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# FINAL BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORTS STUDY AREA 25 NTC ORLANDO FL

7/1/1997

ABB ENVIRONMENTAL

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# BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT

## STUDY AREA 25

## NAVAL TRAINING CENTER ORLANDO, FLORIDA

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

JULY 1997

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

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# BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT STUDY AREA 25

## NAVAL TRAINING CENTER ORLANDO, FLORIDA

Unit Identification Code: N65928

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

Prepared by:

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

Prepared for:

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

Barbara Nwokike, Code 1873, Engineer-in-Charge

July 1997

CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

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

DATE: July 15, 1997

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

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

(DFAR 252.227-7036)

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# GLOSSARY

| | |
|---|---|
| ABB-ES | ABB Environmental Services, Inc. |
| bls | below land surface |
| DDE | dichlorodiphenyldichloroethene |
| DDT | dichlorodiphenyltrichloroethane |
| DWTP | domestic wastewater treatment plant |
| FDEPG | Florida Department of Environmental Protection groundwater guidance |
| FID | flame ionization detector |
| GPR | ground penetrating radar |
| mgd | million gallons per day |
| mg/kg | milligrams per kilogram |
| $\mu g/\ell$ | micrograms per liter |
| $\mu g/kg$ | micrograms per kilogram |
| OPT | Orlando Partnering Team |
| ppm | parts per million |
| RBC | risk-based concentration |
| SA | study area |
| SCG | soil cleanup goal |
| TAL | target analyte list |
| TCL | target compound list |

# 1.0 STUDY AREA 25, FORMER DOMESTIC WASTEWATER TREATMENT PLANT (DWTP)

This report contains information gathered as a result of site screening activities conducted at Study Area (SA) 25 (Figure 1). In March of 1997, after the review of site screening results, the Orlando Partnering Team (OPT) concluded that the site required no further action under the Installation Restoration program. However, the OPT also concluded that secondary standards exceedances for manganese in groundwater would require notification to future land users that use of the shallow groundwater as either a potable or irrigation water source might be objectionable for aesthetic reasons (odor, color).

The following section includes a brief background summary for SA 25. Further details can be found in the Site Screening Plan (ABB Environmental Services, Inc. [ABB-ES], 1995).

1.1 SA 25, BACKGROUND AND CONDITIONS. Before the DWTP was shut down in 1987, it had a capacity of 1.35 million gallons per day (mgd) and had been in operation since the 1940s (Figure 1). The facility included a settling basin, several sludge beds, and two hyacinth ponds. The area now consists of a grassy field, portions of which have been used for vehicle storage.

1.2 SA 25, INVESTIGATION SUMMARY. The investigation at SA 25 consisted of surface and subsurface soil sampling and monitoring well installation with groundwater sampling. Eight surface soil samples (from seven locations), five subsurface soil samples, and three groundwater samples were submitted for full suite Contract Laboratory program target compound list (TCL) and target analyte list (TAL) analyses, in accordance with U.S. Environmental Protection Agency (USEPA) Level IV data quality objectives.

A ground-penetrating radar (GPR) survey had also been planned to determine the location of former hyacinth ponds and a former settling basin. A field decision was made to eliminate the GPR survey because the locations for these former structures could be determined with aerial photographs.

1.2.1 Surface Soil Sampling Of the five soil borings that were completed (25B001 through 25B005), surface soil samples were collected at three locations within a former sludge bed (25B001, 25B004, and 25B005). Four additional surface soil samples were collected at surface soil locations 25B006 through 25B009, the site of two former hyacinth ponds. No positive flame ionization (FID) detector readings were observed during the surface soil sampling.

1.2.2 Subsurface Soil Sampling Five soil borings were completed (25B001 through 25B005) during the investigation. The locations for these explorations were a former sludge bed (25B001, 25B004 and 25B005), a former settling basin (25B002), and a former hyacinth pond (25B003). Subsurface soil samples were collected from each of these soil borings at depths ranging from 2.5 to 8 feet below land surface (bls). A subsurface soil sample was collected from each of the three soil borings located within the former sludge beds from the interval immediately above the water table (25B00102 [6 to 8 feet bls], 25B00402 [2.5 to 3 feet bls], and 25B00502 [5 to 7 feet bls]).

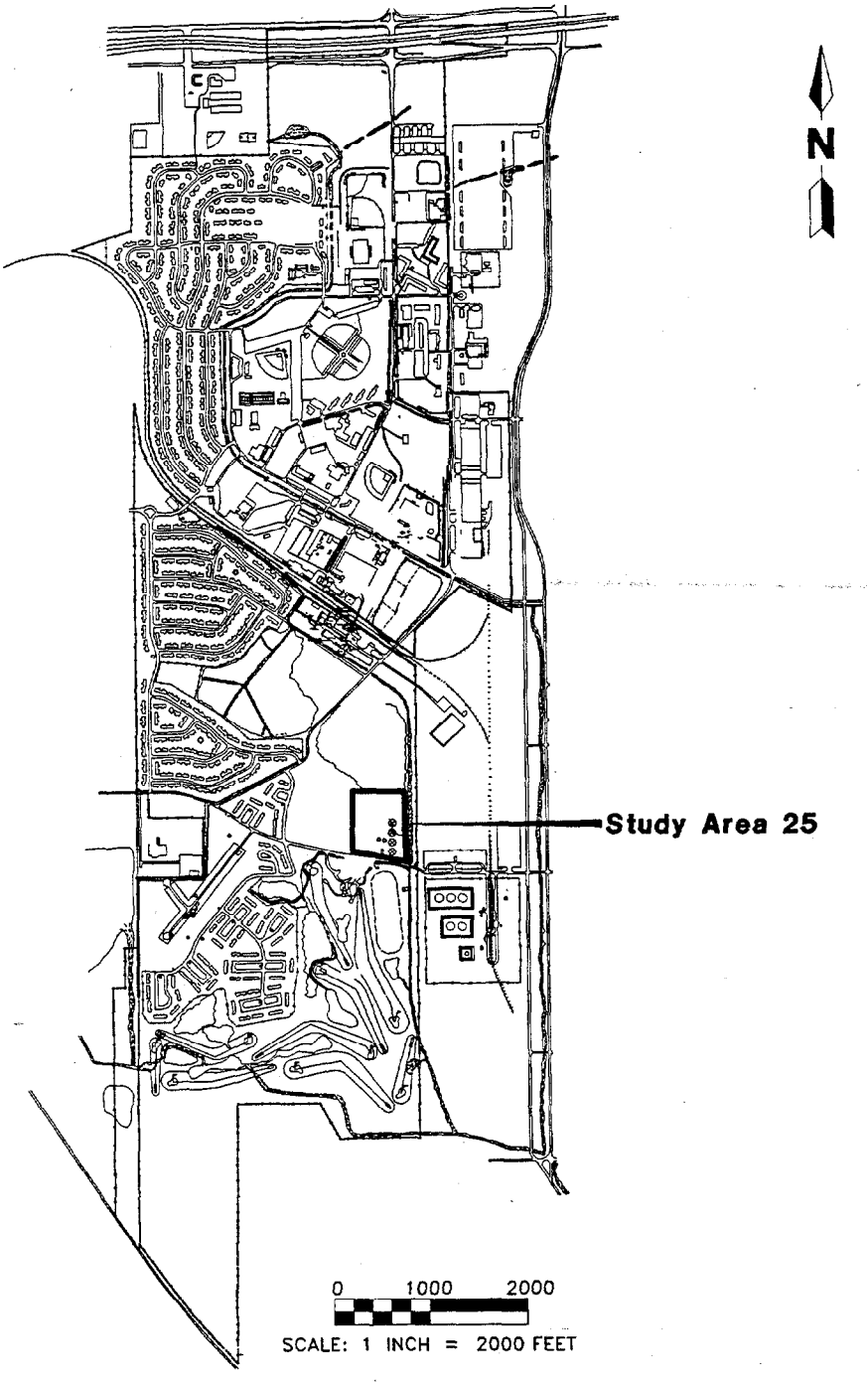


**FIGURE 1**
**LOCATION OF STUDY AREA 25**

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FID readings were observed in soil borings 25B002 and 25B003 during the drilling operations. In soil boring 25B002, FID readings varied from 5 to 10 parts per million (ppm) in the depth range 6 to 12 feet bls. In soil boring 25B003, FID detections from 15 to 25 ppm were noted. Subsurface soil samples from both soil borings were collected from a depth of 6 feet bls.

1.2.3 Groundwater Monitoring Well Installation and Sampling Three of the five soil borings (25B001 through 25B003) were completed as monitoring wells (OLD-25-01 through OLD-25-03). The locations for the monitoring wells were a former sludge bed (25B001), a former settling basin (25B002), and a former hyacinth pond (25B003). Groundwater samples were collected from each of the three monitoring wells. The soil boring logs, monitoring well installation diagrams, and groundwater sample field data sheets are presented as Appendix A.

1.3 SA 25, RESULTS. The results of site screening investigations at SA 25 are discussed below. Analytical results from the surface soil, subsurface soil, and groundwater collected from SA 25 are presented as Summary of Positive Detections Tables in Appendix B as Tables B-1 through B-3. Exceedances of background or regulatory guidance concentrations (shaded on the Summary of Positive Detections Tables) are displayed in chem-boxes near their respective explorations on Figure 2. Complete analytical results for soil and groundwater are presented in Appendix C as Tables C-1 and C-2.

1.3.1 Surface Soil Analytical Results Compounds detected in surface soil samples include volatile organics, semivolatile organics, pesticides and inorganics (Table B-1). Volatile organic detections consisting of methylene chloride appear to be artifacts of the sampling and/or laboratory analytical process. Semivolatile organic detections consist primarily of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)pyrelene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene. The residential risk-based concentration (RBC) for benzo(a)pyrene (88 micrograms per kilogram [$\mu$g/kg]) was exceeded in sample 25B00701. Pesticide detections include 4,4-dichlorodiphenyldichloroethene (DDE), 4,4-dichlorodiphenyltrichloroethane (DDT), alpha-chlordane, gamma-chlordane, dieldrin, heptachlor and heptachlor epoxide. The residential RBC and SCG for dieldrin was exceeded in two samples (25B00101 and 25B00801) at 75 and 240 $\mu$g/kg, respectively, compared with a residential RBC of 40 $\mu$g/kg and soil cleanup goal (SCG) of 70 $\mu$g/kg. Heptachlor epoxide was detected in 25B00501 at 97 $\mu$g/kg, exceeding the residential RBC of 70 $\mu$g/kg, but not the SCG of 100 $\mu$g/kg.

Leachability-based SCG values do not apply because no organic compounds were present in groundwater above Florida Department of Environmental Protection groundwater guidance (FDEPG) concentrations (see Subsection 1.3.3, below).

1.3.2 Subsurface Soil Analytical Results Compounds detected in subsurface soil samples include volatile organics, semivolatile organics, pesticides and inorganics (Table B-2). Because there is no groundwater contamination, leaching SCGs do not apply to the comparison discussed below. Volatile organic detections of 2-butanone, acetone, and carbon disulfide appear to be artifacts of the sampling and/or laboratory analytical process and do not exceed their respective residential RBCs. Semivolatile organic compounds detected at location 25B00402 include anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno-(1,2,3-cd)pyrene, phenanthrene and pyrene. Of the polynuclear aromatic hydro-

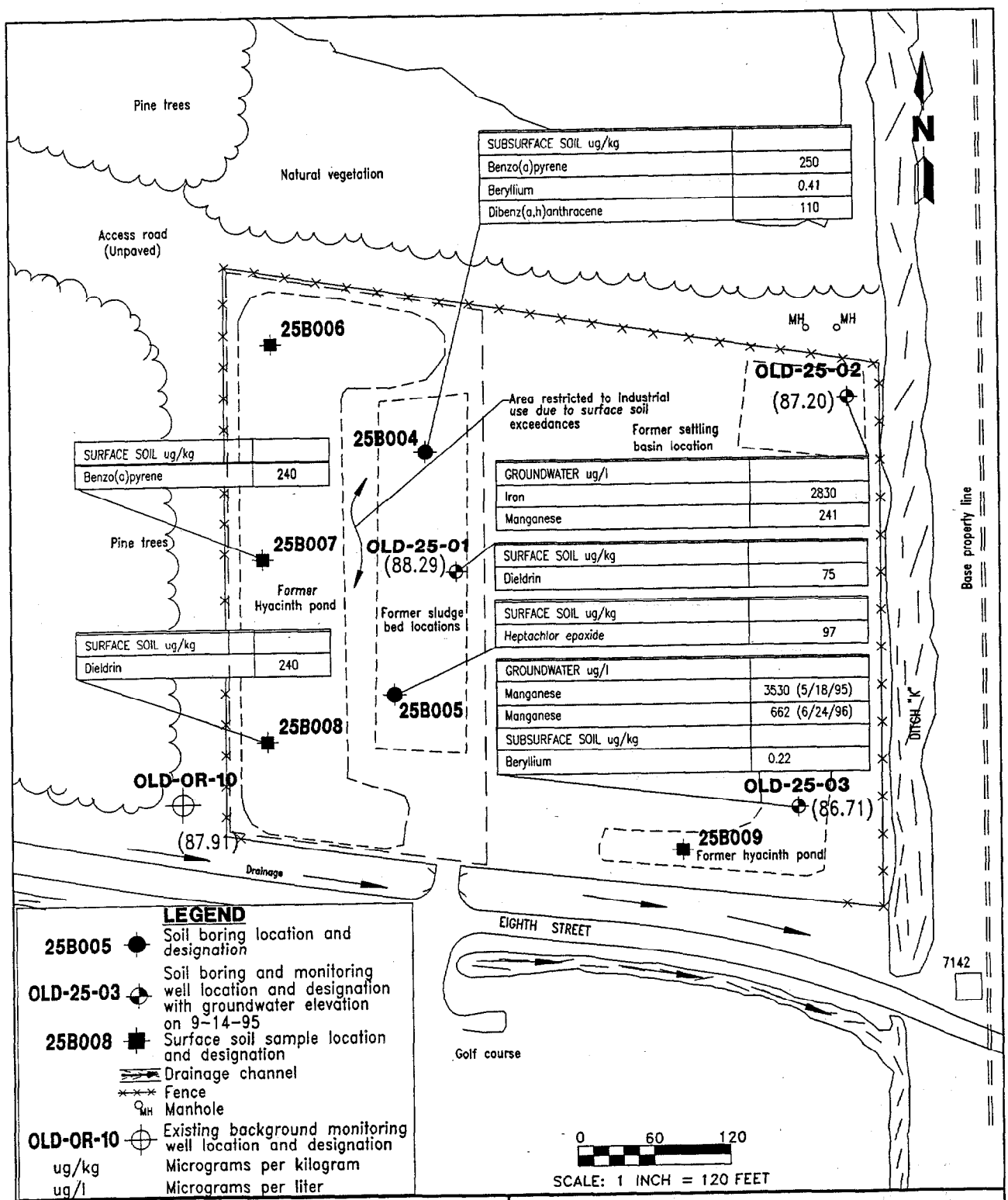


**FIGURE 2**

**SOIL BORING AND MONITORING WELL LOCATIONS, STUDY AREA 25, MCCOY ANNEX, FORMER DOMESTIC WASTEWATER TREATMENT PLANT (DWTP)**

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carbon compounds detected at 25B00402, benzo(a)pyrene and dibenz(a,h)anthracene exceed the corresponding residential RBCs. Pesticide detections include 4,4-DDE, 4,4-DDT, alpha chlordane and gamma chlordane, but at concentrations below the respective RBCs. All inorganic detections do not exceed their respective residential RBCs, except for beryllium at 25B00301 (0.22 milligrams per kilogram [mg/kg]) and 25B00402 (0.41 mg/kg), exceeding the residential RBC of 0.15 mg/kg.

As with surface soils, leachability-based SCG values do not apply because no organic compounds were present in groundwater above FDEPG concentrations (see Subsection 1.3.3, below).

