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LETTER REPORT REGARDING SURFACE SOIL AND SUBSURFACE SOIL SAMPLING AND  
ANALYTICAL RESULTS RESOURCE CONSERVATION AND RECOVERY ACT DISPLAY  
AREA NS MAYPORT FL  
12/12/1996  
ABB ENVIRONMENTAL SERVICES



08534.301

December 12, 1996

Southern Division  
Naval Facilities Engineering Command  
ATTN: Mr. David Driggers  
P.O. Box 190010  
2155 Eagle Drive  
North Charleston, SC 29418

Dear David:

**SUBJECT: Surface Soil and Subsurface Soil Sampling and Analytical Results  
Aircraft Display Area  
U.S. Naval Station, Mayport, Florida  
CLEAN District I, Contract No. N62467-89-D-0317/028**

Enclosed please find a copy of the above referenced letter report presenting the results of sampling and chemical analysis of soil samples collected in June 1994 in the vicinity of the Aircraft Display Area.

Sincerely,

ABB Environmental Services, Inc.

Francis K. Lesesne, P.G.  
Technical Lead

Terry Hansen, P.G.  
Project Manager

cc: Cheryl Mitchell, NAVSTA Mayport  
Jim Cason, FDEP  
Martha Berry, USEPA

ABB Environmental Services Inc.

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Connecticut 1995



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Dear David:

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### INTRODUCTION

This document describes the collection and analytical results of surface and subsurface soil samples and associated duplicates collected from the Aircraft Display Area (former location of an A-6 Intruder and an F-4 Phantom) at the U.S. Naval Station (NAVSTA), Mayport, Florida. Also provided are Toxicity Characteristic Leaching Procedure (TCLP) results of abrasive blasting media (Black Beauty™). Attachments included with this letter report are the following:

- Attachment A: Figures
- Attachment B: Tables
- Attachment C: Analytical Results
- Attachment D: References
- Attachment E: Response to Regulatory Comments

The location of NAVSTA Mayport is shown on Figure 1 (Attachment A), and the location of the aircraft display area and sampling locations are shown on Figure 2. The sampling event was performed by ABB Environmental Services, Inc. (ABB-ES), at the request of the Department of the Navy, Southern Division Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) on behalf of NAVSTA Mayport.

The U.S. Environmental Protection Agency (USEPA) was informed by the Navy in correspondence dated October 19, 1995, that the Aircraft Display Area was considered to be an area of concern (AOC) (U.S. Navy, 1995). The surface and subsurface soil sampling and analytical results for the Aircraft Display Area are provided to meet the requirement of a solid waste management unit (SWMU) assessment report. The SWMU assessment report is described in Part II. B. 3. of the NAVSTA Mayport Hazardous and Solid Waste Amendment permit (FL9 170 024 260).

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The purpose of this sampling and analysis event was to collect representative samples of Black Beauty™ as well as surface and subsurface soil samples for laboratory analysis and then assess whether or not hazardous materials might have been released to the environment. The sampling event is not intended to assess the nature and extent of contamination, if present. Additionally, there are no ecological receptor pathways because the site is paved; therefore, risk to ecological receptors was not considered.

Background information obtained for the Aircraft Display Area is based on a site visit and review of available historical aerial photographs. The site visit indicated the presence of an abrasive blasting medium (Black Beauty™) in an area approximately 400 to 800 feet south-southwest of SWMU 16 and the Naval Supply Center (NSC) Fuel Farm (Figure 2). The Black Beauty™ was a thin veneer on the asphalt pavement that formerly was the active runway. Anecdotal evidence from a station employee suggests that Black Beauty™ was stockpiled for future use at this location. Parts of the former runway at the Black Beauty™ area and SWMU 16 were paved in June and July 1995. These areas are to be used as a parking area for station personnel deployed at sea. Additionally, it should be noted that the two aircraft were dismantled and removed from the area in early 1996.

### **FIELD ACTIVITIES**

Field activities were limited to the collection of samples of the abrasive blasting medium and surface and subsurface soil samples. The samples were collected on June 30, 1994. The methodology for sample collection was consistent with standard operating procedures described in the NAVSTA Mayport's Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Workplan (ABB-ES, 1991), the NAVSTA Mayport General Information Report (ABB-ES, 1995), and USEPA Region IV standard operating procedures (USEPA, 1991; and 1996). The samples were shipped to the laboratory by express-overnight delivery under the chain-of-custody protocol.

The following describes the collection of the abrasive blasting medium and soil samples, laboratory analytical procedures, equipment decontamination, and health and safety requirements.

**Black Beauty™ Sample Collection.** Blasting medium sampling was conducted to assess whether or not the blasting medium contained metals (arsenic, barium, beryllium, cadmium, chromium, lead, mercury, selenium, and silver) at concentrations that meet the definition for hazardous waste (40 Code of Federal Regulations [CFR] Part 261). Two samples of Black Beauty™, MPT-AA-Z001 and MPT-AA-Z002, were collected from the asphalt runway at the Aircraft Display Area.

**Surface Soil Sample Collection.** Surface soil sampling was conducted to assess whether or not runoff from the asphalt runway had resulted in a release of hazardous chemicals to the environment. The sampling locations were selected at the grass-covered area because the pavement of the former runway would limit infiltration of surface water. Two surface soil samples, MPT-AA-SS01 and MPT-AA-SS02, and an associated duplicate were collected in grass-covered areas that received surface water runoff from where the Black Beauty™ had been previously stockpiled (Figure 2). A duplicate sample was collected at the location of surface soil sample MPT-AA-SS01. Vegetation was removed and the surface soil samples were collected from the land surface to a depth of 1 foot below land surface (bls).

**Subsurface Soil Sample Collection.** Subsurface soil sampling was also conducted to assess whether or not runoff from the asphalt runway had resulted in a release of hazardous chemicals to the environment. Two subsurface soil samples, MPT-AA-BS01 and MPT-AA-BS02, and an associated duplicate were collected at the surface soil sampling locations. A duplicate was collected at the location of subsurface soil sample MPT-AA-BS01. The subsurface soil samples were collected from a depth of 1 foot to 2 feet bls.

**Laboratory Analyses.** The samples of the Black Beauty™ abrasive blasting medium were analyzed for metals selected from the TCLP list (arsenic, barium, beryllium, cadmium, chromium, lead, mercury, selenium, and silver) (USEPA Method 1311). Soil samples were analyzed for target analytes selected from the groundwater monitoring list contained in Appendix IX, 40 CFR, Part 264, and USEPA Contract Laboratory Program (CLP) target compound list and target analyte list, including volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), metals, and cyanide (ABB-ES, 1995). The analysis was conducted using methods contained in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, USEPA SW846 (USEPA, 1986). A summary of the analytical results is provided in tables in Attachment B, and complete analytical results are provided in Attachment C.

The analytical data package produced by the laboratory was Naval Energy and Environmental Support Activity (NEESA) Level C. The rationale for using NEESA Level C was to provide analytical data that could be validated substituting the SW846 method criteria for CLP method criteria using National Functional Guidelines for Organic Data Review (USEPA, 1990) and Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analysis (USEPA, 1988). The data were validated so that the appropriate decision could be made as to whether or not the site should be evaluated under the NAVSTA Mayport RCRA Corrective Action Program. Because of the limited scope of this project, the TCLP data were not validated according to the NEESA guidance document 20.2-047B (1988), Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program.

**Decontamination.** Sampling equipment was decontaminated according to the equipment decontamination procedures specified in the USEPA-approved RFI Workplan for NAVSTA Mayport, Volume II (ABB-ES, 1991), the NAVSTA Mayport General Information Report (ABB-ES, 1995), and USEPA Region IV Standard Operating Procedures (USEPA, 1991; and 1996).

**Health and Safety.** The field sampling activities were performed in Occupational Safety and Health Administration (OSHA) Level D personal protective equipment (PPE). The Level D PPE consisted of steel-toed work boots and disposable gloves. The health and safety requirements for performance of the fieldwork are described in the Health and Safety Plan for the Mayport RFI Workplan for NAVSTA Mayport, Volume III (ABB-ES, 1991, revised).

## **ANALYTICAL RESULTS**

**Black Beauty™.** Concentrations of barium and cadmium were detected in the extracts from the Black Beauty™ samples and did not exceed the TCLP regulatory criteria (Table 1). The analytical results suggest that Black Beauty™ does not meet the definition of RCRA-characteristic hazardous waste and would not likely be a source of inorganics that may leach and migrate to groundwater (Florida Department of Environmental Protection [FDEP], 1995).

**Soil Samples.** The locations of the surface and subsurface soil samples and associated duplicates collected at the Aircraft Display Area are shown on Figure 2. Tables 2 and 3 summarize the validated analytical results for organic and inorganic analytes, respectively, detected in surface soil samples. Tables 4 and 5 summarize the validated analytical results for organic and inorganic analytes, respectively, detected in subsurface soil samples. A summary of frequencies of detection, range of detection limits, range of detected concentrations, arithmetic mean, and benchmark comparison values for the surface and subsurface soil samples is provided in Tables 6 and 7, respectively. The following describes the analytical results of the surface and subsurface soil samples.

**Surface Soil Sample Analytical Results.** VOCs were not detected in the surface soil samples. Target analytes detected in the surface soil samples consist of 13 SVOCs, 2 pesticides, and 9 metals. Nine SVOCs (acenaphthene, pentachlorophenol, phenanthrene, anthracene, benzo(a)anthracene, chrysene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene) were detected in the duplicate surface soil sample MPT-AA-SS01DUP (Table 2). Fluoranthene, pyrene, benzo(b)fluoranthene, and benzo(k)fluoranthene were detected in the two surface soil samples and associated duplicate. Concentrations of these SVOCs were not detected in the background surface soil samples (Table 6).

Two pesticides (4,4'-dichlorodiphenyldichloroethene [DDE] and 4,4'-dichlorodiphenyltrichloroethane [DDT]) were detected in the two surface soil samples and associated duplicate (Table 2). Concentrations of 4,4'-DDT were not detected in the background screening samples. Concentrations of 4,4'-DDE exceeded the arithmetic mean of the concentration detected in background samples (Table 6).

Nine inorganic analytes, (arsenic, barium, beryllium, chromium, copper, lead, nickel, vanadium, and zinc) were detected at various combinations and concentrations in the surface soil samples (Table 3). Concentrations of arsenic, beryllium, lead, and nickel were not detected in the background surface soil samples (Table 6). Concentrations of barium, chromium, copper, vanadium, and zinc exceeded the background screening values.

**Subsurface Soil Sample Analytical Results.** VOCs were not detected in the subsurface soil samples. Target analytes detected in the subsurface soil samples consisted of 2 SVOCs, 1 pesticide, and 9 metals. Pentachlorophenol was detected in subsurface soil sample MPT-AA-BS01Dup, and benzo(b)fluoranthene was detected in subsurface soil sample MPT-AA-BS01 (Table 4). Concentrations of these SVOCs were not detected in the background subsurface soil samples (Table 7).

4,4'-DDE was detected in subsurface soil MPT-AA-BS01 and its associated duplicate (Table 4). The detected concentration of 4,4'-DDE was less than the mean of the concentration detected in background samples (Table 7).

Nine inorganic analytes, (arsenic, barium, beryllium, chromium, copper, lead, mercury, vanadium, and zinc) were detected at various combinations and concentrations in the subsurface soil samples (Table 5). Zinc exceeded its background screening value (Table 7).

## **PRELIMINARY RISK EVALUATION**

The target analytes detected in the environmental samples were compared to the background screening values computed from stationwide background surface and subsurface soil samples (ABB-ES, 1995), benchmark values from USEPA Region III risk-based concentrations (RBCs) (USEPA, 1995), and residential and industrial benchmark values from the FDEP Soil Cleanup Goals (FDEP, 1995a; 1995b; and 1996).

Concentrations of analytes detected in the surface soil samples were compared to a residential exposure listed in the USEPA Region III RBCs, and residential and industrial worker exposures listed in the FDEP Soil Cleanup Goals. Concentrations of analytes detected in the subsurface soil samples were compared to an industrial exposure listed in the USEPA Region III RBCs and residential and industrial worker exposures listed in the FDEP Soil Cleanup Goals.

Each of the benchmarks provided in Tables 6 and 7 are human health-based and represent the lower of either a noncarcinogenic hazard index (HI) where values less than 1 represent a concentration at which noncarcinogenic effects are not likely, or, for a carcinogen, an excess lifetime cancer risk of  $1 \times 10^{-6}$ ,

which represents a chance of 1 in 1,000,000 for an adverse carcinogenic effect for a continuous lifetime exposure. The concentrations of noncarcinogens listed for the USEPA, Region III RBCs residential exposure scenario correspond to an HI of 0.1, whereas the State of Florida Soil Cleanup Goals are based on an HI of 1. The concentrations for carcinogens listed in both the USEPA Region III RBCs and FDEP Soil Cleanup Goals are at  $1 \times 10^{-6}$ .

The FDEP recommends that risk management goals that are protective of human health should be established at  $1 \times 10^{-6}$  for carcinogens and an HI of 1 for noncarcinogens. Continuous lifetime exposure in the range of  $1 \times 10^{-4}$  (a chance of 1 in 10,000 for an adverse carcinogenic effect for a continuous lifetime exposure) to  $1 \times 10^{-6}$  represents concentrations that are considered by the USEPA to be protective of human health (Federal National Oil and Hazard Substances Pollution Contingency Plan [NCP], Final Rule, [40 CFR, Part 300]).

