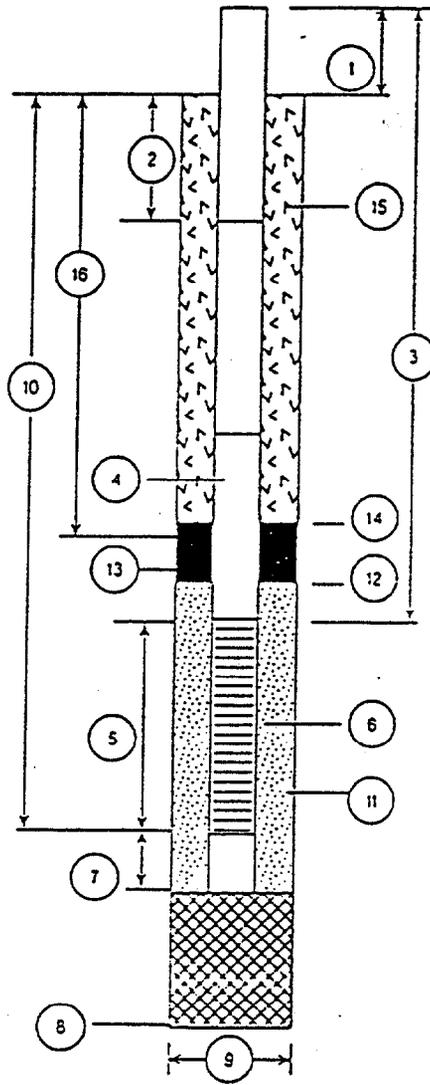
Depth Ft.	Laboratory Sample ID.	Sample Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
	12B00401	ph	0	LIMESTONE SUBGRADE		GP	posthole	
		ph	0	SILTY QUARTZ SAND: Gray.		SM	posthole	
		ph	0				2,2,3,4	
5		80%	0	QUARTZ SAND: Off-white, fine-to medium-grained, some silt, moist, non plastic.		SP		
	12B00402	90%	0				3,4,3,5	
		60%	2	SILTY QUARTZ SAND: Brown, fine-grained, saturated.		SM	1,1,1	
10		60%	0				1,1,1	
		80%	0	SANDY SILT: Brown, fine-grained, stiff, slightly plastic.		ML	3,8,14,15	
15		50%	0				1,8,5,13	
				* = approximate depth				

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

WELL CONSTRUCTION DETAIL

WELL NUMBER: OL12-12-01

DATE OF INSTALLATION: 2/27/45



- 1. Height of Casing above ground: 0'
- 2. Depth to first Coupling: 5'
Coupling Interval Depths: 15'
- 3. Total Length of Riser Pipe: 5'
- 4. Type of Riser Pipe: 2" DIA. PVC
- 5. Length of Screen: 15'
- 6. Type of Screen: 2" DIA PVC, .010 SLOT
- 7. Length of Sump: 2"
- 8. Total Depth of Boring: 16'
- 9. Diameter of Boring: 6 1/4"
- 10. Depth to Bottom of Screen: 15'
- 11. Type of Screen Filter: SILICA SAND
Quantity Used: 40 lbs Size: 20/30
20 lbs Size: 30/60
- 12. Depth to Top of Filter: 2'
- 13. Type of Seat: BENTONITE
Quantity Used: 15 lbs
- 14. Depth to Top of Seat: 1.5'
- 15. Type of Grout: NEAT CEMENT
Grout Mixture: 15% BENTONITE, 85% CEMENT
Method of Placement: POURED
- 16. Tot. Depth of 8 in. Steel Casing: N/A

COMMENTS ON INSTALLATION

WELL CONSTRUCTION DETAIL



PROJECT OPERATIONS PLAN

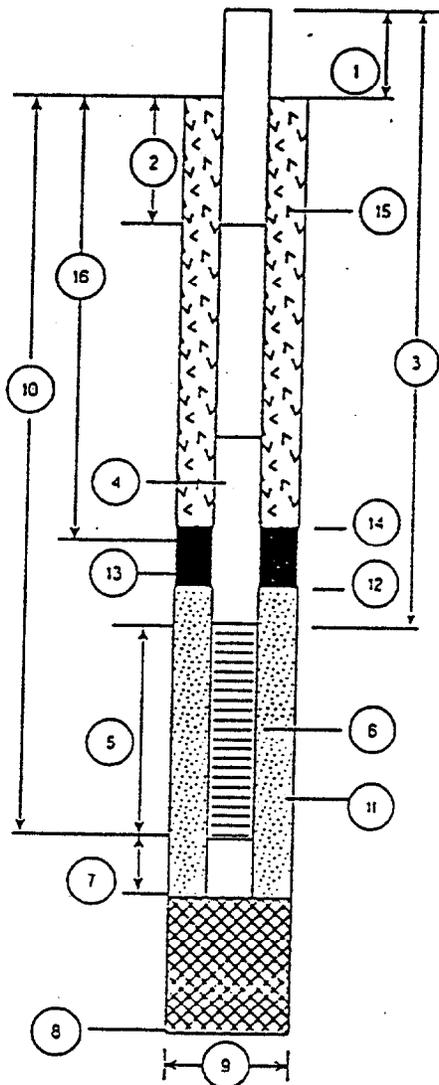
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SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SC.

WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-12-02

DATE OF INSTALLATION: 2/27/95



1. Height of Casing above ground: 0'
2. Depth to first Coupling: 5'
Coupling Interval Depths: 10'
3. Total Length of Riser Pipe: 5'
4. Type of Riser Pipe: 2" DIA PVC
5. Length of Screen: 10'
6. Type of Screen: 2" DIA PVC, .010 SLO
7. Length of Sump: 2'
8. Total Depth of Boring: 16'
9. Diameter of Boring: 6 1/4"
10. Depth to Bottom of Screen: 15'
11. Type of Screen Filter: SILICA SAND
20/30
Quantity Used: 25 lb.s Size: 30/60
12. Depth to Top of Filter: 2'
13. Type of Seat: BENTONITE
Quantity Used: 12 lb.s
14. Depth to Top of Seat: 1.5'
15. Type of Grout: NEAT CEMENT
Grout Mixture: 1% BENTONITE, 85% CEMENT
Method of Placement: PLACED
16. Tot. Depth of 8 in. Steel Casing: N/A

COMMENTS ON INSTALLATION

WELL CONSTRUCTION DETAIL



PROJECT OPERATIONS PLAN

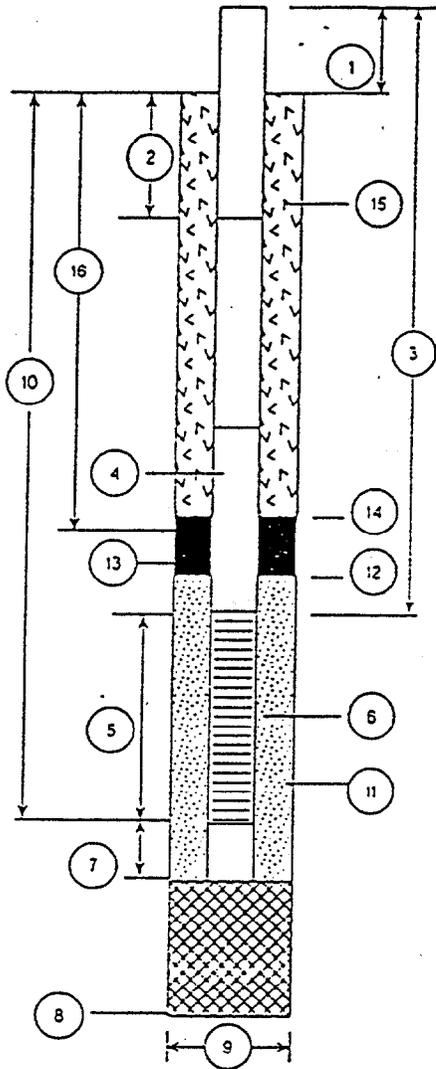
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DEPARTMENT OF THE NAVY
 SOUTHERN DIVISION
 NAVAL FACILITIES ENGINEERING COMMAND
 CHARLESTON, SC.

WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-12-03

DATE OF INSTALLATION: 2/28/95



1. Height of Casing above ground: 0'
2. Depth to first Coupling: 5'
Coupling Interval Depths: 10'
3. Total Length of Riser Pipe: 5'
4. Type of Riser Pipe: 2" DIA. PVC
5. Length of Screen: 10'
6. Type of Screen: 2" DIA. PVC, .010 SLOT
7. Length of Sump: 2"
8. Total Depth of Boring: 16'
9. Diameter of Boring: 6 1/4"
10. Depth to Bottom of Screen: 15'
11. Type of Screen Filter: SILICA SAND
50 lb. S
Quantity Used: 50 lb. S Size: 20/30
12. Depth to Top of Filter: 2'
13. Type of Seat: BENTONITE
Quantity Used: 10 lb S
14. Depth to Top of Seat: 1.5'
15. Type of Grout: NEAT CEMENT
Grout Mixture: 15% BENTONITE, 85% CEMENT
Method of Placement: PLUMPED
18. Tot. Depth of 8 in. Steel Casing: N/A

COMMENTS ON INSTALLATION

10-10

WELL CONSTRUCTION DETAIL



PROJECT OPERATIONS PLAN

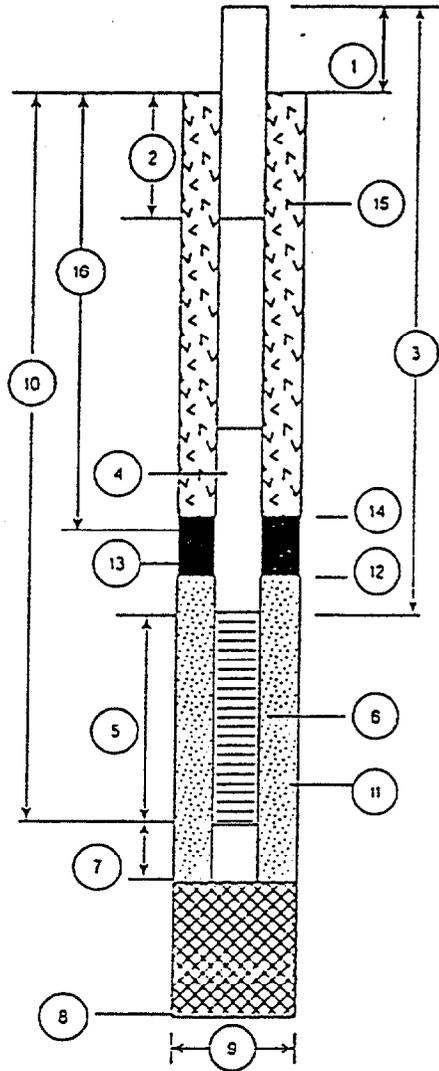
NAVAL TRAINING CENTER
 ORLANDO, FLORIDA

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

WELL CONSTRUCTION DETAIL

WELL NUMBER: CLW-12-04

DATE OF INSTALLATION: 2/25/95



- 1. Height of Casing above ground: 0'
- 2. Depth to first Coupling: 5'
Coupling Interval Depths: 5'
- 3. Total Length of Riser Pipe: 5'
- 4. Type of Riser Pipe: 2" DIA. PVC
- 5. Length of Screen: 10'
- 6. Type of Screen: 2" DIA. PVC, 10/10 SUCT
- 7. Length of Sump: 2'
- 8. Total Depth of Boring: 16'
- 9. Diameter of Boring: 5 1/4"
- 10. Depth to Bottom of Screen: 15'
- 11. Type of Screen Filter: SILICA SAND
Quantity Used: 550 lb. S Size: 20/30
100 lb. S Size: 30/45
- 12. Depth to Top of Filter: 2'
- 13. Type of Seat: BENTONITE
Quantity Used: 10 lb. S
- 14. Depth to Top of Seat: 1.5'
- 15. Type of Grout: NEAT CEMENT
Grout Mixture: 15% BENTONITE, 85% CEMENT
Method of Placement: POURED
- 18. Tot. Depth of 8 in. Steel Casing: N/A