1.3.3 Groundwater Analytical Results There are no organic detections in groundwater (Table B-3). The concentration of iron in well OLD-25-02 exceeds both the background screening and FDEPG secondary standard values. Manganese concentrations in wells OLD-25-02 and OLD-25-03 also exceed both the background screening and FDEPG secondary standard.

Because of OPT concerns regarding secondary standards exceedances for manganese, well OLD-25-03 was resampled on June 24, 1996, and submitted for analysis of TAL metals. The reported manganese concentration decreased in the resampling event from 3,530 to 662 micrograms per liter ($\mu g/\ell$).

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

Based on records reviews and interviews, the site is the former location of a settling pond, several sludge drying beds, and two hyacinth ponds associated with a former DWTP. The secondary standard for iron was exceeded in well OLD-25-02 (2,830 $\mu g/\ell$ versus a background screening concentration of 1,227 $\mu g/\ell$), and the secondary standard for manganese was exceeded in wells OLD-25-02 and OLD-25-03. In well OLD-25-03, the Florida secondary standard for manganese was exceeded by more than an order of magnitude in two rounds of sampling (3,530 [initial sampling] and 662 $\mu g/\ell$ [resampling] versus a Florida secondary standard of 50 $\mu g/\ell$). However, other TAL metals in groundwater did not exceed screening criteria, suggesting that past site use may not have been a factor contributing to the observed exceedances. Surface and subsurface soil concentrations of these analytes did not exceed regulatory criteria.

Analytes exceeding Florida secondary standards should also be compared with RBCs for tapwater published by the USEPA, Region III. The tapwater guidance concentrations for iron and manganese are 11,000 and 840 $\mu g/\ell$, respectively. Groundwater parameters measured during sampling were within normal limits: pH varied from 6.2 to 6.9, temperature varied from 74.1 to 77.0 degrees Fahrenheit, conductivity from 750 to 1,100 micromhos per centimeter, and turbidity from 1 to 11 nephelometric turbidity units. During the resampling of well OLD-25-03, the pH was somewhat elevated with a value of 8. ABB-ES concludes that the iron concentrations that exceed secondary standards are likely naturally occurring and do not pose a risk to human health or the environment. The presence of manganese at concentrations up to 10 times the secondary standard may be related to the former use of the site as a DWTP. However, ABB-ES concludes that the observed concentrations of these analytes do not pose a risk to human health or the environment.

1.4 SA 25, CONCLUSIONS AND RECOMMENDATIONS. Based on available information and site screening data, it is concluded that site screening activities identified minimal soil contamination in the surface soil at SA 25. There are benzo(a)pyrene and dieldrin exceedances of residential SCGs or RBCs in surface soil in the western former hyacinth pond and the former sludge drying bed. Therefore, it is recommended that the western portions of SA 25 be restricted to industrial use in an area beginning at the southwest corner of the SA, extending north from that point along the western fence line to the northwest corner of the SA. The area would extend from that point east southeasterly along the fence line approximately 210 feet to a point 10 feet east of the projection of the eastern margin of the sludge drying bed, from that point south to the drainage ditch north of Eighth Street, and from that point west to the beginning (Figure 2). However, future users of this property should be aware that the presence of iron and manganese at the measured concentrations may render the groundwater from the surficial aquifer objectionable as a potable or irrigation water source. ABB-ES recommends that SA 25 be made eligible for transfer and that the site be reclassified from 7/Grey to 4/Dark Green.

The undersigned members of the Base Realignment and Closure team concur with the findings and recommendations of the preceding investigation.

| STUDY AREA 25 | |
|---|---|
| Nancy Rodriguez<br>U.S. Environmental Protection Agency, Region IV | 8/6/97<br>Date |
| John Mitchell<br>Florida Department of Environmental Protection | 8/6/97<br>Date |
| Wayne J. Wenzel<br>U.S. Department of the Navy | 8/6/97<br>Date |

## REFERENCES

ABB Environmental Services, Inc. (ABB-ES). 1995. *Site Screening Plan, Groups I through V Study Areas and Miscellaneous Additional Sites, Naval Training Center (NTC), Orlando, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina.

ABB-ES. 1996. *Base Realignment and Closure Tank Management Plan, Naval Training Center, Orlando, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina.

# APPENDIX A

## BORING LOGS, MONITORING WELL INSTALLATION DIAGRAMS, AND GROUNDWATER SAMPLE FIELD DATA SHEETS

| | | | |
|---|---|---|---|
| **Project:** BRAC NTC, Group III Site Screening | **Well ID:** S.A. 25 | | **Boring ID:** OLD-25-01 |
| **Client:** SOUTHDIVNAVFACENGCOM | **Contractor:** GEOTEK | | **Job No.:** CTO-107 |
| **Northing:** | **Easting:** | **Date started:** 05/09/95 | **Completd:** 05/09/95 |
| **Method:** Hollow stem auger | **Casing dia.:** 6.25" | **Screened int.:** 10 ft. | **Protection level:** D |
| **TOC elev.:** Ft. | **Type of OVM.:** Porta FID | **Total dpth:** 13.5Ft. | **Dpth to** ∇ 7 Ft. |
| **ABB Rep.:** M. Hawes | **Well development date:** PVC | | **Site:** |

| Depth Ft. | Laboratory Sample ID. | Sample | Recovery | Headspace (ppm) | Soil/Rock Description and comments | Lithologic symbol | Soil class. | Blows/6-in. | Well diag. |
|---|---|---|---|---|---|---|---|---|---|
| | 25B00101 (0-1') | | | | SAND: Gray-black, silty, fine-medium grain | | SM | | |
| | | | | | SAND: Black-brown, silty, fine-medium grain, moist at 5 feet | | | | |
| | | | | 0 | | | | 2,1 | |
| 5 | | | 95% | | | | | 1,1 | |
| | 25B00102 (6-8') | | | 0 | | | | 1,3 | |
| | | | 95% | | SAND: Tan, silty, fine-medium grain | | | 3,4 | ∇ |
| | | | | 0 | | | | 3,4 | |
| | | | 95% | | | | | 6,7 | |
| 10 | | | | 0 | | | | 5,5 | |
| | | | 90% | | | | | 9,9 | |
| | | | | 0 | | | | 5,9 | |
| | | | 90% | | | | | 11,15 | |
| 15 | | | | | | | | | |

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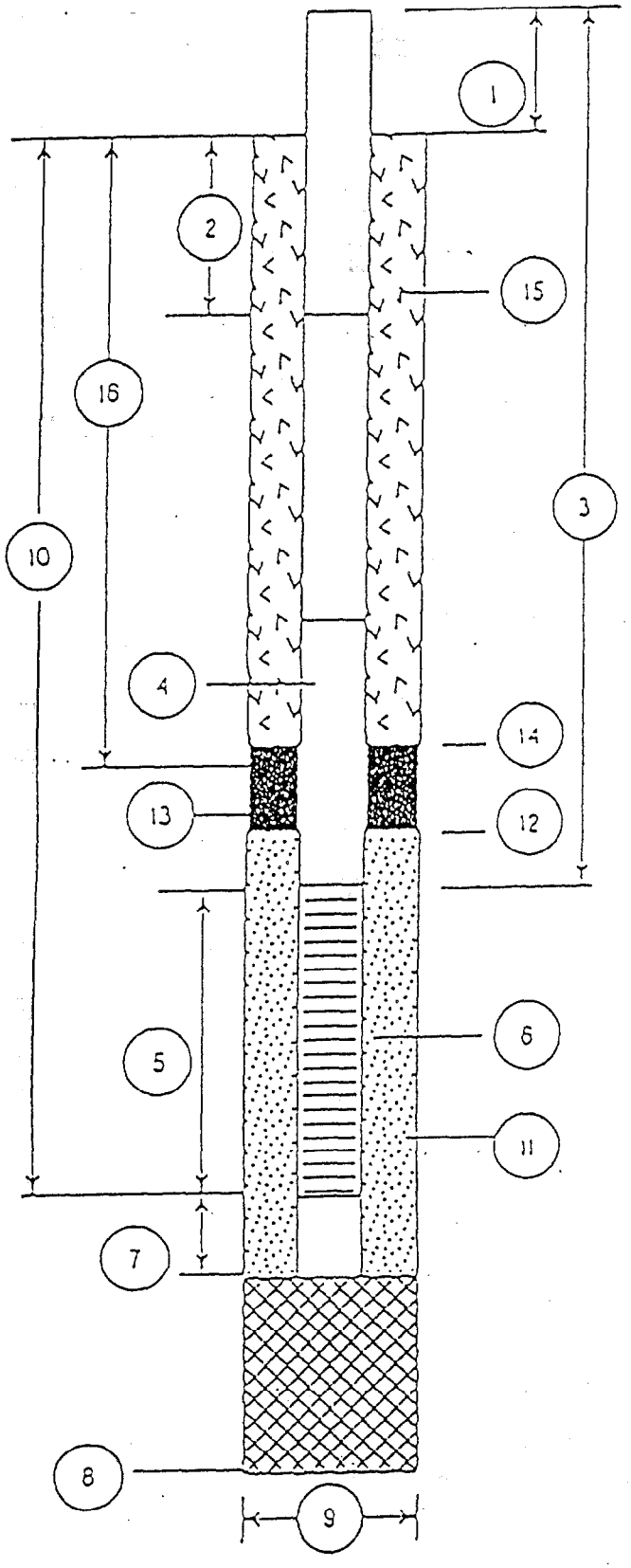
DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SC.




# WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-25-01

DATE OF INSTALLATION: 5/9/95

1. Height of Casing above ground: 0
2. Depth to first Coupling: 3

   Coupling Interval Depths: 10'
3. Total Length of Riser Pipe: 3'
4. Type of Riser Pipe: 2" 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: 12.5'
11. Type of Screen Filter: 20/30 Silica Sand

    Quantity Used: 450 lb  Size: ____
12. Depth to Top of Filter: 2'
13. Type of Seal: Bentonite

    Quantity Used: 20 lb
14. Depth to Top of Seal: 1.5'
15. Type of Grout: Portland Cement

    Grout Mixture:

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

OLD-25-01

# GROUNDWATER SAMPLE FIELD DATA

Project: SITE SCREENING
Point of Interest: S.A. 25
Project Number: CTO 107
Date: 5/18/95
Sample Location ID: 25400101
Time: Start: 15:50 End: 16:30
Signature of Sampler: HUFFMAN/NASH

## Water Level/Well Data

Well Depth 12.5 Ft. — ___ Measured ✓ Historical — ✓ Top of Well ___ Top of Protective Casing ___ ___
Well Riser Stick-up (from ground) 0 Ft. — Protective Casing/Well Difference 0. Ft. — Protective Casing 0 Ft.

Depth to Water N.R Ft. — Well Material: ✓ PVC ___ SS ___ — Well Locked?: ✓ Yes ___ No — Well Dia. ✓ 2 inch ___ 4 inch ___ 6 inch — Water Level Equip. Used: ✓ Elect. Cond. Probe ___ Float Activated ___ Press. Transducer

Height of Water Column ___ Ft. X ___ 16 Gal/Ft. (2 in) ___ 65 Gal/Ft. (4 in) ___ 1.5 Gal/Ft. (6 in) ___ Gal/Ft. (__ in) = ___ Gal/Vol; 5. Total Gal Purged

Well Integrity: Prot. Casing Secure — Yes ✓ No ___; Concrete Collar Intact — Yes ✓ No ___; Other ___

FLOW RATE = .2 TO .5 LPM

## Equipment Documentation

Purging/Sampling Equipment Used:

| (✓ If Used For) Purging | Sampling | | Equipment ID |
|---|---|---|---|
| ___ | ___ | Peristaltic Pump | ___ |
| ___ | ___ | Submersible Pump | ___ |
| ___ | ___ | Bailer | ___ |
| ___ | ___ | PVC/Silicon Tubing | ___ |
| ✓ | ✓ | Teflon/Silicon Tubing | ___ |
| ___ | ___ | Auger | ___ |
| ___ | ___ | Hand Pump | ___ |
| ___ | ___ | In-line Filter | ___ |
| ___ | ___ | Press/Vac Filter | ___ |
| ___ | ___ | | ___ |

Decontamination Fluids Used: (✓ All That Apply at Location)

- ___ Methanol (100%)
- ___ 25% Methanol/75% ASTM Type II water
- ✓ Deionized Water
- ___ Liquinox Solution
- ___ Hexane
- ___ $HNO_3$/D.I. Water Solution
- ___ Potable Water
- ___ None
- ✓ ALCONOX
- ✓ ISOPROPYL

## Field Analysis Data

Ambient Air VOC 0 ppm Well Mouth 0 ppm Field Data Collected ___ In-line ✓ In Container

Sample Observations: ___ Turbid ___ Colored ___ Clear ___ Odor ___ Cloudy

| Purge Data | @ 1.25 Gal. | @ 2.5 Gal. | @ 3.75 Gal. | @ 5. Gal. | @ ___ Gal. |
|---|---|---|---|---|---|
| Temperature, Deg. C | 75.4 | 75.0 | 74.4 | 74.8 | |
| pH, units | 6.12 | 6.19 | 6.12 | 6.19 | |
| Specific Conductivity (umhos/cm. @ 25 Deg. C) | 435. | 436. | 425. | 420. | |
| Oxidation - Reduction, +/- mv | | | | | |
| Dissolved Oxygen, ppm | | | | | |
| TURBIDITY | 2.1 | 1.4 | 1.2 | 0.8 | |
| TIME | 1555 | 1605 | 1615 | 1625 | |

## Sample Collection Requirements (✓ If Required at this Location)

| Analytical Parameter | ✓ If Field Filtered | Preservation Method | Volume Required | ✓ If Sample Collected | Sample Bottle IDs |
|---|---|---|---|---|---|
| VOA | ___ | HCL | ___ | ___ | ___/___/___/___ |
| SVOA | ___ | 4°C | ___ | ___ | ___/___/___/___ |
| Pest/PCB | ___ | 4°C | ___ | ___ | ___/___/___/___ |
| Inorganics | ___ | $HNO_3$ | ___ | ___ | ___/___/___/___ |
| Explosives | ___ | 4°C | ___ | ___ | ___/___/___/___ |
| TPH | ___ | $H_2SO_4$ | ___ | ___ | ___/___/___/___ |
| TOC | ___ | $H_2SO_4$ | ___ | ___ | ___/___/___/___ |
| Nitrate | ___ | $H_2SO_4$ | ___ | ___ | ___/___/___/___ |

Notes:
LOW-FLOW PURGE
FINAL HTV = 0.8

| | | | |
|---|---|---|---|
| **Project:** BRAC NTC, Group III Site Screening | **Well ID:** S.A. 25 | | **Boring ID:** OLD-25-02 |
| **Client:** SOUTHDIVNAVFACENGCOM | **Contractor:** GEOTEK | | **Job No.:** CTO-107 |
| **Northing:** | **Easting:** | **Date started:** 05/10/95 | **Completd:** 05/10/95 |
| **Method:** Hollow stem auger | **Casing dia.:** 6.25" | **Screened int.:** 10 ft. | **Protection level:** D |
| **TOC elev.:** Ft. | **Type of OVM.:** Porta FID | **Total dpth:** 14Ft. | **Dpth to** ∇ 7 Ft. |
| **ABB Rep.:** M. Hawes | **Well development date:** PVC | | **Site:** |

| Depth Ft. | Laboratory Sample ID. | Sample | Recovery | Headspace (ppm) | Soil/Rock Description and comments | Lithologic symbol | Soil class. | Blows/6-in. | Well diag. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | SAND: Brown-black, silty, fine-medium grain, some organics, concrete debris scattered | | SM | | |
| | | | | | SAND: Brown-black, silty, fine-medium grain, some organics, limerock gravel scattered | | | 10,8 | |
| 5 | | | 0 | | | | | 3,5 | |
| | 25B00201 (6-8') | | | 10 | | | | 6,9 | |
| | | | 60% | | SAND: Cream-tan, fine grain, some silts, good sorting, good to moderate rounding | | | 13,15 | ∇ |
| | | | | 5 | | | | 3,4 | |
| | | | 70% | | | | | 6,5 | |
| 10 | | | | 0 | | | | 3,6 | |
| | | | 70% | | | | | 5,4 | |
| | | | | 5 | | | | 3,5 | |
| | | | 95% | | | | | 5,5 | |
| 15 | | | | | | | | | |

