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NAS CECIL FIELD  
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SAMPLING AND ANALYSIS REPORT FACILITIES 216 AND 249 BASE REALIGNMENT AND  
CLOSURE ZONE D INDUSTRIAL AND FLIGHTLINE AREA NAS CECIL FIELD FL  
11/1/1998  
ABB ENVIRONMENTAL

**SAMPLING AND ANALYSIS REPORT**  
**FACILITIES 216 AND 249**  
**BASE REALIGNMENT AND CLOSURE**  
**ZONE D, INDUSTRIAL AND FLIGHTLINE AREA**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/090**

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**November 1998**

**Revision 0.0**

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Base Realignment and Closure  
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Naval Air Station Cecil Field  
Jacksonville, Florida

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## GLOSSARY

ABB-ES	ABB Environmental Services, Inc
BCT	Base Realignment and Closure cleanup team
bls	below land surface
BRAC	Base Realignment and Closure
EBS	environmental baseline survey
ELCR	excess lifetime cancer risk
FDEP	Florida Department of Environmental Protection
HLA	Harding Lawson Associates
HQ	hazard quotient
mg/kg	milligrams per kilogram
NAS	Naval Air Station
PCB	polychlorinated biphenyl
ppm	parts per million
PRE	preliminary risk evaluation
RBC	risk-based concentration
SAO	sampling and analysis outline
SCTL	soil cleanup target level
TCL	target compound list
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank

## 1.0 INTRODUCTION

Harding Lawson Associates (HLA), under contract to Southern Division, Naval Facilities Engineering Command, has completed the Phase II Sampling and Analysis program for Facilities 216 and 249 at Naval Air Station (NAS) Cecil Field. This report summarizes the related field operations, results, conclusions, and recommendations.

Facilities 216 and 249 are located between Avenue "A" and Jet Road, outside of the restricted flightline area (Figure 1). Facility 216 is referred to as the Fire Pump/Air Compressor Building for Hangar 67, in the Base Realignment and Closure (BRAC) NAS Cecil Field Environmental Baseline Survey Report (EBS) (ABB Environmental Services, Inc. [ABB-ES], 1994a). Facility 216 houses pumps and compressors for flightline fire protection systems. Facility 249 consists of a transformer and electrical switching equipment. The equipment is mounted on concrete pads within a fenced enclosure on the west side of Facility 216.

A 3,000-gallon capacity underground storage tank (UST), formerly located outside the east wall of Facility 216, has been removed and replaced by an aboveground storage tank. The aboveground storage tank contains diesel fuel to supply pumps within Facility 216. There is no soil or groundwater contamination associated with the former UST (ABB-ES, 1998).

Two compressed air tanks, with associated oil traps, are located near the northeast corner of Facility 216. Pipes from the oil traps are connected to drains in a concrete slab on grade.

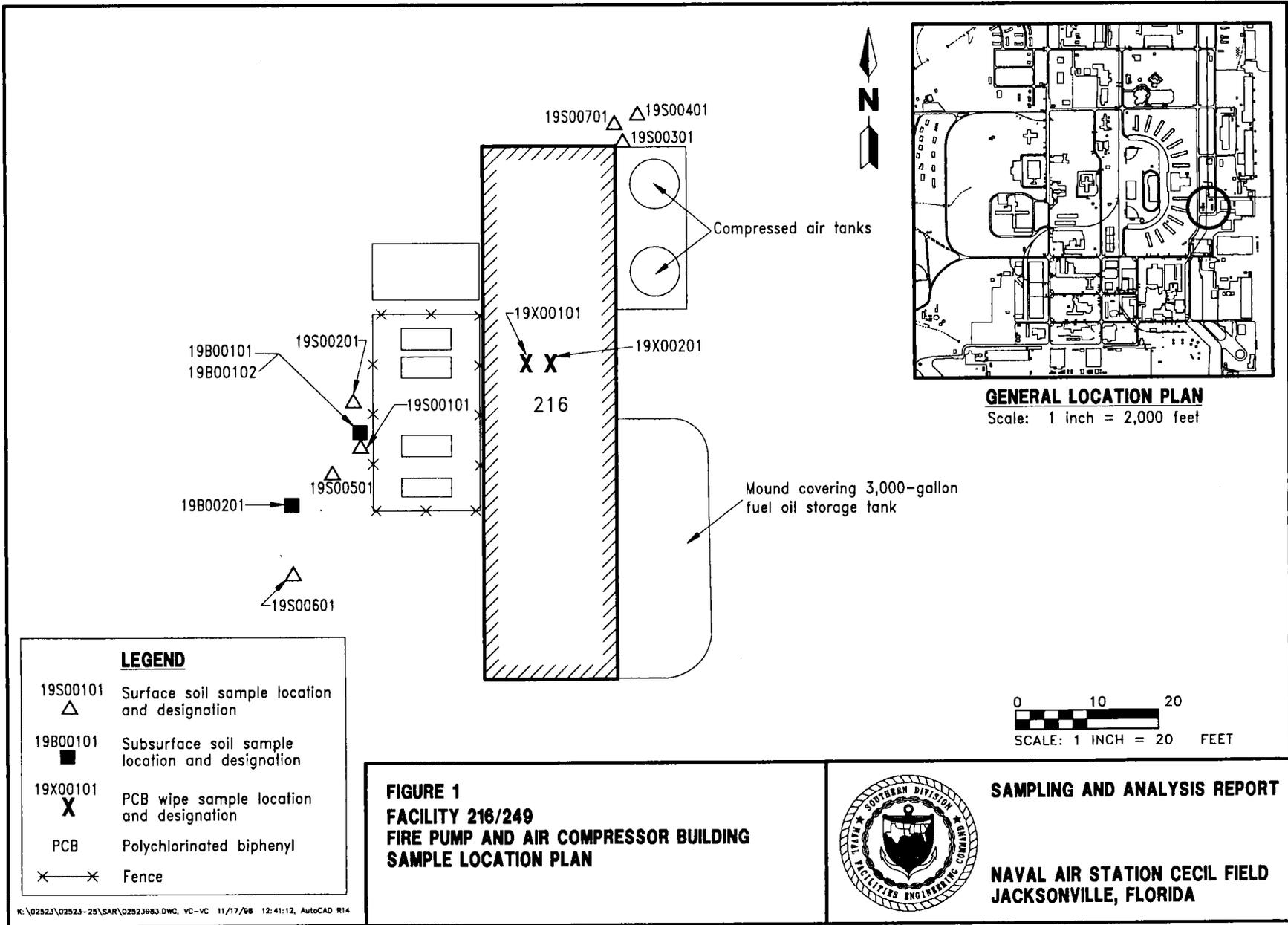
Facility 216 was color-coded Grey in the EBS because of the presence of an unassessed UST. In addition, heavy black tar-like stains observed near the northeast corner of Facility 216 during the EBS were apparently related to overflows from the oil trap drains. Oil-stained concrete was also observed beneath oil switches inside of Facility 216 during the EBS.