COMMENTS ON INSTALLATION

WELL CONSTRUCTION DETAIL



PROJECT OPERATIONS PLAN

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

APPENDIX B

**SUMMARY OF DETECTIONS IN SOIL AND
GROUNDWATER ANALYTICAL RESULTS**

Table B-1
Summary of Detections in Surface Soil
Analytical Results, Study Area 12

BRAC Environmental Site-Screening Report
Naval Training Center
Orlando, Florida

Lab Identifier: Collection Data: Feet bis:	Background Screening ¹	SCG ²	RBC ³ for Residential Soil	RBC ³ for Industrial Soil	12B00101 02/25/95	12B00201 02/25/95	12B00301 02/25/95	12B00401 02/25/95	12B00401D 02/25/95
					1	1	1	1	1
Volatile Organic Compounds (µg/kg)									
Acetone	--	260,000	7,800,000 n	200,000,000 n	--	--	--	--	16
General Chemistry (mg/kg)									
Total Petroleum Hydrocarbons	NA	ND	ND	ND	7.6	--	--	11.7	9.1
Inorganic Analytes (mg/kg)									
Aluminum	2,088	75,000	78,000 n	1,000,000 n	59.9	8.8 B	16.8 B	1,020	806
Arsenic	1.0	0.8	0.43 c/23 n	3.8 c/610 n	--	--	--	0.56 B	--
Barium	8.7	5,200	5,500 n	140,000 n	1.5 B	0.3 B	0.25 B	3.9 B	3.6 B
Calcium	25,295	ND	1,000,000	1,000,000	994 B	1,410	215 B	3,610	3,400
Chromium	4.6	290	390 n	10,000 n	0.71 B	--	0.84 B	3.1	1.1 B
Copper	4.1	ND	3,100 n	82,000 n	--	--	--	0.49 B	--
Iron	712	ND	23,000 n	610,000 n	19.8 B	14.4 B	--	373	322
Lead	14.5	500	400	400	0.46 B	--	0.37 B	1.6	2
Magnesium	328	ND	460,468	460,468	23 B	13.9 B	8.2 B	65.2 B	59.9 B
Manganese	8.1	370	1,800 n	47,000 n	0.68 B	0.52 B	0.53 B	2.7 B	2.2 B
Nickel	4.4	1,500	1,600 n	41,000 n	--	--	--	2.8 B	--
Vanadium	3.1	490	550 n	14,000 n	--	--	--	0.96 B	0.94 B
Zinc	17.2	23,000	23,000 n	610,000 n	0.97 B	--	--	1 B	0.96 B
See notes at end of table.									

**Table B-1 (Continued)
Summary of Detections in Surface Soil
Analytical Results, Study Area 12**

BRAC Environmental Site-Screening Report
Naval Training Center
Orlando, Florida

Lab Identifier:					12B00101	12B00201	12B00301	12B00401	12B00401D
Collection Data:	Background ¹ Screening	SCG ²	RBC ³ for Residential Soil	RBC ³ for Industrial Soil	02/25/95	02/25/95	02/25/95	02/25/95	02/25/95
Feet bls:					1	1	1	1	1

¹ The background screening value is twice the average of detected background concentrations for inorganic analytes. For organic compounds, values are the mean of detected background concentrations, presented for comparison purposes only.

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

³ RBC = Risk-Based Concentration Table, U.S. Environmental Protection Agency 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.

Notes: BRAC = Base Realignment and Closure.
bls = below land surface.
 $\mu\text{g}/\text{kg}$ = microgram per kilogram.
-- = analyte/compound was not detected at reporting limit.
n = noncarcinogenic effects.
mg/kg = milligram per kilogram.
NA = not applicable.
ND = not determined.
B = reported concentration is between the instrument detection limit and the contract required detection limit.

All inorganic results expressed in mg/kg soil dry weight; organics in $\mu\text{g}/\text{kg}$ soil dry weight.

Table B-2
Summary of Detections in Subsurface Soil
Analytical Results, Study Area 12