**Surface Soil Samples.** Benzo(a)pyrene was detected at concentrations that exceeded its USEPA Region III RBCs and FDEP soil cleanup goal (residential exposure only) benchmarks, but not the industrial FDEP soil cleanup goal (Table 6). Currently, there are no USEPA Region III RBCs established for the SVOCs benzo(g,h,i)perylene and phenanthrene; however, there are FDEP soil cleanup goals for residential and industrial exposures, which were not exceeded.

Pesticides were not detected at concentrations that exceed their respective benchmarks (Table 6).

Arsenic and beryllium were detected at concentrations that exceed their respective USEPA Region III RBC and FDEP soil cleanup goal (residential exposure only); however, the concentrations detected did not exceed their respective industrial FDEP soil cleanup goal (Table 6).

The excess lifetime carcinogenic human health risk (surface soils) was estimated for analytes that exceeded the benchmarks (benzo(a)pyrene, arsenic, and beryllium) by comparison of the maximum detected value (Table 8) with the estimated  $1 \times 10^{-6}$  cancer risk values from the USEPA Region III RBCs (residential exposure) and the FDEP soil cleanup goals (residential and industrial exposure) (Table 8). This assessment suggests that hypothetical residential and industrial exposures are likely to be within the risk management range of  $1 \times 10^{-4}$  to  $1 \times 10^{-6}$  that is acceptable to the USEPA for each comparison. The assessment also suggests that the hypothetical residential and industrial exposures based on the USEPA Region III RBC and the FDEP soil cleanup goal are likely to be slightly above or greater than the FDEP risk management goal of  $1 \times 10^{-6}$ .

**Subsurface Soil Samples.** SVOCs and pesticides were not detected at concentrations that exceed their respective benchmarks (Table 7). Arsenic was detected at concentrations that exceed the hypothetical residential FDEP soil cleanup goal; however, the concentration detected did not exceed the Region III or FDEP industrial exposure benchmark values.

An industrial exposure excess lifetime carcinogenic human health risk for subsurface soils was estimated for each analyte that exceeded the residential benchmark(s) by comparison of the maximum detected value (Table 9) to the Region III and FDEP industrial exposure benchmark(s). Based on this comparison, the excess lifetime cancer risk for arsenic is estimated to be less than the USEPA and FDEP risk management goals.

## **SUMMARY**

Below is a summary of the assessment of the surface and subsurface soil sampling and analytical results.

- The results suggest that Black Beauty™ does not meet the definition of RCRA-characteristic hazardous waste and would not likely be a source of inorganics that may leach and migrate to groundwater (FDEP, 1995).
- Noncarcinogenic risks were not identified for surface or subsurface soil by comparison of the analytical data to the risk-based screening values for residential and industrial exposure scenarios.
- VOCs were not detected in the surface and subsurface soil samples.
- Pesticides were not detected in the surface soil samples at concentrations that exceed the human health-based screening criteria for residential and industrial exposure scenarios.
- Concentrations of benzo(a)pyrene, arsenic, and beryllium in the surface soil samples exceeded the hypothetical residential exposure scenarios for their USEPA Region III RBCs and FDEP soil cleanup goals but did not exceed the industrial worker exposure scenario for the FDEP soil cleanup goal.
- An estimate of the risk (Table 8) associated with the residential exposure for surface soil suggests that the excess lifetime cancer risk for the hypothetical surface soil pathway is within the range ( $1 \times 10^{-4}$  to  $1 \times 10^{-6}$ ) that is acceptable to the USEPA and is slightly above or exceeds the risk management level ( $1 \times 10^{-6}$ ) that is recognized by FDEP.
- SVOCs and pesticides were not detected in the subsurface soil samples at concentrations that exceed the human health-based screening criteria for residential and industrial exposure scenarios.
- Concentrations of one inorganic analyte (arsenic) exceed a hypothetical residential exposure scenario for subsurface soil (USEPA Region III RBCs and the FDEP soil cleanup goal) but did not exceed screening values for the USEPA Region III RBCs or FDEP industrial worker exposure scenarios.
- An estimate of the risk (Table 9) associated with a hypothetical industrial exposure for arsenic in subsurface soil suggests that the excess lifetime cancer risk for the pathway is less than the USEPA and FDEP risk management goals.

## **RECOMMENDATIONS**

No further investigation at this time is recommended for the Aircraft Display Area. Additionally, the site should no longer be considered an AOC and evaluated under the NAVSTA Mayport RCRA Corrective Action Program. Also, because chemicals are potentially present in surface soil at concentrations that exceed Federal and State guidance for residential use, it is recommended that the area be designated for industrial use only. The recommendations are based on comparison of analytical results from the surface soil samples to human health-based screening criteria; the current use of the Aircraft Display Area is industrial; and the assumption that the industrial land use will not change in the foreseeable future. The recommendations presented in this report should be reevaluated if use of the

Aircraft Display Area changes from industrial (currently used as an asphalt paved parking area) or a modification(s) is made to the land surface that would result in habitation and/or foraging by ecological receptors.

This document has been prepared under the direction of a Florida Registered Professional Geologist. The work and professional opinions rendered in this report were conducted and developed in accordance with commonly accepted procedures consistent with applicable standards of practice. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the assessment and recommendations in this document. This document was prepared to meet the reporting requirements of an SWMU Assessment Report for the Aircraft Display Area at NAVSTA Mayport, Florida, and should not be construed to be applicable to any other purpose or site.

If you have any questions or comments concerning this information, or should any additional information become available for this site that would affect this recommendation please contact us.

Sincerely,

ABB Environmental Services, Inc.

  
Francis K. Lesesne, P.G.  
Technical Lead

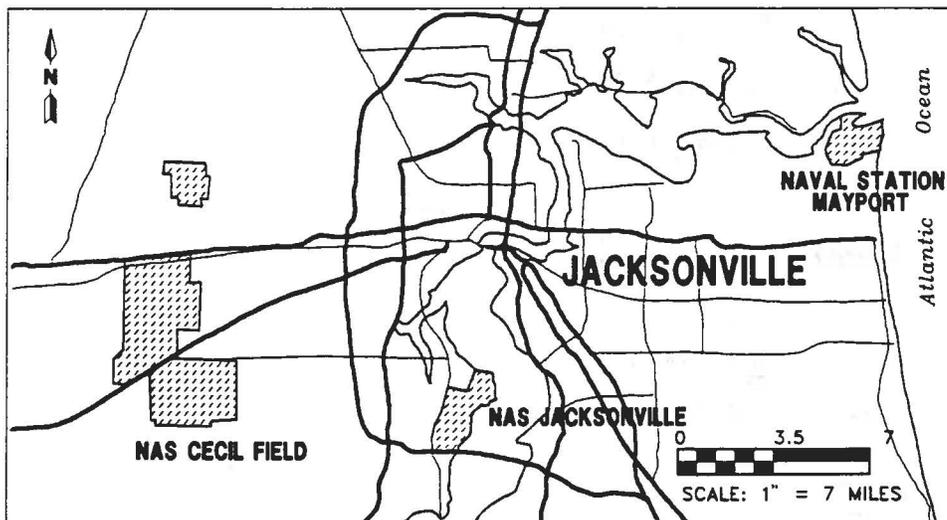
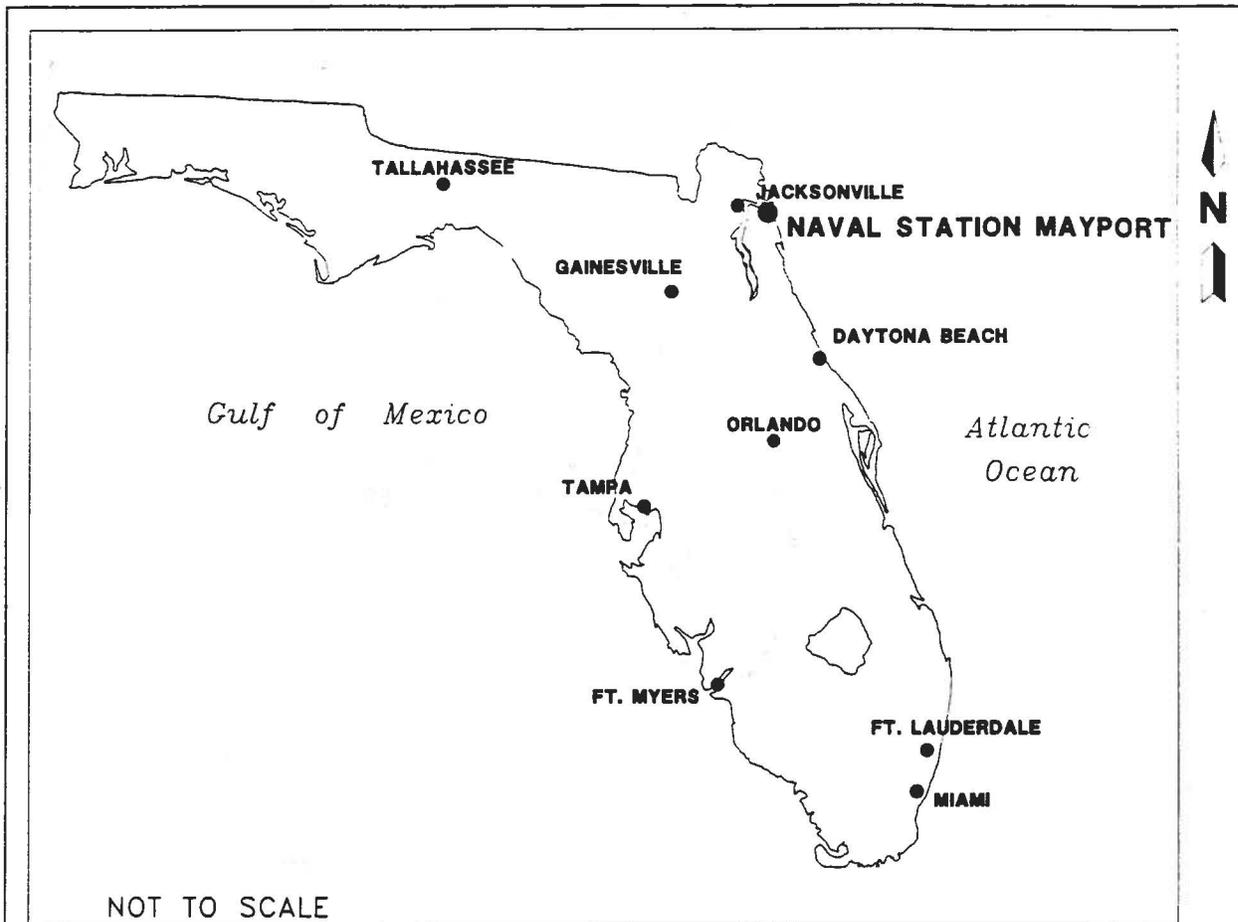
  
Terry Hansen, P.G.  
Project Manager

cc: Cheryl Mitchell, NAVSTA Mayport

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**ATTACHMENT A**  
**FIGURES**



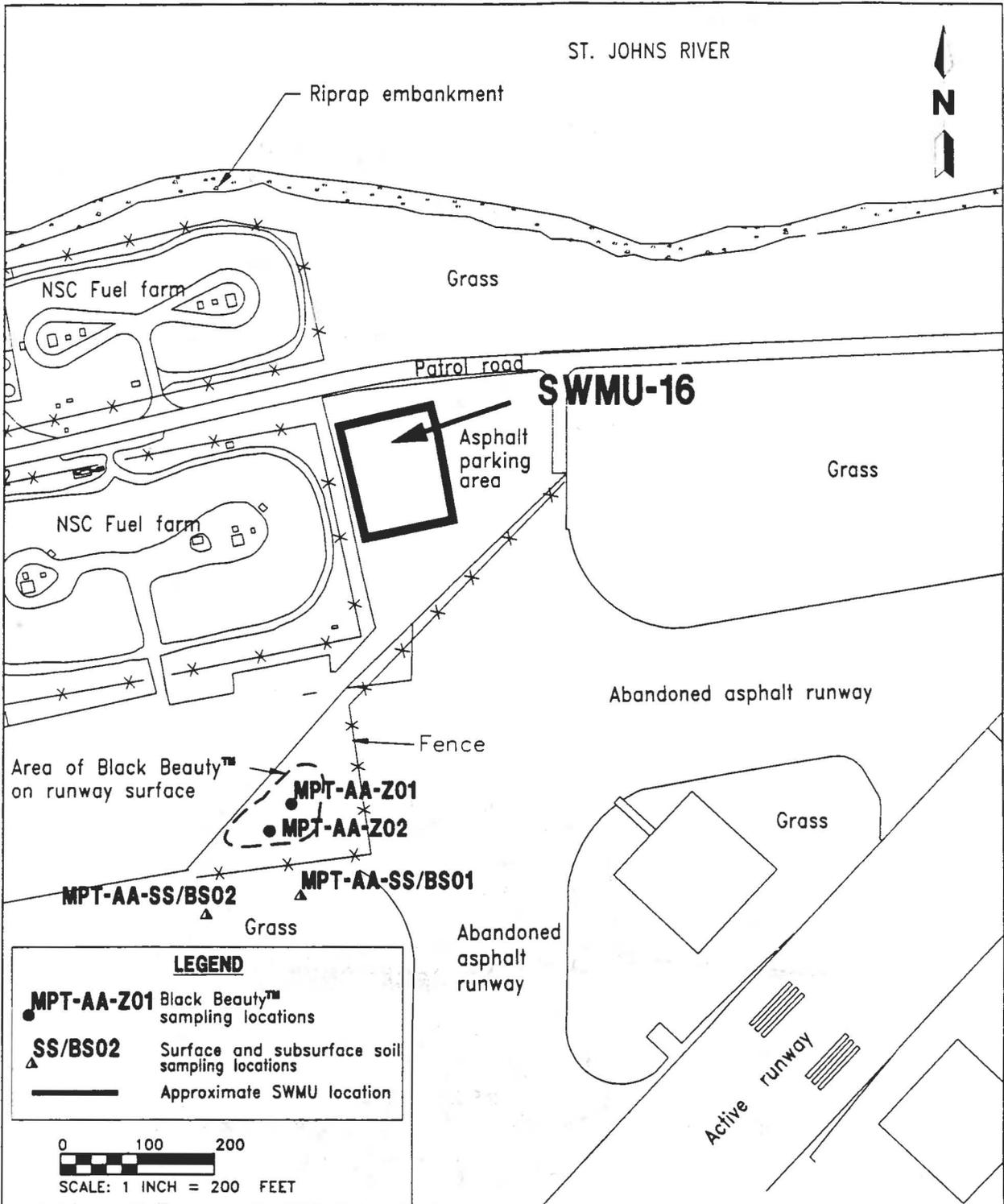
**FIGURE 1**  
**FACILITY LOCATION MAP**