Facility 249 was color-coded Grey in the EBS due to oily stains on the concrete pad beneath the transformers and switches. The 1993 NAS Cecil Field Public Works Department *Oil-filled Electrical Equipment Distribution Inventory* was checked to determine if the transformer or oil switches contain polychlorinated biphenyl (PCB)-contaminated dielectric fluids. The oil switches inside Facility 216 are not on the inventory. The PCB content of the dielectric fluid in the oil switches and transformer at Facility 249 are listed as unknown.

A sampling and analysis outline (SAO) for the assessment of surface soil and concrete surfaces at Facilities 216 and 249 was prepared by HLA (then ABB-ES) and approved by the BRAC cleanup team (BCT) (ABB-ES, 1995a). The results of the sampling and analysis program are discussed in Chapters 2.0 and 3.0.

## 2.0 PHASE II INVESTIGATION

This Phase II investigation included the collection and analysis of four surface soil samples from areas of potential environmental concern at Facilities 216 and



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**FIGURE 1**  
**FACILITY 216/249**  
**FIRE PUMP AND AIR COMPRESSOR BUILDING**  
**SAMPLE LOCATION PLAN**



**SAMPLING AND ANALYSIS REPORT**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

249. The samples were collected from a depth of 0 to 1 foot below land surface (bls) (Figure 1). Surface wipe samples were also collected from the interior floor slab of Facility 216. Field activities were undertaken in general conformance with the Project Operations Plan (ABB-ES, 1994b).

Surface soil samples 19S00101 and 19S00201 were collected in the area surrounding Facility 249, near the transformer and switches. These samples were analyzed for target compound list (TCL) PCBs. A supplemental field investigation was required to delineate the extent of PCB contamination detected during the initial sampling event. Fifteen additional surface soil samples were collected and analyzed on site using immunoassay methods (D TECH PCB Soil Test Kit, item #TK-1002-1) capable of detecting PCBs at concentrations of 0.5 parts per million (ppm) or greater. The extent of PCB contamination was confirmed by laboratory analysis of two surface soil samples (19S00501 and 19S00601) and three subsurface soil samples (19B00101, 19B00201, and 19B00102).

Surface soil samples 19S00301 and 19S00401 were collected near the northeast corner of Facility 216. The samples were analyzed for TCL organics and target analyte list inorganics. Surface soil sample 19S00701 was also collected from this area. Sample 19S00701 was analyzed for total recoverable petroleum hydrocarbons only.

Surface wipe samples 19X00101 and 19X00201 were collected from the concrete floor beneath the oil switches inside Facility 216. The wipe samples were analyzed in the laboratory for TCL PCBs.

A site plan indicating the location of the samples is presented on Figure 1. Analytical results are discussed in Chapter 3.0.

### 3.0 PRELIMINARY RISK EVALUATION

A preliminary risk evaluation (PRE) was conducted to assess potential risks to human and ecological receptors posed by contaminants in surface soil. Primary exposure pathways were evaluated to determine those pathways that potentially contribute to human health and ecological risks. The evaluation was conducted in general conformance with methodology provided in the U.S. Environmental Protection Agency (USEPA) Region IV memorandum entitled "Amended Guidance on Preliminary Risk Evaluations (PREs) for the Purpose of Reaching a Finding of Suitability to Lease (FOSL)," (USEPA, 1994), USEPA Region IV bulletins on ecological risk assessment (USEPA, 1995), and minutes of meetings with the USEPA and the Florida Department of Environmental Protection (FDEP) concerning PREs (ABB-ES, 1995b). Site background information and rationale for sample collection and analysis are detailed in the EBS Report (ABB-ES, 1994a) and the SAO (ABB-ES, 1995a).

Inorganic analytes were compared to NAS Cecil Field screening criteria for inorganics established by the NAS Cecil Field partnering team. The NAS Cecil Field screening criteria were determined by using the nonparametric upper-outside value cutoffs as described in *Understanding Robust and Exploratory Data Analysis* (Hoaglin et al., 1983). These screening values were developed from data collected throughout NAS Cecil Field. No risk evaluation is conducted for inorganic analytes detected below NAS Cecil Field screening criteria for inorganics.

**3.1 PUBLIC HEALTH PRELIMINARY RISK EVALUATION.** All detected analytes were compared to readily available risk-based screening values to assess the likelihood of adverse human health effects associated with potential exposure to groundwater or surface soil. Risk-based screening values were obtained from USEPA Region III Risk-Based Concentrations (RBCs) (USEPA, 1998) and FDEP Soil Cleanup Target Levels (SCTLs) (Florida Administrative Code, 1998). Most screening values published in the references listed above are based on toxicity constants and standard human exposure scenarios and correspond to fixed levels of risk. The designated level of risk for noncarcinogenic chemicals is based on a hazard quotient (HQ) of 1. The level of risk for carcinogenic chemicals is based on an excess lifetime cancer risk (ELCR) of  $1 \times 10^{-6}$ . Cancer and noncancer risks associated with industrial and residential land use are estimated by dividing the maximum detected analyte concentration by the corresponding USEPA Region III RBC value at the designated level of risk (ELCR of  $1 \times 10^{-6}$  or HQ of 1, respectively). For noncarcinogens, the HQs are summed to determine the cumulative noncancer risk or hazard index.