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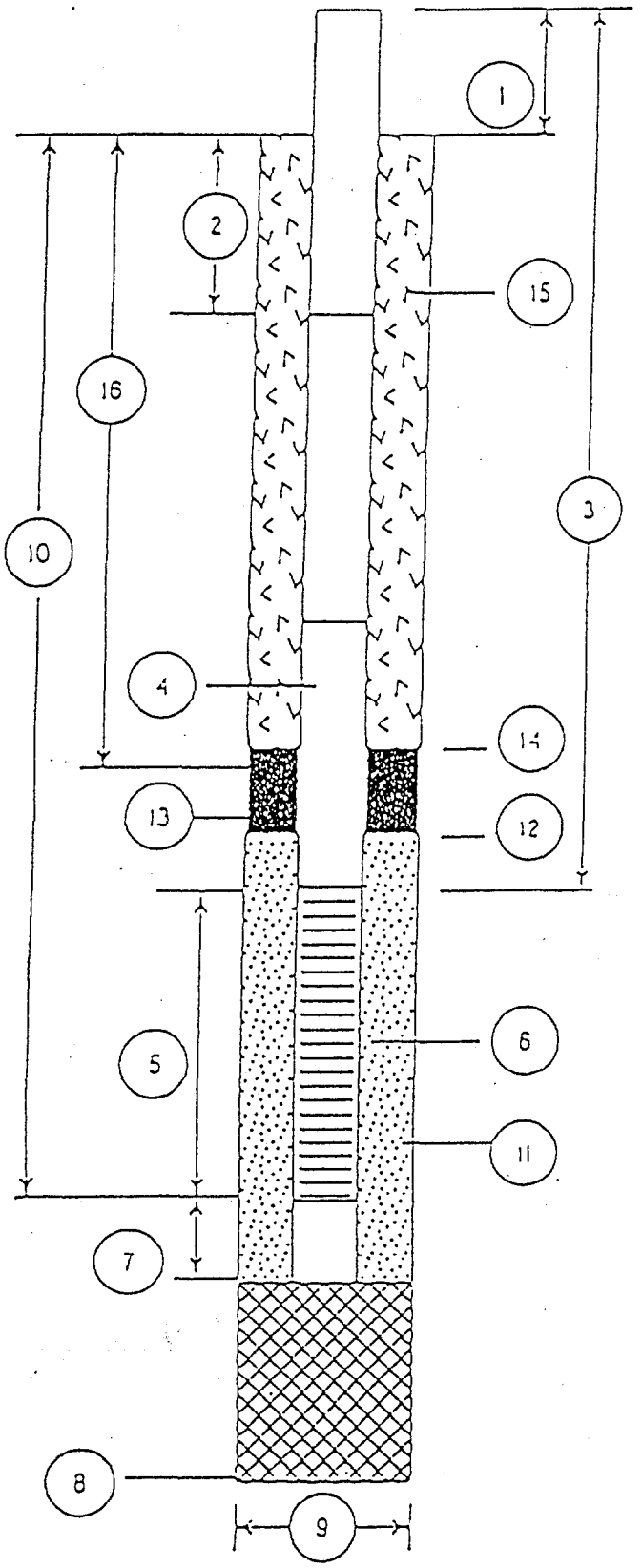
DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SC.

# WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-25-02

DATE OF INSTALLATION: 5/10/95




1. Height of Casing above ground: 0
2. Depth to first Coupling: 3'
   Coupling Interval Depths: 10'
3. Total Length of Riser Pipe: 3'
4. Type of Riser Pipe: 2" 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: 14'
9. Diameter of Boring: 6.25"
10. Depth to Bottom of Screen: 12.5'
11. Type of Screen Filter: 20/30 Silica Sand
    Quantity Used: 420 lb  Size: ____
12. Depth to Top of Filter: 2'
13. Type of Seal: Bentonite
    Quantity Used: 20 lb
14. Depth to Top of Seal: 1.5'
15. Type of Grout: Portland Cement
    Grout Mixture:
    Method of Placement: ____
16. Tot. Depth of 6 in. Steel Casing: N/A

OLD-25-02

# GROUNDWATER SAMPLE FIELD DATA

Project: SITE SCREENING
Point of Interest: S.A. 25
Project Number: CTO 107
Date: 5/18/95
Sample Location ID: 25G00201
Time: Start: 16:50 End: 17:35
Signature of Sampler: GBG/JDN

## Water Level/Well Data

Well Depth _____ Ft. ___ Measured ✓ Historical

✓ Top of Well ___ Top of Protective Casing

Well Riser Stick-up (from ground) 0. Ft.

Protective Casing/Well Difference 0. Ft.

Protective Casing _____ Ft.

Depth to Water 5.93 Ft.

Well Material: ✓ PVC ___ SS

Well Locked?: ✓ Yes ___ No

Well Dia. ✓ 2 inch ___ 4 inch ___ 6 inch

Water Level Equip. Used: ✓ Elect. Cond. Probe ___ Float Activated ___ Press. Transducer

Height of Water Column _____ Ft. X ___ .16 Gal/Ft. (2 in) ___ .65 Gal/Ft. (4 in) ___ 1.5 Gal/Ft. (6 in) ___ Gal/Ft. (___ in) = _____ Gal/Vol _____ Total Gal Purged

| Well Integrity: | Yes | No |
|---|---|---|
| Prot. Casing Secure | ✓ | |
| Concrete Collar Intact | ✓ | |
| Other _____ | | |

FLOW RATE - 1 LPM

## Equipment Documentation

Purging/Sampling Equipment Used:

| (✓ If Used For) Purging | Sampling | | Equipment ID |
|---|---|---|---|
| ✓ | ✓ | Peristaltic Pump | |
| | | Submersible Pump | |
| | | Bailer | |
| | | PVC/Silicon Tubing | |
| ✓ | ✓ | Teflon/Silicon Tubing | |
| | | Airlift | |
| | | Hand Pump | |
| | | In-line Filter | |
| | | Press/Vac Filter | |

Decontamination Fluids Used:

(✓ All That Apply at Location)

___ Methanol (100%)
___ 25% Methanol/75% ASTM Type II water
✓ Deionized Water
___ Liquinox Solution
___ Hexane
___ $HNO_3$/D.I. Water Solution
___ Potable Water
___ None
✓ ALCONOX
✓ ISOPROPYL

## Field Analysis Data

Ambient Air VOC 0 ppm Well Mouth 5 ppm Field Data Collected ___ In-line ✓ In Container

Sample Observations: ___ Turbid ✓ Clear ___ Cloudy ___ Colored ___ Odor

| Purge Data | @ 1.25 Gal. | @ 2.5 Gal. | @ 3.75 Gal. | @ ____ Gal. | @ ____ Gal. |
|---|---|---|---|---|---|
| Temperature, Deg. C | 76.8 | 75.0 | 76.8 | | |
| pH, units | 6.18 | 6.22 | 6.20 | | |
| Specific Conductivity (umhos/cm. @ 25 Deg. C) | 700. | 750. | 750. | | |
| Oxidation - Reduction, +/- mv | | | | | |
| Dissolved Oxygen, ppm | | | | | |
| TURBIDITY | 7.9 | 8.8 | 10.6 | | |
| TIME | 1655 | 1705 | 1715 | | |

## Sample Collection Requirements (✓ If Required at this Location)

| Analytical Parameter | ✓ If Field Filtered | Preservation Method | Volume Required | ✓ If Sample Collected | Sample Bottle IDs |
|---|---|---|---|---|---|
| VOA | | HCL | | | / / / |
| SVOA | | 4°C | | | / / / |
| Pest/PCB | | 4°C | | | / / / |
| Inorganics | | $HNO_3$ | | | / / / |
| Explosives | | 4°C | | | / / / |
| TPH | | $H_2SO_4$ | | | / / / |
| TOC | | $H_2SO_4$ | | | / / / |
| Nitrate | | $H_2SO_4$ | | | / / / |

Notes:

LOW-FLOW PURGE (.2-.5L/min)

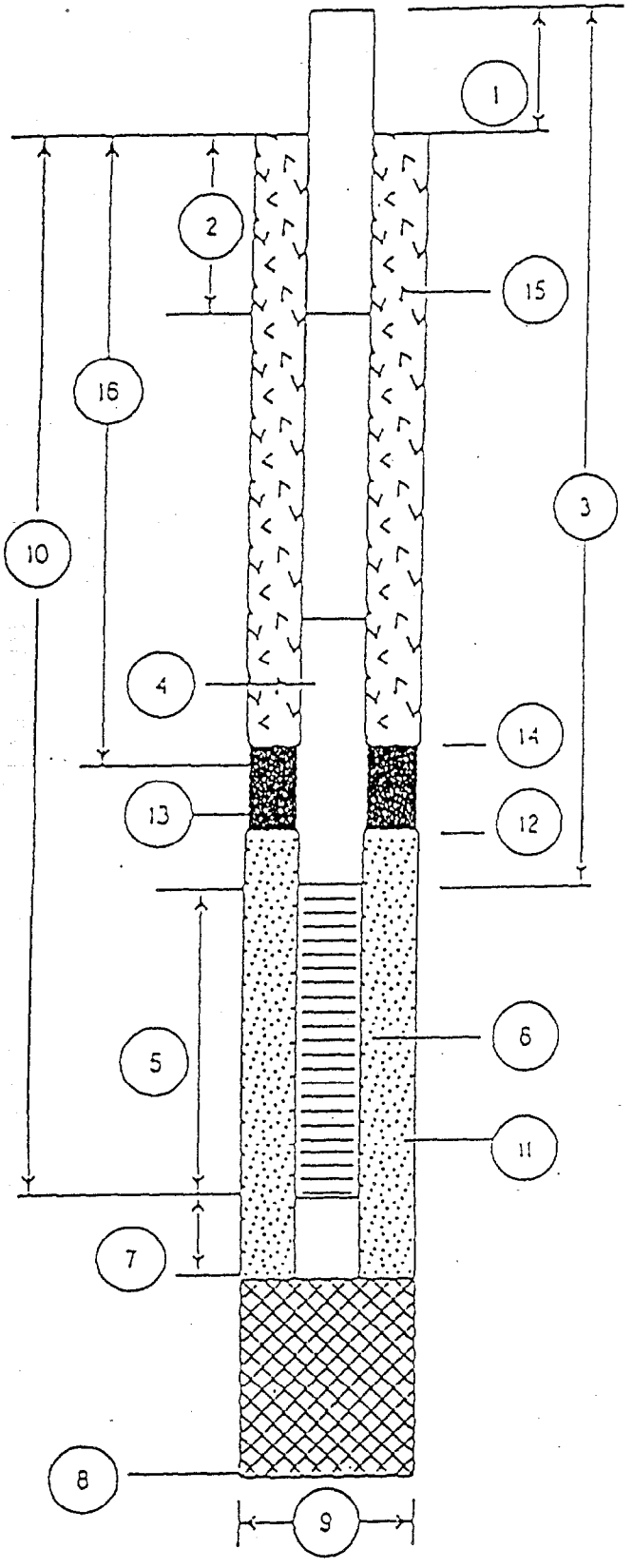
| | | | |
|---|---|---|---|
| **Project:** BRAC NTC, Group III Site Screening | **Well ID:** S.A. 25 | | **Boring ID:** OLD-25-03 |
| **Client:** SOUTHDIVNAVFACENGCOM | **Contractor:** GEOTEK | | **Job No.:** CTO-107 |
| **Northing:** | **Easting:** | **Date started:** 05/10/95 | **Completd:** 05/10/95 |
| **Method:** Hollow stem auger | **Casing dia.:** 6.25" | **Screened int.:** 10 ft. | **Protection level:** D |
| **TOC elev.:** Ft. | **Type of OVM.:** Porta FID | **Total dpth:** 14Ft. | **Dpth to** ▽ 7 Ft. |
| **ABB Rep.:** M. Hawes | **Well development date:** PVC | | **Site:** |

| Depth Ft. | Laboratory Sample ID. | Sample | Recovery | Headspace (ppm) | Soil/Rock Description and comments | Lithologic symbol | Soil class. | Blows/6-in. | Well diag. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | SAND: Brown-black, silty, fine-medium grain | | SM | | |
| | | | | | SAND: Brown-black, silty, fine-medium grain, limerock gravel found | | | 10,5 | |
| 5 | | | 0 | | | | | 6,6 | |
| | 25B00301 (6-8') | | | 25 | | | | 10,12 | |
| | | | 50% | | SAND: Cream-tan, fine grain, some silts, good to moderate rounding, good sorting | | | 12,15 | ▽ |
| | | | | 25 | | | | 4,5 | |
| | | | 70% | | | | | 6,4 | |
| 10 | | | | 0 | | | | 4,6 | |
| | | | 80% | | | | | 7,7 | |
| | | | | 15 | | | | 3,5 | |
| | | | 95% | | | | | 5,5 | |
| 15 | | | | | | | | | |

 **ABB ENVIRONMENTAL SERVICES, INC.**

DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SC.




# WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-25-03

DATE OF INSTALLATION: 5/10/95

1. Height of Casing above ground: 0
2. Depth to first Coupling: 3'
   Coupling Interval Depths: 10'
3. Total Length of Riser Pipe: 3'
4. Type of Riser Pipe: 2" 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: 14'
9. Diameter of Boring: 6.25"
10. Depth to Bottom of Screen: 12.5'
11. Type of Screen Filter: 20/30 Silica Sand
    Quantity Used: ~~500 lb~~ 450 lb Size: ____
12. Depth to Top of Filter: 2'
13. Type of Seal: Bentonite
    Quantity Used: 20 lb
14. Depth to Top of Seal: 1.5'
15. Type of Grout: Portland Cement
    Grout Mixture:
    Method of Placement: ____
16. Tot. Depth of 6 in. Steel Casing: N/A

OLD-25-03

# GROUNDWATER SAMPLE FIELD DATA

Project: SITE SCREENING
Point of Interest: S.A. 25
Project Number: CTO 107
Date: 5/18/95
Sample Location ID: 25G0030
Time: Start: 17:00 End: 18:10
Signature of Sampler: GIRARDOT

## Water Level/Well Data

Well Depth 12.50 Ft. — ___ Measured / ✓ Historical — ✓ Top of Well / ___ Top of Protective Casing

Well Riser Stick-up (from ground) 0. Ft.

Protective Casing/Well Difference 0. Ft.

Protective Casing 0 Ft.

Depth to Water N.R. Ft.