BRAC Environmental Site-Screening Report
Naval Training Center
Orlando, Florida

Lab Identifier: Collection Date: Feet bls:	Background ¹ Screening	SCG ²	RBC ³ for Residential Soil	RBC ³ for Industrial Soil	12B00102 02/27/95 6	12B00202 02/27/95 6	12B00302 02/28/95 6	12B00402 02/25/95 6
Volatile Organic Compounds (µg/kg)								
Acetone	--	NA	7,800,000 n	200,000,000 n	16	32	49	--
Tetrachloroethene	--	*30	12,000 c	110,000 c	11 J	--	--	--
General Chemistry (mg/kg)								
Total Petroleum Hydrocarbons	NA	NA	ND	ND	209.7	11.7	21.7	4.9
Semivolatile Organic Compounds (µg/kg)								
Fluoranthene	--	NA	3,100,000 n	82,000,000 n	260 J	--	110 J	--
Pyrene	--	NA	2,300,000 n	61,000,000 n	200 J	--	110 J	--
Chrysene	--	NA	88,000 c	780,000 c	160 J	--	110 J	--
Benzo(b)fluoranthene	--	NA	880 c	7,800 c	160 J	--	--	--
Benzo(k)fluoranthene	--	NA	8,800 c	78,000 c	130 J	--	--	--
Benzo(a)anthracene	--	NA	880 c	7,800 c	110 J	--	--	--
Benzo(g,h,i)perylene	--	NA	2,300 n	61,000 n	120 J	--	--	--
Pesticides/PCBs (µg/kg)								
4,4'-DDE	130	NA	1,900 c	17,000 c	5.2 J	--	--	--
4,4'-DDT	87	NA	1,900 c	17,000 c	23 J	--	--	--
Aroclor-1260	--	NA	740 c	740 c	110 J	--	--	--
Inorganic Analytes (mg/kg)								
Aluminum	2,119	NA	78,000 n	1,000,000 n	665	310	390	750
Arsenic	1.1	NA	0.43 c/23 n	3.8 c/610 n	0.6 B	--	0.67 J	--
Barium	3.6	NA	5,500 n	140,000 n	6.3 B	--	--	2.1 B
Beryllium	--	NA	0.15 c	1.3 c	0.11 B	--	--	--
Cadmium	--	NA	39 n	1,000 n	0.72 B	--	--	--
Calcium	115	NA	1,000,000	1,000,000	46,700 J	147 J	25,900 J	1,190
See notes at end of table.								

Table B-2 (Continued)
Summary of Detections in Subsurface Soil
Analytical Results, Study Area 12

BRAC Environmental Site-Screening Report
Naval Training Center
Orlando, Florida

Lab Identifier:	Background ¹ Screening	SCG ²	RBC ³ for Residential Soil	RBC ³ for Industrial Soil	12B00102 02/27/95	12B00202 02/27/95	12B00302 02/28/95	12B00402 02/25/95
Collection Date:					6	6	6	6
Feet bls:								
Inorganic Analytes (mg/kg)								
Chromium	3.7	NA	390 n	10,000 n	2.2 B	0.62 B	0.82 B	1.7 B
Iron	264	NA	23,000 n	610,000 n	208 J	5.7 J	143 J	52.1
Lead	3.9	NA	400	400	14.5 J	1.2 J	3 J	1.7
Magnesium	32.8	NA	460,468	460,468	659 B	6.2 B	192 B	16.5 B
Manganese	2.1	NA	1,800 n	47,000 n	23.9	--	4.5	0.8 B
Mercury	--	NA	23 n	610 n	0.05	0.06	0.05	--
Nickel	--	NA	1,600 n	41,000 n	2.3 B	--	--	--
Sodium	--	NA	1,000,000	1,000,000	46 B	--	--	--
Vanadium	3.4	NA	550 n	14,000 n	1.1 J	--	2 J	0.46 B
Zinc	5.6	NA	23,000 n	610,000 n	44.4	--	0.96 B	--
See notes at end of table.								

Table B-2 (Continued)
Summary of Detections in Subsurface Soil
Analytical Results, Study Area 12

BRAC Environmental Site-Screening Report
Naval Training Center
Orlando, Florida

Lab Identifier:	Background ¹ Screening	SCG ²	RBC ³ for Residential Soil	RBC ³ for Industrial Soil	12B00102	12B00202	12B00302	12B00402
Collection Date:					02/27/95	02/27/95	02/28/95	02/25/95
Feet bls:					6	6	6	6

- ¹ The background screening value is twice the average of detected background concentrations for inorganic analytes. For organic compounds, values are the mean of detected background concentrations, presented for comparison purposes only.
- ² SCG = Soil Cleanup Goals for Florida (Florida Department of Environmental Protection memorandum, September 29, 1995). Values indicated are for a leaching scenario, and only apply to tetrachloroethene (PCE). PCE is the only organic constituent present in subsurface soil and also present in groundwater above Florida Groundwater Guidance Concentrations.
- ³ RBC = Risk-Based Concentration Table, U.S. Environmental Protection Agency 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 (Office of Solid Waste and Emergency Response directive 9355-4-12). For essential nutrients (calcium, magnesium, potassium, and sodium) screening values were derived based on recommended daily allowances.
- ⁴ Leachability-based SCG.

Notes: BRAC = Base Realignment and Closure.
bls = below land surface.
 $\mu\text{g}/\text{kg}$ = microgram per kilogram.
-- = analyte/compound was not detected at reporting limit.
NA = not analyzed.
n = noncarcinogenic effects.
c = carcinogenic effects.
J = estimated value.
 mg/kg = milligram per kilogram.
ND = not determined.
PCB = polychlorinated biphenyl.
DDE = dichlorodiphenyldichloroethene.
DDT = dichlorodiphenyltrichloroethane.
B = reported concentration is between the instrument detection limit and the contract-required detection limit.
■ = bolded/shaded value indicate exceedance of regulatory guidance and background.

All metals results expressed in mg/kg soil dry weight; organics in $\mu\text{g}/\text{kg}$ soil dry weight.