Eighteen inorganic analytes, two volatile organic compounds, eight semivolatile organic compounds, one pesticide compound, and one PCB were detected in surface soil samples collected in the area of stained soil and stressed vegetation near the northeast corner of Facility 216. Arsenic was detected at a concentration of 1.0 milligrams per kilogram (mg/kg). This value exceeds the SCTL of 0.8 mg/kg, but is less than the NAS Cecil Field inorganic background data set value for arsenic (2 mg/kg). No other compounds were detected in excess of SCTLs at this location. Therefore, no HQ or ELCR were calculated.

Aroclor-1260 was detected at a concentration of 21 mg/kg in a sample collected near Facility 249. This value exceeds the SCTL of 0.6 mg/kg and results in a calculated ELCR of  $2.5 \times 10^{-4}$ . Concentrations of detected analytes in surface soil have been compared with USEPA RBCs and FDEP SCTLs (see Appendix A). Based on a preliminary review of the data, the BCT identified a requirement to delineate the extent of PCB-contaminated soil in the area downslope of the pad-mounted electrical equipment. Delineation and confirmatory sample locations, and detected concentrations of total PCBs, are presented in Appendix B.

Laboratory analytical results for wipe samples collected from the concrete surface beneath the oil switches inside Facility 216 indicated a maximum concentration of Aroclor-1260 of 0.0015 ppm. The SCTL for Aroclor-1260 is 0.6 mg/kg. Although SCTLs are not intended to be applicable to concrete surfaces, the potential dermal absorption and inhalation pathways included in calculation of SCTLs could be applicable to a concrete surface. This conservative comparison indicates that the residual concentration of Aroclor-1260 in the stained concrete is unlikely to represent a hazard to human health.

**3.2 ECOLOGICAL PRELIMINARY RISK EVALUATION.** An ecological PRE was conducted to evaluate potential risks to ecological receptors in the vicinity of Facilities 216 and 249. Exposure pathways and ecological habitats were characterized during a site walkover conducted by HLA ecological risk assessors in September 1995. The methods and assumptions used in derivation of ecological screening values applied in this evaluation are presented in the Project Operations Plan (ABB-ES, 1994b).

Facilities 216 and 249 are located in a developed area that is subject to frequent human activity. Ecological habitat is limited to maintained grass surrounding

the building. Pathways of potential contaminant exposure at Facilities 216 and 249 for wildlife receptors include direct contact, incidental ingestion of surface soil, and limited terrestrial food-web model exposure to contaminants in surface soil that may bioaccumulate. The concentration of Aroclor-1260 (21 mg/kg) detected in surface soil near the electrical equipment at Facility 249 exceeds the wildlife toxicity screening value (18 mg/kg) and may represent a risk to potential ecological receptors. Chromium, mercury, and zinc were detected at concentrations in excess of terrestrial plant screening values in the area of stressed vegetation near the northeast corner of Facility 216. The detected concentration of chromium in this area also exceeds the invertebrate (earthworm) toxicity screening value. A comparison between concentrations of detected analytes and ecological screening values is presented in Appendix A.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the information obtained for this assessment, the concentration of Aroclor-1260 detected in surface soil downslope of the pad-mounted electrical equipment at Facility 249 may represent a potential hazard to human health and ecological receptors. The horizontal and vertical extent of PCB-contaminated soil has been delineated. A plan to remove 12.6 cubic yards of contaminated surface soil within the delineated area has been proposed to reduce the potential for human and ecological exposure to contaminants. The boundaries of the area, and depth to be excavated, are illustrated on figures in Appendix C.

Surface soil in the area of stressed vegetation and stained soil near the northeast corner of Facility 216 did not contain contaminants at concentrations in excess of SCTLs.

The UST formerly located adjacent to the southeast corner of Facility 216 has been removed. The UST confirmatory sampling report indicates that the former UST did not impact soil or groundwater in the area. PCBs detected in surface wipe samples collected from the floor slab inside Facility 216 do not represent a hazard to human health or the environment.

Contaminated soil associated with Facilities 216 and 249 is scheduled for removal. Therefore, the color classification for Facilities 216 and 249 should be changed to 5/Yellow to indicate that remedial action is in progress. The color classification should not be changed until such remedial action has been completed. It is also recommended that the piping from the oil traps be modified to prevent the potential for overflow.

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- USEPA. 1995. *Supplemental Guidance to RAGS*. Region IV bulletins. Waste Management Division. Atlanta, Georgia.
- USEPA. 1998. *Risk-Based Concentration Table*. Region III. Philadelphia, Pennsylvania.

**APPENDIX A**  
**PRELIMINARY RISK EVALUATION TABLES**

**Preliminary Human Health Risk Evaluation Table for Analytes Detected in Surface Soil  
Facility 216/249, Naval Air Station Cecil Field**

Analyte <sup>1</sup>	Samples									Screening Values			Calculated Risk Values <sup>2</sup>	
	19S00101	19S00201	19S00301	19S00401	19S00501	19S00601	19B00101	19B00102	19B00201	BKGRD	SCTL	RBC(R)	ELCR	HQ
<b><u>Volatile Organic Compounds</u></b>														
2-Butanone			0.002								770	7800	n	
Xylenes (total)			0.002											
<b><u>Semivolatile Organic C</u></b>														
Benzo (a) anthracene				0.061							1.4	0.88	c	
Benzo (a) pyrene				0.042							0.1	0.088	c	
Benzo (b) fluoranthene				0.063							1.4	0.88	c	
Chrysene				0.07							140	88	c	
Fluoranthene			0.042	0.14							2800	3100	n	
Phenanthrene				0.067							1900			
Pyrene			0.03	0.11							2200	2300	n	
bis(2-Ethylhexyl) phthalate				0.7							75	46	c	
<b><u>Pesticides/PCBs</u></b>														
Aldrin				0.00004							0.06	0.038	c	
*Aroclor-1260	21	0.23	0.055		0.53	0.32	1	0.2	0.23		0.6	0.083	c	3E-04
<b><u>Inorganic Analytes</u></b>														
Aluminum			1200	4330						4432.5	72000	78000	n	
Antimony			0.84	0.66						9.44	26		n	
*Arsenic				1						2.04	0.8		c	
*Barium			3.8	14.9						14.4	105	5500	n	
*Calcium			1050	894						9.44				
*Chromium			63.8	9.5						7.75	290	390	n	
Copper			18.1	11.9						5.965	390	3100	n	
Iron			209	1390						1486	23000	23000	n	
Lead			3.6	15.4						196.9	500		n	
Magnesium			39.1	126						328.65				
Manganese			2.9	7.1						21.95	1600	1600	n	
*Mercury			0.32							0.16	3.7		n	
Nickel			0.91	0.78						3.89	105	1600	n	
Potassium			20.4	54.8						101.8				
Selenium				0.82						1.68	390		n	
Sodium			120	143						343				
Vanadium			1.3	3.9						6.3	15	550	n	
Zinc			117	34.3						36.5	23000	23000	n	