Well Material: ✓ PVC / ___ SS

Well Locked?: ✓ Yes / ___ No

Well Dia.: ✓ 2 inch / ___ 4 inch / ___ 6 inch

Water Level Equip. Used: ✓ Elect. Cond. Probe / ___ Float Activated / ___ Press. Transducer

Height of Water Column N.R. Ft. X ___ 16 Gal/Ft. (2 in) / ___ 65 Gal/Ft. (4 in) / ___ 1.5 Gal/Ft. (6 in) / ___ Gal/Ft. (___ in) = [ ___ Gal/Vol / 6.25 Total Gal Purged ]

Well Integrity: Yes / No
Prot. Casing Secure: ✓ / ___
Concrete Collar Intact: ✓ / ___
Other: ___ / ___

FLOW RATE - .5 LPM

## Equipment Documentation

Purging/Sampling Equipment Used:

| (✓ If Used For) Purging | Sampling | | Equipment ID |
|---|---|---|---|
| ✓ | ✓ | Peristaltic Pump | |
| | | Submersible Pump | |
| | | Bailer | |
| | | PVC/Silicon Tubing | |
| ✓ | ✓ | Teflon/Silicon Tubing | |
| | | Airlift | |
| | | Hand Pump | |
| | | In-line Filter | |
| | | Press/Vac Filter | |

Decontamination Fluids Used: (✓ All That Apply at Location)

- ___ Methanol (100%)
- ___ 25% Methanol/75% ASTM Type II water
- ✓ Deionized Water
- ___ Liquinox Solution
- ___ Hexane
- ___ $HNO_3$/D.I. Water Solution
- ___ Potable Water
- ___ None
- ✓ HLCONOX
- ✓ ISOPROPYL

## Field Analysis Data

Ambient Air VOC 0 ppm Well Mouth 0 ppm

Field Data Collected: ___ In-line / ✓ In Container

Sample Observations: ___ Turbid / ___ Clear / ___ Cloudy / ___ Colored / ___ Odor

| Purge Data | @ 3.75 Gal. | @ 5.00 Gal. | @ 6.25 Gal. | @ ___ Gal. | @ ___ Gal. |
|---|---|---|---|---|---|
| Temperature, Deg. C | 73.9 | 74.6 | 74.1 | | |
| pH, units | 6.72 | 6.79 | 6.91 | | |
| Specific Conductivity (umhos/cm. @ 25 Deg. C) | 1100. | 1100. | 1100 | | |
| Oxidation - Reduction, +/- mv | | | | | |
| Dissolved Oxygen, ppm | | | | | |
| TURBIDITY | 1.9 | 1.4 | 1.2 | | |
| TIME | 1730 | 1740 | 1750 | | |

## Sample Collection Requirements (✓ If Required at this Location)

| Analytical Parameter | ✓ If Field Filtered | Preservation Method | Volume Required | ✓ If Sample Collected | Sample Bottle IDs |
|---|---|---|---|---|---|
| VOA | | HCL | | | / / / |
| SVOA | | 4°C | | | / / / |
| Pest/PCB | | 4°C | | | / / / |
| Inorganics | | $HNO_3$ | | | / / / |
| Explosives | | 4°C | | | / / / |
| TPH | | $H_2SO_4$ | | | / / / |
| TOC | | $H_2SO_4$ | | | / / / |
| Nitrate | | $H_2SO_4$ | | | / / / |

Notes:
LOW-FLOW PURGE
FINAL NTU = 1.2

# GROUNDWATER SAMPLE FIELD DATA

Project: NTC-ORLANDO
Point of Interest: OLD-25-03
Project Number: 8545.10
Date: 6/24/96
Sample Location ID: 27G00302 (27H00302)
Time: Start: 1400 End: 1600
Signature of Sampler: J. Mattell FOL WDO

## Water Level/Well Data

Well Depth 12 Ft. — ___ Measured / X Historical

X Top of Well / ___ Top of Protective Casing

Well Riser Stick-up (from ground) — Ft.

Protective Casing/Well Difference — Ft.

Protective Casing — Ft.

Depth to Water 3.51 Ft.

Well Material: X PVC / ___ SS

Well Locked?: X Yes / ___ No

Well Dia. X 2 inch / ___ 4 inch / ___ 6 inch

Water Level Equip. Used: X Elect. Cond. Probe / ___ Float Activated / ___ Press. Transducer

Height of Water Column 8 Ft. X X .16 Gal/Ft. (2 in.) / ___ .65 Gal/Ft. (4 in.) / ___ 1.5 Gal/Ft. (6 in.) / ___ Gal/Ft. (__ in.) = 1.6 Gal/Vol; NA* Total Gal Purged

Well Integrity: Prot. Casing Secure — Yes ✓; Concrete Collar Intact — Yes ✓; Other — No

* PANTY PUMP - TOTAL NOT NOTED

## Equipment Documentation

Purging/Sampling Equipment Used:

| (✓ If Used For) Purging | Sampling | | Equipment ID |
|---|---|---|---|
| X | ✓ | Peristaltic Pump | |
| | | Submersible Pump | |
| | | Bailer | |
| | | PVC/Silicon Tubing | |
| | | Teflon/Silicon Tubing | |
| | | Airlift | |
| | | Hand Pump | |
| | ✓ | In-line Filter | |
| | | Press/Vac Filter | |

Decontamination Fluids Used: (✓ All That Apply at Location)

- ___ Methanol (100%)
- ___ 25% Methanol/75% ASTM Type II water
- X Deionized Water
- X Liquinox Solution
- ___ Hexane
- ___ $HNO_3$/D.I. Water Solution
- X Potable Water
- ___ None

## Field Analysis Data

Ambient Air VOC Ø ppm Well Mouth Ø ppm

Field Data Collected: ___ In-line / ✓ In Container

Sample Observations: ___ Turbid / X Clear / ___ Cloudy / ___ Colored / ___ Odor

| Purge Data | @ NA Gal. | @ NA Gal. | @ NA Gal. | @ NA Gal. | @ NA Gal. |
|---|---|---|---|---|---|
| TIME | 1425 | 1445 | — | 1447 | 1458 |
| Temperature, Deg. C | 26 | 25 | — | 25 | 25.0 |
| pH, units | 7 | 8 | — | 8 | 8 |
| Specific Conductivity (umhos/cm. @ 25 Deg. C.) | 1150 | 1030 | — | 1030 | 1040 |
| Oxidation - Reduction, +/- mv | — | — | — | — | — |
| Dissolved Oxygen, ppm | — | — | — | — | — |
| TURBIDITY | 4.90 | 4.16 | — | 2.82 | 2.47 |

## Sample Collection Requirements (✓ If Required at this Location)

| Analytical Parameter | ✓ If Field Filtered | Preservation Method | Volume Required | ✓ If Sample Collected | Sample Bottle IDs |
|---|---|---|---|---|---|
| VOA | | HCL | | | / / / |
| SVOA | | 4OC | | | / / / |
| Pest/PCB | | 4OC | | | / / / |
| Inorganics * | ✓ | $HNO_3$ | X 500 ML Poly | ✓ | 35 / H / 003 / 02 |
| ~~Explosives~~ | | ~~4°C~~ HNO3 | X 500 ML Poly | ✓ | 25 / G / 003 / 02 |
| TPH | | $H_2SO_4$ | | | / / / |
| TOC | | $H_2SO_4$ | | | / / / |
| Nitrate | | $H_2SO_4$ | | | / / / |

Notes:
* SAMPLED FOR FILTERED/
NON FILTERED METALS

# APPENDIX B

## SUMMARY OF DETECTIONS IN SOIL AND GROUNDWATER ANALYTICAL RESULTS

B-1 Summary of Detections in Surface Soil Analytical Results
B-2 Summary of Detections in Subsurface Soil Analytical Results
B-3 Summary of Detections in Groundwater Analytical Results

# TABLE B-1

## SUMMARY OF DETECTIONS IN SURFACE SOIL ANALYTICAL RESULTS

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results

Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Identifier | Background Screening [1] | SCG [2] | RBC [3] for Residential Soil | RBC [3] for Industrial Soil | 25B00101 | | 25B00401 | | 25B00401D | | 25B00501 | | 25B00601 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sampling Date** | | | | | 5/9/95 | | 5/2/95 | | 5/2/95 | | 5/2/95 | | 5/2/95 | |
| **Feet bls** | | | | | 1 | | 1 | | 1 | | 1 | | 1 | |
| **Volatile Organics, ug/kg** | | | | | | | | | | | | | | |
| 2-Butanone | | 2,200,000 | 47,000,000 n | 1,000,000,000 n | | | | | | | | | | |
| Acetone | | 260,000 | 7,800,000 n | 200,000,000 n | | | | | | | | | | |
| Carbon disulfide | | 5,200 | 7,800,000 n | 200,000,000 n | | | | | | | | | | |
| Methylene chloride | | 16,000 | 85,000 c | 760,000 c | | | | | | | | | 14 | J |
| **Semivolatile Organics, ug/kg** | | | | | | | | | | | | | | |
| Anthracene | | 200,000,000 | 23,000,000 n | 610,000,000 n | | | | | | | | | | |
| Benzo(a)anthracene | | 1,400 | 880 c | 7,800 c | | | | | | | | | | |
| Benzo(a)pyrene | | 100 | 88 c | 780 c | | | | | | | | | | |
| Benzo(b)fluoranthene | | 1,400 | 880 c | 7,800 c | | | | | | | | | | |
| Benzo(g,h,i)perylene | | 14,000 | 2,300,000 n | 61,000,000 n | | | | | | | | | | |
| Benzo(k)fluoranthene | | 14,000 | 8,800 c | 78,000 c | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | | 48,000 | 46,000 c | 410,000 c | | | | | | | 150 | J | | |
| Chrysene | | 140,000 | 88,000 c | 780,000 c | | | | | | | | | | |
| Dibenz(a,h)anthracene | | 100 | 88 c | 780 c | | | | | | | | | | |
| Fluoranthene | | 2,900,000 | 3,100,000 n | 82,000,000 n | | | | | | | | | | |
| Indeno(1,2,3-cd)pyrene | | 1,400 | 880 c | 7,800 c | | | | | | | | | | |
| Phenanthrene | | 1,700,000 | 2,300,000 n | 61,000,000 n | | | | | | | | | | |
| Pyrene | | 2,200,000 | 2,300,000 n | 61,000,000 n | | | | | | | | | | |
| **Pesticides/PCBs, ug/kg** | | | | | | | | | | | | | | |
| 4,4'-DDD | | 4,500 | 2,700 c | 24,000 c | | | | | | | | | | |
| 4,4'-DDE | | 3,000 | 1,900 c | 17,000 c | 3.4 | NJ | 2.5 | J | | | 50 | J | 3.2 | J |
| 4,4'-DDT | | 3,100 | 1,900 c | 17,000 c | | | | | | | 140 | | | |
| Aldrin | | 60 | 38 c | 340 c | | | | | | | | | | |
| alpha-Chlordane | | 800 | 490 c | 4,400 c | 31 | J | 6 | | | | 350 | CD | 8.8 | |
| Dieldrin | | 70 | 40 c | 360 c | 75 | DJ | 18 | | | | 30 | J | 20 | |
| gamma-Chlordane | | 800 | 490 c | 4,400 c | 25 | | 5.3 | | | | 350 | CD | 7.4 | |
| Heptachlor | | 200 | 140 c | 1,300 c | | | | | | | 42 | | | |
| Heptachlor epoxide | | 100 | 70 c | 630 c | 1.7 | J | | | | | 97 | | | |

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results

Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Identifier | Background Screening [1] | SCG [2] | RBC [3] for Residential Soil | RBC [3] for Industrial Soil | 25B00101 | | 25B00401 | | 25B00401D | | 25B00501 | | 25B00601 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | | | | 5/9/95 | | 5/2/95 | | 5/2/95 | | 5/2/95 | | 5/2/95 | |
| Feet bls | | | | | 1 | | 1 | | 1 | | 1 | | 1 | |
| **Inorganics, mg/kg** | | | | | | | | | | | | | | |
| Aluminum | 4,870 | 75,000 | 78,000 n | 1,000,000 n | 2,500 | J | 1,820 | | 1,830 | | 4,170 | | 1,910 | |
| Arsenic | 1.9 | 0.7 | 0.43 c/23 n | 3.8 c/610 n | 1.8 | B | | | | | | | | |
| Barium | 21.6 | 5,200 | 5,500 n | 140,000 n | 4.4 | J | 3.4 | B | 3.4 | B | 16.3 | B | 3.7 | B |
| Beryllium | 0.46 | 0.2 | 0.15 c | 1.3 c | 0.07 | B | | | 0.14 | B | | | | |
| Calcium | 33,568 | ND | 1,000,000 | 1,000,000 | 24,700 | J | 3,320 | J | 5,490 | | 3,120 | J | 5,360 | J |
| Chromium | 7.7 | 290 | 390 n | 10,000 n | 4.3 | | 2.5 | | 1.9 | B | 8.9 | | 2.3 | B |
| Cobalt | ND | 4,700 | 4,700,000 n | 120,000,000 | | | | | | | | | | |
| Copper | 2.6 | ND | 3,100 n | 82,000 n | 1.9 | B | 1.1 | B | 0.98 | B | 50.1 | | 1.4 | B |
| Iron | 843 | ND | 23,000 n | 610,000 n | 350 | J | 233 | J | 222 | | 755 | J | 247 | J |
| Lead | 21.3 | 500 | 400 | 400 | 0.02 | J | 2.2 | | 2.1 | | 6.1 | | 2.7 | |
| Magnesium | 381 | ND | 460,468 | 460,468 | 191 | B | 71.5 | B | 80.1 | B | 68.6 | B | 63.1 | B |
| Manganese | 10.8 | 370 | 1,800 n | 47,000 n | 5.1 | | 1.9 | B | 2 | B | 20.8 | | 2.4 | B |
| Mercury | 0.05 | 23 | 23 n | 610 n | 0.06 | | | | 0.03 | B | 0.39 | | 0.05 | B |
| Nickel | ND | 1,500 | 1,600 n | 41,000 n | | | | | | | | | | |
| Potassium | 210 | ND | 1,000,000 | 1,000,000 | | | 97.1 | B | 117 | B | | | | |
| Selenium | 1.1 | 390 | 390 n | 10,000 n | | | | | | | 0.54 | J | | |
| Silver | ND | 390 | 390 n | 10,000 | | | | | | | 1.5 | B | | |
| Sodium | ND | ND | 1,000,000 | 1,000,000 | | | | | 13.4 | B | | | | |
| Vanadium | 4.9 | 490 | 550 n | 14,000 n | 2.8 | B | 2.1 | B | 1.6 | B | 2.3 | B | 1.6 | B |
| Zinc | 4.6 | 23,000 | 23,000 n | 610,000 n | 2.9 | B | 1.3 | B | 1.3 | B | 35.9 | | 1.5 | B |

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results

Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Identifier | Background Screening [1] | | SCG [2] | | RBC [3] for Residential Soil | | RBC [3] for Industrial Soil | | 25B00701 | | 25B00801 | | 25B00901 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | | | | | | | | 5/2/95 | | 5/2/95 | | 5/2/95 | |
| Feet bls | | | | | | | | | 1 | | 1 | | 1 | |
| **Volatile Organics, ug/kg** | | | | | | | | | | | | | | |
| 2-Butanone | | | 2,200,000 | | 47,000,000 n | | 1,000,000,000 n | | | | | | | |
| Acetone | | | 260,000 | | 7,800,000 n | | 200,000,000 n | | | | | | | |
| Carbon disulfide | | | 5,200 | | 7,800,000 n | | 200,000,000 n | | | | | | | |
| Methylene chloride | | | 16,000 | | 85,000 c | | 760,000 c | | | | | | 5 | J |
| **Semivolatile Organics, ug/kg** | | | | | | | | | | | | | | |
| Anthracene | | | 200,000,000 | | 23,000,000 n | | 610,000,000 n | | | | | | | |
| Benzo(a)anthracene | | | 1,400 | | 880 c | | 7,800 c | | 290 | J | | | | |
| Benzo(a)pyrene | | | 100 | | 88 c | | 780 c | | 240 | J | | | | |
| Benzo(b)fluoranthene | | | 1,400 | | 880 c | | 7,800 c | | 260 | J | | | | |
| Benzo(g,h,i)perylene | | | 14,000 | | 2,300,000 n | | 61,000,000 n | | 190 | J | | | | |
| Benzo(k)fluoranthene | | | 14,000 | | 8,800 c | | 78,000 c | | 260 | J | | | | |
| bis(2-Ethylhexyl)phthalate | | | 48,000 | | 46,000 c | | 410,000 c | | | | | | | |
| Chrysene | | | 140,000 | | 88,000 c | | 780,000 c | | 310 | J | | | | |
| Dibenz(a,h)anthracene | | | 100 | | 88 c | | 780 c | | | | | | | |
| Fluoranthene | | | 2,900,000 | | 3,100,000 n | | 82,000,000 n | | 660 | | | | | |
| Indeno(1,2,3-cd)pyrene | | | 1,400 | | 880 c | | 7,800 c | | 170 | J | | | | |
| Phenanthrene | | | 1,700,000 | | 2,300,000 n | | 61,000,000 n | | 440 | J | | | | |
| Pyrene | | | 2,200,000 | | 2,300,000 n | | 61,000,000 n | | 580 | | | | | |
| **Pesticides/PCBs, ug/kg** | | | | | | | | | | | | | | |
| 4,4'-DDD | | | 4,500 | | 2,700 c | | 24,000 c | | | | | | | |
| 4,4'-DDE | | | 3,000 | | 1,900 c | | 17,000 c | | | | | | 4.5 | |
| 4,4'-DDT | | | 3,100 | | 1,900 c | | 17,000 c | | | | | | 2.9 | J |
| Aldrin | | | 60 | | 38 c | | 340 c | | | | | | | |
| alpha-Chlordane | | | 800 | | 490 c | | 4,400 c | | | | 43 | | 2.3 | |
| Dieldrin | | | 70 | | 40 c | | 360 c | | | | 240 | C | 11 | |
| gamma-Chlordane | | | 800 | | 490 c | | 4,400 c | | | | 34 | | 1.3 | J |
| Heptachlor | | | 200 | | 140 c | | 1,300 c | | | | | | | |
| Heptachlor epoxide | | | 100 | | 70 c | | 630 c | | | | | | | |