**AIRCRAFT DISPLAY AREA**  
**SAMPLING VISIT REPORT**

**U.S. NAVAL STATION**  
**MAYPORT, FLORIDA**

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**FIGURE 2**  
**BLACK BEAUTY™ AND SURFACE AND**  
**SUBSURFACE SOIL SAMPLE LOCATIONS**



**AIRCRAFT DISPLAY AREA**  
**SAMPLING VISIT REPORT**

**U.S. NAVAL STATION**  
**MAYPORT, FLORIDA**

**ATTACHMENT B**  
**TABLES**

**Table 1**  
**Inorganic Analytes by TCLP Analysis - Black Beauty Samples**  
**Collected from the Aircraft Display Area**

Surface and Subsurface Soil Sampling and Analytical Results  
Aircraft Display Area  
U.S. Naval Station  
Mayport, Florida

Sample Matrix:	Black Beauty™	Black Beauty™
Location/Sample No.:	AAZ001	AAZ002
Date Sampled:	30-June-94	30-June-94

CAS RN	Common Name	Regulatory Level	Laboratory Detection Limit	Concentration	Concentration
7440-38-2	Arsenic	5.0	0.015	< 0.015	< 0.015
7440-39-3	Barium	100.0	0.0010	0.35	0.33
7440-43-9	Cadmium	1.0	0.0010	0.0016	0.0028
7440-47-3	Chromium	5.0	0.0030	< 0.0030	< 0.0030
7439-92-1	Lead	5.0	0.025	< 0.025	< 0.025
7439-97-6	Mercury	0.2	0.0002	< 0.0002	< 0.0002
7782-49-2	Selenium	1.0	0.035	< 0.035	< 0.035
7440-22-4	Silver	5.0	0.0020	< 0.0020	< 0.0020

Notes: Concentrations are reported in milligrams per liter.  
TCLP = toxicity characteristic leachate procedure.  
CAS RN = Chemical Abstract Service registry number.  
< = less than.

**Table 2**  
**Organic Analytes Detected in Surface Soil Samples**  
**at Aircraft Display Area**

Surface and Subsurface Soil Sampling and Analytical Results  
Aircraft Display Area  
U.S. Naval Station  
Mayport, Florida

Analytical Batch No.:	R8272	R8272	R8272
Sample Matrix:	Soil	Soil	Soil
Sample Location:	MPT-AA-SS01	MPT-AA-SS01Dup	MPT-AA-SS02
Sample No.:	AASS001	AASS001Dup	AASS002
Date Sampled:	30-JUN-94	30-JUN-94	30-JUN-94
Sample Depth (ft bls):	0 to 1	0 to 1	0 to 1
<b>Semivolatile Analytes (<math>\mu\text{g}/\text{kg}</math>)</b>			
Acenaphthene	--	97 J	--
Pentachlorophenol	--	170 J	--
Phenanthrene	--	680 J	--
Anthracene	--	130 J	--
Fluoranthene	120 J	1,200	110 J
Pyrene	130 J	930 J	--
Benzo(a)anthracene	--	550 J	--
Chrysene	--	620 J	--
Benzo(b)fluoranthene	130 J	920 J	160 J
Benzo(k)fluoranthene	140 J	460 J	74 J
Benzo(a)pyrene	--	470 J	--
Indeno(1,2,3-cd)pyrene	--	290 J	--
Benzo(g,h,i)perylene	--	180 J	--
<b>Pesticides and PCBs (<math>\mu\text{g}/\text{kg}</math>)</b>			
4,4-DDE	17	12	1.4
4,4-DDT	7.9	6.3	1.8
Notes: Dup = sample is a duplicate. ft bls = feet below land surface. $\mu\text{g}/\text{kg}$ = micrograms per kilogram. -- = concentration of analyte, if present, was less than the detection limit. J = estimated value. PCBs = polychlorinated biphenyls. DDE = dichlorodiphenyldichloroethene. DDT = dichlorodiphenyltrichloroethane.			

**Table 3**  
**Inorganic Analytes Detected in Surface Soil Samples at**  
**Aircraft Display Area**

Surface and Subsurface Soil Sampling and Analytical Results  
Aircraft Display Area  
U.S. Naval Station  
Mayport, Florida

Analytical Batch No.:	R8272	R8272	R8272
Sample Matrix:	Soil	Soil	Soil
Sample Location:	MPT-AA-SS01	MPT-AA-SS01	MPT-AA-SS01
Sample No.:	AASS001	AASS001Dup	AASS002
Date Sampled:	30-JUN-94	30-JUN-94	30-JUN-94
Sample Depth (ft bls):	0 to 1	0 to 1	0 to 1
<b><u>Inorganic Analytes (mg/kg)</u></b>			
Arsenic	1.6 J	1.4 J	2.5 J
Barium	13.2 J	10 J	5.9 J
Beryllium	0.3 J	0.17 J	--
Chromium	8.5	4.4	1.3 J
Copper	5.8	3.5 J	2.9 J
Lead	29 J	9.5 J	2.5 J
Nickel	2.2 J	2.4 J	--
Vanadium	6.7 J	5.9 J	3.4 J
Zinc	27.2 J	18.7 J	9 J
Notes: Dup = sample is a duplicate. ft/bls = feet below land surface. mg/kg = milligram per kilogram. J = estimated value. -- = concentration of analyte, if present, was less than the detection limit.			

**Table 4**  
**Organic Analytes Detected in Subsurface Soil Samples at**  
**Aircraft Display Area**

Surface and Subsurface Soil Sampling and Analytical Results  
Aircraft Display Area  
U.S. Naval Station  
Mayport, Florida

Analytical Batch No.:	R8272	R8272	R8272
Sample Matrix:	Soil	Soil	Soil
Sample Location:	MPT-AA-BS01	MPT-AA-BS01	MPT-AA-BS02
Sample No.:	AABS001	AABS001Dup	AABS002
Date Sampled:	30-JUN-94	30-JUN-94	30-JUN-94
Sample Depth (ft bls)	1 to 2	1 to 2	1 to 2
<b>Semivolatiles Analytes (<math>\mu\text{g}/\text{kg}</math>)</b>			
Pentachlorophenol	--	220 J	--
Benzo(b)fluoranthene	71 J	--	--
<b>Pesticides and PCBs (<math>\mu\text{g}/\text{kg}</math>)</b>			
4,4-DDE	2.2	2.4	--
Notes: Dup = sample is a duplicate. ft bls = feet below land surface. $\mu\text{g}/\text{kg}$ = micrograms per kilogram. -- = concentration of analyte, if present, was less than the detection limit. J = estimated value. PCBs = polychlorinated biphenyls. DDE = dichlorodiphenyldichloroethene.			

**Table 5**  
**Inorganic Analytes Detected in Subsurface Soil Samples at**  
**Aircraft Display Area**

Surface and Subsurface Soil Sampling and Analytical Results  
Aircraft Display Area  
U.S. Naval Station  
Mayport, Florida

Analytical Batch No.:	R8272	R8272	R8272
Sample Matrix:	Soil	Soil	Soil
Sample Location:	MPT-AA-BS01	MPT-AA-BS01	MPT-AA-BS02
Sample No.:	AABS001	AABS001Dup	AABS002
Date Sampled:	30-JUN-94	30-JUN-94	30-JUN-94
Sample Depth (ft bls)	1 to 2	1 to 2	1 to 2
<b><u>Inorganic Analytes (mg/kg)</u></b>			
Arsenic	--	1.1 J	0.63 J
Barium	8.8 J	5 J	3.7 J
Beryllium	0.11 J	0.11 J	--
Chromium	1.5 J	--	--
Copper	1.1 J	0.99 J	0.42 J
Lead	2 J	2.2	0.74
Mercury	--	--	0.03 J
Vanadium	2.6 J	2.1 J	1.9 J
Zinc	7.8	7.1 J	--
<b>Notes:</b> Dup = sample is a duplicate. ft bls = feet below land surface. mg/kg = milligram per kilogram. -- = concentration of analyte, if present, was less than the detection limit. J = estimated value.			

**Table 6**  
**Preliminary Risk Screening of Surface Soil Samples from the Aircraft Display Area**

Surface and Subsurface Soil Sampling and Analytical Results  
Aircraft Display Area  
U.S. Naval Station  
Mayport, Florida

Analyte	Frequency of Detection <sup>1</sup>	Range of Detected Concentrations <sup>2</sup>	Range of Reporting Limits	Mean of Detected Concentrations <sup>3</sup>	Background Screening Value <sup>4</sup>	Region III RBCs <sup>5</sup> (Residential)	FDEP Soil Cleanup Goals <sup>6</sup> (Residential)	FDEP Soil Cleanup Goals <sup>6</sup> (Industrial)	Exceeds Residential Benchmark (Yes/No)	Exceeds Industrial Benchmark (Yes/No)
<b>Semivolatile Organic Compounds (µg/kg)</b>										
Acenaphthene	1/2	<sup>2</sup> 221	345 - 690	221	ND	470,000	2,800,000	30,000,000	No	No
Anthracene	1/2	<sup>2</sup> 237.5	345 - 690	238	ND	2,300,000	20,000,000	300,000,000	No	No
Benzo(a)anthracene	1/2	<sup>2</sup> 447.5	345 - 690	448	ND	880	1,400	4,900	No	No
Benzo(a)-pyrene	1/2	<sup>2</sup> 407.5	345 - 690	408	ND	88	100	500	Yes	No
Benzo(b)-fluoranthene	2/2	160 - <sup>2</sup> 525	NR	343	ND	880	1,400	5,000	No	No
Benzo(g,h,i)-perylene	1/2	262.5	345 - 690	263	ND	NS	14,000	50,000	No	No
Benzo(k)-fluoranthene	2/2	74 - <sup>2</sup> 300	NR	187	ND	8,800	14,000	48,000	No	No
Chrysene	1/2	<sup>2</sup> 482.5	345 - 690	483	ND	88,000	140,000	500,000	No	No
Fluoranthene	2/2	110 - <sup>2</sup> 660	NR	385	ND	310,000	2,900,000	48,000,000	No	No
Indeno(1,2,3cd)-pyrene	1/2	<sup>2</sup> 317.5	345 - 690	318	ND	880	1,400	5,000	No	No
Pentachloro-phenol	1/2	<sup>2</sup> 935	1,700 - 3,300	935	ND	5,300	5,400	12,000	No	No
Phenanthrene	1/2	<sup>2</sup> 512.5	345 - 690	513	ND	NS	1,700,000	21,000,000	No	No
Pyrene	1/2	<sup>2</sup> 530	345 - 690	530	ND	230,000	2,200,000	41,000,000	No	No
See notes at end of table.										

**Table 6 (Continued)**  
**Preliminary Risk Screening of Surface Soil Samples from the Aircraft Display Area**

Solid Waste Management Unit Assessment Report  
Aircraft Display Unit  
U.S. Naval Station  
Mayport, Florida

Analyte	Frequency of Detection <sup>1</sup>	Range of Detected Concentrations <sup>2</sup>	Range of Reporting Limits	Mean of Detected Concentrations <sup>3</sup>	Background Screening Value <sup>4</sup>	Region III RBCs <sup>5</sup> (Residential)	FDEP Soil Cleanup Goal <sup>6</sup> (Residential)	FDEP Soil Cleanup Goal <sup>6</sup> (Industrial)	Exceeds Residential Benchmark (Yes/No)	Exceeds Industrial Benchmark (Yes/No)
<b>Pesticides and PCBs (µg/kg)</b>										
4,4'-DDE	2/2	1.4 - <sup>2</sup> 14.5	NR	8	2.3	1,900	3,000	11,000	No	No
4,4'-DDT	2/2	1.8 - <sup>2</sup> 7.1	NR	4.5	ND	1,900	3,100	12,000	No	No
<b>Inorganics (mg/kg)</b>										
Arsenic <sup>7</sup>	2/2	<sup>2</sup> 1.5 - 2.5	NR	2	ND	0.37	<sup>8</sup> 0.8	<sup>8</sup> 3.7	Yes	No
Barium	2/2	5.9 - <sup>2</sup> 11.6	NR	8.8	5.6	550	5,200	84,000	No	No
Beryllium	1/2	<sup>2</sup> 0.23	0.06 - 0.06	0.24	ND	0.15	0.2	1.0	Yes	No
Chromium	2/2	1.3 - <sup>2</sup> 6.45	NR	3.9	2.6	<sup>9</sup> 39	290	430	No	No
Copper	2/2	2.9 - <sup>2</sup> 4.65	NR	3.8	2.2	290	<sup>10</sup> 2,900	<sup>10</sup> 72,000	No	No
Lead	2/2	2.5 - <sup>2</sup> 19.25	NR	10.9	ND	<sup>11</sup> 400	500	1,000	No	No
Nickel	1/2	<sup>2</sup> 2.3	1.2 - 1.2	2.3	ND	160	1,500	26,000	No	No
Vanadium	2/2	3.4 - <sup>2</sup> 6.3	NR	4.9	4	55	490	4,800	No	No
Zinc	2/2	9 - <sup>2</sup> 22.95	NR	16	2.6	2,300	23,000	560,000	No	No

See notes at the end of table.