**Notes:**

<sup>1</sup> All detected analytes are reported. Concentrations and screening values are expressed in mg/kg

<sup>2</sup> ELCR and HQ are only calculated for analytes detected at concentrations in excess of BKGRD and SCTL

\* - Background screening criteria or SCTLs have been exceeded

BKGRD - NAS Cecil Field Inorganic Background Data Set

SCTL - Soil Cleanup Target Level, Chapter 62-785, Florida Administrative Code

RBC(R) - Risk-based Concentration (Residential), USEPA Region III, April 1998

c - carcinogenic risk

n - non-carcinogenic risk

ELCR - calculated excess lifetime cancer risk, based on RBC(R) values. (ELCR = detected concentration/RBC(R) \* 1 E-06)

HQ - calculated Hazard Quotient for non-carcinogenic analytes (HQ = detected concentration/RBC(R))

**Preliminary Ecological Risk Evaluation Table for Analytes Detected in Surface Soil  
Facilities 216 and 249, Naval Air Station Cecil Field**

Analyte	19S00101	19S00201	19S00301	19S00401	19S00501	19S00601	19B00101	19B00102	19B00201	BKGRD <sup>1</sup>	Screening Criteria			Criteria Exceeded <sup>6</sup>
											Plant <sup>2</sup>	Invert <sup>3</sup>	Vert <sup>4</sup>	
<b>Volatiles Organic Compounds</b>														
2-Butanone			0.00								200000		22000000	
Xylenes (total)			0.002								1000000		64000000	
<b>Semi-Volatile Organic Compounds</b>														
Benzo (a) anthracene				0.061							25000	34000	910000	
Benzo (a) pyrene				0.042							25000	34000	910000	
Benzo (b) fluoranthene				0.063							25000	34000	910000	
Chrysene				0.07							25000	34000	910000	
Fluoranthene			0.042	0.14							25000	34000	910000	
Phenanthrene				0.067							25000	34000	910000	
Pyrene			0.03	0.11							25000	34000	910000	
bis(2-Ethylhexyl) phthalate				0.7							1000000	630000	1700000	
<b>Pesticides/PCBs</b>														
Aldrin				0.0004							12500	2200	83000	
* Aroclor-1260	21	0.23	0.055		0.53	0.32	1	0.2	0.23		40000		18000	V
<b>Inorganic Analytes</b>														
* Aluminum			1200	4330						4432.5	50		54000	
Antimony			0.84	0.66						9.44	5		5100	
Arsenic				1						2.0375	10	100	15	
* Barium			3.8	14.9						14.4	500		23000	B
* Calcium			1050	894						9.44				B
* Chromium			63.8	9.5						7.75	1	50	14000	BPI
* Copper			18.1	11.9						5.965	100	30	1000	B
Iron			209	1390						1486				
Lead			3.6	15.4						196.9	50	1190	260	
Magnesium			39.1	126						328.65				
Manganese			2.9	7.1						21.95	500		5800	
* Mercury			0.32							0.16	0.3	36	3.9	BP
Nickel			0.91	0.78						3.89	30	400	550	
Potassium			20.4	54.8						101.8				
Selenium				0.82						1.68	1		7.3	
Sodium			120	143						343				
* Vanadium			1.3	3.9						6.3	2		1100	
* Zinc			117	34.3						36.5	50	130	1600	BP

**Notes:**

All Analytes are reported in mg/kg

Screening Criteria (refer to the Project Operations Plan, ABB-ES, 1995, Appendix A for details)

<sup>1</sup> Background screening value for inorganic analytes in surface soil at NAS Cecil Field. This value is equal to two times the average concentration detected during the NAS Cecil Field background sampling program (Refer to Remedial Investigation Report for OU2, ABB-ES, 1995, Appendix J).

<sup>2</sup> Terrestrial Plant Toxicity Screening Value

<sup>3</sup> Invertebrate Toxicity Screening Value

<sup>4</sup> Vertebrate (Wildlife) Toxicity Screening Value

<sup>6</sup> Screening criteria have been exceeded for background, and the receptor group(s) represented by the following letter codes:

B=Background, P=Plant, I= Invertebrate, V=Vertebrate (Wildlife)

**Preliminary Human Health Risk Evaluation Table for Analytes Detected in Surface Soil  
Facilities 216 and 249, Naval Air Station Cecil Field**

