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FINAL BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT STUDY AREA 9 NTC ORLANDO FL

7/1/1996

ABB ENVIRONMENTAL

01.03.09.0001

BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE-SCREENING REPORT

00041

STUDY AREA 9

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Unit Identification Code: N65928

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

Prepared by:

ABB Environmental Services, Inc.
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Prepared for:

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Naval Facilities Engineering Command
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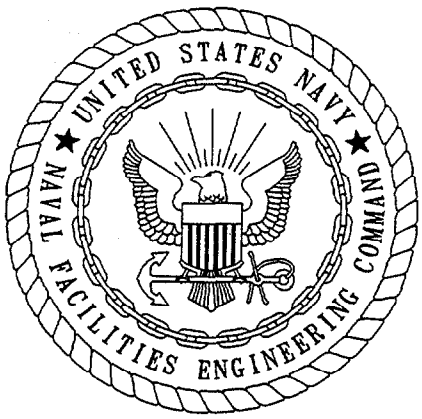
July 1996



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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Naval Training Center
Orlando, Florida

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
BRAC	Base Realignment and Closure
CLP	Contract Laboratory program
DDT	dichlorodiphenyltrichloroethane
DQO	data quality objective
FDEP	Florida Department of Environmental Protection
GPR	ground-penetrating radar
MCL	maximum contaminant level
µg/ℓ	micrograms per liter
µg/kg	micrograms per kilogram
OPT	Orlando Partnering Team
OU	operable unit
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 9, FORMER PESTICIDE AND HERBICIDE STORAGE BUILDING (UNNUMBERED FACILITY [UNF]-14)

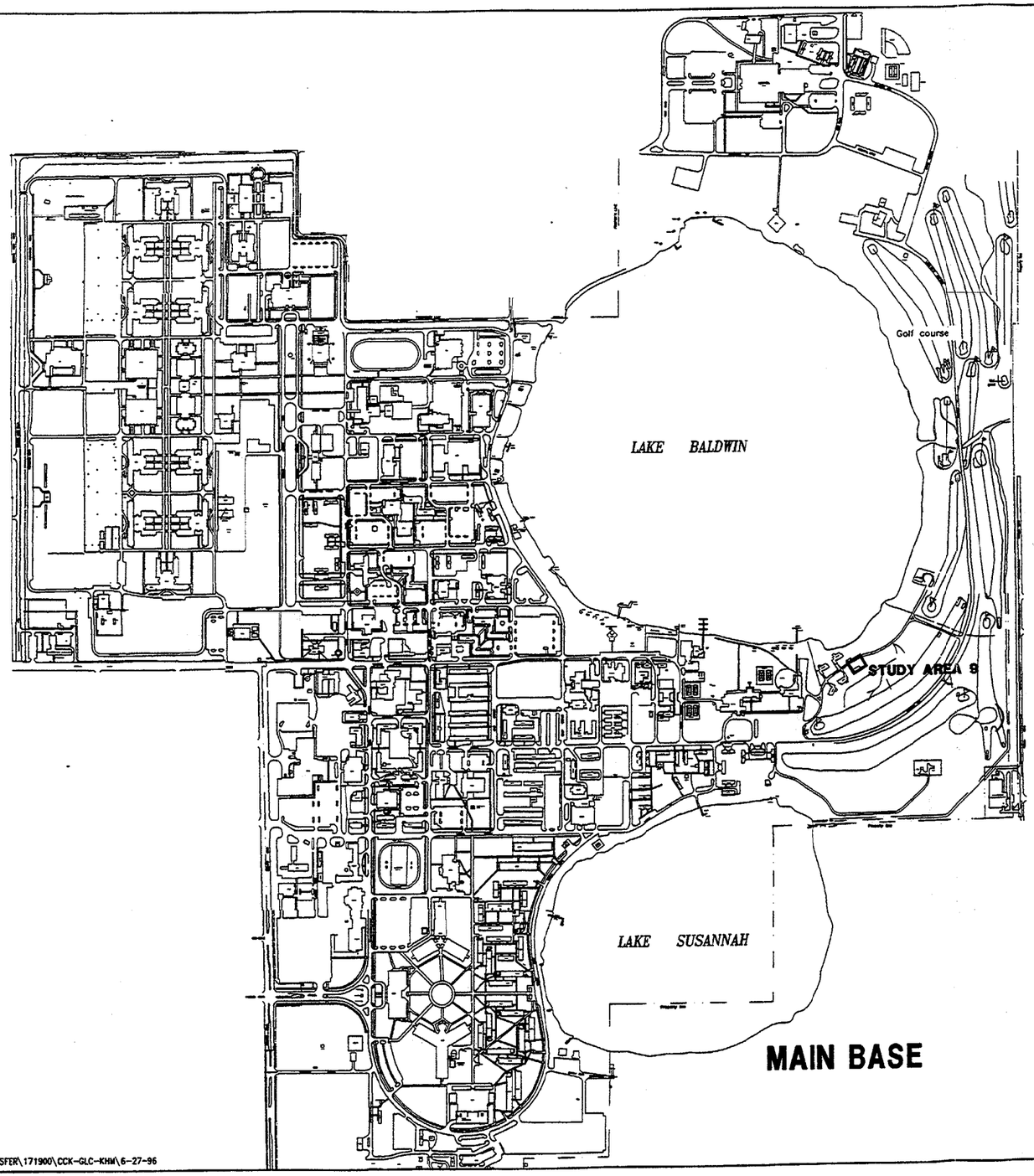
This report contains information gathered as a result of site-screening activities conducted at Study Area 9. In the fall of 1995, after the review of site-screening results, the Orlando Partnering Team (OPT) assigned Study Area 9 and the Greenskeeper Storage Area portion of Study Area 8 to operable unit status as Operable Unit (OU) 3. The results of subsequent investigations are not included in this document but may be found in the appropriate OU 3 reports as they become available.

1.1 STUDY AREA 9, BACKGROUND AND CONDITIONS. Study Area 9 is located on Trident Lane near the southeastern shore of Lake Baldwin (Figures 1 and 2). A pesticide and herbicide storage building was formerly at this location. It was used by the U.S. Air Force and Navy from the early 1950s to 1972 and was demolished in 1981. Pesticide and herbicide spillage estimates from the Environmental Baseline Survey (ABB Environmental Services, Inc. [ABB-ES], 1994) range up to 4,300 gallons over the period the building was in use. Three monitoring wells (now numbered OLD-09-02, OLD-09-03, and OLD-09-04) were installed at the site during the verification study (Geraghty & Miller, 1986). Analytical results for groundwater samples from these wells indicated the presence of ethylbenzene, phenol, 2-chlorophenol, 2,4-dichlorophenol, and chlordane in the northernmost well (now designated OLD-09-04) (ABB-ES, 1994).

1.2 STUDY AREA 9, INVESTIGATION SUMMARY. An evaluation of aerial photographs confirmed the presence of a developed section of land at the location of the study area and defined a 75-foot by 75-foot target area, bounded by Trident Lane to the north and a drainage swale to the east. The resolution of the aerial photographs reviewed was not sufficient to determine the location of specific facility features.

1.2.1 Geophysical Surveys Magnetic gradient, terrain conductivity, and ground-penetrating radar (GPR) surveys were conducted over a 200-foot-by-200-foot area in an attempt to confirm the location of the former building and gravel sump structure. Magnetic gradient and terrain conductivity data points were obtained on 10-foot centers. GPR traverses were spaced at 20-foot intervals in the north-to-south and east-to-west directions. The geophysical data obtained were somewhat inconclusive in further refining target areas for the field sampling effort, although a subtle GPR anomaly in the central portion of the study area may represent the location of the former foundation of the leach field of the facility. Appendix A presents the results of the geophysical surveys.

1.2.2 Soil Sampling Investigation To evaluate potential soil contamination at the study area, four surface soil samples (09S001 through 09S004) and one field duplicate (095001D) were collected from within the target area identified by an aerial photograph evaluation (Figure 2). The four surface soil samples were submitted for full suite Contract Laboratory Program (CLP) target compound list (TCL) and target analyte list (TAL) and herbicide laboratory analyses in accordance with U.S. Environmental Protection Agency (USEPA) Level IV data quality objectives (DQOs).



N

0 500 1000
SCALE: 1 INCH = 1000 FEET

SOURCE: ABB-ES 1994b.

FIGURE 1
LOCATION OF STUDY AREA 9

BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT

NAVAL TRAINING CENTER ORLANDO, FLORIDA

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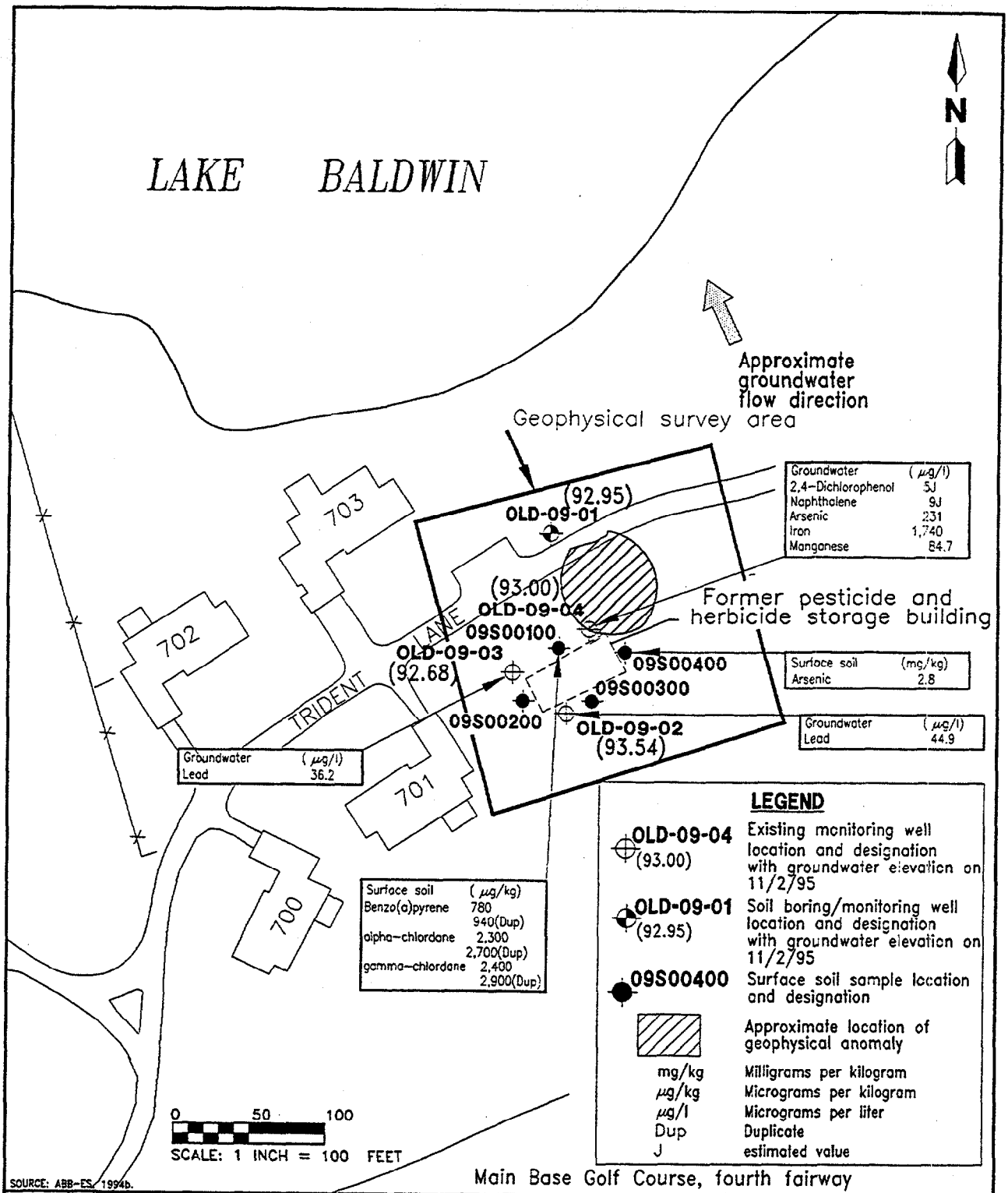