Table B-3
Summary of Detections in Groundwater
Analytical Results, Study Area 12

BRAC Environmental Site-Screening Report
Naval Training Center
Orlando, Florida

Well ID:	Background ¹ Screening	FDEPG	FEDMCL	RBC ² for Tap Water	OLD-12-01Á	OLD-12-02A	OLD-12-03A	OLD-12-04A
Lab Identifier:					12G00101	12G00201	12G00301	12G00401
Collection Date:					03/09/95	03/09/95	03/09/95	03/09/95
Volatile Organic Compounds (µg/l)								
Trichloroethene	--	³ 3	5	1.6 c	2	--	--	--
Tetrachloroethene	--	³ 3	5	1.6 c	2	--	--	--
Inorganic Analytes (µg/l)								
Aluminum	4,067	⁴ 200	--	37,000 n	409	930	179 B	486
Barium	31.4	² 2,000	2,000	2,600 n	9.9 B	4.9 B	11.2 B	7.2 B
Beryllium	--	³ 4	4	0.016 c	1.1 B	0.31 B	--	--
Cadmium	5.6	⁵ 5	5	18 n	3.2 B	--	--	--
Calcium	36,830	ND	ND	1,000,000	125,000	33,300	46,200	48,100
Iron	1,227	⁴ 300	ND	11,000 n	223	34.9 B	54.6 B	27.1 B
Magnesium	4,560	ND	ND	118,807	5,030	2,610 B	3,890 B	1,680 B
Manganese	17.0	⁴ 50	ND	840 n	26.7	4.9 B	32.8	4.9 B
Mercury	0.12	³ 2	2	11 n	0.12 B	0.12 B	--	0.12 B
Potassium	5,400	ND	ND	297,016	1,380 B	1,860 B	3,560 B	911 B
Selenium	9.7	³ 50	50	180 n	--	--	5.5	3.1 B
Sodium	18,222	³ 160,000	ND	396,022	29,700	2,860 B	5,910	2,600 B
Vanadium	20.6	⁵ 49	ND	260 n	3.3 B	6.8 B	4 B	6.8 B
See notes at end of table.								

Table B-3 (Continued)
Summary of Detections in Groundwater
Analytical Results, Study Area 12

BRAC Environmental Site-Screening Report
Naval Training Center
Orlando, Florida

Well ID:	Background ¹ Screening	FDEPG	FEDMCL	RBC ² for Tap Water	OLD-12-01A	OLD-12-02A	OLD-12-03A	OLD-12-04A
Lab Identifier:					12G00101	12G00201	12G00301	12G00401
Collection Date:					03/09/95	03/09/95	03/09/95	03/09/95

¹ Groundwater background screening value is twice the average of detected concentrations for inorganic analytes. For organic compounds, values are the mean of detected concentration, presented for comparison purposes only.

² RBC = Risk-Based Concentration Table, U.S. Environmental Protection Agency (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.

³ Primary standard.

⁴ Secondary standard.

⁵ Systemic toxicant.

Notes: BRAC = Base Realignment and Closure.

ID = Identifier.

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

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

µg/l = microgram per liter.

-- = analyte/compound was not detected at reporting limit.

c = carcinogenic effects.

n = noncarcinogenic effects.

B = reported concentration is between the instrument detection limit and the contract required detection limit.

ND = not determined.

= bolded/shaded value indicate exceedance of regulatory guidance and background.

APPENDIX C

SUMMARY OF ANALYTICAL RESULTS

Definition of Data Qualifiers

Naval Training Center
Orlando, Florida

Qualifier	Definition
U	Compound analyzed for but not detected at or below the reporting limit.
J	Reported concentration is an estimated quantity.
R	Data were rejected during data validation, unusable.
B (inorganics)	Reported concentration is between the instrument detection limit and the contract-required detection limit.
E	Estimated value: concentration is outside the instrument calibration range.
D	Value was determined from sample dilution.
P	Indicates greater than 25 percent difference between concentrations from original and confirmatory GC column.
NA	Not analyzed.
NJ	Presumptive evidence for the presence of the material at an estimated value.

Appendix C-1
 Summary of Soil Analytical Results
 Target Compound List Volatile Organics

Study Area 12
 Naval Training Center, Orlando
 Orlando, Florida

Sample_ID	12B00101	12B00102	12B00201	12B00202	12B00301	12B00302	12B00401	12B00401D	12B00402
Lab_ID	G6955006	G6973001	G6955007	G6973002	G6955008	G6981001	G6955010	G6955017	G6955009
Collection Date	2/25/95	2/27/95	2/25/95	2/27/95	2/25/95	2/28/95	2/25/95	2/25/95	2/25/95
Volatile Organics, ug/kg									
1,1,1-Trichloroethane	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
1,1,2,2-Tetrachloroethane	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
1,1,2-Trichloroethane	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
1,1-Dichloroethane	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
1,1-Dichloroethene	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
1,2-Dichloroethane	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
1,2-Dichloroethene (total)	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
1,2-Dichloropropane	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
2-Butanone	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
2-Hexanone	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
4-Methyl-2-pentanone	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Acetone	14 U	16	15 U	32	10 U	49	10 U	16	19 U
Benzene	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Bromodichloromethane	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Bromoform	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Bromomethane	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Carbon disulfide	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Carbon tetrachloride	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Chlorobenzene	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Chloroethane	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Chloroform	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Chloromethane	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
cis-1,3-Dichloropropene	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Dibromochloromethane	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Ethylbenzene	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Methylene chloride	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Styrene	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Tetrachloroethene	10 U	11 J	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Toluene	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
trans-1,3-Dichloropropene	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Trichloroethene	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Vinyl chloride	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U
Xylene (total)	10 U	11 U	10 U	11 U	10 U	11 U	10 U	10 U	11 U

Appendix C-2
 Summary of Soil Analytical Results
 Target Compound List Semivolatile Organics