**Table 6 (Continued)**  
**Preliminary Risk Screening of Surface Soil Samples from the Aircraft Display Area**

Surface and Subsurface Soil Sampling and Analytical Results  
Aircraft Display Unit  
U.S. Naval Station  
Mayport, Florida

<sup>1</sup> Frequency of detection is the number of samples in which the analyte was detected divided by the total number of samples analyzed (excluding rejected values, "R" qualifier).

<sup>2</sup> Values are the average of the detected concentrations in a sample and its duplicate. For duplicate samples having one nondetected value, 1/2 the Contract Required Quantitation Limit is used as a surrogate.

<sup>3</sup> The mean of detected concentrations is the arithmetic mean of all samples in which the analyte was detected, including values qualified as "J"; it does not include those samples where the analyte was not detected ("U" or "UJ" qualifiers) and rejected ("R" qualifier).

<sup>4</sup> The background screening concentration is twice the average of detected concentrations for inorganic analytes in background samples. Organic values are only one time the mean of detected concentrations, and are included for comparison purposes only. Surface soil background samples are MPT-B-SS1, MPT-B-SS1DUP, MPT-B-SS2, MPT-B-SS3, MPT-B-SS4, MPT-B-SS5, and MPT-B-SS6.

<sup>5</sup> For all chemicals except the essential nutrients (calcium, iron, magnesium, potassium, and sodium), U.S. Environmental Protection Agency (USEPA) Region III RBCs for residential surface soil exposure per January 1993 guidance (Selecting Exposure Routes and Contaminants of Concern by Risk-Based Screening [EPA/903/R-93-001]) were used for screening. Actual values are taken from the USEPA Region III RBC Tables dated February 9, 1995, and are based on a cancer risk of  $1 \times 10^{-6}$  and for noncarcinogens an adjusted hazard quotient (HQ) of 0.1.

<sup>6</sup> Values are taken from the FDEP memorandum, Soil Cleanup Goals for Florida, dated September 29, 1995. The values are for either a residential or industrial worker soil exposure and are based on a cancer risk of  $1 \times 10^{-6}$  and for noncarcinogens an HQ of 1.

<sup>7</sup> The RBCs are based on carcinogenic effects.

<sup>8</sup> Value is from the FDEP memorandum, Applicability of Soil Cleanup Goals for Florida, January 19, 1996.

<sup>9</sup> Chromium in hexavalent form.

<sup>10</sup> The value for copper is from the FDEP memorandum, Soil Cleanup Goals for the Military Sites, dated April 5, 1995.

<sup>11</sup> No RBC is available for lead in soil due to a lack of toxicity data. The value is based on USEPA recommended target cleanup level for Superfund sites (USEPA, 1994).

Notes: Environmental samples included in this evaluation are MPT-AA-SS01, MPT-AA-SS01DUP, and MPT-AA-SS02.

RBC = risk-based concentration.

FDEP = Florida Department of Environmental Protection.

$\mu\text{g}/\text{kg}$  = micrograms per kilogram.

ND = analyte not detected in background surface soil sample.

NR = no reporting limits available.

NS = no screening concentration.

PCBs = polychlorinated biphenyls.

4,4'-DDE = dichlorodiphenyldichloroethene.

4,4'-DDT = dichlorodiphenyltrichloroethane.

$\text{mg}/\text{kg}$  = milligram per kilogram.

**Table 7**  
**Preliminary Risk Screening of Subsurface Soil Samples from the Aircraft Display Area**

Surface and Subsurface Soil Sampling and Analytical Results  
Aircraft Display Unit  
U.S. Naval Station  
Mayport, Florida

Analyte	Frequency of Detection <sup>1</sup>	Range of Detected Concentrations <sup>2</sup>	Range of Reporting Limits	Mean of Detected Concentrations <sup>3</sup>	Background Screening Value <sup>4</sup>	Region III RBCs <sup>5</sup> (Industrial)	FDEP Soil Cleanup Goal <sup>6</sup> (Residential)	FDEP Soil Cleanup Goal <sup>6</sup> (Industrial)	Exceeds Residential Benchmark (Yes/No)	Exceeds Industrial Benchmark (Yes/No)
<b>Semivolatile Organic Compounds (µg/kg)</b>										
Benzo(b)-fluoranthene	1/2	<sup>2</sup> 210.5	350 - 690	211	ND	7,800	1,400	5,000	No	No
Pentachlorophenol	1/2	<sup>2</sup> 960	1,700 - 3,400	960	ND	48,000	5,400	12,000	No	No
<b>Pesticides and PCBs (µg/kg)</b>										
4,4'-DDE	1/2	<sup>2</sup> 2.3	0.71 - 0.71	2.3	3.5	17,000	3,000	11,000	No	No
<b>Inorganics (mg/kg)</b>										
Arsenic <sup>7</sup>	2/2	0.63 - <sup>2</sup> 0.71	0.32 - 0.32	0.67	0.9	3.3	<sup>8</sup> 0.8	<sup>8</sup> 3.7	Yes	No
Barium	2/2	3.7 - <sup>2</sup> 6.9	NR	5.3	7.2	14,000	5,200	84,000	No	No
Beryllium	1/2	<sup>2</sup> 0.11	0.06 - 0.06	0.11	0.14	1.3	0.2	1.0	No	No
Chromium	1/2	<sup>2</sup> 0.89	0.275 - 0.55	0.89	3.4	<sup>9</sup> 1,000	290	430	No	No
Copper	2/2	0.42 - <sup>2</sup> 1.05	NR	0.73	3.6	7,600	<sup>10</sup> 2,900	<sup>10</sup> 72,000	No	No
Lead	2/2	0.74 - <sup>2</sup> 2.1	0.6 - 0.6	1.4	2.8	<sup>11</sup> 400	500	1,000	No	No
Mercury	1/2	0.03	0.03 - 0.03	0.03	0.06	61	23	480	No	No
Vanadium	2/2	1.9 - <sup>2</sup> 2.35	NR	2.1	3.2	1,400	490	4,800	No	No
Zinc	1/2	<sup>2</sup> 7.45	2.9 - 2.9	7.5	4.8	61,000	23,000	560,000	No	No

See notes at end of table.

**Table 7 (Continued)**  
**Preliminary Risk Screening of Subsurface Soil Samples from the Aircraft Display Area**

Surface and Subsurface Soil Sampling and Analytical Results  
Aircraft Display Unit  
U.S. Naval Station  
Mayport, Florida

<sup>1</sup> Frequency of detection is the number of samples in which the analyte was detected divided by the total number of samples analyzed (excluding rejected values, "R" qualifier).

<sup>2</sup> Values are the average of the detected concentrations in a sample and its duplicate. For duplicate samples having one nondetected values, 1/2 the Contract Required Quantitation Limit is used as a surrogate.

<sup>3</sup> The mean of detected concentrations is the arithmetic mean of all samples in which the analyte was detected, including values qualified as "J"; it does not include those samples where the analyte was not detected ("U" or "UJ" qualifiers) and rejected ("R" qualifier).

<sup>4</sup> The background screening concentration is twice the average of detected concentrations for inorganic analytes in background samples. Organic values are only one time the mean of detected concentrations, and are included for comparison purposes only. Surface soil background samples are MPT-B-BS1, MPT-B-BS1DUP, MPT-B-BS4, MPT-B-BS5, and MPT-B-BS6.

<sup>5</sup> For all chemicals except the essential nutrients (calcium, iron, magnesium, potassium, and sodium), U.S. Environmental Protection Agency (USEPA) Region III RBCs for industrial surface soil exposure per January 1993 guidance (Selecting Exposure Routes and Contaminants of Concern by Risk-Based Screening (EPA/903/R-93-001) were used for screening. Actual values are taken from the USEPA Region III RBC Tables dated February 9, 1995 and are based on a cancer risk of  $1 \times 10^{-6}$  and for noncarcinogens an adjusted hazard quotient (HQ) of 0.1.

<sup>6</sup> Values are taken from the FDEP memorandum, Soil Cleanup Goals for Florida, dated September 29, 1995. The values are for either a residential or industrial worker soil exposure and are based on a cancer risk of  $10^{-6}$  and for noncarcinogens an HQ of 1.

<sup>7</sup> The RBCs are based on carcinogenic effects.

<sup>8</sup> Values are taken from the FDEP memorandum, Applicability of Soil Cleanup Goals for Florida, January 19, 1996.

<sup>8</sup> Chromium in hexavalent form.

<sup>10</sup> The value for copper is from the FDEP memorandum, Soil Cleanup Goals for Military Sites, dated April 5, 1995.

<sup>11</sup> No RBC is available for lead because of the lack of toxicity data. The value provided is based on USEPA's recommended target cleanup level for Superfund sites (USEPA, 1994).

Notes: Environmental samples included in this evaluation are MPT-AA-BS01, MPT-AA-BS01DUP, and MPT-AA-BS02.

RBC = risk-based concentration.

FDEP = Florida Department of Environmental Protection.

$\mu\text{g}/\text{kg}$  = micrograms per kilogram.

ND = analyte not detected in background surface soil sample.

PCBs = polychlorinated biphenyls.

4,4'-DDE = dichlorodiphenyldichloroethene.

$\text{mg}/\text{kg}$  = milligrams per kilogram.

NR = no reporting limits available.

**Table 8**  
**Estimated Human Health Risk Based on Maximum Values for**  
**Surface Soil at the Aircraft Display Area**

Surface and Subsurface Soil Sampling and Analytical Results  
Aircraft Display Unit  
U.S. Naval Station  
Mayport, Florida

Analyte	Maximum Detected Concentration <sup>1</sup>	Residential Exposure				Industrial Exposure	
		USEPA Region III RBC <sup>2</sup>	Estimated Residential Cancer Risk <sup>3</sup>	FDEP Soil Cleanup Goal <sup>4</sup>	Estimated Residential Cancer Risk <sup>3</sup>	FDEP Soil Cleanup Goal <sup>4</sup>	Estimated Industrial Cancer Risk <sup>3</sup>
<b><u>Volatile Organic Compounds (µg/kg)</u></b>							
No analytes exceeded screening criteria							
<b><u>Semivolatile Organic Compounds (µg/kg)</u></b>							
Benzo(a)pyrene	408	88	4.6E-6	100	4.1E-6	500	8.1E-7
<b><u>Pesticides and PCBs (µg/kg)</u></b>							
No analytes exceeded screening criteria							
<b><u>Inorganics (mg/kg)</u></b>							
Arsenic	2.5	0.37	6.7E-6	50.8	3.1E-6	3.7	6.7E-7
Beryllium	0.23	0.15	1.5E-6	0.2	1.1E-6	1.0	2.3E-7
<b>Total Cancer Risk</b>			1.3E-5		8.3E-6		1.7E-6

<sup>1</sup> The maximum value is from Table 3.

<sup>2</sup> USEPA Region III RBCs for residential surface soil exposure per January 1993 guidance (Selecting Exposure Routes and Contaminants of Concern by Risk-Based Screening [EPA/903/R-93-001]) were used for screening. Actual values are taken from the USEPA Region III RBC Tables dated February 9, 1995, and are based on a cancer risk of 1x10<sup>-6</sup>.

<sup>3</sup> The cancer risk is an estimated value based on the assumptions used to determine the human health-based risk values.

<sup>4</sup> Values are taken from the FDEP memorandum, Soil Cleanup Goals for Florida, dated September 29, 1995. The values are for either a residential or industrial worker soil exposure and are based on a cancer risk of 10<sup>-6</sup>.

<sup>5</sup> Value for arsenic is taken from the FDEP memorandum, Applicability of Soil Cleanup Goals for Florida, January 19, 1996.

Notes: USEPA = U.S. Environmental Protection Agency.  
RBC = risk-based concentration.  
FDEP = Florida Department of Environmental Protection.  
µg/kg = micrograms per kilogram.  
PCB = polychlorinated biphenyls.  
mg/kg = milligram per kilogram.

**Table 9**  
**Estimated Human Health Risk Based on Maximum Values for**  
**Subsurface Soil at the Aircraft Display Area**

Surface and Subsurface Soil Sampling and Analytical Results  
Aircraft Display Unit  
U.S. Naval Station  
Mayport, Florida

Analyte	Maximum Detected Concentration <sup>1</sup>	Industrial Exposure			
		USEPA Region III RBC <sup>2</sup>	Estimated Residential Cancer Risk <sup>3</sup>	FDEP Soil Cleanup Goal <sup>4</sup>	Estimated Industrial Cancer Risk <sup>3</sup>
<b><u>Volatile Organic Compounds (µg/kg)</u></b>					
No analytes exceeded screening criteria					
<b><u>Semivolatile Organic Compounds (µg/kg)</u></b>					
No analytes exceeded screening criteria					
<b><u>Pesticides and PCBs (µg/kg)</u></b>					
No analytes exceeded screening criteria					
<b><u>Inorganics (mg/kg)</u></b>					
Arsenic	0.71	3.3	2.1E-7	3.7	1.9E-7
<b>Total Cancer Risk</b>			2.1E-7		1.9E-7

<sup>1</sup> The maximum value is from Table 3.