FIGURE 2
SURFACE SOIL SAMPLE, MONITORING WELL LOCATIONS, AND GEOPHYSICAL SURVEY AREA AT UNF-14, FORMER PESTICIDE AND HERBICIDE STORAGE BUILDING, STUDY AREA 9

H:\9585\171900\CCK-GLC-KHM\6-6-96

BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT

NAVAL TRAINING CENTER ORLANDO, FLORIDA

1.2.3 Soil Boring and Monitoring Well Installation and Sampling One soil boring was advanced to a depth of approximately 14 feet below land surface (bls) using an hollow-stem auger drilling technique. The boring was located downgradient of the existing monitoring wells, based on the inferred hydraulic gradient. Soil samples were collected continuously and field-screened with an flame ionization detector. No responses above background were observed, with the exception of a reading of 25 parts per million approximately 10 feet bls. This soil sample was collected from below the water table. One soil sample was collected from the water table interface and submitted for full suite CLP TCL and TAL and herbicide laboratory analyses in accordance with USEPA Level IV DQOs. The boring log for this boring is included in Appendix B.

1.2.4 Groundwater Monitoring Well Installation and Sampling The above boring was completed as a monitoring well (OLD-09-01). Because of the shallow water table (approximately 2 feet bls), it was not possible to install the well screen across the water table. Prior to sampling, the three existing monitoring wells (OLD-09-02, OLD-09-03, and OLD-09-04) were redeveloped. Four groundwater samples (one from each well) were collected and submitted for full suite CLP TCL, TAL, herbicide, and endothall analyses in accordance with USEPA Level IV DQOs. The well installation diagram for the new well OLD-09-01 is included in Appendix B.

1.3 STUDY AREA 9, RESULTS. A summary of positive detections in soil and groundwater analytical results is presented in Appendix C (Tables C-1, C-2, and C-3). A complete set of soil and groundwater analytical results is presented in Appendix D.

1.3.1 Soil Analytical Results Arsenic, barium, copper, lead, manganese, mercury, and zinc were detected above background in surface soil samples 09S001 and/or 09S004. Arsenic was detected in sample 09S004 at 2.8 micrograms per kilogram ($\mu g/kg$), exceeding the soil cleanup goal (SCG) and the residential risk-based concentration (RBC) for arsenic as a carcinogen. The concentrations of all other analytes were below the SCGs and residential RBCs.

Polynuclear aromatic hydrocarbons, 4,4'-dichlorodiphenyltrichloroethane (DDT), and chlordane were detected in surface soil sample 09S001. 4,4'-Dichlorodiphenyldichloroethane, 4,4'-dichlorodiphenyldichloroethene, 4,4'-DDT, and chlordane were detected in surface soil sample 09S004. However, only concentrations of benzo(a)pyrene (780 $\mu g/kg$; 940 $\mu g/kg$ in the field duplicate) and chlordane (2,300 $\mu g/kg$ to 2,900 $\mu g/kg$) in surface soil sample 09S001 exceeded the corresponding SCGs and residential RBCs. Di-n-butylphthalate was detected in all surface soil samples at concentrations less than the SCG.

Di-n-butylphthalate and acetone were detected in the single subsurface soil sample collected from boring 09B001, but at concentrations below the corresponding residential RBCs. Leachability-based SCG values do not apply, as no organic compounds present in subsurface soil were also present in groundwater above Florida Department of Environmental Protection (FDEP) groundwater guidance concentrations (see below).

1.3.2 Groundwater Analytical Results Arsenic, barium, calcium, cobalt, copper, iron, lead, magnesium, manganese, nickel, and zinc were detected above background screening concentrations in groundwater from Study Area 9. Lead was detected in groundwater from wells OLD-09-02 and OLD-09-03 (44.9 micrograms per liter [$\mu g/\ell$]

and 36.2 µg/ℓ, respectively) above the FDEP groundwater primary standard and the Federal maximum contaminant level (MCL) of 15 µg/ℓ. Arsenic was detected in well OLD-09-04 (231 µg/ℓ) above the FDEP groundwater primary standard and Federal MCL of 50 µg/ℓ. Iron (1,740 µg/ℓ) and manganese (84.7 µg/ℓ) were also detected in well OLD-09-04 above the corresponding FDEP groundwater secondary standards.

Organic compounds were only detected in well OLD-09-04. Compounds included ethylbenzene, toluene, 2-butanone, xylenes, bis(2-ethylhexyl)phthalate, 4-methylphenol, 2,4-dichlorophenol, 2-methylnaphthalene, naphthalene, and the pesticides dicamba and chlordane. Naphthalene (9J µg/ℓ) and 2,4-dichlorophenol (5J µg/ℓ) exceeded the corresponding FDEP groundwater guidance concentrations. The concentrations of all other organics were less than FDEP groundwater guidance concentrations and Federal MCLs.

1.4 STUDY AREA 9, CONCLUSIONS AND RECOMMENDATIONS. Additional information acquired during the Air Force records review (ABB-ES, 1995c) indicated that the burial area for materials from the old pesticide building may lie on the north side of Trident Lane. This location is outside the area of the geophysical survey conducted during the site-screening investigation. Based on this new information and the analytical results discussed above, further evaluation of surface soil and groundwater at Study Area 9 will be required. ABB-ES recommends that Study Area 9 remain classified 6/Red. In the fall of 1995, after a review of site-screening results, the OPT upgraded Study Area 9 and the Greenskeeper Storage Area portion of Study Area 8 to OU status, assigning them to OU 3. The results of subsequent investigations are not included in this document but may be found in the appropriate OU 3 reports as they become available.

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

STUDY AREA 9

Nancy Rodriguez	7/24/96
U.S. Environmental Protection Agency, Region IV	Date
[signature]	7/24/96
Florida Department of Environmental Protection	Date
Wayne A. Howard	7/24/96
U.S. Department of the Navy	Date

REFERENCES

ABB-ES, 1994, Final Draft Environmental Baseline Survey (EBS) Report, NTC, Orlando, Florida: prepared for SOUTHNAVFACENGCOM, Charleston, South Carolina.

Geraghty & Miller, 1986, Verification Study, Assessment of Potential Soil and Ground-Water Contamination at NTC, Orlando, Florida: Tampa, Florida, December.

APPENDIX A

GEOPHYSICAL SURVEYS

TECHNICAL MEMORANDUM
GEOPHYSICAL SURVEYS
SITE-SCREENING INVESTIGATIONS
STUDY AREA 9

The following is a summary of the significant findings of the geophysical surveys that took place between July 28 and August 23, 1994, at NTC Orlando. Geophysical surveys took place at Study Area 9, the former Pesticide and Herbicide Storage Building.

A discussion of the results follows.

Geophysical surveys at the former herbicide and pesticide storage area included a magnetometer and terrain conductivity survey (with a 10-by-10-foot measurement grid), which was followed by a ground-penetrating radar (GPR). The purpose for the work was to determine the location of the former storage building and a gravel-filled sump.

Figures 18A, 18B, and 18C show the approximate location of the geophysical grid. Figures 19, 20, and 21 present the vertical gradient (magnetic) contours, quadrature (conductivity) contours, and in-phase (roughly equivalent to a metal detector) contours for the geophysical data. Superimposed over the magnetic contours (Figure 19) is the outline of a GPR anomaly, which may represent the location of the former foundation or the leach field. The most prominent anomaly on the magnetic and terrain conductivity contours is Trident Lane and the buried utilities that may exist on either side of the road.