Study Area 12
 Naval Training Center, Orlando
 Orlando, Florida

Sample_ID	12B00101	12B00102	12B00201	12B00202	12B00301	12B00302	12B00401	12B00401D	12B00402
Lab_ID	G6955006	G6973001	G6955007	G6973002	G6955008	G6981001	G6955010	G6955017	G6955009
Collection Date	2/25/95	2/27/95	2/25/95	2/27/95	2/25/95	2/28/95	2/25/95	2/25/95	2/25/95
Semivolatile Organics, ug/kg									
1,2,4-Trichlorobenzene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
1,2-Dichlorobenzene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
1,3-Dichlorobenzene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
1,4-Dichlorobenzene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
2,2'-oxybis(1-Chloropropane)	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
2,4,5-Trichlorophenol	860 U	920 U	850 U	950 U	860 U	900 U	860 U	860 U	920 U
2,4,6-Trichlorophenol	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
2,4-Dichlorophenol	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
2,4-Dimethylphenol	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
2,4-Dinitrophenol	860 U	920 U	850 U	950 U	860 U	900 U	860 U	860 U	920 U
2,4-Dinitrotoluene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
2,6-Dinitrotoluene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
2-Chloronaphthalene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
2-Chlorophenol	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
2-Methylnaphthalene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
2-Methylphenol	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
2-Nitroaniline	860 U	920 U	850 U	950 U	860 U	900 U	860 U	860 U	920 U
2-Nitrophenol	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
3,3'-Dichlorobenzidine	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
3-Nitroaniline	860 U	920 U	850 U	950 U	860 U	900 U	860 U	860 U	920 U
4,6-Dinitro-2-methylphenol	860 U	920 U	850 U	950 U	860 U	900 U	860 U	860 U	920 U
4-Bromophenyl-phenylether	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
4-Chloro-3-methylphenol	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
4-Chloroaniline	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
4-Chlorophenyl-phenylether	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
4-Methylphenol	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
4-Nitroaniline	860 U	920 U	850 U	950 U	860 U	900 U	860 U	860 U	920 U
4-Nitrophenol	860 U	920 U	850 U	950 U	860 U	900 U	860 U	860 U	920 U
Acenaphthene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Acenaphthylene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Anthracene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Benzo(a)anthracene	340 U	110 J	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Benzo(a)pyrene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U

Appendix C-2
Summary of Soil Analytical Results
Target Compound List Semivolatile Organics

Study Area 12
Naval Training Center, Orlando
Orlando, Florida

Sample_ID	12B00101	12B00102	12B00201	12B00202	12B00301	12B00302	12B00401	12B00401D	12B00402
Lab_ID	G6955006	G6973001	G6955007	G6973002	G6955008	G6981001	G6955010	G6955017	G6955009
Collection Date	2/25/95	2/27/95	2/25/95	2/27/95	2/25/95	2/28/95	2/25/95	2/25/95	2/25/95
Benzo(b)fluoranthene	340 U	160 J	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Benzo(g,h,i)perylene	340 U	120 J	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Benzo(k)fluoranthene	340 U	130 J	340 U	380 U	340 U	360 U	340 U	340 U	370 U
bis(2-Chloroethoxy)methane	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
bis(2-Chloroethyl)ether	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
bis(2-Ethylhexyl)phthalate	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Butylbenzylphthalate	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Carbazole	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Chrysene	340 U	160 J	340 U	380 U	340 U	110 J	340 U	340 U	370 U
Di-n-butylphthalate	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Di-n-octylphthalate	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Dibenz(a,h)anthracene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Dibenzofuran	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Diethylphthalate	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Dimethylphthalate	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Fluoranthene	340 U	260 J	340 U	380 U	340 U	110 J	340 U	340 U	370 U
Fluorene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Hexachlorobenzene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Hexachlorobutadiene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Hexachlorocyclopentadiene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Hexachloroethane	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Indeno(1,2,3-cd)pyrene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Isophorone	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
N-Nitroso-di-n-propylamine	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
N-Nitrosodiphenylamine (1)	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Naphthalene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Nitrobenzene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Pentachlorophenol	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Phenanthrene	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Phenol	340 U	370 U	340 U	380 U	340 U	360 U	340 U	340 U	370 U
Pyrene	340 U	200 J	340 U	380 U	340 U	110 J	340 U	340 U	370 U

Appendix C-3
 Summary of Soil Analytical Results
 Target Compound List Pesticides and PCBs