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results

Study Area 25

Naval Training Center, Orlando

Orlando, FL

| Identifier | Background Screening [1] | | SCG [2] | | RBC [3] for Residential Soil | | RBC [3] for Industrial Soil | | 25B00701 | | 25B00801 | | 25B00901 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | | | | | | | | 5/2/95 | | 5/2/95 | | 5/2/95 | |
| Feet bls | | | | | | | | | 1 | | 1 | | 1 | |
| **Inorganics, mg/kg** | | | | | | | | | | | | | | |
| Aluminum | 4,870 | | 75,000 | | 78,000 n | | 1,000,000 n | | 2,610 | | 2,110 | | 1,220 | |
| Arsenic | 1.9 | | 0.7 | | 0.43 c/23 n | | 3.8 c/610 n | | | | | | | |
| Barium | 21.6 | | 5,200 | | 5,500 n | | 140,000 n | | 6.1 | B | 4.8 | B | 2.8 | B |
| Beryllium | 0.46 | | 0.2 | | 0.15 c | | 1.3 c | | | | | | 0.07 | B |
| Calcium | 33,568 | | ND | | 1,000,000 | | 1,000,000 | | 4,320 | J | 4,520 | J | 1,210 | |
| Chromium | 7.7 | | 290 | | 390 n | | 10,000 n | | 2.6 | | 4.5 | | 1.8 | B |
| Cobalt | ND | | 4,700 | | 4,700,000 n | | 120,000,000 | | | | | | 0.85 | B |
| Copper | 2.6 | | ND | | 3,100 n | | 82,000 n | | 2.7 | B | 3.3 | B | 0.87 | B |
| Iron | 843 | | ND | | 23,000 n | | 610,000 n | | 449 | J | 341 | J | 150 | |
| Lead | 21.3 | | 500 | | 400 | | 400 | | 2.5 | | 5.6 | | 1.2 | |
| Magnesium | 381 | | ND | | 460,468 | | 460,468 | | 62.2 | B | 89.9 | B | 36.3 | B |
| Manganese | 10.8 | | 370 | | 1,800 n | | 47,000 n | | 2.8 | B | 6.5 | | 1.6 | B |
| Mercury | 0.05 | | 23 | | 23 n | | 610 n | | | | 0.06 | | | |
| Nickel | ND | | 1,500 | | 1,600 n | | 41,000 n | | | | | | | |
| Potassium | 210 | | ND | | 1,000,000 | | 1,000,000 | | | | | | 110 | B |
| Selenium | 1.1 | | 390 | | 390 n | | 10,000 n | | | | | | | |
| Silver | ND | | 390 | | 390 n | | 10,000 | | | | | | | |
| Sodium | ND | | ND | | 1,000,000 | | 1,000,000 | | | | | | 6.2 | B |
| Vanadium | 4.9 | | 490 | | 550 n | | 14,000 n | | 3.6 | B | 2 | B | 0.96 | B |
| Zinc | 4.6 | | 23,000 | | 23,000 n | | 610,000 n | | 1.6 | B | 5.6 | | 1.1 | B |

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results

Study Area 25

Naval Training Center, Orlando

Orlando, FL

**NOTES:**

[1] The background screening value is twice the average of detected concentrations for inorganic analytes.

[2] SCG = Soil Cleanup Goals for Florida (Florida Department of Environmental Protection memorandum, September 29, 1995). Values indicated are from a residential scenario. Chromium values are for Chromium VI.

[3] RBC = Risk-Based Concentration Table, USEPA Region III, March 1997. RBC for chromium is based on chromium VI. RBC for lead is not available, value is Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites (OSWER directive 9355-4-12). For essential nutrients (calcium, magnesium, potassium, and sodium) screening values were derived based on recommended daily allowances (RDAs). RBC for benzo(g,h,i)perylene and phenanthrene are not available, value is based on pyrene. RBC for alpha and gamma-chlordane are based on chlordane.

n = noncarcinogenic pathway
ND = Not determined.
D = Indicates value was determined during a diluted reanalysis.
C = Identification confirmed by gas chromatography/mass spectroscopy
N = Indicates presumptive evidence of the compound.
PCB = polychlorinated biphenyl.
DDD = dichlorodiphenyldichloroethane.
mg/kg = milligrams per kilogram.
OSWER = Office of Solid Waste and Emergency Response.

c = carcinogenic pathway
bls = below land surface
ug/kg = micrograms per kilogram.
J = Reported concentration is an estimated quantity.
DDE = dichlorodiphenyldichloroethene.
DDT = dichlorodiphenyltrichloroethane.
USEPA = U.S. Environmental Protection Agency.

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

Bold/shaded values indicate exceedance of regulatory guidance and background.
All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight; organics in micrograms per kilogram (ug/kg) soil dry weight.
Blank space indicates analyte/compound was not detected at the reporting limit.

# TABLE B-2

## SUMMARY OF DETECTIONS IN SUBSURFACE SOIL ANALYTICAL RESULTS

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results

Study Area 25

Naval Training Center, Orlando

Orlando, FL

| Identifier | Background [1] | SCG [2] | RBC [3] for Residential Soil | RBC [3] for Industrial Soil | 25B00102 | 25B00201 | 25B00301 | 25B00402 | 25B00502 |
|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | | | | 5/9/95 | 5/10/95 | 5/10/95 | 5/10/95 | 5/10/95 |
| Feet bls | | | | | 6 | 6 | 6 | 2.5 | 5 |
| **Volatile Organics, ug/kg** | | | | | | | | | |
| 2-Butanone | | ND | 47,000,000 n | 1,000,000,000 n | | | | 12 J | |
| Acetone | | ND | 7,800,000 n | 200,000,000 n | | 39 | 24 | 110 | |
| Carbon disulfide | | ND | 7,800,000 n | 200,000,000 n | | | | 3 J | |
| Methylene chloride | | ND | 85,000 c | 760,000 c | | | | | |
| **Semivolatile Organics, ug/kg** | | | | | | | | | |
| Anthracene | | ND | 23,000,000 n | 610,000,000 n | | | | 120 J | |
| Benzo(a)anthracene | | ND | 880 c | 7,800 c | | | | 480 | |
| Benzo(a)pyrene | | ND | 88 c | 780 c | | | | **250 J** | |
| Benzo(b)fluoranthene | | ND | 880 c | 7,800 c | | | | 520 | |
| Benzo(g,h,i)perylene | | ND | 2,300,000 n | 61,000,000 n | | | | | |
| Benzo(k)fluoranthene | | ND | 8,800 c | 78,000 c | | | | 330 J | |
| bis(2-Ethylhexyl)phthalate | | ND | 46,000 c | 410,000 c | | | | | |
| Chrysene | | ND | 88,000 c | 780,000 c | | | | 560 | |
| Dibenz(a,h)anthracene | | ND | 88 c | 780 c | | | | **110 J** | |
| Fluoranthene | | ND | 3,100,000 n | 82,000,000 n | | | | 760 | |
| Indeno(1,2,3-cd)pyrene | | ND | 880 c | 7,800 c | | | | 220 J | |
| Phenanthrene | | ND | 2,300,000 n | 61,000,000 n | | | | 530 | |
| Pyrene | | ND | 2,300,000 n | 61,000,000 n | | | | 480 | |
| **Pesticides/PCBs, ug/kg** | | | | | | | | | |
| 4,4'-DDD | | ND | 2,700 c | 24,000 c | | | | 860 D | |
| 4,4'-DDE | | ND | 1,900 c | 17,000 c | | | | 300 D | 3 NJ |
| 4,4'-DDT | | ND | 1,900 c | 17,000 c | | | | 470 D | 11 |
| Aldrin | | ND | 38 c | 340 c | | | | 3.5 J | |
| alpha-Chlordane | | ND | 490 c | 4,400 c | | | | 82 DJ | 33 J |
| Dieldrin | | ND | 40 c | 360 c | | | | | |
| gamma-Chlordane | | ND | 490 c | 4,400 c | | | | 92 DJ | 35 |
| Heptachlor | | ND | 140 c | 1,300 c | | | | | 9.4 |
| Heptachlor epoxide | | ND | 70 c | 630 c | | | | | 6.9 |

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results

Study Area 25

Naval Training Center, Orlando

Orlando, FL

| Identifier | Background [1] | SCG [2] | RBC [3] for Residential Soil | RBC [3] for Industrial Soil | 25B00102 | | 25B00201 | | 25B00301 | | 25B00402 | | 25B00502 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | | | | 5/9/95 | | 5/10/95 | | 5/10/95 | | 5/10/95 | | 5/10/95 | |
| Feet bls | | | | | 6 | | 6 | | 6 | | 2.5 | | 5 | |
| **Inorganics, mg/kg** | | | | | | | | | | | | | | |
| Aluminum | 11,130 | ND | 78,000 n | 1,000,000 n | 6,520 | J | 6,650 | J | 2,600 | J | 3,750 | J | 8,930 | J |
| Arsenic | 2.0 | ND | 0.43 c/23 n | 3.8 c/610 n | 0.73 | B | 0.95 | B | 0.47 | B | 1.2 | B | 0.9 | B |
| Barium | 11.3 | ND | 5,500 n | 140,000 n | 12 | J | 35.6 | J | 19.7 | J | 25.7 | J | 8.8 | J |
| Beryllium | 0.18 | ND | 0.15 c | 1.3 c | 0.07 | BJ | 0.1 | J | 0.22 | B | 0.41 | B | 0.14 | J |
| Calcium | 321 | ND | 1,000,000 | 1,000,000 | 436 | J | 827 | J | 3,610 | J | 118,000 | J | 604 | J |
| Chromium | 11.3 | ND | 390 n | 10,000 n | 5.9 | | 6.4 | | | | 10 | | 9.1 | |
| Cobalt | 1.3 | ND | 4,700,000 n | 120,000,000 | 1.2 | B | | | | | 0.67 | B | 0.92 | B |
| Copper | 2.8 | ND | 3,100 n | 82,000 n | | | 0.7 | B | 1.2 | B | 12.5 | | 0.79 | B |
| Iron | 829 | ND | 23,000 n | 610,000 n | 253 | J | 416 | J | 223 | J | 1,810 | J | 366 | J |
| Lead | 7.0 | ND | 400 | 400 | 3.7 | J | 5.2 | J | 2.9 | J | 0.05 | J | 6.2 | J |
| Magnesium | 38.9 | ND | 460,468 | 460,468 | 44.4 | B | 121 | B | 522 | B | 1,690 | | 52.6 | B |
| Manganese | 0.69 | ND | 1,800 n | 47,000 n | 1.2 | B | 2.5 | B | 46.9 | | 105 | | 2.3 | B |
| Mercury | 0.12 | ND | 23 n | 610 n | | | | | | | 0.2 | | 0.04 | B |
| Nickel | 11.3 | ND | 1,600 n | 41,000 n | 4.8 | B | 5.2 | B | | | 8 | B | 5.1 | B |
| Potassium | ND | ND | 1,000,000 | 1,000,000 | | | | | 148 | B | 319 | B | 139 | B |
| Selenium | 1.4 | ND | 390 n | 10,000 n | | | | | | | | | | |
| Silver | 1.1 | ND | 390 n | 10,000 | | | | | | | | | | |
| Sodium | ND | ND | 1,000,000 | 1,000,000 | | | 27.7 | B | | | 73.2 | B | | |
| Vanadium | 5.9 | ND | 550 n | 14,000 n | 5.2 | B | 6.2 | B | 2.4 | B | 11.2 | B | 4.6 | B |
| Zinc | 0.66 | ND | 23,000 n | 610,000 n | 0.55 | B | 1 | B | 2.5 | B | 45.9 | | 5 | |

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results

Study Area 25

Naval Training Center, Orlando

Orlando, FL

**NOTES:**

[1] The background screening value is twice the average of detected concentrations for inorganic analytes.

[2] SCG = Soil Cleanup Goals for Florida (Florida Department of Environmental Protection memorandum, September 29, 1995). Values indicated are from a residential scenario. Inorganic SCGs for subsurface soils have not been determined (ND). For organic compounds, SCGs are not applicable because there is no associated exceedance of groundwater guidance concentrations for the compound.

[3] RBC = Risk-Based Concentration Table, USEPA Region III, March 1997, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites (OSWER directive 9355-4-12). For essential nutrients (calcium, magnesium, potassium, and sodium) screening values were derived based on recommended daily allowances (RDAs). RBC for benzo(g,h,i)perylene and phenanthrene are not available, value is based on pyrene. RBC for alpha and gamma-chlordane are based on chlordane.

n = noncarcinogenic pathway
c = carcinogenic pathway
ND = Not determined.
bls = below land surface
D = Indicates value was determined during a diluted reanalysis.
ug/kg = micrograms per kilogram.
N = Indicates presumptive evidence of the presence of the compound.
J = Reported concentration is an estimated quantity.
PCB = polychlorinated biphenyl.
DDE = dichlorodiphenyldichloroethene.
DDD = dichlorodiphenyldichloroethane.
DDT = dichlorodiphenyltrichloroethane.
mg/kg = milligrams per kilogram.
USEPA = U.S. Environmental Protection Agency.
OSWER = Office of Solid Waste and Emergency Response.
B = Reported concentration is between the instrument detection limit (IDL) and Contract Required Detection Limit (CRDL).

Bold/shaded values indicate exceedance of regulatory guidance and background.
All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight; organics in micrograms per kilogram (ug/kg) soil dry weight.
Blank space indicates analyte/compound was not detected at the reporting limit.

# TABLE B-3

## SUMMARY OF DETECTIONS IN GROUNDWATER ANALYTICAL RESULTS

Appendix B

Table B-3. Summary of Positive Detections in Groundwater Analytical Results

Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Well ID | | | | | OLD-25-01 | | OLD-25-02 | | OLD-25-03 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Identifier | Background [1] Screening | FDEPG | Primary FEDMCL | RBC[2] for Tap Water | 25G00101 | | 25G00201 | | 25G00301 | | 25G00302 | | 25H00302 | |
| Sampling Date | | | | | 5/18/95 | | 5/18/95 | | 5/18/95 | | 6/24/96 | | 6/24/96 | |
| **Inorganics, ug/L** | | | | | | | | | | | | | | |
| Aluminum | 4,067 | 200 [3] | ND | 37,000 n | 52 | B | 1,310 | | 117 | B | | | 33.5 | B |
| Arsenic | 5 | 50 [5] | 50 | 0.045/11 c/n | | | | | 2.1 | B | | | | |
| Barium | 31.4 | 2,000 [5] | 2,000 | 2,600 n | 15.5 | B | 57.2 | B | 26.7 | B | 34.1 | BJ | 38.3 | BJ |
| Calcium | 36,830 | ND | ND | 1,000,000 | 74,000 | | 86,700 | | 181,000 | | 151,000 | | 158,000 | |
| Chromium | 7.8 | 100 [5] | 100 [6] | 180 [8] n | | | | | | | 4 | B | 3 | B |
| Copper | 5.4 | 1,000 [3] | 1,300 [7] | 1,500 n | | | | | | | 51 | | 38 | |
| Iron | 1,227 | 300 [3] | ND | 11,000 n | 52.3 | B | 2,830 | | 1,090 | | 277 | | 250 | |
| Magnesium | 4,560 | ND | ND | 118,807 | 5,940 | | 15,000 | | 59,100 | | 36,300 | | 38,000 | |
| Manganese | 17 | 50 [3] | ND | 840 n | 28.1 | | 241 | | 3,530 | | 662 | | 670 | |
| Mercury | 0.12 | 2 [5] | 2 | 11 c | | | | | | | 0.13 | B | 0.11 | B |
| Potassium | 5,400 | ND | ND | 297,016 | 12,400 | | 11,200 | | 18,100 | | 10,200 | | 10,700 | |
| Sodium | 18,222 | 160,000 [5] | ND | 396,022 | 8,850 | | 38,800 | | 14,300 | | 10,000 | J | 10,400 | J |
| Vanadium | 20.6 | 49 [4] | ND | 260 n | 35.7 | B | 24 | B | | | 4.7 | B | 5.5 | B |
| **General chemistry, mg/L** | | | | | | | | | | | | | | |
| Total Suspended Solids | ND | ND | ND | ND | | | 3 | | 4 | | | | NA | |

Appendix B

Table B-3. Summary of Positive Detections in Groundwater Analytical Results

Study Area 25

Naval Training Center, Orlando

Orlando, FL

**NOTES:**

[1] Groundwater background screening value is twice the average of detected concentrations for inorganic analytes.