<sup>2</sup> USEPA Region III RBCs for residential surface soil exposure per January 1993 guidance (Selecting Exposure Routes and Contaminants of Concern by Risk-Based Screening [EPA/903/R-93-001]) were used for screening. Actual values are taken from the USEPA Region III RBC Tables dated February 9, 1995, and are based on a cancer risk of 1x10<sup>-6</sup>.

<sup>3</sup> The cancer risk is an estimated value based on the assumptions used to determine the human health-based risk values.

<sup>4</sup> Values are taken from the FDEP memorandum, Applicability of Soil Cleanup Goals for Florida, dated January 19, 1996. The values are for an industrial worker soil exposure and are based on a cancer risk of 1x10<sup>-6</sup>.

Notes: USEPA = U.S. Environmental Protection Agency.  
RBC = risk-based concentration.  
FDEP = Florida Department of Environmental Protection.  
µg/kg = micrograms per kilogram.  
PCB = polychlorinated biphenyls.  
mg/kg = milligram per kilogram.

**ATTACHMENT C**  
**ANALYTICAL RESULTS**

NAVSTA MAYPORT  
RFA Soil Boring Data

Lab Sample Number:	R8272008			R8272009				R8272010				
Site	RFADATA			RFADATA				RFADATA				
Locator	AABS001			AABS001D				AABS002				
Collect Date:	30-JUN-94			30-JUN-94				30-JUN-94				
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL

ESTICIDES/PCBs	ug/kg											
alpha-BHC	.71 U	ug/kg	.71									
beta-BHC	1.4 U	ug/kg	1.4									
delta-BHC	.71 U	ug/kg	.71									
gamma-BHC (Lindene)	.71 U	ug/kg	.71									
Heptachlor	.71 U	ug/kg	.71									
Aldrin	.71 U	ug/kg	.71									
Heptachlor epoxide	.71 U	ug/kg	.71									
Endosulfan I	.71 U	ug/kg	.71									
Dieldrin	.71 U	ug/kg	.71									
4,4-DDE	2.2	ug/kg		2.4	ug/kg		.71 U	ug/kg	.71	.71 U	ug/kg	.71
Endrin	1.4 U	ug/kg	1.4									
Endosulfan II	1.4 U	ug/kg	1.4									
4,4-DDD	1.4 U	ug/kg	1.4									
Endosulfan sulfate	1.4 U	ug/kg	1.4									
4,4-DDT	1.4 U	ug/kg	1.4									
Methoxychlor	2.9 U	ug/kg	2.9	2.9 U	ug/kg	2.9	2.9 U	ug/kg	2.9	2.8 U	ug/kg	2.8
Endrin aldehyde	1.4 U	ug/kg	1.4									
Endrin ketone	1.4 U	ug/kg	1.4									
Chlordane	7.1 U	ug/kg	7.1									
Chlorobenzilate	21 U	ug/kg	21									
Diallate	43 U	ug/kg	43	42 U	ug/kg	42	42 U	ug/kg	42	42 U	ug/kg	42
Toxaphene	35 U	ug/kg	35									
Isodrin	.71 U	ug/kg	.71									
Kepone	43 U	ug/kg	43	43 U	ug/kg	43	43 U	ug/kg	43	42 U	ug/kg	42
Aroclor-1016	35 U	ug/kg	35									
Aroclor-1221	71 U	ug/kg	71									
Aroclor-1232	71 U	ug/kg	71									
Aroclor-1242	35 U	ug/kg	35									
Aroclor-1248	35 U	ug/kg	35									
Aroclor-1254	17 U	ug/kg	17									
Aroclor-1260	17 U	ug/kg	17									

U \* NOT DETECTED R \* RESULT IS REJECTED  
J \* ESTIMATED VALUE UJ \* REPORTED QUANTITATION LIMIT IS ESTIMATED

NAVSTA MAYPORT  
RFA Surface Soil Data

Lab Sample Number:  
Site  
Locator  
Collect Date:

R8272005  
RFADATA  
AASS001  
30-JUN-94

R8272006  
RFADATA  
AASS001D  
30-JUN-94

R8272007  
RFADATA  
AASS002  
30-JUN-94

VALUE QUAL UNITS DL VALUE QUAL UNITS DL VALUE QUAL UNITS DL

Chemical Name	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
VOLATILES												
1-Nitrosodimethylamine	690	U	ug/kg	690	690	UJ	ug/kg		690	UJ	ug/kg	
Phenol	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Aniline	690	UJ	ug/kg		690	UJ	ug/kg		690	UJ	ug/kg	
Diis(2-Chloroethyl) ether	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Benzyl Alcohol	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
2-Methylphenol	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Diis(2-Chloroisopropyl) ether	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
1-Nitroso-di-n-propylamine	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Hexachloroethane	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Nitrobenzene	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Isophorane	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
2-Nitrophenol	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
2,4-Dimethylphenol	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Benzoic acid	3400	U	ug/kg	3400	3300	UJ	ug/kg		3300	UJ	ug/kg	
Diis(2-Chloroethoxy)methane	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
2,4-Dichlorophenol	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
1,2,4-Trichlorobenzene	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Naphthalene	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
4-Chloroaniline	690	UJ	ug/kg		690	UJ	ug/kg		690	UJ	ug/kg	
Hexachlorobutadiene	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
4-Chloro-3-methylphenol	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
2-Methylnaphthalene	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Hexachlorocyclopentadiene	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
2,4,6-Trichlorophenol	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Dimethylphthalate	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
2,4,5-Trichlorophenol	3400	U	ug/kg	3400	3300	U	ug/kg	3300	3300	U	ug/kg	3300
2-Chloronaphthalene	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
2-Nitroaniline	3400	U	ug/kg	3400	3300	U	ug/kg	3300	3300	U	ug/kg	3300
Acenaphthylene	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
2,6-Dinitrotoluene	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
3-Nitroaniline	3400	UJ	ug/kg		3300	UJ	ug/kg		3300	UJ	ug/kg	
Acenaphthene	690	U	ug/kg	690	97	J	ug/kg		690	U	ug/kg	690
2,4-Dinitrophenol	3400	UJ	ug/kg		3300	UJ	ug/kg		3300	UJ	ug/kg	
4-Nitrophenol	3400	U	ug/kg	3400	690	U	ug/kg	690	690	U	ug/kg	690
Dibenzofuran	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
2,4-Dinitrotoluene	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Diethylphthalate	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
4-Chlorophenyl-phenylether	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Fluorene	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
4-Nitroaniline	3400	U	ug/kg	3400	3300	U	ug/kg	3300	3300	U	ug/kg	3300
4,6-Dinitro-2-methylphenol	3400	UJ	ug/kg		3300	UJ	ug/kg		3300	UJ	ug/kg	
N-Nitrosodiphenylamine (1)	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
1,2-Diphenylhydrazine	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
4-Bromophenyl-phenylether	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Hexachlorobenzene	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Pentachlorophenol	3400	U	ug/kg	3400	170	J	ug/kg		3300	U	ug/kg	3300
Phenanthrene	690	U	ug/kg	690	680	J	ug/kg		690	U	ug/kg	690
Anthracene	690	U	ug/kg	690	130	J	ug/kg		690	U	ug/kg	690
Di-n-Butylphthalate	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Fluoranthene	120	J	ug/kg		1200		ug/kg		110	J	ug/kg	

NAVSTA MAYPORT  
RFA Surface Soil Data

Lab Sample Number:  
Site  
Locator  
Collect Date:

R8272005  
RFADATA  
AASS001  
30-JUN-94

R8272006  
RFADATA  
AASS001D  
30-JUN-94

R8272007  
RFADATA  
AASS002  
30-JUN-94

VALUE QUAL UNITS DL VALUE QUAL UNITS DL VALUE QUAL UNITS DL

Pyrene	130	J	ug/kg		930		ug/kg	690	U	ug/kg	690
Butylbenzylphthalate	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
3,3'-Dichlorobenzidine	1400	U	ug/kg	1400	1400	U	ug/kg	1400	U	ug/kg	1400
Benzo(a)anthracene	690	U	ug/kg	690	550	J	ug/kg	690	U	ug/kg	690
Chrysene	690	U	ug/kg	690	620	J	ug/kg	690	U	ug/kg	690
bis(2-Ethylhexyl)phthalate	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
Di-n-octylphthalate	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
Benzo(b)fluoranthene	130	J	ug/kg		920	J	ug/kg	160	J	ug/kg	
Benzo(k)fluoranthene	140	J	ug/kg		460	J	ug/kg	74	J	ug/kg	
Benzo(a)pyrene	690	U	ug/kg	690	470	J	ug/kg	690	U	ug/kg	690
Indeno(1,2,3-cd)pyrene	690	U	ug/kg	690	290	J	ug/kg	690	U	ug/kg	690
Dibenz(a,h)anthracene	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
Benzo(g,h,i)perylene	690	U	ug/kg	690	180	J	ug/kg	690	UJ	ug/kg	
2-Picoline	3400	U	ug/kg	3400	3300	U	ug/kg	3300	U	ug/kg	3300
Methyl methanesulfonate	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
Ethyl methanesulfonate	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
Acetophenone	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
N-Nitrosopiperidine	690	UJ	ug/kg		690	UJ	ug/kg	690	UJ	ug/kg	
Phenyl-tert-butylamine	3400	U	ug/kg	3400	690	U	ug/kg	690	U	ug/kg	690
2,6-Dichlorophenol	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
N-Nitroso-di-n-butylamine	690	U	ug/kg	690	690	UJ	ug/kg	690	UJ	ug/kg	
N-Nitrosodiethylamine	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
N-Nitrosopyrrolidine	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
Benzidine	3400	UJ	ug/kg		3300	U	ug/kg	3300	U	ug/kg	3300
1,2,4,5-Tetrachlorobenzene	3400	U	ug/kg	3400	3300	U	ug/kg	3300	U	ug/kg	3300
Pentachlorobenzene	3400	U	ug/kg	3400	3300	U	ug/kg	3300	U	ug/kg	3300
1-Naphthylamine	3400	UJ	ug/kg		3300	U	ug/kg	3300	U	ug/kg	3300
2-Naphthylamine	3400	UJ	ug/kg		3300	UJ	ug/kg	3300	UJ	ug/kg	
2,3,4,6-Tetrachlorophenol	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
Phenacetin	690	U	ug/kg	690	690	UJ	ug/kg	690	UJ	ug/kg	
4-Aminobiphenyl	3400	UJ	ug/kg		3300	UJ	ug/kg	3300	UJ	ug/kg	
Pentachloronitrobenzene	3400	U	ug/kg	3400	3300	U	ug/kg	3300	U	ug/kg	3300
Pronamide	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
p-(Dimethylamino)azobenzene	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
7,12-Dimethylbenz(A)Anthracene	690	U	ug/kg	690	690	UJ	ug/kg	690	UJ	ug/kg	
3-Methylcholanthrene	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
Pyridine	3400	U	ug/kg	3400	3300	U	ug/kg	3300	U	ug/kg	3300
N-Nitrosomethylethylamine	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
N-Nitrosomorpholine	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
o-Toluidine	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
Hexachloropropene	3400	U	ug/kg	3400	3300	U	ug/kg	3300	U	ug/kg	3300
p-Phenylenediamine	34000	U	ug/kg	34000	33000	U	ug/kg	33000	U	ug/kg	33000
Safrole	3400	U	ug/kg	3400	3300	U	ug/kg	3300	U	ug/kg	3300
Isosafrole	3400	U	ug/kg	3400	3300	U	ug/kg	3300	U	ug/kg	3300
1,4-Naphthoquinone	69000	UJ	ug/kg		69000	UJ	ug/kg	69000	UJ	ug/kg	
1,3-Dinitrobenzene	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
3-Nitro-o-toluidine	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
1,3,5-Trinitrobenzene	690	U	ug/kg	690	690	U	ug/kg	690	U	ug/kg	690
4-Nitroquinoline-1-oxide	34000	UJ	ug/kg		33000	UJ	ug/kg	33000	UJ	ug/kg	
Methapyrilene	3400	UJ	ug/kg		3300	UJ	ug/kg	3300	UJ	ug/kg	
3,3'-Dimethylbenzidine	690	UJ	ug/kg		690	UJ	ug/kg	690	UJ	ug/kg	
Hexachlorophene	34000	UJ	ug/kg		33000	UJ	ug/kg	33000	UJ	ug/kg	

NAVSTA MAYPORT  
RFA Surface Soil Data

Lab Sample Number:  
Site  
Locator  
Collect Date:

R8272005  
RFADATA  
AASS001  
30-JUN-94

R8272006  
RFADATA  
AASS001D  
30-JUN-94

R8272007  
RFADATA  
AASS002  
30-JUN-94

VALUE QUAL UNITS DL VALUE QUAL UNITS DL VALUE QUAL UNITS DL

Aramite	3400	U	ug/kg	3400	3300	U	ug/kg	3300	3300	U	ug/kg	3300
2-Chlorophenol	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
3- & 4-Methylphenol (2)	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690
Hexachloropropene	3400	U	ug/kg	3400	3300	U	ug/kg	3300	3300	U	ug/kg	3300
2-Acetylaminofluorene	690	U	ug/kg	690	690	U	ug/kg	690	690	U	ug/kg	690

U = NOT DETECTED R = RESULT IS REJECTED

J = ESTIMATED VALUE UJ = REPORTED QUANTITATION LIMIT IS ESTIMATED

THE ADDITIONAL LISTINGS OF RESULTS FOR 1,2-; 1,3-; AND 1,4-DICHLOROBENZENE WERE GENERATED FROM THE SVOC (8270) ANALYTICAL RUN.