Study Area 12
 Naval Training Center, Orlando
 Orlando, Florida

Sample_ID	12B00101	12B00102	12B00201	12B00202	12B00301	12B00302	12B00401	12B00401D	12B00402
Lab_ID	G6955006	G6973001	G6955007	G6973002	G6955008	G6981001	G6955010	G6955017	G6955009
Collection Date	2/25/95	2/27/95	2/25/95	2/27/95	2/25/95	2/28/95	2/25/95	2/25/95	2/25/95
Pesticides/PCBs, ug/kg									
4,4'-DDD	3.4 U	7.4 U	3.4 U	3.7 U	3.4 U	3.5 U	3.4 U	17 U	3.6 U
4,4'-DDE	3.4 U	5.2 J	3.4 U	3.7 U	3.4 U	3.5 U	3.4 U	17 U	3.6 U
4,4'-DDT	3.4 U	23 J	3.4 U	3.7 U	3.4 U	3.5 U	3.4 U	17 U	3.6 U
Aldrin	1.8 U	3.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.8 U	8.8 U	1.8 U
alpha-BHC	1.8 U	3.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.8 U	8.8 U	1.8 U
alpha-Chlordane	1.8 U	3.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.8 U	8.8 U	1.8 U
Aroclor-1016	34 U	74 U	34 U	37 U	34 U	35 U	34 U	170 U	36 U
Aroclor-1221	70 U	150 U	69 U	75 U	69 U	72 U	69 U	350 U	73 U
Aroclor-1232	34 U	74 U	34 U	37 U	34 U	35 U	34 U	170 U	36 U
Aroclor-1242	34 U	74 U	34 U	37 U	34 U	35 U	34 U	170 U	36 U
Aroclor-1248	34 U	74 U	34 U	37 U	34 U	35 U	34 U	170 U	36 U
Aroclor-1254	34 U	74 U	34 U	37 U	34 U	35 U	34 U	170 U	36 U
Aroclor-1260	34 U	110	34 U	37 U	34 U	35 U	34 U	170 U	36 U
beta-BHC	1.8 U	3.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.8 U	8.8 U	1.8 U
delta-BHC	1.8 U	3.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.8 U	8.8 U	1.8 U
Dieldrin	3.4 U	7.4 U	3.4 U	3.7 U	3.4 U	3.5 U	3.4 U	17 U	3.6 U
Endosulfan I	1.8 U	3.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.8 U	8.8 U	1.8 U
Endosulfan II	3.4 U	7.4 U	3.4 U	3.7 U	3.4 U	3.5 U	3.4 U	17 U	3.6 U
Endosulfan sulfate	3.4 U	7.4 U	3.4 U	3.7 U	3.4 U	3.5 U	3.4 U	17 U	3.6 U
Endrin	3.4 U	7.4 U	3.4 U	3.7 U	3.4 U	3.5 U	3.4 U	17 U	3.6 U
Endrin aldehyde	3.4 U	7.4 U	3.4 U	3.7 U	3.4 U	3.5 U	3.4 U	17 U	3.6 U
Endrin ketone	3.4 U	7.4 U	3.4 U	3.7 U	3.4 U	3.5 U	3.4 U	17 U	3.6 U
gamma-BHC (Lindane)	1.8 U	3.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.8 U	8.8 U	1.8 U
gamma-Chlordane	1.8 U	3.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.8 U	8.8 U	1.8 U
Heptachlor	1.8 U	3.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.8 U	8.8 U	1.8 U
Heptachlor epoxide	1.8 U	3.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.8 U	8.8 U	1.8 U
Methoxychlor	18 U	38 U	18 U	19 U	18 U	18 U	18 U	88 U	18 U
Toxaphene	180 U	380 U	180 U	190 U	180 U	180 U	180 U	880 U	180 U

Appendix C-4
 Summary of Soil Analytical Results
 Target Analyte List Metals and General Chemistry

Study Area 12
 Naval Training Center, Orlando
 Orlando, Florida

Sample_ID	12B00101	12B00102	12B00201	12B00202	12B00301	12B00302	12B00401	12B00401D	12B00402
Lab_ID	G6955006	G6973001	G6955007	G6973002	G6955008	G6981001	G6955010	G6955017	G6955009
Collection Date	2/25/95	2/27/95	2/25/95	2/27/95	2/25/95	2/28/95	2/25/95	2/25/95	2/25/95
Inorganics, mg/kg									
Aluminum	59.9	665	8.8 B	310	16.8 B	390	1020	806	750
Antimony	4.6 U	5 U	4.5 U	5.1 U	4.6 U	4.8 U	4.6 U	4.6 U	4.8 U
Arsenic	0.39 U	0.6 B	0.39 UJ	0.43 U	0.38 U	0.67 J	0.56 B	0.39 U	0.42 U
Barium	1.5 B	6.3 B	0.3 B	0.34 U	0.25 B	1.3 U	3.9 B	3.6 B	2.1 B
Beryllium	0.04 U	0.11 B	0.04 U	0.05 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Cadmium	0.62 U	0.72 B	0.61 U	0.7 U	0.63 U	0.66 U	0.63 U	0.63 U	0.66 U
Calcium	994 B	46700 J	1410	147 J	215 B	25900 J	3610	3400	1190
Chromium	0.71 B	2.2 B	0.5 U	0.62 B	0.84 B	0.82 B	3.1	1.1 B	1.7 B
Cobalt	0.4 U	0.44 U	0.4 U	0.45 U	0.41 U	0.43 U	0.41 U	0.4 U	0.43 U
Copper	0.44 U	0.49 UJ	0.44 U	0.5 UJ	0.45 U	0.47 UJ	0.49 B	0.44 U	0.47 U
Iron	19.8 B	208 J	14.4 B	5.7 J	10.4 UJ	143 J	373	322	52.1
Lead	0.46 B	14.5 J	0.31 U	1.2 J	0.37 B	3 J	1.6	2	1.7
Magnesium	23 B	659 B	13.9 B	6.2 B	8.2 B	192 B	65.2 B	59.9 B	16.5 B
Manganese	0.68 B	23.9	0.52 B	0.24 U	0.53 B	4.5	2.7 B	2.2 B	0.8 B
Mercury	0.02 U	0.05	0.03 U	0.06	0.02 UJ	0.05	0.03 UJ	0.04 UJ	0.03 UJ
Nickel	1.9 U	2.3 B	1.9 U	2.2 U	2 U	2 U	2.8 B	1.9 U	2.1 U
Potassium	94.9 U	104 U	93.2 U	106 U	96.1 U	100 U	96.1 U	95.2 U	101 U
Selenium	0.47 U	0.51 U	0.47 U	0.52 U		0.49 U	0.47 U	0.47 U	0.5 U
Silver	0.54 U	0.6 U	0.53 U	0.61 U	0.55 U	0.58 U	0.55 U	0.55 U	0.58 U
Sodium	4.5 U	46 B	4.4 U	5.1 U	4.6 U	12.1 U	6.7 U	5.5 U	4.8 U
Thallium	0.37 U	0.4 U	0.37 U	0.41 U	0.37 U	0.39 U	0.37 U	0.37 U	0.4 U
Vanadium	0.42 U	1.1 J	0.42 U	0.47 UJ	0.43 U	2 J	0.96 B	0.94 B	0.46 B
Zinc	0.97 B	44.4	0.24 U	0.27 U	0.24 U	0.96 B	1 B	0.96 B	0.26 U
General chemistry									
pH (units)	NA	NA							
Total Petroleum Hydrocarbons, mg/k	7.6	209.7	4.1 U	11.7	4.1 U	21.7	11.7	9.1	4.9