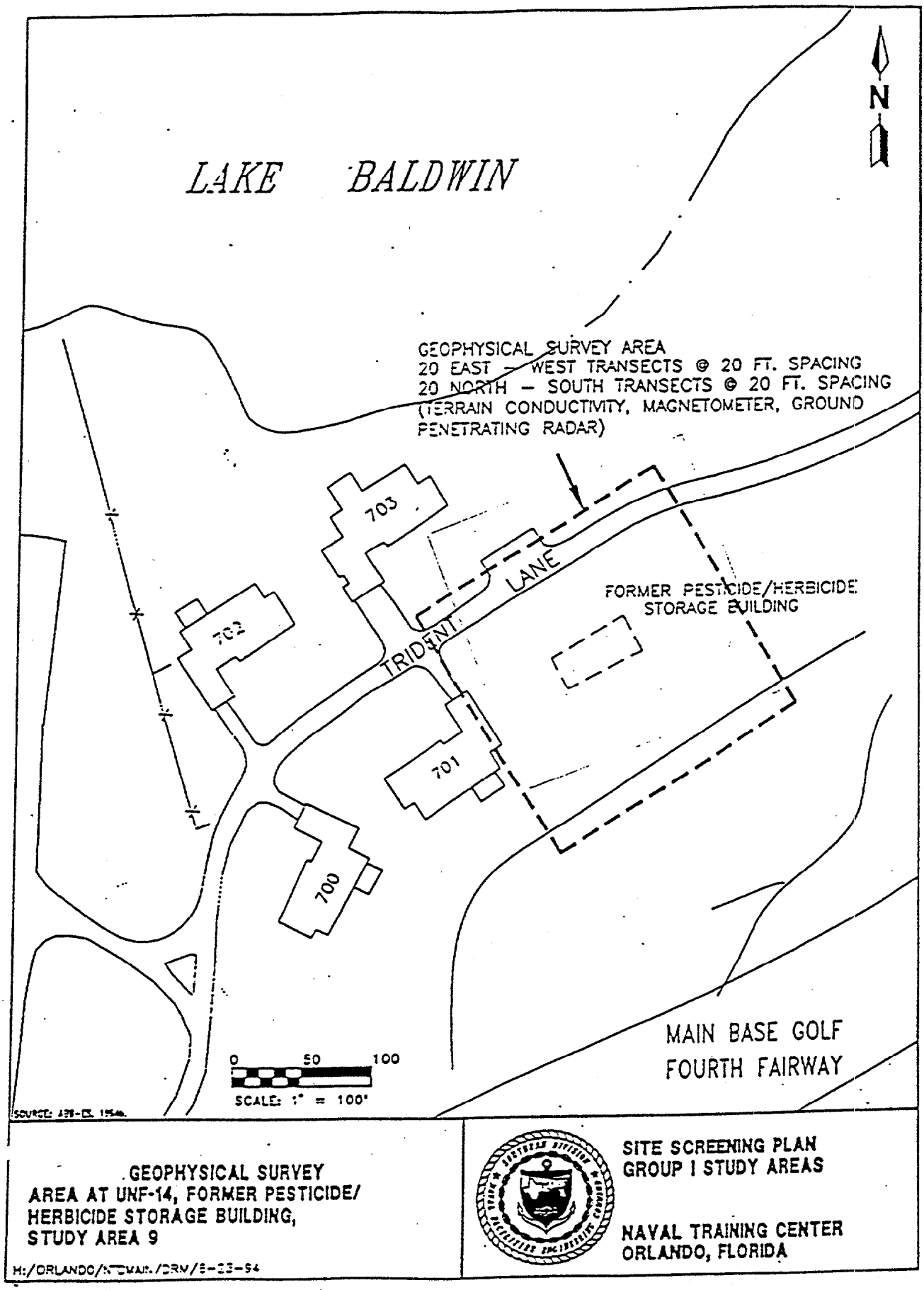

LAKE BALDWIN
N
GEOPHYSICAL SURVEY AREA
20 EAST – WEST TRANSECTS @ 20 FT. SPACING
20 NORTH – SOUTH TRANSECTS @ 20 FT. SPACING
(TERRAIN CONDUCTIVITY, MAGNETOMETER, GROUND PENETRATING RADAR)
703
702
701
700
TRIDENT LANE
FORMER PESTICIDE/HERBICIDE STORAGE BUILDING
MAIN BASE GOLF
FOURTH FAIRWAY
0 50 100
SCALE: 1" = 100'
SOURCE: ABB-ES, 1994.
GEOPHYSICAL SURVEY
AREA AT UNF-14, FORMER PESTICIDE/
HERBICIDE STORAGE BUILDING,
STUDY AREA 9
H:/ORLANDO/NTCMAIN/DRW/8-23-94
SITE SCREENING PLAN
GROUP I STUDY AREAS
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Figure 18A

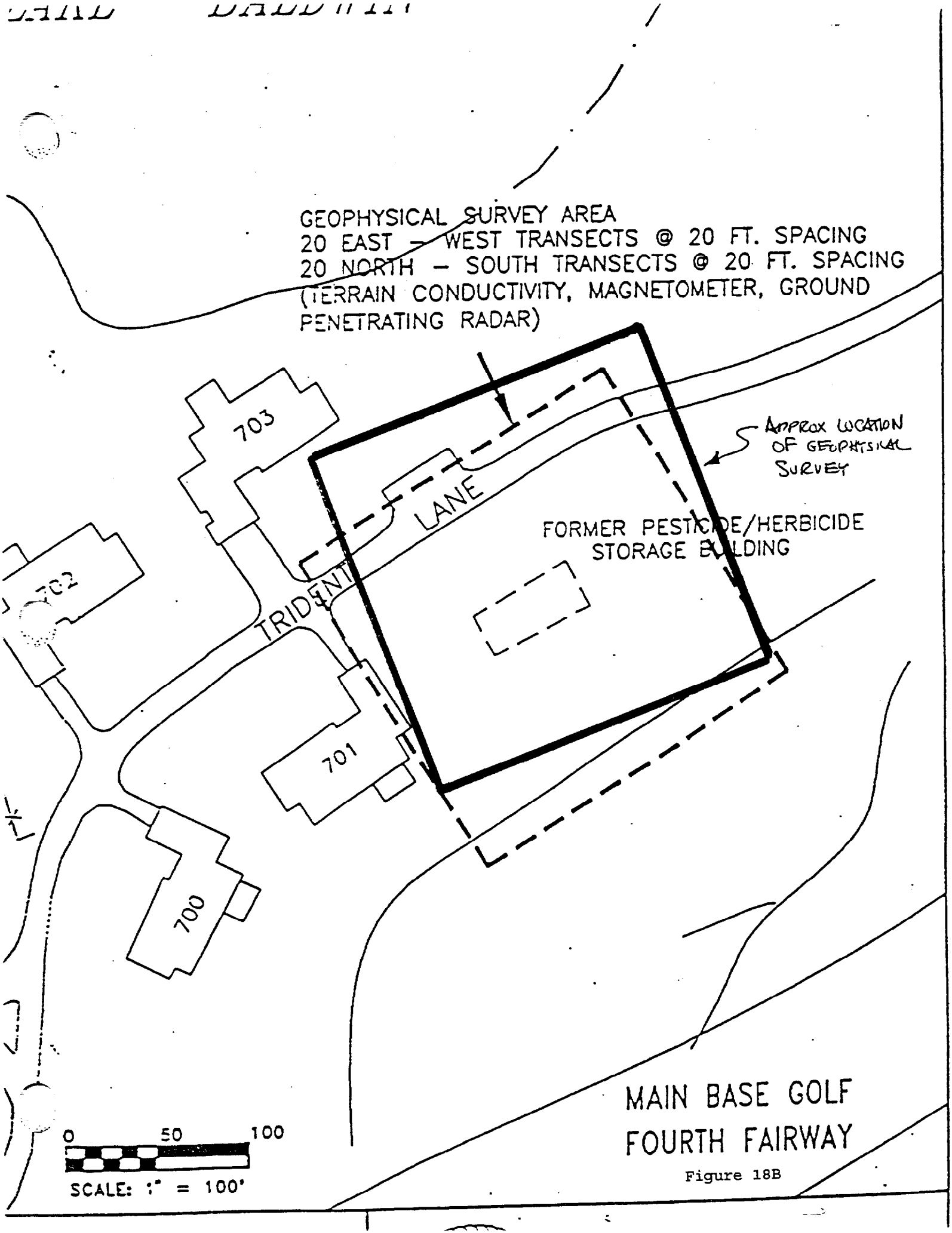

GEOPHYSICAL SURVEY AREA
20 EAST – WEST TRANSECTS @ 20 FT. SPACING
20 NORTH – SOUTH TRANSECTS @ 20 FT. SPACING
(TERRAIN CONDUCTIVITY, MAGNETOMETER, GROUND PENETRATING RADAR)
703
LANE
APPROX LOCATION OF GEOPHYSICAL SURVEY
FORMER PESTICIDE/HERBICIDE STORAGE BUILDING
TRIDENT
701
700
0
50
100
SCALE: 1" = 100'
MAIN BASE GOLF
FOURTH FAIRWAY

Figure 18B

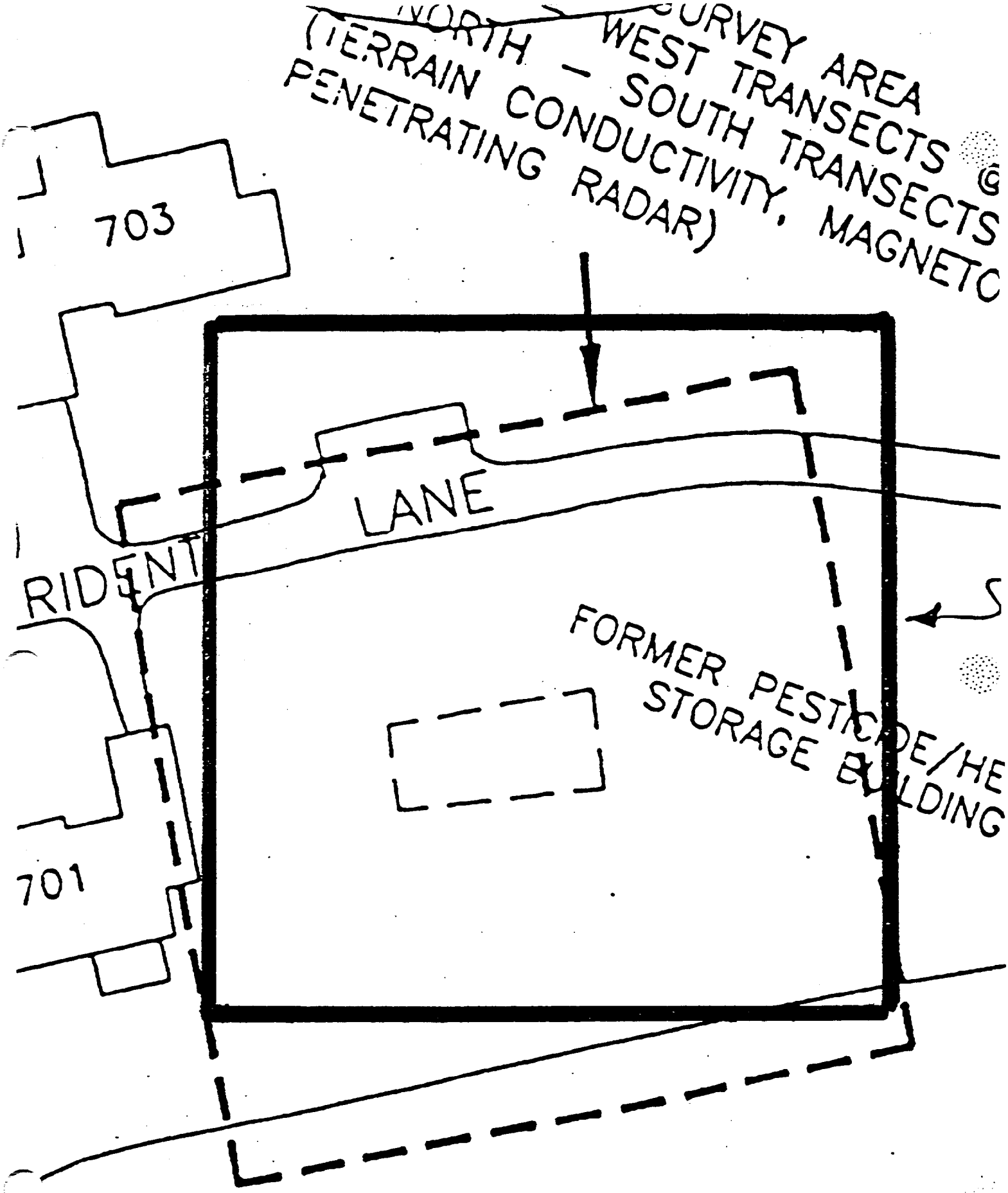

NORTH
URVEY AREA
WEST TRANSECTS
SOUTH TRANSECTS
(TERRAIN CONDUCTIVITY, MAGNETO
PENETRATING RADAR)
703
LANE
RIDENT
FORMER PESTICIDE/HE
STORAGE BUILDING
701