NAVSTA MAYPORT  
RFA Soil Boring Data

Lab Sample Number:	R8272005			R8272006				R8272007				
Site	RFADATA			RFADATA				RFADATA				
Locator	AASS001			AASS001D				AASS002				
Collect Date:	30-JUN-94			30-JUN-94				30-JUN-94				
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL

	ug/kg											
ESTICIDES/PCBs												
alpha-BHC	.7 U	ug/kg	.7									
beta-BHC	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6	1.6 U	ug/kg	1.6
delta-BHC	.7 U	ug/kg	.7									
gamma-BHC (Lindane)	.7 U	ug/kg	.7									
Heptachlor	.7 U	ug/kg	.7									
Aldrin	.7 U	ug/kg	.7									
Heptachlor epoxide	.7 U	ug/kg	.7									
Endosulfan I	.7 U	ug/kg	.7									
Dieldrin	.7 U	ug/kg	.7									
4,4-DDE	17	ug/kg	12	12	ug/kg	12	1.4	ug/kg	1.4	1.4	ug/kg	1.4
Endrin	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6	1.6 U	ug/kg	1.6
Endosulfan II	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6	1.6 U	ug/kg	1.6
4,4-DDD	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6	1.6 U	ug/kg	1.6
Endosulfan sulfate	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6	1.6 U	ug/kg	1.6
4,4-DDT	7.9	ug/kg	6.3	6.3	ug/kg	6.3	1.8	ug/kg	1.8	1.8	ug/kg	1.8
Methoxychlor	2.8 U	ug/kg	2.8									
Endrin aldehyde	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6	1.6 U	ug/kg	1.6
Endrin ketone	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6	1.6 U	ug/kg	1.6
Chlordane	7 U	ug/kg	7									
Chlorobenzilate	21 U	ug/kg	21									
Diallate	42 U	ug/kg	42									
Toxaphene	35 U	ug/kg	35	34 U	ug/kg	34	34 U	ug/kg	34	34 U	ug/kg	34
Isodrin	.7 U	ug/kg	.7									
Kepone	42 U	ug/kg	42									
Aroclor-1016	35 U	ug/kg	35	34 U	ug/kg	34	34 U	ug/kg	34	34 U	ug/kg	34
Aroclor-1221	70 U	ug/kg	70									
Aroclor-1232	70 U	ug/kg	70									
Aroclor-1242	35 U	ug/kg	35	34 U	ug/kg	34	34 U	ug/kg	34	34 U	ug/kg	34
Aroclor-1248	35 U	ug/kg	35	34 U	ug/kg	34	34 U	ug/kg	34	34 U	ug/kg	34
Aroclor-1254	17 U	ug/kg	17									
Aroclor-1260	17 U	ug/kg	17									

U \* NOT DETECTED R = RESULT IS REJECTED  
J \* ESTIMATED VALUE UJ = REPORTED QUANTITATION LIMIT IS ESTIMATED

NAVSTA MAYPORT  
RFA Surface Soil Data

Lab Sample Number:	R8272005		R8272006		R8272007	
Site	RFADATA		RFADATA		RFADATA	
Locator	AASS001		AASS001D		AASS002	
Collect Date:	30-JUN-94		30-JUN-94		30-JUN-94	
	VALUE	DL	VALUE	DL	VALUE	DL

NORGANICS (SOIL)

mg/kg

	VALUE	DL	VALUE	DL	VALUE	DL
Antimony	1 U	1	1 U	1	1 U	1
Arsenic	1.6 J		1.4 J		2.5 J	
Barium	13.2 J		10 J		5.9 J	
Beryllium	.3 J		.17 J		.06 U	.06
Cadmium	.21 U	.21	.21 U	.21	.21 U	.21
Chromium	8.5		4.4		1.3 J	
Cobalt	1.5 U	1.5	1.2 U	1.2	.65 U	.65
Copper	5.8		3.5 J		2.9 J	
Cyanide	.14 U	.14	.14 U	.14	.14 U	.14
Lead	.29 J		9.5 J		2.5 J	
Mercury	.03 U	.03	.03 U	.03	.03 U	.03
Nickel	2.2 J		2.4 J		1.2 U	1.2
Selenium	.63 UJ		.62 UJ		.62 UJ	
Silver	.44 U	.44	.44 U	.44	.44 U	.44
Thallium	.13 U	.13	.12 UJ		.12 U	.12
Tin	3.7 U	3.7	3.01 U	3.01	3.01 UJ	
Vanadium	6.7 J		5.9 J		3.4 J	
Zinc	27.2 J		18.7 J		9 J	

U = NOT DETECTED R = RESULT IS REJECTED  
J = ESTIMATED VALUE UJ = REPORTED QUANTITATION LIMIT IS ESTIMATED

NAVSTA MAYPORT  
RFA Soil Boring Data

Lab Sample Number:  
Site  
Locator  
Collect Date:

R8272008  
RFADATA  
AABS001  
30-JUN-94

R8272009  
RFADATA  
AABS001D  
30-JUN-94

R8272010  
RFADATA  
AABS002  
30-JUN-94

VALUE QUAL UNITS DL VALUE QUAL UNITS DL VALUE QUAL UNITS DL

VOLATILES	ug/kg									
Chloromethane	11 U	ug/kg	11	11 U	ug/kg	11	11 U	ug/kg	11	11
Bromomethane	11 U	ug/kg	11	11 U	ug/kg	11	11 U	ug/kg	11	11
Vinyl chloride	11 U	ug/kg	11	11 U	ug/kg	11	11 U	ug/kg	11	11
Chloroethane	11 U	ug/kg	11	11 U	ug/kg	11	11 U	ug/kg	11	11
Methylene chloride	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Acetone	11 U	ug/kg	11	11 U	ug/kg	11	11 U	ug/kg	11	11
Carbon disulfide	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
1,1-Dichloroethane	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
1,1-Dichloroethene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
1,2-Dichloroethene (total)	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Chloroform	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
1,2-Dichloroethane	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
2-Butanone	11 UJ	ug/kg	11	11 UJ	ug/kg	11	11 UJ	ug/kg	11	11
1,1,1-Trichloroethane	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Carbon tetrachloride	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Bromodichloromethane	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
1,2-Dichloropropane	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
cis-1,3-Dichloropropene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Trichloroethene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Dibromochloromethane	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
1,1,2-Trichloroethane	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Benzene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
trans-1,3-Dichloropropene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Bromoform	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
4-Methyl-2-pentanone	11 U	ug/kg	11	11 U	ug/kg	11	11 U	ug/kg	11	11
2-Hexanone	11 U	ug/kg	11	11 U	ug/kg	11	11 U	ug/kg	11	11
Tetrachloroethene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
1,1,2,2-Tetrachloroethane	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Toluene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Chlorobenzene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Ethylbenzene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Styrene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Xylenes (total)	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Dichlorodifluoromethane	11 UJ	ug/kg	11	11 UJ	ug/kg	11	11 UJ	ug/kg	11	11
Trichlorofluoromethane	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
1,3-Dichlorobenzene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Acrolein	110 U	ug/kg	110	110 U	ug/kg	110	110 U	ug/kg	110	110
Iodomethane	11 U	ug/kg	11	11 U	ug/kg	11	11 U	ug/kg	11	11
1,4-Dichlorobenzene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Acrylonitrile	110 U	ug/kg	110	110 U	ug/kg	110	110 U	ug/kg	110	110
Dibromomethane	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
1,2-Dichlorobenzene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
2-Chloroethylvinylether	11 U	ug/kg	11	11 U	ug/kg	11	11 U	ug/kg	11	11
Ethyl methacrylate	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
1,2,3-Trichloropropene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
trans-1,4-Dichloro-2-butene	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
Isobutyl alcohol	210 R	ug/kg	210	210 R	ug/kg	210	210 R	ug/kg	210	210
1,1,1,2-Tetrachloroethane	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5
1,2-Dibromo-3-chloropropene	11 UJ	ug/kg	11	11 UJ	ug/kg	11	11 UJ	ug/kg	11	11
1,2-Dibromoethane	5 U	ug/kg	5	5 U	ug/kg	5	5 U	ug/kg	5	5

NAVSTA MAYPORT  
RFA Soil Boring Data

Lab Sample Number: R8272008  
Site: RFADATA  
Locator: AABS001  
Collect Date: 30-JUN-94

R8272009  
RFADATA  
AABS001D  
30-JUN-94

R8272010  
RFADATA  
AABS002  
30-JUN-94

	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
1,4-Dioxane	210	R	ug/kg		210	R	ug/kg		210	R	ug/kg	
3-Chloropropene	5	UJ	ug/kg		5	UJ	ug/kg		5	UJ	ug/kg	
Acetonitrile	110	U	ug/kg	110	110	U	ug/kg	110	110	U	ug/kg	110
Chloroprene	210	U	ug/kg	210	210	U	ug/kg	210	210	U	ug/kg	210
Methacrylonitrile	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Methyl methacrylate	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Pentachloroethane	11	UJ	ug/kg		11	UJ	ug/kg		11	UJ	ug/kg	
Propionitrile	110	UJ	ug/kg		110	UJ	ug/kg		110	UJ	ug/kg	
Vinyl acetate	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11

U = NOT DETECTED R = RESULT IS REJECTED

J = ESTIMATED VALUE UJ = REPORTED QUANTITATION LIMIT IS ESTIMATED

THE ADDITIONAL LISTINGS OF RESULTS FOR 1,2-; 1,3-; AND 1,4-DICHLOROBENZENE WERE GENERATED FROM THE SVOC (8270) ANALYTICAL RUN.

NAVSTA MAYPORT  
RFA Soil Boring Data

Lab Sample Number:	R8272008			R8272009			R8272010		
Site	RFADATA			RFADATA			RFADATA		
Locator	AABS001			AABS001D			AABS002		
Collect Date:	30-JUN-94			30-JUN-94			30-JUN-94		
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE

	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
VOLATILES			ug/kg									
Chloromethane	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Bromomethane	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Vinyl chloride	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Chloroethane	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Methylene chloride	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Acetone	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Carbon disulfide	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
1,1-Dichloroethane	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
1,1-Dichloroethene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
1,2-Dichloroethene (total)	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Chloroform	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
1,2-Dichloroethane	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
2-Butanone	11	UJ	ug/kg		11	UJ	ug/kg		11	UJ	ug/kg	
1,1,1-Trichloroethane	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Carbon tetrachloride	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Bromodichloromethane	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
1,2-Dichloropropane	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
cis-1,3-Dichloropropene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Trichloroethene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Dibromochloromethane	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
1,1,2-Trichloroethane	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Benzene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
trans-1,3-Dichloropropene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Bromoform	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
4-Methyl-2-pentanone	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
2-Hexanone	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Tetrachloroethene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
1,1,2,2-Tetrachloroethane	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Toluene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Chlorobenzene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Ethylbenzene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Styrene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Xylenes (total)	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Dichlorodifluoromethane	11	UJ	ug/kg		11	UJ	ug/kg		11	UJ	ug/kg	
Trichlorofluoromethane	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
1,3-Dichlorobenzene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Acrolein	110	U	ug/kg	110	110	U	ug/kg	110	110	U	ug/kg	110
Iodomethane	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
1,4-Dichlorobenzene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Acrylonitrile	110	U	ug/kg	110	110	U	ug/kg	110	110	U	ug/kg	110
Dibromomethane	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
1,2-Dichlorobenzene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
2-Chloroethylvinylether	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Ethyl methacrylate	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
1,2,3-Trichloropropene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
trans-1,4-Dichloro-2-butene	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Isobutyl alcohol	210	R	ug/kg		210	R	ug/kg		210	R	ug/kg	
1,1,1,2-Tetrachloroethane	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
1,2-Dibromo-3-chloropropane	11	UJ	ug/kg		11	UJ	ug/kg		11	UJ	ug/kg	
1,2-Dibromoethane	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5

NAVSTA MAYPORT  
RFA Soil Boring Data

Lab Sample Number:	R8272008		R8272009		R8272010
Site	RFADATA		RFADATA		RFADATA
Locator	AABS001		AABS001D		AABS002
Collect Date:	30-JUN-94		30-JUN-94		30-JUN-94

	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
1,4-Dioxane	210	R	ug/kg		210	R	ug/kg		210	R	ug/kg	
3-Chloropropene	5	UJ	ug/kg		5	UJ	ug/kg		5	UJ	ug/kg	
Acetonitrile	110	U	ug/kg	110	110	U	ug/kg	110	110	U	ug/kg	110
Chloroprene	210	U	ug/kg	210	210	U	ug/kg	210	210	U	ug/kg	210
Methacrylonitrile	5	U	ug/kg	5	5	U	ug/kg	5	5	U	ug/kg	5
Methyl methacrylate	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11
Pentachloroethane	11	UJ	ug/kg		11	UJ	ug/kg		11	UJ	ug/kg	
Propionitrile	110	UJ	ug/kg		110	UJ	ug/kg		110	UJ	ug/kg	
Vinyl acetate	11	U	ug/kg	11	11	U	ug/kg	11	11	U	ug/kg	11

U = NOT DETECTED R = RESULT IS REJECTED  
 J = ESTIMATED VALUE UJ = REPORTED QUANTITATION LIMIT IS ESTIMATED  
 THE ADDITIONAL LISTINGS OF RESULTS FOR 1,2-; 1,3-; AND 1,4-DICHLOROBENZENE WERE GENERATED FROM THE SVOC (8270) ANALYTICAL RUN.