Appendix C-5
 Summary of Groundwater Analytical Results
 Low Detection Limit Volatile Organics

Study Area 12
 Naval Training Center, Orlando
 Orlando, Florida

Sample_ID	12G00101	12G00201	12G00301	12G00401
Lab_ID	G7063001	G7063002	G7063003	G7063004
Collection Date	3/9/95	3/9/95	3/9/95	3/9/95
Volatile Organics, ug/L				
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropa	1 R	1 R	1 R	1 R
1,2-Dibromoethane	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U
2-Butanone	5 R	5 R	5 R	5 R
2-Hexanone	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U
Acetone	5 R	5 R	5 R	5 R
Benzene	1 U	1 U	1 U	1 U
Bromochloromethane	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U
Carbon disulfide	1 U	1 U	1 U	1 U
Carbon tetrachloride	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U
Chloromethane	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U
Methylene chloride	2 U	2 U	2 U	2 U
Styrene	1 U	1 U	1 U	1 U
Tetrachloroethene	8	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U
Trichloroethene	2	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U
Xylene (total)	1 U	1 U	1 U	1 U

Appendix C-6
 Summary of Groundwater Analytical Results
 Target Compound List Semivolatile Organics

Study Area 12
 Naval Training Center, Orlando
 Orlando, Florida

Sample_ID	12G00101	12G00201	12G00301	12G00401
Lab_ID	G7063001	G7063002	G7063003	G7063004
Collection Date	3/9/95	3/9/95	3/9/95	3/9/95
Semivolatile Organics, ug/L				
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U
2,2'-oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U
2-Nitrophenol	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	25 U
4-Nitrophenol	25 U	25 U	25 U	25 U
Acenaphthene	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U
Benzo(a)pyrene	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U

Appendix C-6
 Summary of Groundwater Analytical Results
 Target Compound List Semivolatile Organics

Study Area 12
 Naval Training Center, Orlando
 Orlando, Florida

Sample ID	12G00101	12G00201	12G00301	12G00401
Lab ID	G7063001	G7063002	G7063003	G7063004
Collection Date	3/9/95	3/9/95	3/9/95	3/9/95
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	1 U	1 U	1 U	2 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U
Hexachlorobenzene	1 U	1 U	1 U	1 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine (1)	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U
Pentachlorophenol	1 U	1 U	1 U	1 U
Phenanthrene	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U

Appendix C-7
 Summary of Groundwater Analytical Results
 Target Compound List Pesticides and PCBs

Study Area 12
 Naval Training Center, Orlando
 Orlando, Florida

Sample_ID	12G00101	12G00201	12G00301	12G00401
Lab_ID	G7063001	G7063002	G7063003	G7063004
Collection Date	3/9/95	3/9/95	3/9/95	3/9/95
Pesticides/PCBs, ug/L				
4,4'-DDD	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ
4,4'-DDE	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ
4,4'-DDT	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ
Aldrin	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
alpha-BHC	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
alpha-Chlordane	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
Aroclor-1016	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ
Aroclor-1221	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ
Aroclor-1232	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ
Aroclor-1242	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ
Aroclor-1248	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ
Aroclor-1254	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ
Aroclor-1260	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ
beta-BHC	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
delta-BHC	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
Dieldrin	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ
Endosulfan I	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
Endosulfan II	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ
Endosulfan sulfate	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ
Endrin	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ
Endrin aldehyde	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ
Endrin ketone	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ
gamma-BHC (Lindane)	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
gamma-Chlordane	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
Heptachlor	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
Heptachlor epoxide	0.05 UJ	0.05 U	0.05 UJ	0.05 UJ
Methoxychlor	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ
Toxaphene	5 UJ	5 U	5 UJ	5 UJ

Appendix C-8
 Summary of Groundwater Analytical Results
 Target Analyte List Metals and General Chemistry

Study Area 12
 Naval Training Center, Orlando
 Orlando, Florida

Sample_ID	12G00101	12G00201	12G00301	12G00401
Lab_ID	G7063001	G7063002	G7063003	G7063004
Collection Date	3/9/95	3/9/95	3/9/95	3/9/95
Inorganics, ug/L				
Aluminum	409	930	179 B	486
Antimony	2.5 U	2.5 U	2.5 U	2.5 U
Arsenic	1.9 U	1.9 U	1.9 U	1.9 U
Barium	9.9 B	4.9 B	11.2 B	7.2 B
Beryllium	1.1 B	0.31 B	0.2 U	0.2 U
Cadmium	3.2 B	3.1 U	3.1 U	3.1 U
Calcium	125000	33300	46200	48100
Chromium	2.5 U	2.5 U	2.5 U	2.5 U
Cobalt	2 U	2 U	2 U	2 U
Copper	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ
Iron	223	34.9 B	54.6 B	27.1 B
Lead	1.5 U	1.5 U	1.5 U	1.5 U
Magnesium	5030	2610 B	3690 B	1680 B
Manganese	26.7	4.9 B	32.8	4.9 B
Mercury	0.12 B	0.12 B	0.12 U	0.12 B
Nickel	9.6 U	9.6 U	9.6 U	9.6 U
Potassium	1380 B	1860 B	3560 B	911 B
Selenium	2.3 U	2.3 U	5.5	3.1 B
Silver	2.7 U	2.7 U	2.7 U	2.7 U
Sodium	29700	2860 B	5910	2600 B
Thallium	1.8 UJ	1.8 U	1.8 UJ	1.8 UJ
Vanadium	3.3 B	6.8 B	4 B	6.8 B
Zinc	1.6 U	1.2 U	1.2 U	1.2 U
General chemistry, mg/L				
Total Petroleum Hydrocarbons	1 U	1 U	1 U	1 U
Total Suspended Solids	1 U	1 U	1	2