Figure 18C

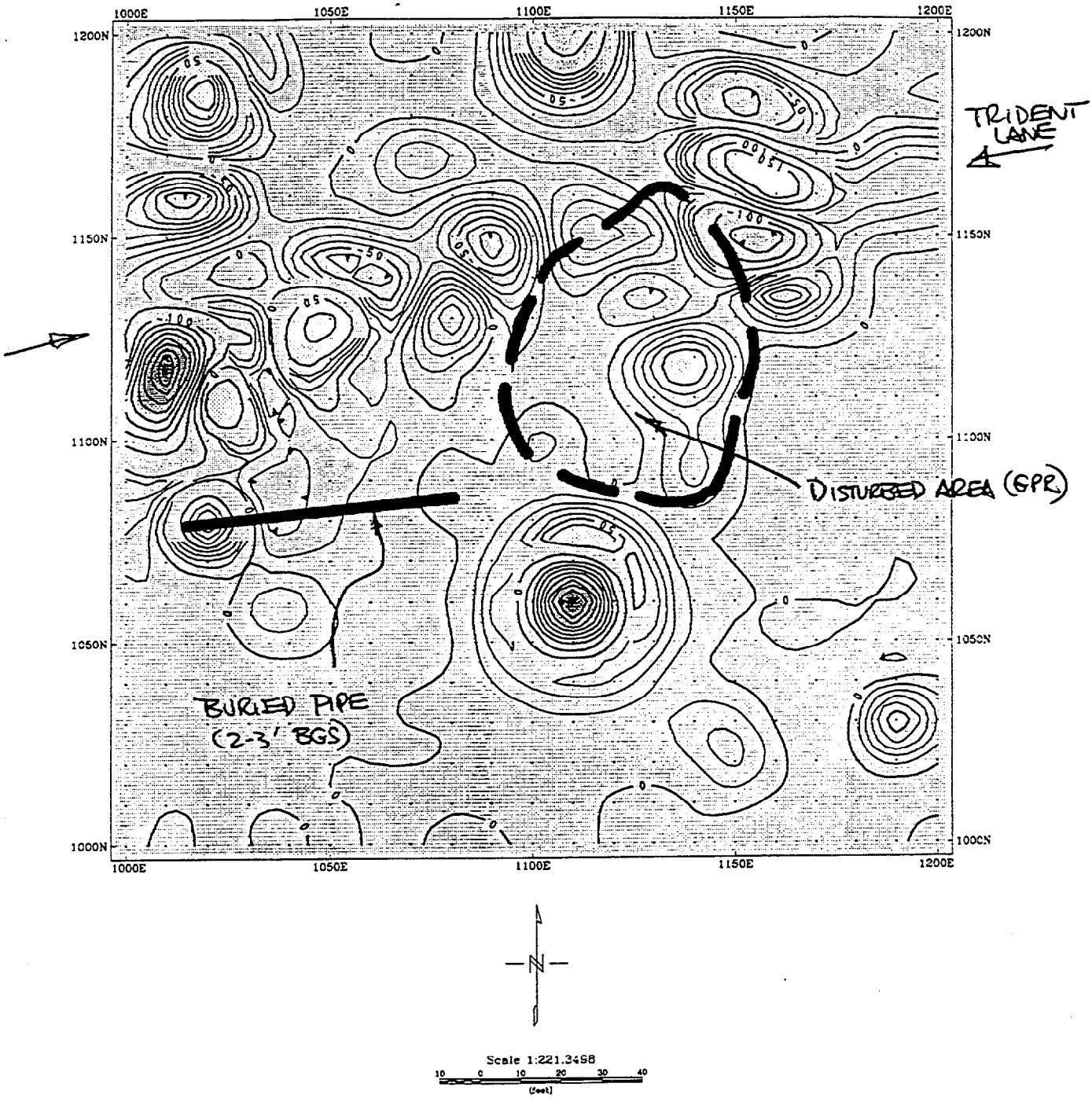


Figure 19

NAVY CLEAN
VERTICAL GRADIENT CONTOURS SA 9 – FORMER HERB/PEST STORAGE AREA SSP – GROUP 1 STUDY AREAS
ABB ENVIRONMENTAL SERVICES, INC.

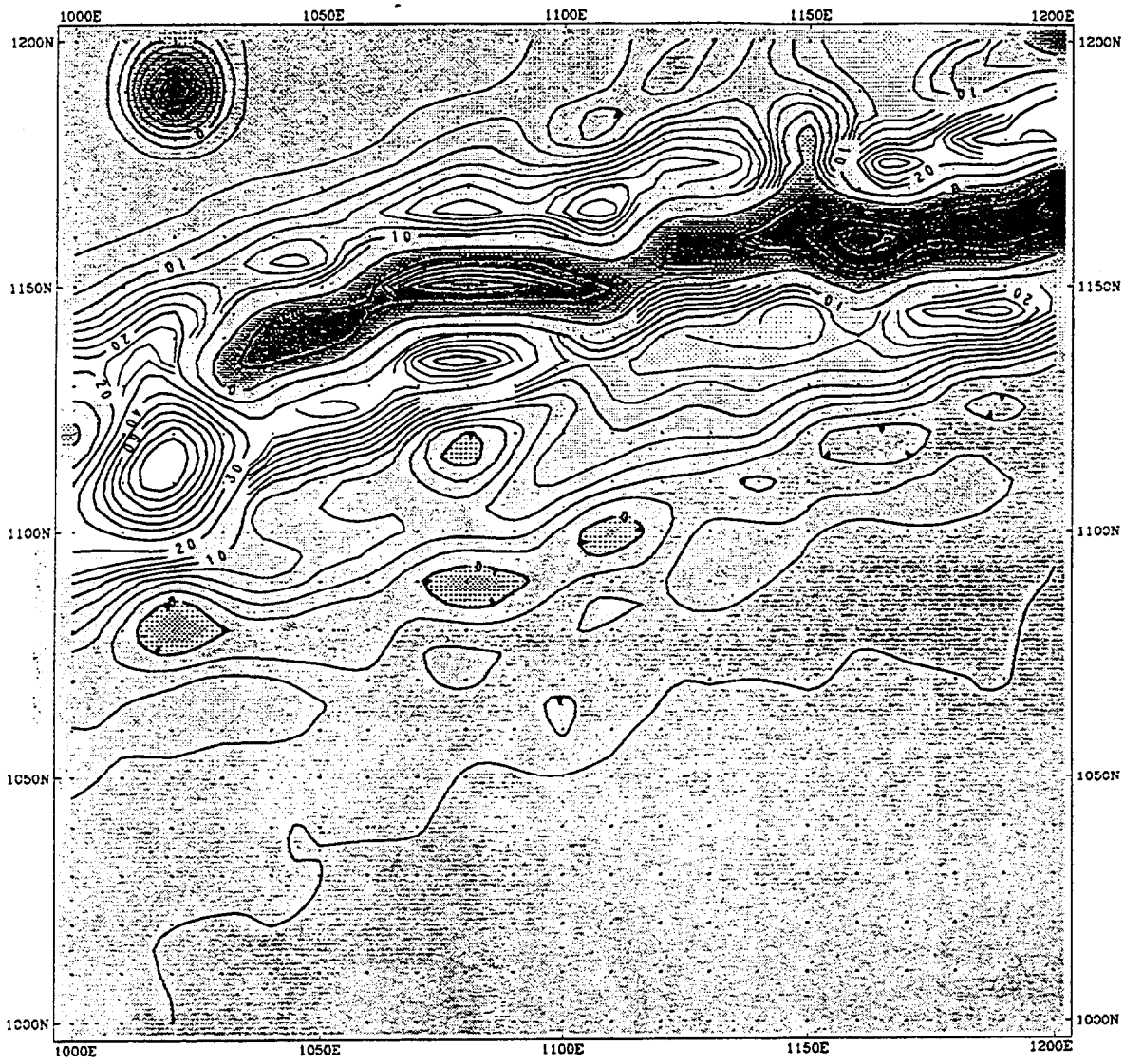
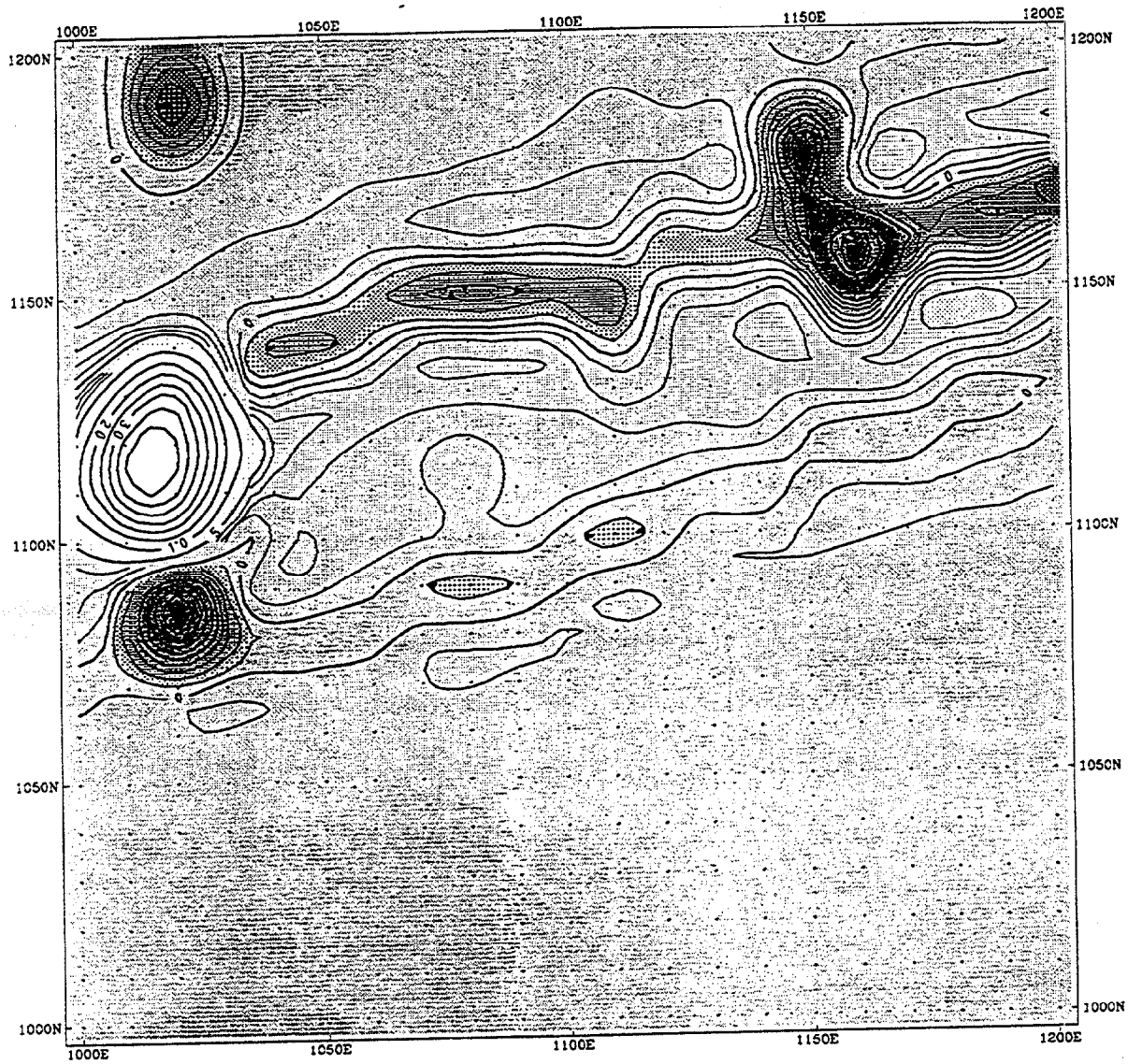


Figure 20

NAVY CLEAN
QUADRATURE CONTOURS SA 9 - FORMER HERB/PEST STORAGE AREA SSP - GROUP 1 STUDY AREAS
ABB ENVIRONMENTAL SERVICES, INC.