[2] RBC = Risk-Based Concentration Table, USEPA Region III, March 1997, R.L. Smith. RBC for chromium is based on chromium VI. For essential nutrients (calcium, magnesium, potassium) screening values were derived based on recommended daily allowances (RDAs).

[3] Secondary Standard.

[4] Systemic Toxicant

[5] Primary Standard

[6] Value shown is for total chromium compounds.

[7] Value is preliminary action level.

[8] Value shown is for Chromium VI. Value for Chromium III is 37,000 n.

n = noncarcinogenic effects.

c = carcinogenic effects.

ND = Not determined.

NA = Not analyzed.

ID = identifier.

USEPA = U.S. Environmental Protection Agency.

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

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

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

J = Reported concentration is an estimated quantity.

G = unfiltered water sample.

H = filtered water sample.

ug/l = micrograms per liter.

mg/l = miligrams per liter.

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

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

# APPENDIX C

## SUMMARY OF ANALYTICAL RESULTS

C-1 Summary of Soil Analytical Results
C-2 Summary of Groundwater Analytical Results

# TABLE C-1

# SUMMARY OF SOIL ANALYTICAL RESULTS

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Sample ID | 25B00101 | | 25B00102 | | 25B00201 | 25B00301 | 25B00401 | 25B00401D | 25B00402 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lab ID | G7544001 | G7544001D | G7544002 | G7544002R | G7544003 | G7544004 | G7468005 | G7468006 | G7544005 | G7544005D |
| Sampling Date | 9-May-95 | 9-May-95 | 9-May-95 | 9-May-95 | 10-May-95 | 10-May-95 | 2-May-95 | 2-May-95 | 10-May-95 | 10-May-95 |
| **Volatile organics, ug/kg** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| 1,1,2,2-Tetrachloroethane | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| 1,1,2-Trichloroethane | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| 1,1-Dichloroethane | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| 1,1-Dichloroethene | 11 U | NA | 12 UR | 12 U | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| 1,2-Dichloroethane | 11 U | NA | 12 UR | 12 U | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| 1,2-Dichloroethene (total) | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| 1,2-Dichloropropane | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| 2-Butanone | 11 U | NA | 12 UR | 12 U | 12 U | 12 U | 11 U | 11 U | 12 J | NA |
| 2-Hexanone | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| 4-Methyl-2-pentanone | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Acetone | 11 U | NA | 12 UR | 12 U | 39 | 24 | 11 U | 11 U | 110 | NA |
| Benzene | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Bromodichloromethane | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Bromoform | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Bromomethane | 11 U | NA | 12 UR | 12 U | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Carbon disulfide | 11 U | NA | 12 UR | 12 U | 12 U | 12 U | 11 U | 11 U | 3 J | NA |
| Carbon tetrachloride | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Chlorobenzene | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Chloroethane | 11 U | NA | 12 UR | 12 U | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Chloroform | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Chloromethane | 11 U | NA | 12 UR | 12 U | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| cis-1,3-Dichloropropene | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Dibromochloromethane | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Ethylbenzene | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Methylene chloride | 11 U | NA | 12 UR | 12 U | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Styrene | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Tetrachloroethene | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Toluene | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| trans-1,3-Dichloropropene | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Trichloroethene | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| Vinyl chloride | 11 U | NA | 12 UR | 12 U | 12 U | 12 U | 11 U | 11 U | 11 U | NA |

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Sample ID | 25B00101 | | 25B00102 | | 25B00201 | 25B00301 | 25B00401 | 25B00401D | 25B00402 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lab ID | G7544001 | G7544001D | G7544002 | G7544002R | G7544003 | G7544004 | G7468005 | G7468006 | G7544005 | G7544005D |
| Sampling Date | 9-May-95 | 9-May-95 | 9-May-95 | 9-May-95 | 10-May-95 | 10-May-95 | 2-May-95 | 2-May-95 | 10-May-95 | 10-May-95 |
| Xylene (total) | 11 U | NA | 12 UR | 12 UJ | 12 U | 12 U | 11 U | 11 U | 11 U | NA |
| **Semivolatile organics, ug/kg** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 1,2-Dichlorobenzene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 1,3-Dichlorobenzene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 1,4-Dichlorobenzene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 2,2'-oxybis(1-Chloropropane) | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 2,4,5-Trichlorophenol | 1100 U | NA | 1000 U | NA | 980 U | 980 U | 900 U | 920 U | 940 U | NA |
| 2,4,6-Trichlorophenol | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 2,4-Dichlorophenol | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 2,4-Dimethylphenol | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 2,4-Dinitrophenol | 1100 U | NA | 1000 U | NA | 980 U | 980 U | 900 U | 920 U | 940 U | NA |
| 2,4-Dinitrotoluene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 2,6-Dinitrotoluene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 2-Chloronaphthalene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 2-Chlorophenol | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 2-Methylnaphthalene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 2-Methylphenol | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 2-Nitroaniline | 1100 U | NA | 1000 U | NA | 980 U | 980 U | 900 U | 920 U | 940 U | NA |
| 2-Nitrophenol | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 3,3'-Dichlorobenzidine | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 3-Nitroaniline | 1100 U | NA | 1000 U | NA | 980 U | 980 U | 900 U | 920 U | 940 U | NA |
| 4,6-Dinitro-2-methylphenol | 1100 U | NA | 1000 U | NA | 980 U | 980 U | 900 U | 920 U | 940 U | NA |
| 4-Bromophenyl-phenylether | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 4-Chloro-3-methylphenol | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 4-Chloroaniline | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 4-Chlorophenyl-phenylether | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 4-Methylphenol | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| 4-Nitroaniline | 1100 U | NA | 1000 U | NA | 980 U | 980 U | 900 U | 920 U | 940 U | NA |
| 4-Nitrophenol | 1100 U | NA | 1000 U | NA | 980 U | 980 U | 900 U | 920 U | 940 U | NA |
| Acenaphthene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Acenaphthylene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Anthracene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 120 J | NA |

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Sample ID | 25B00101 | | 25B00102 | | 25B00201 | 25B00301 | 25B00401 | 25B00401D | 25B00402 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lab ID | G7544001 | G7544001D | G7544002 | G7544002R | G7544003 | G7544004 | G7468005 | G7468006 | G7544005 | G7544005D |
| Sampling Date | 9-May-95 | 9-May-95 | 9-May-95 | 9-May-95 | 10-May-95 | 10-May-95 | 2-May-95 | 2-May-95 | 10-May-95 | 10-May-95 |
| Benzo(a)anthracene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 480 | NA |
| Benzo(a)pyrene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 250 J | NA |
| Benzo(b)fluoranthene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 520 | NA |
| Benzo(g,h,i)perylene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Benzo(k)fluoranthene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 330 J | NA |
| bis(2-Chloroethoxy)methane | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| bis(2-Chloroethyl)ether | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| bis(2-Ethylhexyl)phthalate | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Butylbenzylphthalate | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Carbazole | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Chrysene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 560 | NA |
| Di-n-butylphthalate | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Di-n-octylphthalate | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Dibenz(a,h)anthracene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 110 J | NA |
| Dibenzofuran | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Diethylphthalate | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Dimethylphthalate | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Fluoranthene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 760 | NA |
| Fluorene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Hexachlorobenzene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Hexachlorobutadiene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Hexachlorocyclopentadiene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Hexachloroethane | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Indeno(1,2,3-cd)pyrene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 220 J | NA |
| Isophorone | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| N-Nitroso-di-n-propylamine | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| N-Nitrosodiphenylamine (1) | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Naphthalene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Nitrobenzene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Pentachlorophenol | 1100 U | NA | 1000 U | NA | 980 U | 980 U | 900 U | 920 U | 940 U | NA |
| Phenanthrene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 530 | NA |
| Phenol | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 370 U | NA |
| Pyrene | 440 U | NA | 400 U | NA | 390 U | 390 U | 360 U | 370 U | 480 | NA |

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Sample ID | 25B00101 | | | | 25B00102 | | | | 25B00201 | | 25B00301 | | 25B00401 | | 25B00401D | | 25B00402 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab ID | G7544001 | | G7544001D | | G7544002 | | G7544002R | | G7544003 | | G7544004 | | G7468005 | | G7468006 | | G7544005 | | G7544005D | |
| Sampling Date | 9-May-95 | | 9-May-95 | | 9-May-95 | | 9-May-95 | | 10-May-95 | | 10-May-95 | | 2-May-95 | | 2-May-95 | | 10-May-95 | | 10-May-95 | |
| **Pesticides/PCBs, ug/kg** | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 4.3 | U | 22 | UR | 4 | U | NA | | 3.9 | U | 4 | U | 3.6 | U | 72 | U | 430 | R | 860 | D |
| 4,4'-DDE | 3.4 | NJ | 22 | UR | 4 | U | NA | | 3.9 | U | 4 | U | 2.5 | J | 72 | U | 230 | R | 300 | D |
| 4,4'-DDT | 4.3 | U | 22 | UR | 4 | U | NA | | 3.9 | U | 4 | U | 3.6 | U | 72 | U | 310 | R | 470 | D |
| Aldrin | 2.2 | U | 11 | UR | 2.1 | U | NA | | 2 | U | 2.1 | U | 1.8 | U | 37 | U | 3.5 | J | 100 | UR |
| alpha-BHC | 2.2 | UJ | 11 | UR | 2.1 | UJ | NA | | 2 | UJ | 2.1 | UJ | 1.8 | U | 37 | U | 2 | UJ | 100 | UR |
| alpha-Chlordane | 31 | J | 28 | DP | 2.1 | U | NA | | 2 | U | 2.1 | U | 6 | | 37 | U | 89 | ER | 82 | DJ |
| Aroclor-1016 | 43 | U | 220 | UR | 40 | U | NA | | 39 | U | 40 | U | 36 | U | 720 | U | 40 | UJ | 2000 | UR |
| Aroclor-1221 | 88 | U | 440 | UR | 82 | U | NA | | 80 | U | 82 | U | 73 | U | 1500 | U | 81 | UJ | 4000 | UR |
| Aroclor-1232 | 43 | U | 220 | UR | 40 | U | NA | | 39 | U | 40 | U | 36 | U | 720 | U | 40 | UJ | 2000 | UR |
| Aroclor-1242 | 43 | U | 220 | UR | 40 | U | NA | | 39 | U | 40 | U | 36 | U | 720 | U | 40 | UJ | 2000 | UR |
| Aroclor-1248 | 43 | U | 220 | UR | 40 | U | NA | | 39 | U | 40 | U | 36 | U | 720 | U | 40 | UJ | 2000 | UR |
| Aroclor-1254 | 43 | U | 220 | UR | 40 | U | NA | | 39 | U | 40 | U | 36 | U | 720 | U | 40 | UJ | 2000 | UR |
| Aroclor-1260 | 43 | U | 220 | UR | 40 | U | NA | | 39 | U | 40 | U | 36 | U | 720 | U | 40 | UJ | 2000 | UR |
| beta-BHC | 2.2 | U | 11 | UR | 2.1 | U | NA | | 2 | U | 2.1 | U | 1.8 | U | 37 | U | 2 | UJ | 100 | UR |
| delta-BHC | 2.2 | U | 11 | UR | 2.1 | U | NA | | 2 | U | 2.1 | U | 1.8 | U | 37 | U | 2 | UJ | 100 | UR |
| Dieldrin | 82 | R | 75 | DJ | 4 | UJ | NA | | 3.9 | UJ | 4 | UJ | 18 | | 72 | U | 4 | UJ | 200 | UR |
| Endosulfan I | 2.2 | U | 11 | UR | 2.1 | U | NA | | 2 | U | 2.1 | U | 1.8 | U | 37 | U | 2 | UJ | 100 | UR |
| Endosulfan II | 4.3 | U | 22 | UR | 4 | U | NA | | 3.9 | U | 4 | U | 3.6 | U | 72 | U | 4 | UJ | 200 | UR |
| Endosulfan sulfate | 4.3 | U | 22 | UR | 4 | U | NA | | 3.9 | U | 4 | U | 3.6 | U | 72 | U | 4 | UJ | 200 | UR |
| Endrin | 4.3 | U | 22 | UR | 4 | U | NA | | 3.9 | U | 4 | U | 3.6 | U | 72 | U | 4 | UJ | 200 | UR |
| Endrin aldehyde | 4.3 | U | 22 | UR | 4 | U | NA | | 3.9 | U | 4 | U | 3.6 | U | 72 | U | 4 | UJ | 200 | UR |
| Endrin ketone | 4.3 | U | 22 | UR | 4 | U | NA | | 3.9 | U | 4 | U | 3.6 | U | 72 | U | 4 | UJ | 200 | UR |
| gamma-BHC (Lindane) | 2.2 | U | 11 | UR | 2.1 | U | NA | | 2 | U | 2.1 | U | 1.8 | U | 37 | U | 2 | UJ | 100 | UR |
| gamma-Chlordane | 25 | | 22 | DR | 2.1 | U | NA | | 2 | U | 2.1 | U | 5.3 | | 37 | U | 87 | R | 92 | DJ |
| Heptachlor | 2.2 | U | 11 | UR | 2.1 | U | NA | | 2 | U | 2.1 | U | 1.8 | U | 37 | U | 2 | UJ | 100 | UR |
| Heptachlor epoxide | 1.7 | J | 11 | UR | 2.1 | U | NA | | 2 | U | 2.1 | U | 1.8 | U | 37 | U | 2 | UJ | 100 | UR |
| Methoxychlor | 22 | U | 110 | UR | 21 | U | NA | | 20 | U | 21 | U | 18 | U | 370 | U | 20 | UJ | 1000 | UR |
| Toxaphene | 220 | U | 1100 | UR | 210 | U | NA | | 200 | U | 210 | U | 180 | U | 3700 | U | 200 | UJ | 10000 | UR |
| **Inorganics, ug/kg** | | | | | | | | | | | | | | | | | | | | |
| Aluminum | 2500 | J | NA | | 6520 | J | NA | | 6650 | J | 2600 | J | 1820 | | 1830 | | 3750 | J | NA | |
| Antimony | 6.6 | U | NA | | 7.3 | U | NA | | 6.9 | U | 7 | U | 6.4 | U | 6.4 | U | 6.7 | U | NA | |
| Arsenic | 1.8 | B | NA | | 0.73 | B | NA | | 0.95 | B | 0.47 | B | 0.47 | U | 0.41 | U | 1.2 | B | NA | |