NAVSTA MAYPORT  
RFA Soil Boring Data

Lab Sample Number:	R8272008			R8272009			R8272010		
Site	RFADATA			RFADATA			RFADATA		
Locator	AABS001			AABS001D			AABS002		
Collect Date:	30-JUN-94			30-JUN-94			30-JUN-94		
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE

EMIVOLATILES

	ug/kg									
N-Nitrosodimethylamine	700 UJ	ug/kg			700 UJ	ug/kg			690 UJ	ug/kg
Phenol	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Aniline	700 UJ	ug/kg			700 UJ	ug/kg			690 UJ	ug/kg
bis(2-Chloroethyl) ether	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Benzyl Alcohol	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
2-Methylphenol	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
bis(2-Chloroisopropyl) ether	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
N-Nitroso-di-n-propylamine	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Hexachloroethane	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Nitrobenzene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Isophorone	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
2-Nitrophenol	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
2,4-Dimethylphenol	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Benzoic acid	3400 UJ	ug/kg			3400 UJ	ug/kg			3400 UJ	ug/kg
bis(2-Chloroethoxy)methane	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
2,4-Dichlorophenol	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
1,2,4-Trichlorobenzene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Naphthalene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
4-Chloroaniline	700 UJ	ug/kg			700 UJ	ug/kg			690 UJ	ug/kg
Hexachlorobutadiene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
4-Chloro-3-methylphenol	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
2-Methylnaphthalene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Hexachlorocyclopentadiene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
2,4,6-Trichlorophenol	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Dimethylphthalate	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
2,4,5-Trichlorophenol	3400 U	ug/kg	3400		3400 U	ug/kg	3400		3400 U	ug/kg
2-Chloronaphthalene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
2-Nitroaniline	3400 U	ug/kg	3400		3400 U	ug/kg	3400		3400 U	ug/kg
Acenaphthylene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
2,6-Dinitrotoluene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
3-Nitroaniline	3400 UJ	ug/kg			3400 UJ	ug/kg			3400 UJ	ug/kg
Acenaphthene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
2,4-Dinitrophenol	3400 UJ	ug/kg			3400 UJ	ug/kg			3400 UJ	ug/kg
4-Nitrophenol	3400 U	ug/kg	3400		3400 U	ug/kg	3400		3400 U	ug/kg
Dibenzofuran	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
2,4-Dinitrotoluene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Diethylphthalate	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
4-Chlorophenyl-phenylether	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Fluorene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
4-Nitroaniline	3400 U	ug/kg	3400		3400 U	ug/kg	3400		3400 U	ug/kg
4,6-Dinitro-2-methylphenol	3400 UJ	ug/kg			3400 UJ	ug/kg			3400 UJ	ug/kg
N-Nitrosodiphenylamine (1)	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
1,2-Diphenylhydrazine	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
4-Bromophenyl-phenylether	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Hexachlorobenzene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Pentachlorophenol	3400 U	ug/kg	3400		220 J	ug/kg			3400 U	ug/kg
Phenanthrene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Anthracene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Di-n-Butylphthalate	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg
Fluoranthene	700 U	ug/kg	700		700 U	ug/kg	700		690 U	ug/kg

NAVSTA MAYPORT  
RFA Soil Boring Data

Lab Sample Number:  
Site  
Locator  
Collect Date:

R8272008  
RFADATA  
AABS001  
30-JUN-94

R8272009  
RFADATA  
AABS001D  
30-JUN-94

R8272010  
RFADATA  
AABS002  
30-JUN-94

VALUE QUAL UNITS DL VALUE QUAL UNITS DL VALUE QUAL UNITS DL

Pyrene	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Butylbenzylphthalate	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
3,3'-Dichlorobenzidine	1400 U	ug/kg	1400	1400 U	ug/kg	1400	1400 U	ug/kg	1400
Benzo(a)anthracene	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Chrysene	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
bis(2-Ethylhexyl)phthalate	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Di-n-octylphthalate	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Benzo(b)fluoranthene	71 J	ug/kg		700 UJ	ug/kg		690 UJ	ug/kg	
Benzo(k)fluoranthene	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Benzo(a)pyrene	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Indeno(1,2,3-cd)pyrene	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Dibenz(a,h)anthracene	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Benzo(g,h,i)perylene	700 UJ	ug/kg		700 UJ	ug/kg		690 UJ	ug/kg	
2-Picoline	3400 U	ug/kg	3400	3400 U	ug/kg	3400	3400 U	ug/kg	3400
Methyl methanesulfonate	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Ethyl methanesulfonate	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Acetophenone	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
N-Nitrosopiperidine	700 UJ	ug/kg		700 UJ	ug/kg		690 UJ	ug/kg	
Phenyl-tert-butylamine	3400 U	ug/kg	3400	3400 U	ug/kg	3400	3400 U	ug/kg	3400
2,6-Dichlorophenol	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
N-Nitroso-di-n-butylamine	700 UJ	ug/kg		700 UJ	ug/kg		690 UJ	ug/kg	
N-Nitrosodiethylamine	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
N-Nitrosopyrrolidine	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Benzidine	3400 U	ug/kg	3400	3400 U	ug/kg	3400	3400 U	ug/kg	3400
1,2,4,5-Tetrachlorobenzene	3400 U	ug/kg	3400	3400 U	ug/kg	3400	3400 U	ug/kg	3400
Pentachlorobenzene	3400 U	ug/kg	3400	3400 U	ug/kg	3400	3400 U	ug/kg	3400
1-Naphthylamine	3400 U	ug/kg	3400	3400 U	ug/kg	3400	3400 U	ug/kg	3400
2-Naphthylamine	3400 UJ	ug/kg		3400 UJ	ug/kg		3400 UJ	ug/kg	
2,3,4,6-Tetrachlorophenol	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Phenacetin	700 UJ	ug/kg		700 UJ	ug/kg		690 UJ	ug/kg	
4-Aminobiphenyl	3400 UJ	ug/kg		3400 UJ	ug/kg		3400 UJ	ug/kg	
Pentachloronitrobenzene	3400 U	ug/kg	3400	3400 U	ug/kg	3400	3400 U	ug/kg	3400
Pronamide	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
p-(Dimethylamino)azobenzene	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
7,12-Dimethylbenz(A)Anthracene	700 UJ	ug/kg		700 UJ	ug/kg		690 UJ	ug/kg	
3-Methylcholanthrene	700 UJ	ug/kg		700 UJ	ug/kg		690 UJ	ug/kg	
Pyridine	3400 U	ug/kg	3400	3400 U	ug/kg	3400	3400 U	ug/kg	3400
N-Nitrosomethylethylamine	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
N-Nitrosomorpholine	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
o-Toluidine	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Hexachloropropene	3400 U	ug/kg	3400	3400 U	ug/kg	3400	3400 U	ug/kg	3400
p-Phenylenediamine	34000 U	ug/kg	34000	34000 U	ug/kg	34000	34000 U	ug/kg	34000
Safrole	3400 U	ug/kg	3400	3400 U	ug/kg	3400	3400 U	ug/kg	3400
Isosafrole	3400 U	ug/kg	3400	3400 U	ug/kg	3400	3400 U	ug/kg	3400
1,4-Naphthoquinone	70000 UJ	ug/kg		70000 UJ	ug/kg		69000 UJ	ug/kg	
1,3-Dinitrobenzene	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
5-Nitro-o-toluidine	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
1,3,5-Trinitrobenzene	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
4-Nitroquinoline-1-oxide	34000 UJ	ug/kg		34000 UJ	ug/kg		34000 UJ	ug/kg	
Methapyrilene	3400 UJ	ug/kg		3400 UJ	ug/kg		3400 UJ	ug/kg	
3,3'-Dimethylbenzidine	700 UJ	ug/kg		700 UJ	ug/kg		690 UJ	ug/kg	
Hexachlorophene	34000 UJ	ug/kg		34000 UJ	ug/kg		34000 UJ	ug/kg	

NAVSTA MAYPORT  
RFA Soil Boring Data

Lab Sample Number:  
Site  
Locator  
Collect Date:

R8272008  
RFADATA  
AABS001  
30-JUN-94

R8272009  
RFADATA  
AABS001D  
30-JUN-94

R8272010  
RFADATA  
AABS002  
30-JUN-94

VALUE QUAL UNITS DL VALUE QUAL UNITS DL VALUE QUAL UNITS DL

Aramite	3400 U	ug/kg	3400	3400 U	ug/kg	3400	3400 U	ug/kg	3400
2-Chlorophenol	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
3- & 4-Methylphenol (2)	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690
Hexachloropropene	3400 U	ug/kg	3400	3400 U	ug/kg	3400	3400 U	ug/kg	3400
2-Acetylaminofluorene	700 U	ug/kg	700	700 U	ug/kg	700	690 U	ug/kg	690

U = NOT DETECTED R = RESULT IS REJECTED

J = ESTIMATED VALUE UJ = REPORTED QUANTITATION LIMIT IS ESTIMATED

THE ADDITIONAL LISTINGS OF RESULTS FOR 1,2-; 1,3-; AND 1,4-DICHLOROBENZENE WERE GENERATED FROM THE SVOC (8270) ANALYTICAL RUN.

NAVSTA MAYPORT  
RFA Soil Boring Data

Lab Sample Number:	R8272008			R8272009				R8272010				
Site	RFADATA			RFADATA				RFADATA				
Locator	AABS001			AABS001D				AABS002				
Collect Date:	30-JUN-94			30-JUN-94				30-JUN-94				
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL

STICIDES/PCBs	ug/kg											
alpha-BHC	.71 U	ug/kg	.71									
beta-BHC	1.4 U	ug/kg	1.4									
delta-BHC	.71 U	ug/kg	.71									
gamma-BHC (Lindane)	.71 U	ug/kg	.71									
Heptachlor	.71 U	ug/kg	.71									
Aldrin	.71 U	ug/kg	.71									
Heptachlor epoxide	.71 U	ug/kg	.71									
Endosulfan I	.71 U	ug/kg	.71									
Dieldrin	.71 U	ug/kg	.71									
4,4-DDE	2.2	ug/kg		2.4	ug/kg		.71 U	ug/kg	.71	.71 U	ug/kg	.71
Endrin	1.4 U	ug/kg	1.4									
Endosulfan II	1.4 U	ug/kg	1.4									
4,4-DDD	1.4 U	ug/kg	1.4									
Endosulfan sulfate	1.4 U	ug/kg	1.4									
4,4-DDT	1.4 U	ug/kg	1.4									
Methoxychlor	2.9 U	ug/kg	2.9	2.9 U	ug/kg	2.9	2.9 U	ug/kg	2.9	2.8 U	ug/kg	2.8
Endrin aldehyde	1.4 U	ug/kg	1.4									
Endrin ketone	1.4 U	ug/kg	1.4									
Chlordane	7.1 U	ug/kg	7.1									
Chlorobenzilate	21 U	ug/kg	21									
Diallate	43 U	ug/kg	43	42 U	ug/kg	42	42 U	ug/kg	42	42 U	ug/kg	42
Toxaphene	35 U	ug/kg	35									
Isodrin	.71 U	ug/kg	.71									
Kepone	43 U	ug/kg	43	43 U	ug/kg	43	42 U	ug/kg	42	42 U	ug/kg	42
Aroclor-1016	35 U	ug/kg	35									
Aroclor-1221	71 U	ug/kg	71									
Aroclor-1232	71 U	ug/kg	71									
Aroclor-1242	35 U	ug/kg	35									
Aroclor-1248	35 U	ug/kg	35									
Aroclor-1254	17 U	ug/kg	17									
Aroclor-1260	17 U	ug/kg	17									

U = NOT DETECTED R = RESULT IS REJECTED  
J = ESTIMATED VALUE UJ = REPORTED QUANTITATION LIMIT IS ESTIMATED

NAVSTA MAYPORT  
RFA Soil Boring Data

Lab Sample Number:	R8272005		R8272006		R8272007				
Site	RFADATA		RFADATA		RFADATA				
Locator	AASS001		AASS001D		AASS002				
Collect Date:	30-JUN-94		30-JUN-94		30-JUN-94				
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL
ESTICIDES/PCBs		ug/kg							
alpha-BHC	.7 U	ug/kg	.7	.7 U	ug/kg	.7	.7 U	ug/kg	.7
beta-BHC	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6
delta-BHC	.7 U	ug/kg	.7	.7 U	ug/kg	.7	.7 U	ug/kg	.7
gamma-BHC (Lindane)	.7 U	ug/kg	.7	.7 U	ug/kg	.7	.7 U	ug/kg	.7
Heptachlor	.7 U	ug/kg	.7	.7 U	ug/kg	.7	.7 U	ug/kg	.7
Aldrin	.7 U	ug/kg	.7	.7 U	ug/kg	.7	.7 U	ug/kg	.7
Heptachlor epoxide	.7 U	ug/kg	.7	.7 U	ug/kg	.7	.7 U	ug/kg	.7
Endosulfan I	.7 U	ug/kg	.7	.7 U	ug/kg	.7	.7 U	ug/kg	.7
Dieldrin	.7 U	ug/kg	.7	.7 U	ug/kg	.7	.7 U	ug/kg	.7
4,4-DDE	17	ug/kg		12	ug/kg		1.4	ug/kg	
Endrin	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6
Endosulfan II	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6
4,4-DDD	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6
Endosulfan sulfate	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6
4,4-DDT	7.9	ug/kg		6.3	ug/kg		1.8	ug/kg	
Methoxychlor	2.8 U	ug/kg	2.8	2.8 U	ug/kg	2.8	2.8 U	ug/kg	2.8
Endrin aldehyde	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6
Endrin ketone	1.4 U	ug/kg	1.4	1.4 U	ug/kg	1.4	1.6 U	ug/kg	1.6
Chlordane	7 U	ug/kg	7	7 U	ug/kg	7	7 U	ug/kg	7
Chlorobenzilate	21 U	ug/kg	21	21 U	ug/kg	21	21 U	ug/kg	21
Diallate	42 U	ug/kg	42	42 U	ug/kg	42	42 U	ug/kg	42
Toxaphene	35 U	ug/kg	35	34 U	ug/kg	34	34 U	ug/kg	34
Isodrin	.7 U	ug/kg	.7	.7 U	ug/kg	.7	.7 U	ug/kg	.7
Kepone	42 U	ug/kg	42	42 U	ug/kg	42	42 U	ug/kg	42
Aroclor-1016	35 U	ug/kg	35	34 U	ug/kg	34	34 U	ug/kg	34
Aroclor-1221	70 U	ug/kg	70	70 U	ug/kg	70	70 U	ug/kg	70
Aroclor-1232	70 U	ug/kg	70	70 U	ug/kg	70	70 U	ug/kg	70
Aroclor-1242	35 U	ug/kg	35	34 U	ug/kg	34	34 U	ug/kg	34
Aroclor-1248	35 U	ug/kg	35	34 U	ug/kg	34	34 U	ug/kg	34
Aroclor-1254	17 U	ug/kg	17	17 U	ug/kg	17	17 U	ug/kg	17
Aroclor-1260	17 U	ug/kg	17	17 U	ug/kg	17	17 U	ug/kg	17