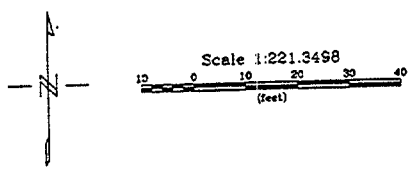


Figure 21

NAVY CLEAN
IN PHASE (TC) CONTOURS SA 9 - FORMER HERB/PEST STORAGE AREA SSP - GROUP 1 STUDY AREAS
ABB ENVIRONMENTAL SERVICES, INC.

APPENDIX B

BORING LOGS AND MONITORING WELL INSTALLATION DIAGRAMS

Project: BRAC NTC, Orlando, Group I, Site Screening	**Well ID:** OLD-09-01		**Boring ID:** 09B001
Client: SOUTHNAVFACENGCOM	**Contractor:** Groundwater Protection, Inc.		**Job No.:** CTO-107
Northing: 1539392.00	**Easting:** 553787.22	**Date started:** 08/30/94	**Compltd:** 08/30/94
Method: 4.25" Hollow stem auger	**Casing dia.:** 2 in.	**Screened int.:** 3-13 ft. bls	**Protection level:** D
TOC elev.: 94.77 Ft.	**Type of OVM.:** Porta FID	**Total dpth:** 13.5Ft.	**Dpth to** ⊽ 4.0* Ft.
ABB Rep.: S. Grietens/T.Cramer	**Well development date:** 09/09/94		**Site:** Study Area 09

Depth Ft.	Laboratory Sample ID.	Sample	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
				0	QUARTZ SAND: Light gray, medium grained.		SP	posthole	
	09B00101		100%	0				4,9,7,10	
5			100%	0	QUARTZ SAND: Light brown, medium grained, trace silts, good sorting, good to moderate rounding.			4,4,5,6	
			75%	0				8,9,12,11	
			100%	0	QUARTZ SAND: Dark brown/black, same as 4 to 8 feet, with trace fines and trace silts.			10,9,11,6	
10			100%	25				4,19,15,23	
			100%	0				12,14,20,20	
15									

 ABB ENVIRONMENTAL SERVICES, INC.

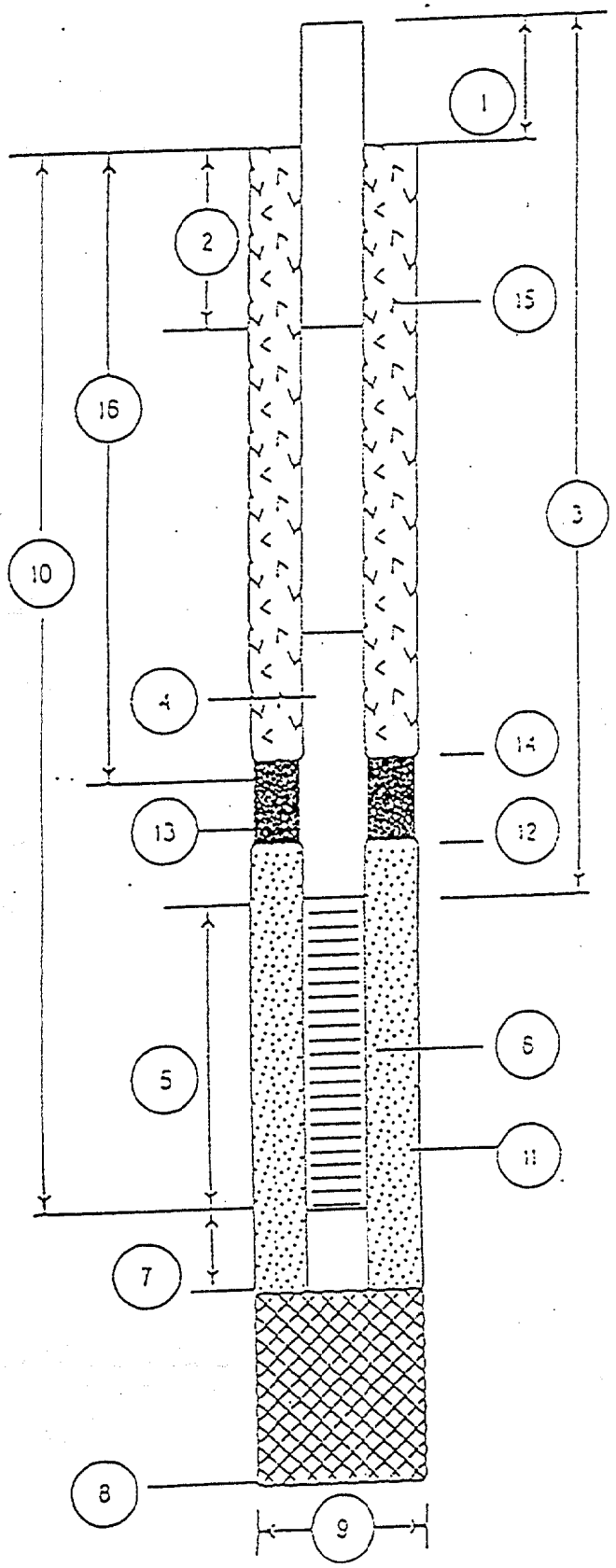
DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SC.

WELL CONSTRUCTION DETAIL gcy

WELL NUMBER: OLD-09-0~~8~~1

DATE OF INSTALLATION: 8/30/94



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" ϕ Schedule 40 PVC
5. Length of Screen: 10'
6. Type of Screen: 2" ϕ schedule 40 pvc .010 slot screen
7. Length of Sump: 6"
8. Total Depth of Boring: 13.5'
9. Diameter of Boring: 6.25"
10. Depth to Bottom of Screen: 13'
11. Type of Screen Filler: 20/30 Silica Sand
    Quantity Used: 325 lb Size: ____
12. Depth to Top of Filler: 2'
13. Type of Seal: Bentonite
    Quantity Used: 25 lb
14. Depth to Top of Seal: 1.5'
15. Type of Grout: Portland Cement
    Grout Mixture:
    Method of Placement: POURED
16. Tot. Depth of 6 in. Steel Casing: N/A

APPENDIX C

SUMMARY OF DETECTIONS IN SOIL AND GROUNDWATER ANALYTICAL RESULTS

Table C-1
Summary of Detections in Surface Soil Analytical Results, Study Area 9

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

Identifier: Sampling Date: Feet bls:	Background [1] Screening	SCG [2]	RBC[3] for Residential Soil	RBC[3] for Industrial Soil	09S00100 26-Aug-94 1	09S00100D 26-Aug-94 1	09S00200 26-Aug-94 1	09S00300 26-Aug-94 1	09S00400 26-Aug-94 1
Semivolatile Organic Compounds (µg/kg)									
Acenaphthene	--	670,000	4,700,000 n	120,000,000 n	280 J	270 J	--	--	--
Anthracene	--	20,000,000	23,000,000 n	610,000,000 n	360 J	430	--	--	--
Benzo(a)anthracene	--	1,400	880 c	7,800 c	1,000	1,300	--	--	--
Benzo(a)pyrene	--	100	88 c	780 c	780	940	--	--	--
Benzo(b)fluoranthene	--	1,400	880 c	7,800 c	930	1,100	--	--	--
Benzo(g,h,i)perylene	100	14,000	2,300,000 n	61,000,000 n	540	610	--	--	--
Benzo(k)fluoranthene	--	14,000	8,800 c	78,000 c	640 J	930 J	--	--	--
Carbazole	--	42,000	32,000 c	290,000 c	240 J	260 J	--	--	--
Chrysene	--	140,000	88,000 c	780,000 c	920	1,200	--	--	--
Di-n-butylphthalate	442	7,300,000	7,800,000 n	200,000,000 n	--	350 J	340 J	360 J	320 J
Dibenzofuran	--	240,000	310,000 n	8,200,000 n	140 J	150 J	--	--	--
Fluoranthene	--	2,900,000	3,100,000 n	82,000,000 n	1,900	2,400	--	--	--
Fluorene	--	2,400,000	3,100,000 n	82,000,000 n	240 J	240 J	--	--	--
Indeno(1,2,3-cd)pyrene	--	1,400	880 c	7,800 c	530	630	--	--	--
Naphthalene	--	1,300,000	3,100,000 n	82,000,000 n	140 J	--	--	--	--
Phenanthrene	--	1,700,000	2,300,000 n	61,000,000 n	1,600	1,900	--	--	--
Pyrene	--	2,200,000	2,300,000 n	61,000,000 n	1,600	2,000	--	--	--
Pesticides/PCBs (µg/kg)									
4,4'-DDD	--	4,500	2,700 c	76,000 n	--	--	--	--	39 NJ
4,4'-DDE	39.2	3,000	1,900 c	17,000 c	--	--	--	--	130
4,4'-DDT	22.8	3,100	1,900 c	17,000 c	700 J	1,300 J	--	--	48 J
alpha-Chlordane	6.1	500	490 c	4,400 c	2,300	2,700	7.2	7.7 J	19 J
gamma-Chlordane	4.3	500	490 c	4,400 c	2,400	2,900	3.3 J	5.6	15 J
Inorganic Analytes (mg/kg)									
Aluminum	2,088	75,000	78,000 n	1,000,000 n	660	679	197	145	484
Arsenic	1.0	0.8	0.43 c/23 n	3.8 c/610 n	--	--	--	--	2.6
Barium	8.7	5,200	5,500 n	140,000 n	12.8 B	13.4 B	3.4 B	1.9 B	9.8 B
Calcium	25,295	ND	1,000,000	1,000,000	1,600	1,750	481 B	591 B	17,500

See notes at end of table.