Analyte <sup>1</sup>	Samples									Screening Values			Calculated Risk Values <sup>2</sup>	
	19S00101	19S00201	19S00301	19S00401	19S00501	19S00601	19B00101	19B00102	19B00201	BKGRD	SCTL	RBC(R)	ELCR	HQ
<b><u>Volatile Organic Compounds</u></b>														
2-Butanone			0.002								770	7800	n	
Xylenes (total)			0.002											
<b><u>Semivolatile Organic Com</u></b>														
Benzo (a) anthracene				0.061							1.4	0.88	c	
Benzo (a) pyrene				0.042							0.1	0.088	c	
Benzo (b) fluoranthene				0.063							1.4	0.88	c	
Chrysene				0.07							140	88	c	
Fluoranthene			0.042	0.14							2800	3100	n	
Phenanthrene				0.067							1900			
Pyrene			0.03	0.11							2200	2300	n	
bis(2-Ethylhexyl) phthalate				0.7							75	46	c	
<b><u>Pesticides/PCBs</u></b>														
Aldrin				0.00004							0.06	0.038	c	
*Aroclor-1260	21	0.23	0.055		0.53	0.32	1	0.2	0.23		0.6	0.083	c	0.0003
<b><u>Inorganic Analytes</u></b>														
Aluminum			1200	4330						4432.5	72000	78000	n	
Antimony			0.84	0.66						9.44	26		n	
*Arsenic				1						2.04	0.8		c	
*Barium			3.8	14.9						14.4	105	5500	n	
*Calcium			1050	894						9.44				
*Chromium			63.8	9.5						7.75	290	390	n	
Copper			18.1	11.9						5.965	390	3100	n	
Iron			209	1390						1486	23000	23000	n	
Lead			3.6	15.4						196.9	500		n	
Magnesium			39.1	126						328.65				
Manganese			2.9	7.1						21.95	1600	1600	n	
*Mercury			0.32							0.16	3.7		n	
Nickel			0.91	0.78						3.89	105	1600	n	
Potassium			20.4	54.8						101.8				
Selenium				0.82						1.68	390		n	
Sodium			120	143						343				
Vanadium			1.3	3.9						6.3	15	550	n	
Zinc			117	34.3						36.5	23000	23000	n	

**Notes:**  
<sup>1</sup> All detected analytes are reported. Concentrations and screening values are expressed in mg/kg  
<sup>2</sup>ELCR and HQ are only calculated for analytes detected at concentrations in excess of BKGRD and SCTL  
 \*= Background screening criteria or SCTLs have been exceeded  
 BKGRD=NAS Cecil Field Inorganic Background Data Set  
 SCTL = Soil Cleanup Target Level, Chapter 62-785, Florida Administrative Code  
 RBC(R)= Risk-based Concentration (Residential), USEPA Region III, April 1998  
 c=carcinogenic risk  
 n=non-carcinogenic risk  
 ELCR = calculated excess lifetime cancer risk, based on RBC(R) values. (ELCR = detected concentration/RBC(R) \* 1 E-06)  
 HQ = calculated Hazard Quotient for non-carcinogenic analytes (HQ=detected concentration/RBC(R))

**Preliminary Ecological Risk Evaluation Table for Analytes Detected In Surface Soil  
Facilities 216 and 249, Naval Air Station Cecil Field**

Analyte	19S00101	19S00201	19S00301	19S00401	19S00501	19S00601	19B00101	19B00102	19B00201	BKGRD <sup>1</sup>	Screening Criteria			Criteria
											Plant <sup>2</sup>	Invert <sup>3</sup>	Vert <sup>4</sup>	Exceeded <sup>5</sup>
<u>Volatile Organic Compounds</u>														
2-Butanone			0.00								200000		22000000	
Xylenes (total)			0.002								1000000		64000000	
<u>Semi-Volatile Organic Compounds</u>														
Benzo (a) anthracene				0.061							25000	34000	910000	
Benzo (a) pyrene				0.042							25000	34000	910000	
Benzo (b) fluoranthene				0.063							25000	34000	910000	
Chrysene				0.07							25000	34000	910000	
Fluoranthene			0.042	0.14							25000	34000	910000	
Phenanthrene				0.067							25000	34000	910000	
Pyrene			0.03	0.11							25000	34000	910000	
bis(2-Ethylhexyl) phthalate				0.7							1000000	630000	1700000	
<u>Pesticides/PCBs</u>														
Aldrin				0.0004							12500	2200	83000	
*Aroclor-1260	21	0.23	0.055		0.53	0.32	1	0.2	0.23		40000		18000	V
<u>Inorganic Analytes</u>														
*Aluminum			1200	4330						4432.5	50		54000	
Antimony			0.84	0.66						9.44	5		5100	
Arsenic				1						2.0375	10	100	15	
*Barium			3.8	14.9						14.4	500		23000	B
*Calcium			1050	894						9.44				B
*Chromium			63.8	9.5						7.75	1	50	14000	BPI
*Copper			18.1	11.9						5.965	100	30	1000	B
Iron			209	1390						1486				
Lead			3.6	15.4						196.9	50	1190	260	
Magnesium			39.1	126						328.65				
Manganese			2.9	7.1						21.95	500		5800	
*Mercury			0.32							0.16	0.3	36	3.9	BP
Nickel			0.91	0.78						3.89	30	400	550	
Potassium			20.4	54.8						101.8				
Selenium				0.82						1.68	1		7.3	
Sodium			120	143						343				
*Vanadium			1.3	3.9						6.3	2		1100	
*Zinc			117	34.3						36.5	50	130	1600	BP

Notes:

All Analytes are reported in mg/kg

Screening Criteria (refer to the Project Operations Plan, ABB-ES, 1995, Appendix A for details)

<sup>1</sup> Background screening value for inorganic analytes in surface soil at NAS Cecil Field. This value is equal to two times the average concentration detected during the NAS Cecil Field background sampling program (Refer to Remedial Investigation Report for OU2, ABB-ES, 1995, Appendix J).

<sup>2</sup> Terrestrial Plant Toxicity Screening Value

<sup>3</sup> Invertebrate Toxicity Screening Value

<sup>4</sup> Vertebrate (Wildlife) Toxicity Screening Value

<sup>5</sup> Screening criteria have been exceeded for background, and the receptor group(s) represented by the following letter codes:

B=Background, P=Plant, I= Invertebrate, V=Vertebrate (Wildlife)