U = NOT DETECTED R = RESULT IS REJECTED  
J = ESTIMATED VALUE UJ = REPORTED QUANTITATION LIMIT IS ESTIMATED

NAVSTA MAYPORT  
RFA Soil Boring Data

Lab Sample Number:	R8272008		R8272009		R8272010	
Site	RFADATA		RFADATA		RFADATA	
Locator	AABS001		AABS001D		AABS002	
Collect Date:	30-JUN-94		30-JUN-94		30-JUN-94	
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

ORGANICS (SOIL)	mg/kg								
Antimony	1.1 U	mg/kg	1.1	1.1 UJ	mg/kg		1.1 U	mg/kg	1.1
Arsenic	.64 UJ	mg/kg		1.1 J	mg/kg		.63 J	mg/kg	
Barium	8.8 J	mg/kg		5 J	mg/kg		3.7 J	mg/kg	
Beryllium	.11 J	mg/kg		.11 J	mg/kg		.06 U	mg/kg	.06
Cadmium	.21 U	mg/kg	.21	.21 U	mg/kg	.21	.21 U	mg/kg	.21
Chromium	1.5 J	mg/kg		.55 U	mg/kg	.55	.55 U	mg/kg	.55
Cobalt	.71 U	mg/kg	.71	.95 U	mg/kg	.95	.65 U	mg/kg	.65
Copper	1.1 J	mg/kg		.99 J	mg/kg		.42 J	mg/kg	
Cyanide	.14 U	mg/kg	.14	.14 U	mg/kg	.14	.14 U	mg/kg	.14
Lead	2 J	mg/kg		2.2	mg/kg		.74	mg/kg	
Mercury	.03 U	mg/kg	.03	.03 U	mg/kg	.03	.03 J	mg/kg	
Nickel	1.3 U	mg/kg	1.3	1.2 U	mg/kg	1.2	1.2 U	mg/kg	1.2
Selenium	.64 UJ	mg/kg		.64 UJ	mg/kg		.63 UJ	mg/kg	
Silver	.45 U	mg/kg	.45	.44 U	mg/kg	.44	.44 U	mg/kg	.44
Thallium	.13 U	mg/kg	.13	.13 UJ	mg/kg		.13 U	mg/kg	.13
Tin	3.6 U	mg/kg	3.6	3.8 U	mg/kg	3.8	3.01 U	mg/kg	3.01
Vanadium	2.6 J	mg/kg		2.1 J	mg/kg		1.9 J	mg/kg	
Zinc	7.8	mg/kg		7.1 J	mg/kg		2.9 U	mg/kg	2.9

U = NOT DETECTED R = RESULT IS REJECTED  
J = ESTIMATED VALUE UJ = REPORTED QUANTITATION LIMIT IS ESTIMATED

**ATTACHMENT D**

**REFERENCES**

## REFERENCES

- ABB Environmental Services, Inc. (ABB-ES), 1991, Resource Conservation and Recovery Act Facility Investigation Workplan, U.S. Naval Station, Mayport, Florida, Volumes I, II, and III (Interim Final): prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina, October.
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**ATTACHMENT E**  
**RESPONSE TO REGULATORY COMMENTS**

## INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract, No. N62467-89-D-0317, is conducting a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) on behalf of the U.S. Navy at the U.S. Naval Station (NAVSTA), Mayport, Florida. This investigation is being conducted in accordance with the Hazardous and Solid Waste Amendment (HSWA) permit No. FL9-170-024-260, issued by the U.S. Environmental Protection Agency (USEPA) on March 25, 1988, and revised and reissued June 15, 1993.

Below are responses to comments made by the Florida Department of Environmental Protection (FDEP) in correspondence dated January 5, 1996 (FDEP, 1996a) concerning the report entitled Surface and Subsurface Soil Sampling and Analytical Results, Aircraft Display Area, NAVSTA, Mayport, Florida (ABB-ES, 1995).

## PROJECT REVIEW COMMENTS

**U.S. Naval Station  
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Surface and Subsurface Soil Sampling  
and Analytical Results**

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### Florida Department of Environmental Protection

1. **In a letter dated October 19, 1995 to Mr. Joseph Franzmathes, Region IV EPA, M.J. McVann, acting Staff Civil Engineer, stated that this area was an area of concern (AOC). I recognize that this letter was written after this report; however, please clarify the status of this area.**

The draft Aircraft Display Area report stated that this site was neither a solid waste management unit (SWMU) nor AOC. The report will be revised to be consistent with the Navy's correspondence dated October 19, 1995.

2. **Since several target analytes were detected in low levels in the surface and subsurface soil samples, please justify why a groundwater sample was not obtained. It seems reasonable that the shallow groundwater flow would be generally toward the north or northeast; if so, are data available from wells at the existing fuel farm or at SWMU 16 that could be utilized in this regard.**

Below are the reasons for not installing a monitoring well at the aircraft display area site.

- Anecdotal evidence suggests that Black Beauty™ was stockpiled for future use at this location. The area has also been used as a parking area for station personnel deployed at sea. The area was being assessed because of the potential that Black Beauty™ was used for abrasive blasting of painted metal parts.
- Analytical results for samples of Black Beauty™ using the toxic characteristics leachate procedure (TCLP) suggest that the material does not meet the definition of a hazardous waste and would not likely be a source of inorganics that may leach to groundwater (FDEP, 1995).
- Two surface and subsurface soil sample pairs were collected from areas that receive surface water runoff from the Aircraft Display Area based on observation of the site topography.
- Volatile organic analytes were not detected in either surface or subsurface soil samples.
- Semivolatile organics compounds (SVOCs), which primarily were polynuclear aromatic hydrocarbons (PAHs), were detected in the surface soil samples collected from the two sampling locations and at only one of the subsurface soil sampling locations. The surface soil sample and duplicate at sampling location MPT-AA-SS01 both contained PAHs. However, there was poor correlation between the number of analytes and concentrations detected in the two samples. This is also demonstrated by the occurrence of benzo(a)pyrene in the surface soil samples. Benzo(a)pyrene was detected in the duplicate and not the

## PROJECT REVIEW COMMENTS (Continued)

### **U.S. Naval Station Mayport, Florida Surface and Subsurface Soil Sampling and Analytical Results**

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environmental sample from sampling location MPT-AA-SS01. Benzo(a)pyrene was detected at a concentration that exceeded its Florida residential soil cleanup goal (FDEP, 1995), but not the industrial screening concentration.

- The subsurface soil samples (environmental sample and duplicate) from sampling location MPT-AA-SB01 both contained a different SVOC. Three PAHs detected in the surface soil sample collected from sampling location MPT-AA-SS02 were not detected in the subsurface soil sample from this location (Tables 2 and 4). This suggests that either poor mixing of the samples occurred or that the chemicals are present as a heterogenous mixture in the samples and/or decrease in concentration with depth.
- Two pesticides (4,4-DDE and 4,4-DDT) were detected in surface soil samples collected from both sampling locations. One pesticide (4,4-DDE) was detected in an environmental sample and duplicate collected from one subsurface soil sampling location. The concentrations of 4,4-DDE detected in the subsurface soil samples were less than the concentrations detected in the surface soil samples, suggesting that the concentrations decrease with depth.
- None of the target organic analytes were detected in subsurface soil samples at concentrations that exceed their respective residential or industrial Florida soil cleanup goals.
- Inorganic analytes arsenic and beryllium were detected in surface soil samples at concentrations that exceed their respective Florida residential soil cleanup goals (FDEP, 1995; and 1996b), but not industrial screening concentrations. Arsenic was detected in subsurface soil samples at concentrations that exceed its Florida residential soil cleanup goal (FDEP, 1996b), but not the industrial screening concentration.

It also should be noted that none of the PAHs and pesticides were detected in the surface and subsurface soil samples at concentrations exceeding the leaching criteria listed in the Florida Soil Cleanup Goals (FDEP, 1995). Currently there are no leaching values for arsenic and beryllium.

The monitoring wells at SWMU 16 are approximately 150 to 400 feet from the aircraft display area. The monitoring well located closest to the aircraft display area (MPT-16-MW04S) is the hydraulically upgradient monitoring well for SWMU 16 (please refer to Figure 7-2 in the RFI Report for Group II [ABB-ES, 1996a]). However, this monitoring well is located hydraulically sidegradient to the Aircraft Display Area (i.e., to the side of the Aircraft Display Area along a similar flowpath line). Therefore, this monitoring well location would not be expected to provide a groundwater sample representative of the surficial aquifer beneath the aircraft display area.

Another monitoring well (MPT-16-MW01I) is located approximately 200 feet hydraulically downgradient from the Aircraft Display Area. SVOCs were not detected in groundwater samples collected from this monitoring well. However, it is likely that the Aircraft Display Area would not be a source of SVOCs at this location, because the analytical data from surface and

## **PROJECT REVIEW COMMENTS (Continued)**

### **U.S. Naval Station Mayport, Florida Surface and Subsurface Soil Sampling and Analytical Results**

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subsurface soil samples suggest that the combination and concentrations of SVOCs detected in subsurface soil samples were much less than those detected in the surface soil samples.

Additionally, analytical data from other sites at NAVSTA Mayport also support the conclusion that monitoring wells are not warranted at sites where low concentrations (i.e., concentrations at or slightly above the analytical detection limits) of aromatic volatile organics or PAHs of organic compounds are detected in soil samples and are not detected in groundwater samples. Assessments for the following sites support this conclusion:

- SWMU 26 (ABB-ES, 1996b)
- SWMU 28 (ABB-ES, 1996b)
- SWMUs 20 and 21 (ABB-ES, 1996c)
- SWMU 52 (ABB-ES, 1996c)

The source of the PAHs at the Aircraft Display Area is likely from the use of the area as a parking lot, and the pesticides are from the historic application of pesticides. Based on the results of the TCLP and soil analytical data, there does not appear to have been a release to the environment of significant proportion to result in an adverse impact to groundwater quality; therefore, installing a monitoring well(s) and collecting a groundwater sample(s) at this site is not warranted.

3. **There are some relatively minor errors in the document: this includes the FDEP soil cleanup goal (FDEP, September 29, 1995) for pyrene in an industrial scenario (Table 6, page B-6) listed as 47,000,000 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ). The correct value is 41,000,000  $\mu\text{g}/\text{kg}$ . Additionally, the FDEP Soil Cleanup Goals for copper (page B-7) are the values for the interim goals; the present goals do not carry a value for copper. Please insert a reference to the interim goals for this value. In Table 8, page B-11, the FDEP Soil Cleanup Goal for benzo(a)pyrene is listed as 140  $\mu\text{g}/\text{kg}$ ; it is 100  $\mu\text{g}/\text{kg}$ . In the recommendations, Bullet No. 5 discusses benzo(a)anthracene; it appears that this should be benzo(a)pyrene.**

Minor errors will be corrected.

4. **Three analytes (benzo(a)pyrene, arsenic and beryllium) exceeded the FDEP Soil Cleanup Goal and Region III EPA RBCs for surface soil in a residential scenario. Estimated human health risk related to beryllium concentrations yielded an industrial cancer risk of  $2.3\text{E}-6$  with an estimated Total Cancer Risk of  $1.8\text{E}-6$ ; depending upon additional data from groundwater data review or sampling, the Navy may, in addition to further data acquisition or cleanup operations, want to consider an industrial deed restriction for this area. I suggest that the Mayport Partnering Team begin discussing options for this area.**

Additional sampling of soil and groundwater is not warranted at this site. This conclusion is based on the interpretation of analytical results from the sampling locations at the Aircraft Display

**PROJECT REVIEW COMMENTS (Continued)**

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Area. No further action at this time is recommended based on the assumption that use of the site will remain industrial for the foreseeable future. Also please refer to the response to Comment 2.

## **PROJECT REVIEW COMMENTS (Continued)**

### **U.S. Naval Station Mayport, Florida Surface and Subsurface Soil Sampling and Analytical Results**

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#### References

- ABB-Environmental Services Inc. (ABB-ES), 1995, Surface and Subsurface Soil Sampling and Analytical Results, Aircraft Display Area, U.S. Naval Station, Mayport, Florida: prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina, October.
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