Table C-1 (Continued)
Summary of Detections in Surface Soil Analytical Results, Study Area 9

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

Identifier: Sampling Date: Feet bls:	Background [1] Screening	SCG [2]	RBC[3] for Residential Soil	RBC[3] for Industrial Soil	09S00100 26-Aug-94 1	09S00100D 26-Aug-94 1	09S00200 26-Aug-94 1	09S00300 26-Aug-94 1	09S00400 26-Aug-94 1
Inorganic Analytes (mg/kg) (Continued)									
Chromium	4.6	290	390 n	10,000 n	4.4	--	--	--	--
Copper	4.1	ND	3,100 n	82,000 n	4.8 B	4 B	2.7 B	0.69 B	8
Iron	712	ND	23,000 n	610,000 n	347 J	243 J	135 J	200 J	422 J
Lead	14.5	500	400	400	18.7	23.4	2.9	3	9.5
Magnesium	328	--	460,468	460,468	41.2 B	32.4 B	23.3 B	16.3 B	166 B
Manganese	8.1	370	1,800 n	47,000 n	6.2	4.4	1.4 B	1.4 B	12.3
Mercury	0.07	23	23 n	610 n	0.08	0.08	0.02 B	--	0.02 B
Nickel	4.4	1,500	1,600 n	41,000 n	--	--	--	--	2.4 B
Silver	1.8	390	390 n	10,000 n	0.88 B	0.84 B	--	--	--
Vanadium	3.1	490	550 n	14,000 n	1.3 B	--	--	--	2.1 B
Zinc	17.2	23,000	23,000 n	610,000 n	45.7	34.3	--	--	13.2

[1] Background values are for subsoils and surface soils, respectively. The 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] SCG = Soil Cleanup Goals for Florida (Florida Department of Environmental Protection [FDEP] 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.

[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.

Notes: All metals results expressed in mg/kg soil dry weight; organics in µg/kg soil dry weight.

BRAC = Base Realignment and Closure.
bls = below land surface.
µg/kg = micrograms per kilogram.
n = noncarcinogenic pathway.
J = reported concentration is an estimated quantity.
-- = analyte/compound was not detected or regulatory guidance (RBC or SCG) not available.
c = carcinogenic pathway.
PCB = polychlorinated biphenyl.
▒ = bolded/shaded value indicate exceedance of regulatory guidance and background.
N = indicates presumptive evidence of the compound.
DDD = dichlorodiphenyldichloroethane.
DDE = dichlorodiphenyldichloroethene.
DDT = dichlorodiphenyltrichloroethane.
B = reported concentration is between the instrument detection limit and contract required detection limit.
ND = not determined.
mg/kg = milligrams per kilogram.

Table C-2
Summary of Detections in Subsurface Soil Analytical Results, Study Area 9

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

Identifier: Sampling Date: Feet bls:	Background [1] Screening	RBC [2] for Residential Soil	RBC [2] for Industrial Soil	09B00101 30-Aug-94 2
Volatile Organic Compounds (µg/kg)				
Acetone	–	7,800,000 n	200,000,000 n	110
Semivolatile Organic Compounds (µg/kg)				
Di-n-butylphthalate	560	7,800,000 n	200,000,000 n	490
Inorganic Analytes (mg/kg)				
Barium	3.6	5,500 n	140,000 n	0.67 B
Calcium	115	1,000,000	1,000,000	36.1 B

[1] The 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 Region III, May 1996, R.L. Smith. For essential nutrients (calcium) screening values were derived based on recommended daily allowances.

Notes: BRAC = Base Realignment and Closure.
bls = below land surface.
µg/kg = micrograms per kilogram.
– = analyte/compound was not detected.
n = noncarcinogenic pathway.
mg/kg = milligrams per kilogram.
B = reported concentration is between the instrument detection limit and contract required detection limit.
All metal results expressed in mg/kg soil dry weight; organics in µg/kg soil dry weight.

Table C-3
Summary of Detections in Groundwater Analytical Results, Study Area 9

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

Well ID: Identifier: Sampling Date:	Background [1] Screening	FDEPG	FEDMCL	RBC [2] for Tap Water	OLD-09-01 09G00101 16-Sep-94	OLD-09-02 09G00201 20-Sep-94	OLD-09-03 09G00301 20-Sep-94	OLD-09-04 09G00401 20-Sep-94
Volatile Organic Compounds (µg/ℓ)								
Ethylbenzene	--	[3]30/[4]700	700	1,300 n				
Toluene	--	[3]40/[4]1,000	1,000	750 n	--	--	--	0.4 J
2-Butanone	--	[5]4,200	ND	1,900 n	--	--	--	3 J
Xylene (total)	--	[3]20/[4]10,000	10,000	12,000 n	--	--	5 J	
2-Methylnaphthalene	--	ND	ND	1,500 n	--	--	--	25
Naphthalene	--	[6]6.8	--	1,500 n	--	--	--	9 J
Pesticides (µg/ℓ)								
Dicamba	--	[5]210	--	1,100 n	--	--	--	1.5
alpha-Chlordane	--	[4]2	2	0.052 c	--	--	--	1.2
gamma-Chlordane	--	[4]2	2	0.052 c	--	--	--	1.4
Inorganic Analytes (µg/ℓ)								
Aluminum	4,067	[3]200	ND	37,000 n	1,090	858	476	368
Antimony	4.1	[4]6	6	15 n	--	--	--	3.4 B
Arsenic	5.0	[4]50	50	0.045 c/11 n	10 J	2.6 J		231
Barium	31.4	[4]2,000	2,000	2,600 n	32.6 B	0.74 B	3.4 B	4.5 B
Calcium	36,830	ND	ND	1,000,000	34,900	5,670	12,800	53,600
Cobalt	--	ND	ND	2,200 n	--	--	--	3.7 B
Copper	5.4	[3]1,000	ND	1,500 n	--	--	--	36.2
Iron	1,227	[3]300	ND	11,000 n	676	85.7 B	189	1,740
Lead	4.0	[4]15	15	15	1.4 B	44.9	36.2	6

See notes at end of table.

Table C-3 (Continued)
Summary of Detections in Groundwater Analytical Results, Study Area 9

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

Well ID: Identifier: Sampling Date:	Background [1] Screening	FDEPG	FEDMCL	RBC [2] for Tap Water	OLD-09-01 09G00101 16-Sep-94	OLD-09-02 09G00201 20-Sep-94	OLD-09-03 09G00301 20-Sep-94	OLD-09-04 09G00401 20-Sep-94
Inorganic Analytes (µg/ℓ) (Continued)								
Magnesium	4,560	ND	ND	118,807	2,570 B	1,740 B	4,970 B	1,550 B
Manganese	**17.0**	[3]**50**	ND	840 n	15.9	--	0.59 B	**84.7**
Mercury	0.12	[4]2	2	11 n	--	--	--	0.07 B
Nickel	--	[4]100	100	730 n	10.8 B	--	--	--
Potassium	5,400	ND	ND	297,016	3,830 B	3,300 B	2,210 B	3,220 B
Sodium	18,222	[4]160,000	ND	396,022	6,090	3,560 B	4,240 B	4,470 B
Thallium	3.8	[4]2	2	2.9 n	--	--	--	1.4 J
Vanadium	20.6	[5]49	ND	260 n	--	--	--	--
Zinc	4.0	[3]5,000	ND	11,000 n	--	--	--	35.8

[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, October, 1995, R.L. Smith. RBC for chromium is based on chromium VI. RBC for 2-methylnaphthalene is based on naphthalene. 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] Secondary standard.
[4] Primary standard.
[5] Systemic toxicant.
[6] Organoleptic.

Notes: BRAC = Base Realignment and Closure.
ID = identification.
FDEPG = Florida Department of Environmental Protection, Groundwater Guidance Concentrations, June 1994.
FEDMCL = Federal Maximum Contaminant Levels, Primary Drinking Water Regulations and Health Advisories, May 1993.
µg/ℓ = micrograms per liter.
-- = analyte/compound was not detected at the reporting limit.
n = noncarcinogenic effects.
J = reported concentration is an estimated quantity.
ND = not determined.
c = carcinogenic effects.
B = reported concentration is between the instrument detection limit and the contract required detection limit.
bold/shaded = bold/shaded numbers indicate exceedance of groundwater guidance and background.

APPENDIX D

SUMMARY OF ANALYTICAL RESULTS

Table D-1
Summary of Soil Analytical Results
Target Compound List Volatile Organics
Study Area 9

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

Identifier	09B00101	09S00100	09S00100D	09S00100DRE	09S00200	09S00300	09S00400
Sampling Date	30-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94
1,1,1-Trichloroethane	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
1,1,2,2-Tetrachloroethane	12 U	11 U	12 UJ	12 UR	11 U	12 U	11 U
1,1,2-Trichloroethane	12 U	11 U	12 UJ	12 UR	11 U	12 U	11 U
1,1-Dichloroethane	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
1,1-Dichloroethene	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
1,2-Dichloroethane	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
1,2-Dichloroethene (total)	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
1,2-Dichloropropane	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
2-Butanone	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
2-Hexanone	12 U	11 U	12 UJ	12 UR	11 U	12 U	11 U
4-Methyl-2-pentanone	12 U	11 U	12 UJ	12 UR	11 U	12 U	11 U
Acetone	110 J	11 U	12 U	12 UR	11 U	12 U	11 U
Benzene	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
Bromodichloromethane	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
Bromoform	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
Bromomethane	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
Carbon disulfide	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
Carbon tetrachloride	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
Chlorobenzene	12 U	11 U	12 UJ	12 UR	11 U	12 U	11 U
Chloroethane	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
Chloroform	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
Chloromethane	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
cis-1,3-Dichloropropene	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
Dibromochloromethane	12 U	11 U	12 UJ	12 UR	11 U	12 U	11 U

See notes at end of table.

Table D-1 (Continued)
Summary of Soil Analytical Results
Target Compound List Volatile Organics
Study Area 9

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

Identifier	09B00101	09S00100	09S00100D	09S00100DRE	09S00200	09S00300	09S00400
Sampling Date	30-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94
Ethylbenzene	12 U	11 U	12 UJ	12 UR	11 U	12 U	11 U
Methylene chloride	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
Styrene	12 U	11 U	12 UJ	12 UR	11 U	12 U	11 U
Tetrachloroethene	12 U	11 U	12 UJ	12 UR	11 U	12 U	11 U
Toluene	12 U	11 U	12 UJ	12 UR	11 U	12 U	11 U
trans-1,3-Dichloropropene	12 U	11 U	12 UJ	12 UR	11 U	12 U	11 U
Trichloroethene	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
Vinyl chloride	12 U	11 U	12 U	12 UR	11 U	12 U	11 U
Xylene (total)	12 U	11 U	12 UJ	12 UR	11 U	12 U	11 U

Notes: Analytical results expressed in micrograms per kilogram (μg/kg) soil dry weight.

U = Compound not detected at the contract-required quantitation limit (CRQL).
J = Reported concentration is an estimated quantity.
R = Data rejected during data validation.