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Sample ID | 25B00101 | | 25B00102 | | 25B00201 | 25B00301 | 25B00401 | 25B00401D | 25B00402 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lab ID | G7544001 | G7544001D | G7544002 | G7544002R | G7544003 | G7544004 | G7468005 | G7468006 | G7544005 | G7544005D |
| Sampling Date | 9-May-95 | 9-May-95 | 9-May-95 | 9-May-95 | 10-May-95 | 10-May-95 | 2-May-95 | 2-May-95 | 10-May-95 | 10-May-95 |
| Barium | 4.4 J | NA | 12 J | NA | 35.6 J | 19.7 J | 3.4 B | 3.4 B | 25.7 J | NA |
| Beryllium | 0.07 B | NA | 0.07 BJ | NA | 0.1 J | 0.22 B | 0.11 U | 0.14 B | 0.41 B | NA |
| Cadmium | 0.69 U | NA | 0.77 U | NA | 0.72 U | 0.74 U | 0.68 U | 0.67 U | 0.7 U | NA |
| Calcium | 24700 J | NA | 436 J | NA | 827 J | 3610 J | 3320 J | 5490 | 118000 J | NA |
| Chromium | 4.3 | NA | 5.9 | NA | 6.4 | 3.3 U | 2.5 | 1.9 B | 10 | NA |
| Cobalt | 0.64 U | NA | 1.2 B | NA | 0.68 U | 0.69 U | 0.63 U | 0.63 U | 0.67 B | NA |
| Copper | 1.9 B | NA | 0.35 U | NA | 0.7 B | 1.2 B | 1.1 B | 0.98 B | 12.5 | NA |
| Iron | 350 J | NA | 253 J | NA | 416 J | 223 J | 233 J | 222 | 1810 J | NA |
| Lead | 0.02 J | NA | 3.7 J | NA | 5.2 J | 2.9 J | 2.2 | 2.1 | 0.05 J | NA |
| Magnesium | 191 B | NA | 44.4 B | NA | 121 B | 522 B | 71.5 B | 80.1 B | 1690 | NA |
| Manganese | 5.1 | NA | 1.2 B | NA | 2.5 B | 46.9 | 1.9 B | 2 B | 105 | NA |
| Mercury | 0.06 | NA | 0.03 U | NA | 0.03 U | 0.03 U | 0.03 U | 0.03 B | 0.2 | NA |
| Nickel | 3.2 U | NA | 4.8 B | NA | 5.2 B | 3.4 U | 3.1 U | 3.1 U | 8 B | NA |
| Potassium | 98.5 U | NA | 110 U | NA | 104 U | 148 B | 97.1 B | 117 B | 319 B | NA |
| Selenium | 0.51 U | NA | 0.57 UJ | NA | 0.54 UJ | 0.54 U | 0.5 U | 0.5 U | 0.52 U | NA |
| Silver | 0.58 U | NA | 0.64 U | NA | 0.61 U | 0.62 U | 0.57 U | 0.56 U | 0.59 U | NA |
| Sodium | 18.7 U | NA | 13.8 U | NA | 27.7 B | 16.8 U | 14.2 U | 13.4 B | 73.2 B | NA |
| Thallium | 0.4 U | NA | 0.45 U | NA | 0.42 U | 0.43 U | 0.41 U | 0.4 U | 0.41 U | NA |
| Vanadium | 2.8 B | NA | 5.2 B | NA | 6.2 B | 2.4 B | 2.1 B | 1.6 B | 11.2 B | NA |
| Zinc | 2.9 B | NA | 0.55 B | NA | 1 B | 2.5 B | 1.3 B | 1.3 B | 45.9 | NA |

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Sample ID | 25B00501 | | 25B00502 | | 25B00601 | 25B00701 | 25B00801 | | 25B00901 |
|---|---|---|---|---|---|---|---|---|---|
| Lab ID | G7468007 | G7468007DL | G7544006 | G7544006DL | G7468008 | G7468009 | G7468010 | G7468010DL | G7468011 |
| Sampling Date | 2-May-95 | 2-May-95 | 10-May-95 | 10-May-95 | 2-May-95 | 2-May-95 | 2-May-95 | 2-May-95 | 2-May-95 |
| **Volatile organics, ug/kg** | | | | | | | | | |
| 1,1,1-Trichloroethane | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| 1,1,2,2-Tetrachloroethane | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| 1,1,2-Trichloroethane | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| 1,1-Dichloroethane | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| 1,1-Dichloroethene | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| 1,2-Dichloroethane | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| 1,2-Dichloroethene (total) | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| 1,2-Dichloropropane | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| 2-Butanone | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| 2-Hexanone | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| 4-Methyl-2-pentanone | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Acetone | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Benzene | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Bromodichloromethane | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Bromoform | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Bromomethane | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Carbon disulfide | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Carbon tetrachloride | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Chlorobenzene | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Chloroethane | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Chloroform | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Chloromethane | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| cis-1,3-Dichloropropene | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Dibromochloromethane | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Ethylbenzene | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Methylene chloride | 11 U | NA | 12 U | NA | 14 J | 13 U | 10 U | NA | 5 J |
| Styrene | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Tetrachloroethene | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Toluene | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| trans-1,3-Dichloropropene | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Trichloroethene | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| Vinyl chloride | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Sample ID | 25B00501 | | 25B00502 | | 25B00601 | 25B00701 | 25B00801 | | 25B00901 |
|---|---|---|---|---|---|---|---|---|---|
| Lab ID | G7468007 | G7468007DL | G7544006 | G7544006DL | G7468008 | G7468009 | G7468010 | G7468010DL | G7468011 |
| Sampling Date | 2-May-95 | 2-May-95 | 10-May-95 | 10-May-95 | 2-May-95 | 2-May-95 | 2-May-95 | 2-May-95 | 2-May-95 |
| Xylene (total) | 11 U | NA | 12 U | NA | 14 U | 13 U | 10 U | NA | 10 U |
| **Semivolatile organics, ug/kg** | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 1,2-Dichlorobenzene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 1,3-Dichlorobenzene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 1,4-Dichlorobenzene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 2,2'-oxybis(1-Chloropropane) | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 2,4,5-Trichlorophenol | 920 U | NA | 1000 U | NA | 920 U | 1200 U | 880 U | NA | 1100 U |
| 2,4,6-Trichlorophenol | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 2,4-Dichlorophenol | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 2,4-Dimethylphenol | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 2,4-Dinitrophenol | 920 U | NA | 1000 U | NA | 920 U | 1200 U | 880 U | NA | 1100 U |
| 2,4-Dinitrotoluene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 2,6-Dinitrotoluene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 2-Chloronaphthalene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 2-Chlorophenol | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 2-Methylnaphthalene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 2-Methylphenol | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 2-Nitroaniline | 920 U | NA | 1000 U | NA | 920 U | 1200 U | 880 U | NA | 1100 U |
| 2-Nitrophenol | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 3,3'-Dichlorobenzidine | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 3-Nitroaniline | 920 U | NA | 1000 U | NA | 920 U | 1200 U | 880 U | NA | 1100 U |
| 4,6-Dinitro-2-methylphenol | 920 U | NA | 1000 U | NA | 920 U | 1200 U | 880 U | NA | 1100 U |
| 4-Bromophenyl-phenylether | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 4-Chloro-3-methylphenol | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 4-Chloroaniline | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 4-Chlorophenyl-phenylether | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 4-Methylphenol | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| 4-Nitroaniline | 920 U | NA | 1000 U | NA | 920 U | 1200 U | 880 U | NA | 1100 U |
| 4-Nitrophenol | 920 U | NA | 1000 U | NA | 920 U | 1200 U | 880 U | NA | 1100 U |
| Acenaphthene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Acenaphthylene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Anthracene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Sample ID | 25B00501 | | 25B00502 | | 25B00601 | 25B00701 | 25B00801 | | 25B00901 |
|---|---|---|---|---|---|---|---|---|---|
| Lab ID | G7468007 | G7468007DL | G7544006 | G7544006DL | G7468008 | G7468009 | G7468010 | G7468010DL | G7468011 |
| Sampling Date | 2-May-95 | 2-May-95 | 10-May-95 | 10-May-95 | 2-May-95 | 2-May-95 | 2-May-95 | 2-May-95 | 2-May-95 |
| Benzo(a)anthracene | 370 U | NA | 400 U | NA | 370 U | 290 J | 350 U | NA | 440 U |
| Benzo(a)pyrene | 370 U | NA | 400 U | NA | 370 U | 240 J | 350 U | NA | 440 U |
| Benzo(b)fluoranthene | 370 U | NA | 400 U | NA | 370 U | 260 J | 350 U | NA | 440 U |
| Benzo(g,h,i)perylene | 370 U | NA | 400 U | NA | 370 U | 190 J | 350 U | NA | 440 U |
| Benzo(k)fluoranthene | 370 U | NA | 400 U | NA | 370 U | 260 J | 350 U | NA | 440 U |
| bis(2-Chloroethoxy)methane | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| bis(2-Chloroethyl)ether | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| bis(2-Ethylhexyl)phthalate | 150 J | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Butylbenzylphthalate | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Carbazole | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Chrysene | 370 U | NA | 400 U | NA | 370 U | 310 J | 350 U | NA | 440 U |
| Di-n-butylphthalate | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Di-n-octylphthalate | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Dibenz(a,h)anthracene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Dibenzofuran | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Diethylphthalate | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Dimethylphthalate | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Fluoranthene | 370 U | NA | 400 U | NA | 370 U | 660 | 350 U | NA | 440 U |
| Fluorene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Hexachlorobenzene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Hexachlorobutadiene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Hexachlorocyclopentadiene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Hexachloroethane | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Indeno(1,2,3-cd)pyrene | 370 U | NA | 400 U | NA | 370 U | 170 J | 350 U | NA | 440 U |
| Isophorone | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| N-Nitroso-di-n-propylamine | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| N-Nitrosodiphenylamine (1) | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Naphthalene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Nitrobenzene | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Pentachlorophenol | 920 U | NA | 1000 U | NA | 920 U | 1200 U | 880 U | NA | 1100 U |
| Phenanthrene | 370 U | NA | 400 U | NA | 370 U | 440 J | 350 U | NA | 440 U |
| Phenol | 370 U | NA | 400 U | NA | 370 U | 480 U | 350 U | NA | 440 U |
| Pyrene | 370 U | NA | 400 U | NA | 370 U | 580 | 350 U | NA | 440 U |

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Sample ID | 25B00501 | | | | 25B00502 | | | | 25B00601 | | 25B00701 | | 25B00801 | | | | 25B00901 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab ID | G7468007 | | G7468007DL | | G7544006 | | G7544006DL | | G7468008 | | G7468009 | | G7468010 | | G7468010DL | | G7468011 | |
| Sampling Date | 2-May-95 | | 2-May-95 | | 10-May-95 | | 10-May-95 | | 2-May-95 | | 2-May-95 | | 2-May-95 | | 2-May-95 | | 2-May-95 | |
| **Pesticides/PCBs, ug/kg** | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 36 | U | 140 | UR | 4 | U | 20 | UR | 7.2 | U | 76 | U | 18 | U | 70 | UR | 3.5 | U |
| 4,4'-DDE | 50 | J | 140 | UR | 3 | NJ | 20 | UR | 3.2 | J | 76 | U | 18 | U | 70 | UR | 4.5 | |
| 4,4'-DDT | 140 | | 120 | R | 11 | | 9.6 | DR | 7.2 | U | 76 | U | 18 | U | 70 | UR | 2.9 | J |
| Aldrin | 18 | U | 74 | UR | 2 | U | 10 | UR | 3.7 | U | 39 | U | 9 | U | 36 | UR | 1.8 | U |
| alpha-BHC | 18 | U | 74 | UR | 2 | UJ | 10 | UR | 3.7 | U | 39 | U | 9 | U | 36 | UR | 1.8 | U |
| alpha-Chlordane | 350 | R | 350 | CD | 33 | J | 26 | DR | 8.8 | | 39 | U | 43 | | 42 | DR | 2.3 | |
| Aroclor-1016 | 360 | U | 1400 | UR | 40 | U | 200 | UR | 72 | U | 760 | U | 180 | U | 700 | UR | 35 | U |
| Aroclor-1221 | 730 | U | 2900 | UR | 81 | U | 400 | UR | 150 | U | 1500 | U | 360 | U | 1400 | UR | 71 | U |
| Aroclor-1232 | 360 | U | 1400 | UR | 40 | U | 200 | UR | 72 | U | 760 | U | 180 | U | 700 | UR | 35 | U |
| Aroclor-1242 | 360 | U | 1400 | UR | 40 | U | 200 | UR | 72 | U | 760 | U | 180 | U | 700 | UR | 35 | U |
| Aroclor-1248 | 360 | U | 1400 | UR | 40 | U | 200 | UR | 72 | U | 760 | U | 180 | U | 700 | UR | 35 | U |
| Aroclor-1254 | 360 | U | 1400 | UR | 40 | U | 200 | UR | 72 | U | 760 | U | 180 | U | 700 | UR | 35 | U |
| Aroclor-1260 | 360 | U | 1400 | UR | 40 | U | 200 | UR | 72 | U | 760 | U | 180 | U | 700 | UR | 35 | U |
| beta-BHC | 18 | U | 74 | UR | 2 | U | 10 | UR | 3.7 | U | 39 | U | 9 | U | 36 | UR | 1.8 | U |
| delta-BHC | 18 | U | 74 | UR | 2 | U | 10 | UR | 3.7 | U | 39 | U | 9 | U | 36 | UR | 1.8 | U |
| Dieldrin | 30 | J | 140 | UR | 4 | UJ | 20 | UR | 20 | | 76 | U | 240 | C | 230 | DR | 11 | |
| Endosulfan I | 18 | U | 74 | UR | 2 | U | 10 | UR | 3.7 | U | 39 | U | 9 | U | 36 | UR | 1.8 | U |
| Endosulfan II | 36 | U | 140 | UR | 4 | U | 20 | UR | 7.2 | U | 76 | U | 18 | U | 70 | UR | 3.5 | U |
| Endosulfan sulfate | 36 | U | 140 | UR | 4 | U | 20 | UR | 7.2 | U | 76 | U | 18 | U | 70 | UR | 3.5 | U |
| Endrin | 36 | U | 140 | UR | 4 | U | 20 | UR | 7.2 | U | 76 | U | 18 | U | 70 | UR | 3.5 | U |
| Endrin aldehyde | 36 | U | 140 | UR | 4 | U | 20 | UR | 7.2 | U | 76 | U | 18 | U | 70 | UR | 3.5 | U |
| Endrin ketone | 36 | U | 140 | UR | 4 | U | 20 | UR | 7.2 | U | 76 | U | 18 | U | 70 | UR | 3.5 | U |
| gamma-BHC (Lindane) | 18 | U | 74 | UR | 2 | U | 10 | UR | 3.7 | U | 39 | U | 9 | U | 36 | UR | 1.8 | U |
| gamma-Chlordane | 360 | R | 350 | CD | 35 | | 27 | DR | 7.4 | | 39 | U | 34 | | 34 | DR | 1.3 | J |
| Heptachlor | 42 | | 50 | R | 9.4 | | 8.7 | DR | 3.7 | U | 39 | U | 9 | U | 36 | UR | 1.8 | U |
| Heptachlor epoxide | 97 | | 99 | R | 6.9 | | 6.5 | DR | 3.7 | U | 39 | U | 9 | U | 36 | UR | 1.8 | U |
| Methoxychlor | 180 | U | 740 | UR | 20 | U | 100 | UR | 37 | U | 390 | U | 90 | U | 360 | UR | 18 | U |
| Toxaphene | 1800 | U | 7400 | UR | 200 | U | 1000 | UR | 370 | U | 3900 | U | 900 | U | 3600 | UR | 180 | U |
| **Inorganics, ug/kg** | | | | | | | | | | | | | | | | | | |
| Aluminum | 4170 | | NA | | 8930 | J | NA | | 1910 | | 2610 | | 2110 | | NA | | 1220 | |
| Antimony | 6.4 | U | NA | | 7.1 | U | NA | | 8.4 | U | 7.7 | U | 6.2 | U | NA | | 6 | U |
| Arsenic | 0.54 | UJ | NA | | 0.9 | B | NA | | 0.53 | UJ | 0.49 | UJ | 0.85 | UJ | NA | | 0.38 | U |