**APPENDIX B**

**LABORATORY ANALYTICAL DATA**

**Summary of Analyses for Delineation of PCBs  
in Surface Soil Facility 216/294  
Naval Air Station Cecil Field**

<b>Sample Number</b>	<b>Analyte Detected</b>	<b>Concentration (mg/kg)</b>	<b>Sample Interval (feet bls)</b>
S1	Total PCBs (by Immuno-assay)		0-1
S2	Total PCBs (by Immuno-assay)		0-1
S3	Total PCBs (by Immuno-assay)	<.5	0-1
S4	Total PCBs (by Immuno-assay)	<.5	0-1
S5	Total PCBs (by Immuno-assay)	<.5	0-1
S6	Total PCBs (by Immuno-assay)	<.5	0-1
S7	Total PCBs (by Immuno-assay)	1-4.0	0-1
S8	Total PCBs (by Immuno-assay)	4.1-15	0-1
S9	Total PCBs (by Immuno-assay)	<.5	0-1
S10	Total PCBs (by Immuno-assay)	4.1-15	0-1
S11	Total PCBs (by Immuno-assay)	0.5-1.0	0-1
S12	Total PCBs (by Immuno-assay)	<.5	0-1
S13	Total PCBs (by Immuno-assay)	<.5	0-1
S14	Total PCBs (by Immuno-assay)	<.5	0-1
S15	Total PCBs (by Immuno-assay)	0.5-1.0	0-1
19S00501	Aroclor-1260	0.53	0-1
19S00601	Aroclor-1260	0.32	0-1
19B00101	Aroclor-1260	1	1-2
19B00102	Aroclor-1260	0.2	1-2
19B00201	Aroclor-1260	0.23	2-4

NAS CECIL FIELD -- FACILITY 216/249  
 PCB DATA -- REPORT REQUEST NO. 10306

Lab Sample Number:	JR86476	JR12103	JR86477	JR86475					
Site	BRAC	BRAC	BRAC	CECILBRAC					
Locator	19B00101	19B00102	19B00201	19S00501					
Collect Date:	12-JAN-98	01-MAY-98	12-JAN-98	12-JAN-98					
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

BRAC PCBs												
Aroclor-1221	19 U	ug/kg	19	21 U	ug/kg	21	20 U	ug/kg	20	19 U	ug/kg	19
Aroclor-1232	19 U	ug/kg	19	21 U	ug/kg	21	20 U	ug/kg	20	19 U	ug/kg	19
Aroclor-1248	19 U	ug/kg	19	21 U	ug/kg	21	20 U	ug/kg	20	19 U	ug/kg	19
Aroclor-1254	19 U	ug/kg	19	21 U	ug/kg	21	20 U	ug/kg	20	19 U	ug/kg	19
Aroclor-1260	1000	ug/kg	96	200	ug/kg	21	230	ug/kg	20	530	ug/kg	19
Aroclor-1016/1242	19 U	ug/kg	19	21 U	ug/kg	21	20 U	ug/kg	20	19 U	ug/kg	19

U = NOT DETECTED J = ESTIMATED VALUE  
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- FACILITY 216/249  
PCB DATA -- REPORT REQUEST NO. 10306

Lab Sample Number: JR86474  
Site: CECILBRAC  
Locator: 19S00601  
Collect Date: 12-JAN-98

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

BRAC PCBs

Aroclor-1221	19	U	ug/kg	19
Aroclor-1232	19	U	ug/kg	19
Aroclor-1248	19	U	ug/kg	19
Aroclor-1254	19	U	ug/kg	19
Aroclor-1260	320		ug/kg	19
Aroclor-1016/1242	19	U	ug/kg	19

U = NOT DETECTED J = ESTIMATED VALUE  
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- FACILITY 216/249  
 PCB DATA -- REPORT REQUEST NO. 10307

Lab Sample Number:	A6B0701380		A6B0701380		A6B1601240		A6B1601240		
Site	CECILBRAC2		CECILBRAC2		CECILBRAC2		CECILBRAC2		
Locator	19S00101		19S00201		19X00101		19X00201		
Collect Date:	06-FEB-96		06-FEB-96		15-FEB-96		15-FEB-96		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL

PCBs

Aroclor-1016	4300 U	ug/kg	4300	180 U	ug/kg	180	1 U	UG	1	1 U	UG	1
Aroclor-1221	4300 U	ug/kg	4300	180 U	ug/kg	180	1 U	UG	1	1 U	UG	1
Aroclor-1232	4300 U	ug/kg	4300	180 U	ug/kg	180	1 U	UG	1	1 U	UG	1
Aroclor-1242	4300 U	ug/kg	4300	180 U	ug/kg	180	1 U	UG	1	1 U	UG	1
Aroclor-1248	4300 U	ug/kg	4300	180 U	ug/kg	180	1 U	UG	1	1 U	UG	1
Aroclor-1254	4300 U	ug/kg	4300	180 U	ug/kg	180	1 U	UG	1	1 U	UG	1
Aroclor-1260	21000	ug/kg	4300	230	ug/kg	180	1 U	UG	1	1.5	UG	1

U = NOT DETECTED J = ESTIMATED VALUE  
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- FACILITY 216/249  
 SOIL DATA -- REPORT REQUEST NO. 10308

Lab Sample Number:	C2WAV	C2WAV			
Site	CECILBRAC2	CECILBRAC2			
Locator	19S00301	19S00401			
Collect Date:	06-FEB-96	06-FEB-96			
	VALUE	DL	VALUE	QUAL UNITS	DL