Table D-2
Summary of Surface Soil Analytical Results
Target Compound List Semivolatile Organics
Study Area 9

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

Identifier	09B00101	09S00100	09S00100D	09S00200	09S00300	09S00400
Sampling Date	30-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94
1,2,4-Trichlorobenzene	400 U	380 U	380 U	380 U	390 U	390 U
1,2-Dichlorobenzene	400 U	380 U	380 U	380 U	390 U	390 U
1,3-Dichlorobenzene	400 U	380 U	380 U	380 U	390 U	390 U
1,4-Dichlorobenzene	400 U	380 U	380 U	380 U	390 U	390 U
2,2'-oxybis(1-Chloropropane)	400 U	380 U	380 U	380 U	390 U	390 U
2,4,5-Trichlorophenol	990 U	960 U	950 U	960 U	980 U	970 U
2,4,6-Trichlorophenol	400 U	380 U	380 U	380 U	390 U	390 U
2,4-Dichlorophenol	400 U	380 U	380 U	380 U	390 U	390 U
2,4-Dimethylphenol	400 U	380 U	380 U	380 U	390 U	390 U
2,4-Dinitrophenol	990 U	960 U	950 U	960 U	980 U	970 U
2,4-Dinitrotoluene	400 U	380 U	380 U	380 U	390 U	390 U
2,6-Dinitrotoluene	400 U	380 U	380 U	380 U	390 U	390 U
2-Chloronaphthalene	400 U	380 U	380 U	380 U	390 U	390 U
2-Chlorophenol	400 U	380 U	380 U	380 U	390 U	390 U
2-Methylnaphthalene	400 U	380 U	380 U	380 U	390 U	390 U
2-Methylphenol	400 U	380 U	380 U	380 U	390 U	390 U
2-Nitroaniline	990 U	960 U	950 U	960 U	980 U	970 U
2-Nitrophenol	400 U	380 U	380 U	380 U	390 U	390 U
3,3'-Dichlorobenzidine	400 U	380 U	380 U	380 U	390 U	390 U
3-Nitroaniline	990 U	960 U	950 U	960 U	980 U	970 U
4,6-Dinitro-2-methylphenol	990 U	960 U	950 U	960 U	980 U	970 U
4-Bromophenyl-phenylether	400 U	380 U	380 U	380 U	390 U	390 U
4-Chloro-3-methylphenol	400 U	380 U	380 U	380 U	390 U	390 U
4-Chloroaniline	400 U	380 U	380 U	380 U	390 U	390 U

See notes at end of table.

Table D-2 (Continued)
Summary of Surface Soil Analytical Results
Target Compound List Semivolatile Organics
Study Area 9

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

Identifier	09B00101	09S00100	09S00100D	09S00200	09S00300	09S00400
Sampling Date	30-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94
4-Chlorophenyl-phenylether	400 U	380 U	380 U	380 U	390 U	390 U
4-Methylphenol	400 U	380 U	380 U	380 U	390 U	390 U
4-Nitroaniline	990 U	960 U	950 U	960 U	980 U	970 U
4-Nitrophenol	990 U	960 U	950 U	960 U	980 U	970 U
Acenaphthene	400 U	280 J	270 J	380 U	390 U	390 U
Acenaphthylene	400 U	380 U	380 U	380 U	390 U	390 U
Anthracene	400 U	360 J	430	380 U	390 U	390 U
Benzo(a)anthracene	400 U	1000	1300	380 U	390 U	390 U
Benzo(a)pyrene	400 U	780	940	380 U	390 U	390 U
Benzo(b)fluoranthene	400 U	930	1100	380 U	390 U	390 U
Benzo(g,h,i)perylene	400 U	540	610	380 U	390 U	390 U
Benzo(k)fluoranthene	400 U	640 J	930 J	380 U	390 U	390 U
bis(2-Chloroethoxy)methane	400 U	380 U	380 U	380 U	390 U	390 U
bis(2-Chloroethyl)ether	400 U	380 U	380 U	380 U	390 U	390 U
bis(2-Ethylhexyl)phthalate	400 U	380 U	380 U	380 U	390 U	390 U
Butylbenzylphthalate	400 U	380 U	380 U	380 U	390 U	390 U
Carbazole	400 U	240 J	260 J	380 U	390 U	390 U
Chrysene	400 U	920	1200	380 U	390 U	390 U
Di-n-butylphthalate	490	380 U	350 J	340 J	360 J	320 J
Di-n-octylphthalate	400 U	380 U	380 U	380 U	390 U	390 U
Dibenz(a,h)anthracene	400 U	380 U	380 U	380 U	390 U	390 U
Dibenzofuran	400 U	140 J	150 J	380 U	390 U	390 U
Diethylphthalate	400 U	380 U	380 U	380 U	390 U	390 U
Dimethylphthalate	400 U	380 U	380 U	380 U	390 U	390 U

See notes at end of table.

Table D-2 (Continued)
Summary of Surface Soil Analytical Results
Target Compound List Semivolatile Organics
Study Area 9

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

Identifier	09B00101	09S00100	09S00100D	09S00200	09S00300	09S00400
Sampling Date	30-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94
Fluoranthene	400 U	1900	2400	380 U	390 U	390 U
Fluorene	400 U	240 J	240 J	380 U	390 U	390 U
Hexachlorobenzene	400 U	380 U	380 U	380 U	390 U	390 U
Hexachlorobutadiene	400 U	380 U	380 U	380 U	390 U	390 U
Hexachlorocyclopentadiene	400 U	380 U	380 U	380 U	390 U	390 U
Hexachloroethane	400 U	380 U	380 U	380 U	390 U	390 U
Indeno(1,2,3-cd)pyrene	400 U	530	630	380 U	390 U	390 U
Isophorone	400 U	380 U	380 U	380 U	390 U	390 U
N-Nitroso-di-n-propylamine	400 U	380 U	380 U	380 U	390 U	390 U
N-Nitrosodiphenylamine [1]	400 U	380 U	380 U	380 U	390 U	390 U
Naphthalene	400 U	140 J	380 U	380 U	390 U	390 U
Nitrobenzene	400 U	380 U	380 U	380 U	390 U	390 U
Pentachlorophenol	990 U	960 U	950 U	960 U	980 U	970 U
Phenanthrene	400 U	1600	1900	380 U	390 U	390 U
Phenol	400 U	380 U	380 U	380 U	390 U	390 U
Pyrene	400 U	1600	2000	380 U	390 U	390 U

[1] Cannot be separated from diphenylamine

Notes: Analytical results expressed in micrograms per kilogram (µg/kg) soil dry weight.

U = Compound not detected at the contract-required quantitation limit (CRQL).
J = Reported concentration is an estimated quantity.

Table D-3
Summary of Surface Soil Analytical Results
Target Compound List Pesticides/PCBs
Study Area 9

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

Identifier	09B00101	09S00100	09S00100D	09S00200	09S00300	09S00400
Sampling Date	30-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94
4,4'-DDD	3.8 U	780 U	1500 U	7.6 U	7.8 U	39 NJ
4,4'-DDE	3.8 U	780 U	1500 U	7.6 U	7.8 U	130
4,4'-DDT	3.8 U	700 J	1300 J	7.6 U	7.8 U	48 J
Aldrin	2 U	400 U	790 U	3.9 U	2 U	20 U
alpha-BHC	2 U	400 U	790 U	3.9 U	2 U	20 U
alpha-Chlordane	2 U	2300	2700	7.2	7.7 J	19 J
Aroclor-1016	38 U	7800 U	15000 U	76 U	39 U	390 U
Aroclor-1221	78 U	16000 U	31000 U	150 U	79 U	790 U
Aroclor-1232	38 U	7800 U	15000 U	76 U	39 U	390 U
Aroclor-1242	38 U	7800 U	15000 U	76 U	39 U	390 U
Aroclor-1248	38 U	7800 U	15000 U	76 U	78 U	390 U
Aroclor-1254	38 U	7800 U	15000 U	76 U	78 U	390 U
Aroclor-1260	38 U	7800 U	15000 U	76 U	78 U	390 U
beta-BHC	2 U	400 U	790 U	3.9 U	2 U	20 U
delta-BHC	2 U	400 U	790 U	3.9 U	2 U	20 U
Dieldrin	3.8 U	780 U	1500 U	7.6 U	7.8 U	39 U
Endosulfan I	2 U	400 U	790 U	3.9 U	2 U	20 U
Endosulfan II	3.8 U	780 U	1500 U	7.6 U	7.8 U	39 U
Endosulfan sulfate	3.8 U	780 U	1500 U	7.6 U	7.8 U	39 U
Endrin	3.8 U	780 U	1500 U	7.6 U	7.8 U	39 U
Endrin aldehyde	3.8 U	780 U	1500 U	7.6 U	7.8 U	39 U
Endrin ketone	3.8 U	780 U	1500 U	7.6 U	7.8 U	39 U
gamma-BHC (Lindane)	2 U	400 U	790 U	3.9 U	2 U	20 U
gamma-Chlordane	2 U	2400	2900	3.3 J	5.6	15 J

See notes at end of table.

Table D-3 (Continued)
Summary of Surface Soil Analytical Results
Target Compound List Pesticides/PCBs
Study Area 9

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

Identifier	09B00101	09S00100	09S00100D	09S00200	09S00300	09S00400
Sampling Date	30-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94
Heptachlor	2 U	400 U	790 U	3.9 U	2 U	20 U
Heptachlor epoxide	2 U	400 U	790 U	3.9 U	2 U	20 U
Methoxychlor	20 U	4000 U	7900 U	39 U	40 U	200 U
Toxaphene	200 U	40000 U	79000 U	390 U	200 U	2000 U

Notes: Analytical results expressed in micrograms per kilogram (μg/kg) soil dry weight.

U = Compound not detected at the contract-required quantitation limit (CRQL).
J = Reported concentration is an estimated quantity.
N = ??????

Table D-4
Summary of Surface Soil Analytical Results
Herbicides - SW 846 Method 8150
Study Area 9

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

Identifier	09B00101	09S00100	09S00100D	09S00200	09S00300	09S00400
Sampling Date	30-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94
2,4,5-T	23 U	24 U	23 U	23 U	24 U	24 U
2,4-D	120 U	120 U	120 U	110 U	120 U	120 U
2,4-DB	120 U	240 U	240 U	110 U	120 U	120 U
2,4-DP (Dichloroprop)	120 U	120 U	120 U	110 U	120 U	120 U
Dalapon	230 U	240 U	230 U	230 U	240 U	240 U
Dicamba	23 U	24 U	23 U	23 U	24 U	24 U
Dinoseb	23 U	48 U	46 U	23 U	24 U	24 U
MCPA	12000 U	12000 U	12000 U	11000 U	12000 U	12000 U
MCPP	12000 U	12000 U	12000 U	11000 U	12000 U	12000 U
Silvex (2,4,5-TP)	23 U	24 U	23 U	23 U	24 U	24 U

Notes: Analytical results expressed in micrograms per kilogram (µg/kg) soil dry weight.

U = Compound not detected at the quantitation limit (QL).