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Sample ID | 25B00501 | | 25B00502 | | 25B00601 | 25B00701 | 25B00801 | | 25B00901 |
|---|---|---|---|---|---|---|---|---|---|
| Lab ID | G7468007 | G7468007DL | G7544006 | G7544006DL | G7468008 | G7468009 | G7468010 | G7468010DL | G7468011 |
| Sampling Date | 2-May-95 | 2-May-95 | 10-May-95 | 10-May-95 | 2-May-95 | 2-May-95 | 2-May-95 | 2-May-95 | 2-May-95 |
| Barium | 16.3 B | NA | 8.8 J | NA | 3.7 B | 6.1 B | 4.8 B | NA | 2.8 B |
| Beryllium | 0.08 U | NA | 0.14 J | NA | 0.08 U | 0.15 U | 0.09 U | NA | 0.07 B |
| Cadmium | 0.67 U | NA | 0.74 U | NA | 0.88 U | 0.8 U | 0.65 U | NA | 0.63 U |
| Calcium | 3120 J | NA | 604 J | NA | 5360 J | 4320 J | 4520 J | NA | 1210 |
| Chromium | 8.9 | NA | 9.1 | NA | 2.3 B | 2.6 | 4.5 | NA | 1.8 B |
| Cobalt | 0.63 U | NA | 0.92 B | NA | 0.82 U | 0.75 U | 0.61 U | NA | 0.85 B |
| Copper | 50.1 | NA | 0.79 B | NA | 1.4 B | 2.7 B | 3.3 B | NA | 0.87 B |
| Iron | 755 J | NA | 366 J | NA | 247 J | 449 J | 341 J | NA | 150 |
| Lead | 6.1 | NA | 6.2 J | NA | 2.7 | 2.5 | 5.6 | NA | 1.2 |
| Magnesium | 68.6 B | NA | 52.6 B | NA | 63.1 B | 62.2 B | 89.9 B | NA | 36.3 B |
| Manganese | 20.8 | NA | 2.3 B | NA | 2.4 B | 2.8 B | 6.5 | NA | 1.6 B |
| Mercury | 0.39 | NA | 0.04 B | NA | 0.05 B | 0.03 U | 0.06 | NA | 0.02 U |
| Nickel | 3.1 U | NA | 5.1 B | NA | 4 U | 3.7 U | 3 U | NA | 2.9 U |
| Potassium | 95.7 U | NA | 139 B | NA | 125 U | 115 U | 93.3 U | NA | 110 B |
| Selenium | 0.54 J | NA | 0.55 UJ | NA | 0.65 U | 0.59 U | 0.48 U | NA | 0.46 U |
| Silver | 1.5 B | NA | 0.62 U | NA | 0.73 U | 0.67 U | 0.55 U | NA | 0.53 U |
| Sodium | 9.9 U | NA | 6.9 U | NA | 9.9 U | 10.5 U | 10 U | NA | 6.2 B |
| Thallium | 0.4 U | NA | 0.43 U | NA | 0.53 U | 0.48 U | 0.39 U | NA | 0.38 U |
| Vanadium | 2.3 B | NA | 4.6 B | NA | 1.6 B | 3.6 B | 2 B | NA | 0.96 B |
| Zinc | 35.9 | NA | 5 | NA | 1.5 B | 1.6 B | 5.6 | NA | 1.1 B |

# TABLE C-2

# SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Appendix C
Table C-2. Summary of Groundwater Analytical Results
Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Sample_ID | 25G00101 | | 25G00201 | | 25G00301 | | 25G00302 | | 25H00302 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lab_ID | G7607011 | | G7607012 | | G7607013 | | MB227001 | | MB227002 | |
| Sampling Date | 18-May-95 | | 18-May-95 | | 18-May-95 | | 24-Jun-96 | | 24-Jun-96 | |
| **Volatile Organics, ug/L** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| 1,1,2,2-Tetrachloroethane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| 1,1,2-Trichloroethane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| 1,1-Dichloroethane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| 1,1-Dichloroethene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| 1,2-Dibromo-3-chloropropane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| 1,2-Dibromoethane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| 1,2-Dichloroethane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| 1,2-Dichloropropane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| 2-Butanone | 5 | UR | 5 | U | 5 | UR | NA | | NA | |
| 2-Hexanone | 5 | UR | 5 | UR | 5 | UR | NA | | NA | |
| 4-Methyl-2-pentanone | 5 | U | 5 | U | 5 | U | NA | | NA | |
| Acetone | 5 | UR | 5 | UR | 6 | UR | NA | | NA | |
| Benzene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Bromochloromethane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Bromodichloromethane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Bromoform | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Bromomethane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Carbon disulfide | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Carbon tetrachloride | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Chlorobenzene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Chloroethane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Chloroform | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Chloromethane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| cis-1,2-Dichloroethene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| cis-1,3-Dichloropropene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Dibromochloromethane | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Ethylbenzene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Methylene chloride | 2 | U | 2 | U | 2 | U | NA | | NA | |
| Styrene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Tetrachloroethene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Toluene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| trans-1,2-Dichloroethene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| trans-1,3-Dichloropropene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Trichloroethene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Vinyl chloride | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Xylene (total) | 1 | U | 1 | U | 1 | U | NA | | NA | |
| **Semivolatile Organics, ug/L** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 1,2-Dichlorobenzene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| 1,3-Dichlorobenzene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| 1,4-Dichlorobenzene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| 2,2'-oxybis(1-Chloropropane) | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 2,4,5-Trichlorophenol | 25 | U | 25 | U | 25 | U | NA | | NA | |
| 2,4,6-Trichlorophenol | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 2,4-Dichlorophenol | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 2,4-Dimethylphenol | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 2,4-Dinitrophenol | 25 | UJ | 25 | UJ | 25 | UJ | NA | | NA | |
| 2,4-Dinitrotoluene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 2,6-Dinitrotoluene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 2-Chloronaphthalene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 2-Chlorophenol | 10 | U | 10 | U | 10 | U | NA | | NA | |

Appendix C

Table C-2. Summary of Groundwater Analytical Results

Study Area 25

Naval Training Center, Orlando

Orlando, FL

| Sample_ID | 25G00101 | | 25G00201 | | 25G00301 | | 25G00302 | | 25H00302 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lab_ID | G7607011 | | G7607012 | | G7607013 | | MB227001 | | MB227002 | |
| Sampling Date | 18-May-95 | | 18-May-95 | | 18-May-95 | | 24-Jun-96 | | 24-Jun-96 | |
| 2-Methylnaphthalene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 2-Methylphenol | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 2-Nitroaniline | 25 | U | 25 | U | 25 | U | NA | | NA | |
| 2-Nitrophenol | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 3,3'-Dichlorobenzidine | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 3-Nitroaniline | 25 | U | 25 | U | 25 | U | NA | | NA | |
| 4,6-Dinitro-2-methylphenol | 25 | U | 25 | U | 25 | U | NA | | NA | |
| 4-Bromophenyl-phenylether | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 4-Chloro-3-methylphenol | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 4-Chloroaniline | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 4-Chlorophenyl-phenylether | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 4-Methylphenol | 10 | U | 10 | U | 10 | U | NA | | NA | |
| 4-Nitroaniline | 25 | U | 25 | U | 25 | U | NA | | NA | |
| 4-Nitrophenol | 25 | U | 25 | U | 25 | U | NA | | NA | |
| Acenaphthene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Acenaphthylene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Anthracene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Benzo(a)anthracene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Benzo(a)pyrene | 0.2 | U | 0.2 | U | 0.2 | U | NA | | NA | |
| Benzo(b)fluoranthene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Benzo(g,h,i)perylene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Benzo(k)fluoranthene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| bis(2-Chloroethoxy)methane | 10 | U | 10 | U | 10 | U | NA | | NA | |
| bis(2-Chloroethyl)ether | 10 | U | 10 | U | 10 | U | NA | | NA | |
| bis(2-Ethylhexyl)phthalate | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Butylbenzylphthalate | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Carbazole | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Chrysene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Di-n-butylphthalate | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Di-n-octylphthalate | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Dibenz(a,h)anthracene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Dibenzofuran | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Diethylphthalate | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Dimethylphthalate | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Fluoranthene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Fluorene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Hexachlorobenzene | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Hexachlorobutadiene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Hexachlorocyclopentadiene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Hexachloroethane | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Indeno(1,2,3-cd)pyrene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Isophorone | 10 | U | 10 | U | 10 | U | NA | | NA | |
| N-Nitroso-di-n-propylamine | 10 | U | 10 | U | 10 | U | NA | | NA | |
| N-Nitrosodiphenylamine (1) | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Naphthalene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Nitrobenzene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Pentachlorophenol | 1 | U | 1 | U | 1 | U | NA | | NA | |
| Phenanthrene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Phenol | 10 | U | 10 | U | 10 | U | NA | | NA | |
| Pyrene | 10 | U | 10 | U | 10 | U | NA | | NA | |
| **Pesticides/PCBs, ug/L** | | | | | | | | | | |
| 4,4'-DDD | 0.1 | UJ | 0.1 | UJ | 0.1 | UJ | NA | | NA | |
| 4,4'-DDE | 0.1 | UJ | 0.1 | UJ | 0.1 | UJ | NA | | NA | |

Appendix C
Table C-2. Summary of Groundwater Analytical Results
Study Area 25

Naval Training Center, Orlando
Orlando, FL

| Sample_ID | 25G00101 | | 25G00201 | | 25G00301 | | 25G00302 | | 25H00302 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lab_ID | G7607011 | | G7607012 | | G7607013 | | MB227001 | | MB227002 | |
| Sampling Date | 18-May-95 | | 18-May-95 | | 18-May-95 | | 24-Jun-96 | | 24-Jun-96 | |
| 4,4'-DDT | 0.1 | UJ | 0.1 | UJ | 0.1 | UJ | NA | | NA | |
| Aldrin | 0.05 | UJ | 0.05 | UJ | 0.05 | UJ | NA | | NA | |
| alpha-BHC | 0.05 | UJ | 0.05 | UJ | 0.05 | UJ | NA | | NA | |
| alpha-Chlordane | 0.05 | UJ | 0.05 | UJ | 0.05 | UJ | NA | | NA | |
| Aroclor-1016 | 0.5 | UJ | 0.5 | UJ | 0.5 | UJ | NA | | NA | |
| Aroclor-1221 | 0.5 | UJ | 0.5 | UJ | 0.5 | UJ | NA | | NA | |
| Aroclor-1232 | 0.5 | UJ | 0.5 | UJ | 0.5 | UJ | NA | | NA | |
| Aroclor-1242 | 0.5 | UJ | 0.5 | UJ | 0.5 | UJ | NA | | NA | |
| Aroclor-1248 | 0.5 | UJ | 0.5 | UJ | 0.5 | UJ | NA | | NA | |
| Aroclor-1254 | 0.5 | UJ | 0.5 | UJ | 0.5 | UJ | NA | | NA | |
| Aroclor-1260 | 0.5 | UJ | 0.5 | UJ | 0.5 | UJ | NA | | NA | |
| beta-BHC | 0.05 | UJ | 0.05 | UJ | 0.05 | UJ | NA | | NA | |
| delta-BHC | 0.05 | UJ | 0.05 | UJ | 0.05 | UJ | NA | | NA | |
| Dieldrin | 0.1 | UJ | 0.1 | UJ | 0.1 | UJ | NA | | NA | |
| Endosulfan I | 0.05 | UJ | 0.05 | UJ | 0.05 | UJ | NA | | NA | |
| Endosulfan II | 0.1 | UJ | 0.1 | UJ | 0.1 | UJ | NA | | NA | |
| Endosulfan sulfate | 0.1 | UJ | 0.1 | UJ | 0.1 | UJ | NA | | NA | |
| Endrin | 0.1 | UJ | 0.1 | UJ | 0.1 | UJ | NA | | NA | |
| Endrin aldehyde | 0.1 | UJ | 0.1 | UJ | 0.1 | UJ | NA | | NA | |
| Endrin ketone | 0.1 | UJ | 0.1 | UJ | 0.1 | UJ | NA | | NA | |
| gamma-BHC (Lindane) | 0.05 | UJ | 0.05 | UJ | 0.05 | UJ | NA | | NA | |
| gamma-Chlordane | 0.05 | UJ | 0.05 | UJ | 0.05 | UJ | NA | | NA | |
| Heptachlor | 0.05 | UJ | 0.05 | UJ | 0.05 | UJ | NA | | NA | |
| Heptachlor epoxide | 0.05 | UJ | 0.05 | UJ | 0.05 | UJ | NA | | NA | |
| Methoxychlor | 0.5 | UJ | 0.5 | UJ | 0.5 | UJ | NA | | NA | |
| Toxaphene | 5 | UJ | 5 | UJ | 5 | UJ | NA | | NA | |
| **Inorganics, ug/L** | | | | | | | | | | |
| Aluminum | 52 | B | 1310 | | 117 | B | 18.2 | U | 33.5 | B |
| Antimony | 2.5 | U | 2.5 | U | 2.5 | U | 2.6 | U | 2.6 | U |
| Arsenic | 1.9 | U | 1.9 | U | 2.1 | B | 1.3 | U | 1.3 | U |
| Barium | 15.5 | B | 57.2 | B | 26.7 | B | 34.1 | BJ | 38.3 | BJ |
| Beryllium | 0.1 | U | 0.1 | U | 0.1 | U | 0.13 | UJ | 0.13 | UJ |
| Cadmium | 3.1 | U | 3.1 | U | 3.1 | U | 3.3 | U | 3.3 | U |
| Calcium | 74000 | | 86700 | | 181000 | | 151000 | | 158000 | |
| Chromium | 3.1 | U | 3.8 | U | 3.1 | U | 3.5 | B | 3.3 | B |
| Cobalt | 2.9 | U | 2.9 | U | 2.9 | U | 2.5 | U | 2.5 | U |
| Copper | 2.8 | U | 3.5 | U | 1.7 | U | 50.6 | | 38 | |
| Iron | 52.3 | B | 2830 | | 1090 | | 277 | | 250 | |
| Lead | 1.5 | U | 1.5 | U | 15 | U | 1.2 | U | 1.2 | U |
| Magnesium | 5940 | | 15000 | | 59100 | | 36300 | | 38000 | |
| Manganese | 28.1 | | 241 | | 3530 | | 662 | | 670 | |
| Mercury | 0.12 | U | 0.12 | U | 0.12 | U | 0.13 | B | 0.11 | B |
| Nickel | 14.2 | U | 14.2 | U | 14.2 | U | 5.5 | U | 5.5 | U |
| Potassium | 12400 | | 11200 | | 18100 | | 10200 | | 10700 | |
| Selenium | 2.3 | UJ | 2.3 | U | 2.3 | UJ | 1.3 | UJ | 1.3 | UJ |
| Silver | 2.6 | U | 2.6 | U | 2.6 | U | 2.2 | U | 2.2 | U |
| Sodium | 8850 | | 38800 | | 14300 | | 10000 | J | 10400 | J |
| Thallium | 1.8 | U | 1.8 | U | 1.8 | U | 0.86 | UJ | 0.86 | UJ |
| Vanadium | 35.7 | B | 24 | B | 9.3 | U | 4.7 | B | 5.5 | B |
| Zinc | 2.9 | U | 3.4 | U | 3.3 | U | 15.6 | U | 10.1 | U |
| **General chemistry, mg/L** | | | | | | | | | | |
| Total Suspended Solids | 1 | U | 3 | | 4 | | 4 | U | NA | |

# Notes for Analytical Results Tables
## Study Area 25

Naval Training Center, Orlando
Orlando Florida

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

Units:

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

The following standard validation qualifiers have the following definitions:

U The analyte/compound was analyzed for but was not detected above the reported sample quantitation limit
The number preceding the U qualifier is the reported sample quantitation limit.

J The analyte/compound was positively identified and the associated numerical value is an estimated concentration of the analyte/compound in the sample.

B The inorganic analyte was positively identified and the associated numerical value is an estimated concentration because the detection was below the contract required detection limit (CRDL) and above the instrument detection limit.

UJ The analyte/compound was not detected above the reported sample quantitation limit.
The reported quantitation limit, however, is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte/compound in the sample.

R The sample results are rejected during data validation because of serious deficiencies in meeting quality control criteria.