CLP VOLATILES 90-SOW

Chloromethane	11 U	ug/kg	11	11 U	ug/kg	11
Bromomethane	11 U	ug/kg	11	11 U	ug/kg	11
Vinyl chloride	11 U	ug/kg	11	11 U	ug/kg	11
Chloroethane	11 U	ug/kg	11	11 U	ug/kg	11
Methylene chloride	6 U	ug/kg	6	6 U	ug/kg	6
Acetone	11 U	ug/kg	11	11 U	ug/kg	11
Carbon disulfide	6 U	ug/kg	6	6 U	ug/kg	6
1,1-Dichloroethene	6 U	ug/kg	6	6 U	ug/kg	6
1,1-Dichloroethane	6 U	ug/kg	6	6 U	ug/kg	6
1,2-Dichloroethene (total)	6 U	ug/kg	6	6 U	ug/kg	6
Chloroform	6 U	ug/kg	6	6 U	ug/kg	6
1,2-Dichloroethane	6 U	ug/kg	6	6 U	ug/kg	6
2-Butanone	2 J	ug/kg	11	11 U	ug/kg	11
1,1,1-Trichloroethane	6 U	ug/kg	6	6 U	ug/kg	6
Carbon tetrachloride	6 U	ug/kg	6	6 U	ug/kg	6
Bromodichloromethane	6 U	ug/kg	6	6 U	ug/kg	6
1,2-Dichloropropane	6 U	ug/kg	6	6 U	ug/kg	6
cis-1,3-Dichloropropene	6 U	ug/kg	6	6 U	ug/kg	6
Trichloroethene	6 U	ug/kg	6	6 U	ug/kg	6
Dibromochloromethane	6 U	ug/kg	6	6 U	ug/kg	6
1,1,2-Trichloroethane	6 U	ug/kg	6	6 U	ug/kg	6
Benzene	6 U	ug/kg	6	6 U	ug/kg	6
trans-1,3-Dichloropropene	6 U	ug/kg	6	6 U	ug/kg	6
Bromoform	6 U	ug/kg	6	6 U	ug/kg	6
4-Methyl-2-pentanone	11 U	ug/kg	11	11 U	ug/kg	11
2-Hexanone	11 U	ug/kg	11	11 U	ug/kg	11
Tetrachloroethene	6 U	ug/kg	6	6 U	ug/kg	6
Toluene	6 U	ug/kg	6	6 U	ug/kg	6
1,1,2,2-Tetrachloroethane	6 U	ug/kg	6	6 U	ug/kg	6
Chlorobenzene	6 U	ug/kg	6	6 U	ug/kg	6
Ethylbenzene	6 U	ug/kg	6	6 U	ug/kg	6
Styrene	6 U	ug/kg	6	6 U	ug/kg	6
Xylenes (total)	2 J	ug/kg	11	6 U	ug/kg	6

CLP SEMIVOLATILES 90-SOW

Phenol	360 U	ug/kg	360	370 U	ug/kg	370
bis(2-Chloroethyl) ether	360 U	ug/kg	360	370 U	ug/kg	370
2-Chlorophenol	360 U	ug/kg	360	370 U	ug/kg	370
1,3-Dichlorobenzene	360 U	ug/kg	360	370 U	ug/kg	370
1,4-Dichlorobenzene	360 U	ug/kg	360	370 U	ug/kg	370
1,2-Dichlorobenzene	360 U	ug/kg	360	370 U	ug/kg	370
2-Methylphenol	360 U	ug/kg	360	370 U	ug/kg	370
2,2-oxybis(1-Chloropropane)	360 U	ug/kg	360	370 U	ug/kg	370
4-Methylphenol	360 U	ug/kg	360	370 U	ug/kg	370
N-Nitroso-di-n-propylamine	360 U	ug/kg	360	370 U	ug/kg	370
Hexachloroethane	360 U	ug/kg	360	370 U	ug/kg	370
Nitrobenzene	360 U	ug/kg	360	370 U	ug/kg	370
Isophorone	360 U	ug/kg	360	370 U	ug/kg	370
2-Nitrophenol	360 U	ug/kg	360	370 U	ug/kg	370
2,4-Dimethylphenol	360 U	ug/kg	360	370 U	ug/kg	370

NAS CECIL FIELD -- FACILITY 216/249  
 SOIL DATA -- REPORT REQUEST NO. 10308

Lab Sample Number:  
 Site  
 Locator  
 Collect Date:

C2WAV  
 CECILBRAC2  
 19S00301  
 06-FEB-96

C2WAV  
 CECILBRAC2  
 19S00401  
 06-FEB-96

VALUE QUAL UNITS DL VALUE QUAL UNITS DL

bis(2-Chloroethoxy) methane	360 U	ug/kg	360	370 U	ug/kg	370
2,4-Dichlorophenol	360 U	ug/kg	360	370 U	ug/kg	370
1,2,4-Trichlorobenzene	360 U	ug/kg	360	370 U	ug/kg	370
Naphthalene	360 U	ug/kg	360	370 U	ug/kg	370
4-Chloroaniline	360 U	ug/kg	360	370 U	ug/kg	370
Hexachlorobutadiene	360 U	ug/kg	360	370 U	ug/kg	370
4-Chloro-3-methylphenol	360 U	ug/kg	360	370 U	ug/kg	370
2-Methylnaphthalene	360 U	ug/kg	360	370 U	ug/kg	370
Hexachlorocyclopentadiene	360 U	ug/kg	360	370 U	ug/kg	370
2,4,6-Trichlorophenol	360 U	ug/kg	360	370 U	ug/kg	370
2,4,5-Trichlorophenol	880 U	ug/kg	880	900 U	ug/kg	900
2-Chloronaphthalene	360 U	ug/kg	360	370 U	ug/kg	370
2-Nitroaniline	880 U	ug/kg	880	900 U	ug/kg	900
Dimethylphthalate	360 U	ug/kg	360	370 U	ug/kg	370
Acenaphthylene	360 U	ug/kg	360	370 U	ug/kg	370
2,6-Dinitrotoluene	360 U	ug/kg	360	370 U	ug/kg	370
3-Nitroaniline	880 U	ug/kg	880	900 U	ug/kg	900
Acenaphthene	360 U	ug/kg	360	370 U	ug/kg	370
2,4-Dinitrophenol	880 U	ug/kg	880	900 U	ug/kg	900
4-Nitrophenol	880 U	ug/kg	880	900 U	ug/kg	900
Dibenzofuran	360 U	ug/kg	360	370 U	ug/kg	370
2,4-Dinitrotoluene	360 U	ug/kg	360	370 U	ug/kg	370
Diethylphthalate	360 U	ug/kg	360	370 U	ug/kg	370
4-Chlorophenyl-phenylether	360 U	ug/kg	360	370 U	ug/kg	370
Fluorene	360 U	ug/kg	360	370 U	ug/kg	370
4-Nitroaniline	880 U	ug/kg	880	900 U	ug/kg	900
4,6-Dinitro-2-methylphenol	880 U	ug/kg	880	900 U	ug/kg	900
N-Nitrosodiphenylamine	360 U	ug/kg	360	370 U	ug/kg	370
4-Bromophenyl-phenylether	360 U	ug/kg	360	370 U	ug/kg	370
Hexachlorobenzene	360 U	ug/kg	360	370 U	ug/kg	370
Pentachlorophenol	880 U	ug/kg	880	900 U	ug/kg	900
Phenanthrene	360 U	ug/kg	360	67 J	ug/kg	370
Anthracene	360 U	ug/kg	360	370 U	ug/kg	370
Carbazole	360 U	ug/kg	360	370 U	ug/kg	370
Di-n-butylphthalate	360 U	ug/kg	360	370 U	ug/kg	370
Fluoranthene	42 J	ug/kg	360	140 J	ug/kg	370
Pyrene	30 J	ug/kg	360	110 J	ug/kg	370
Butylbenzylphthalate	360 U	ug/kg	360	370 U	ug/kg	370
3,3-Dichlorobenzidine	360 U	ug/kg	360	370 U	ug/kg	370
Benzo (a) anthracene	360 U	ug/kg	360	61 J	ug/kg	370
Chrysene	360 U	ug/kg	360	70 J	ug/kg	370
bis(2-Ethylhexyl) phthalate	360 U	ug/kg	360	700	ug/kg	370
Di-n-octylphthalate	360 U	ug/kg	360	370 U	ug/kg	370
Benzo (b) fluoranthene	360 U	ug/kg	360	63 J	ug/kg	370
Benzo (k) fluoranthene	360 U	ug/kg	360	370 U	ug/kg	370
Benzo (a) pyrene	360 U	ug/kg	360	42 J	ug/kg	370
Indeno (1,2,3-cd) pyrene	360 U	ug/kg	360	370 U	ug/kg	370
Dibenzo (a,h) anthracene	360 U	ug/kg	360	370 U	ug/kg	370
Benzo (g,h,i) perylene	360 U	ug/kg	360	370 U	ug/kg	370