Table D-5
Summary of Soil Analytical Results
Target Analyte List Metals
Study Area 9

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

Identifier	09B00101	09S00100	09S00100D	09S00200	09S00300	09S00400
Sampling Date	30-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94
Aluminum	4.1 U	660	679	197	145	484
Antimony	4.6 U	4.5 U	4.5 U	4.4 U	4.6 U	4.5 U
Arsenic	0.44 UJ	1.5 U	1.2 U	0.43 U	0.62 U	2.8
Barium	0.67 B	12.8 B	13.4 B	3.4 B	1.9 B	9.8 B
Beryllium	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Cadmium	0.69 U	0.67 U	0.67 U	0.67 U	0.68 U	0.68 U
Calcium	36.1 B	1600	1750	481 B	591 B	17500
Chromium	0.44 U	4.4	3 U	0.61 U	0.62 U	1.7 U
Cobalt	0.71 U	0.69 U	0.69 U	0.69 U	0.7 U	0.7 U
Copper	0.41 U	4.8 B	4 B	2.7 B	0.69 B	8
Iron	43.7 U	347 J	243 J	135 J	200 J	422 J
Lead	0.2 U	18.7	23.4	2.9	3	9.5
Magnesium	4.4 U	41.2 B	32.4 B	23.3 B	16.3 B	166 B
Manganese	0.24 U	6.2	4.4	1.4 B	1.4 B	12.3
Mercury	0.01 U	0.08	0.08	0.02 B	0.01 U	0.02 B
Nickel	2.2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.4 B
Potassium	71.4 U	70.1 U	69.7 U	68.9 U	70.8 U	87 U
Selenium	0.47 U	0.46 U	0.46 U	0.45 U	0.63 U	0.58 U
Silver	0.61 U	0.88 B	0.84 B	0.59 U	0.61 U	0.6 U
Sodium	3.7 U	3.6 U	3.6 U	3.6 U	3.7 U	3.7 U
Thallium	0.31 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Vanadium	0.63 U	1.3 B	0.61 U	0.61 U	0.62 U	2.1 B

See notes at end of table.

Table D-5 (Continued)
Summary of Soil Analytical Results
Target Analyte List Metals
Study Area 9

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

Identifier	09B00101	09S00100	09S00100D	09S00200	09S00300	09S00400
Sampling Date	30-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94	26-Aug-94
Zinc	1.1 U	45.7	34.3	2.3 U	1.5 U	13.2

Notes: Analytical results expressed in milligrams per kilogram (mg/kg) soil dry weight.

U = Analyte not detected at the reporting limit.
B = Reported concentration is between the instrument detection limit (IDL) and the contract-required detection limit (CRDL).
J = Reported concentration is an estimated quantity.

Table D-6
Summary of Groundwater Analytical Results
Low Detection Limit Volatile Organics
Study Area 9

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

Identifier	09G00101		09G00201		09G00301		09G00401	
Sampling Date	16-Sep-94		20-Sep-94		20-Sep-94		20-Sep-94	
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-chloropropane	1	U	1	U	1	U	1	U
1,2-Dibromoethane	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	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
1,3-Dichlorobenzene	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	1	U	1	U	1	U	1	U
2-Butanone		R		R		R	3	J
2-Hexanone		R		R		R		R
4-Methyl-2-pentanone	5	U	5	U	5	U	5	U
Acetone		R		R		R		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	0.3	UJ
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	2	
Methylene chloride	1	U	1	U	1	U	1	U
Styrene	1	U	1	U	1	U	1	U
Tetrachloroethene	1	U	1	U	1	U	1	U
Toluene	1	U	1	U	1	U	0.4	J
trans-1,2-Dichloroethene	1	U	1	U	1	U	1	U

See notes at end of table.

Table D-6 (Continued)
Summary of Groundwater Analytical Results
Low Detection Limit Volatile Organics
Study Area 9

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

Identifier	09G00101	09G00201	09G00301	09G00401
Sampling Date	16-Sep-94	20-Sep-94	20-Sep-94	20-Sep-94
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U
Xylene (total)	1 U	1 U	1 U	8

Notes: Analytical results expressed in micrograms per liter ($\mu g/\ell$).

U = Compound not detected at the quantitation limit.
J = Reported concentration is an estimated quantity.
R = Data rejected during data validation.

Table D-7
Summary of Groundwater Analytical Results
Target Compound List Semivolatile Organics
Study Area 9

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

Identifier	09G00101	09G00201	09G00301	09G00401
Sampling Date	16-Sep-94	20-Sep-94	20-Sep-94	20-Sep-94
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 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	5 J
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	25
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	2 J
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 UJ	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

See notes at end of table.

Table D-7 (Continued)
Summary of Groundwater Analytical Results
Target Compound List Semivolatile Organics
Study Area 9

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

Identifier	09G00101	09G00201	09G00301	09G00401
Sampling Date	16-Sep-94	20-Sep-94	20-Sep-94	20-Sep-94
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	1
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	9 J
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

[1] Cannot be separated from diphenylamine

Notes: Analytical results expressed in micrograms per liter ($\mu g/\ell$).

U = Compound not detected at the contract-required quantitation limit (CRQL).
J = Reported concentration is an estimated quantity.

Low detection limit analytical results indicated for Benzo(a)pyrene were obtained using High Pressure Liquid Chromatography, Method 8310(MOD). For sample 09G00101, reported concentration for this compound is from sample reanalysis (the same values were obtained from the original analysis).

Low detection limit analytical results indicated for bis(2-Ethylhexyl)phthalate, hexachlorobenzene, and pentachlorophenol were obtained using Selective Ion Monitoring chromatography.

Table D-8
Summary of Groundwater Analytical Results
Target Compound List Pesticides/PCBs
Study Area 9

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

Identifier	09G00101	09G00201	09G00301	09G00401
Sampling Date	16-Sep-94	20-Sep-94	20-Sep-94	20-Sep-94
4,4'-DDT	0.5 U	0.1 UJ	0.1 U	1 U
4,4'-DDE	0.5 U	0.1 UJ	0.1 U	1 U
4,4'-DDD	0.5 U	0.1 UJ	0.1 U	1 U
Aldrin	0.25 U	0.05 UJ	0.05 U	0.5 U
alpha-Chlordane	0.25 U	0.05 UJ	0.05 U	1.2
alpha-BHC	0.25 U	0.05 UJ	0.05 U	0.5 U
Aroclor-1242	2.5 U	0.5 UJ	0.5 U	10 U
Aroclor-1248	2.5 U	0.5 UJ	0.5 U	10 U
Aroclor-1221	2.5 U	0.5 UJ	0.5 U	10 U
Aroclor-1016	2.5 U	0.5 UJ	0.5 U	10 U
Aroclor-1254	2.5 U	0.5 UJ	0.5 U	10 U
Aroclor-1232	2.5 U	0.5 UJ	0.5 U	10 U
Aroclor-1260	2.5 U	0.5 UJ	0.5 U	10 U
beta-BHC	0.25 U	0.05 UJ	0.05 U	0.5 U
delta-BHC	0.25 U	0.05 UJ	0.05 U	0.5 U
Dieldrin	0.5 U	0.1 UJ	0.1 U	1 U
Endosulfan II	0.5 U	0.1 UJ	0.1 U	1 U
Endosulfan I	0.25 U	0.05 UJ	0.05 U	0.5 U
Endosulfan sulfate	0.5 U	0.1 UJ	0.1 U	1 U
Endrin ketone	0.5 U	0.1 UJ	0.1 U	1 U
Endrin	0.5 U	0.1 UJ	0.1 U	1 U
Endrin aldehyde	0.5 U	0.1 UJ	0.1 U	1 U
gamma-BHC (Lindane)	0.25 U	0.05 UJ	0.05 U	0.5 U
gamma-Chlordane	0.25 U	0.05 UJ	0.05 U	1.4
Heptachlor	0.25 U	0.05 UJ	0.05 U	0.5 U
Heptachlor epoxide	0.25 U	0.05 UJ	0.05 U	0.5 U
Methoxychlor	2.5 U	0.5 UJ	0.5 U	5 U
Toxaphene	25 U	5 UJ	5 U	50 U

Notes: Analytical results expressed in micrograms per liter ($\mu g/\ell$).

U = Compound not detected at the contract-required quantitation limit (CRQL).
J = Reported concentration is an estimated quantity.

Table D-9
Summary of Groundwater Analytical Results
Herbicides - SW 846 Method 8150
Study Area 9

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

Identifier	09G00101	09G00201	09G00301	09G00401
Sampling Date	16-Sep-94	20-Sep-94	20-Sep-94	20-Sep-94
2,4,5-T	0.5 U	0.5 U	0.5 U	0.5 U
2,4-D	2.5 U	2.5 U	2.5 U	2.5 U
2,4-DB	2.5 U	2.5 U	2.5 U	10 U
2,4-DP (Dichloroprop)	2.5 U	2.5 U	2.5 U	2.5 U
Dalapon	5 U	5 U	5 U	5 U
Dicamba	0.5 U	0.5 U	0.5 U	1.5
Dinoseb	0.5 U	0.5 U	0.5 U	2.5 U
MCPA	250 U	250 U	250 U	250 U
MCPP	250 U	250 U	250 U	250 U
Silvex (2,4,5-TP)	0.5 U	0.5 U	0.5 U	0.5 U
Endothall	9 U	9 U	9 U	9 U

Notes: Analytical results expressed in micrograms per liter ($\mu g/\ell$).

Analysis for Endothall performed using EPA Method 548.1.

U = Compound not detected at the quantitation limit (QL).

Table D-10
Summary of Groundwater Analytical Results
Target Analyte List Metals
Study Area 9

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

Identifier	09G00101	09G00201	09G00301	09G00401
Sampling Date	16-Sep-94	20-Sep-94	20-Sep-94	20-Sep-94
Aluminum	1090	858	476	368
Antimony	1.2 U	1.2 U	1.2 U	3.4 B
Arsenic	10 J	2.6 J	1.9 UJ	231
Barium	32.6 B	0.74 B	3.4 B	4.5 B
Beryllium	0.21 UJ	0.21 UJ	0.21 UJ	0.21 UJ
Cadmium	2.9 U	2.9 U	2.9 U	2.9 U
Calcium	34900	5670	12800	53600
Chromium	1.8 U	1.8 U	1.8 U	1.8 U
Cobalt	3 U	3 U	3 U	3.7 B
Copper	1.7 U	1.7 U	1.7 U	36.2
Iron	676	85.7 B	189	1740
Lead	1.4 B	44.9 J	36.2	6
Magnesium	2570 B	1740 B	4970 B	1550 B
Manganese	15.9	0.52 U	0.59 B	84.7
Mercury	0.06 U	0.06 U	0.06 U	0.07 B
Nickel	10.8 B	9.2 U	9.2 U	9.2 U
Potassium	3830 B	3300 B	2210 B	3220 B
Selenium	2 UJ	2 UJ	2 UJ	2 UJ
Silver	2.6 U	2.6 U	2.6 U	2.6 U
Sodium	6090	3560 B	4240 B	4470 B
Thallium	1.3 U	1.3 U	1.3 U	1.4 J
Vanadium	5 U	2.7 U	2.7 U	2.7 U
Zinc	9 U	1.6 U	3 U	35.8

Notes: Analytical results expressed in micrograms per liter ($\mu g/\ell$).

U = Analyte not detected at the reporting limit.
B = Reported concentration is between the instrument detection limit (IDL) and the contract-required detection limit (CRDL).
J = Reported concentration is an estimated quantity.