CLP PESTICIDES/PCBS 90-SOW  
 alpha-BHC 1.8 U ug/kg 1.8 1.9 U ug/kg 1.9

NAS CECIL FIELD -- FACILITY 216/249  
 SOIL DATA -- REPORT REQUEST NO. 10308

Lab Sample Number:	C2WAV	C2WAV			
Site	CECILBRAC2	CECILBRAC2			
Locator	19S00301	19S00401			
Collect Date:	06-FEB-96	06-FEB-96			
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS
					DL

beta-BHC	1.8 U	ug/kg	1.8	1.9 U	ug/kg	1.9
delta-BHC	1.8 U	ug/kg	1.8	1.9 U	ug/kg	1.9
gamma-BHC (Lindane)	1.8 U	ug/kg	1.8	1.9 U	ug/kg	1.9
Heptachlor	1.8 U	ug/kg	1.8	1.9 U	ug/kg	1.9
Aldrin	1.8 U	ug/kg	1.8	.4 J	ug/kg	2
Heptachlor epoxide	1.8 U	ug/kg	1.8	1.9 U	ug/kg	1.9
Endosulfan I	1.8 U	ug/kg	1.8	1.9 U	ug/kg	1.9
Dieldrin	3.7 U	ug/kg	3.7	3.7 U	ug/kg	3.7
4,4-DDE	3.7 U	ug/kg	3.7	3.7 U	ug/kg	3.7
Endrin	3.7 U	ug/kg	3.7	3.7 U	ug/kg	3.7
Endosulfan II	3.7 U	ug/kg	3.7	3.7 U	ug/kg	3.7
4,4-DDD	3.7 U	ug/kg	3.7	3.7 U	ug/kg	3.7
Endosulfan sulfate	3.7 U	ug/kg	3.7	3.7 U	ug/kg	3.7
4,4-DDT	3.7 U	ug/kg	3.7	3.7 U	ug/kg	3.7
Methoxychlor	18 U	ug/kg	18	19 U	ug/kg	19
Endrin ketone	3.7 U	ug/kg	3.7	3.7 U	ug/kg	3.7
Endrin aldehyde	3.7 U	ug/kg	3.7	3.7 U	ug/kg	3.7
alpha-Chlordane	1.8 U	ug/kg	1.8	1.9 U	ug/kg	1.9
gamma-Chlordane	1.8 U	ug/kg	1.8	1.9 U	ug/kg	1.9
Toxaphene	180 U	ug/kg	180	190 U	ug/kg	190
Aroclor-1016	37 U	ug/kg	37	37 U	ug/kg	37
Aroclor-1221	74 U	ug/kg	74	75 U	ug/kg	75
Aroclor-1232	37 U	ug/kg	37	37 U	ug/kg	37
Aroclor-1242	37 U	ug/kg	37	37 U	ug/kg	37
Aroclor-1248	37 U	ug/kg	37	37 U	ug/kg	37
Aroclor-1254	37 U	ug/kg	37	37 U	ug/kg	37
Aroclor-1260	55 J	ug/kg	36	37 U	ug/kg	37

CLP METALS AND CYANIDE

Aluminum	1200	mg/kg	40	4330	mg/kg	40
Antimony	.84 J	mg/kg	12	.66 J	mg/kg	12
Arsenic	.66 U	mg/kg	2	1 J	mg/kg	2
Barium	3.8 J	mg/kg	40	14.9 J	mg/kg	40
Beryllium	.22 U	mg/kg	1	.22 U	mg/kg	1
Cadmium	.22 U	mg/kg	1	.22 U	mg/kg	1
Calcium	1050 J	mg/kg	1000	894 J	mg/kg	1000
Chromium	63.8	mg/kg	2	9.5	mg/kg	2
Cobalt	.44 U	mg/kg	10	.45 U	mg/kg	10
Copper	18.1	mg/kg	5	11.9	mg/kg	5
Iron	209	mg/kg	20	1390	mg/kg	20
Lead	3.6 J	mg/kg	.6	15.4 J	mg/kg	.6
Magnesium	39.1 J	mg/kg	1000	126 J	mg/kg	1000
Manganese	2.9 J	mg/kg	3	7.1	mg/kg	3
Mercury	.32	mg/kg	.1	.11 U	mg/kg	.1
Nickel	.91 J	mg/kg	8	.78 J	mg/kg	8
Potassium	20.4 J	mg/kg	1000	54.8 J	mg/kg	1000
Selenium	.66 U	mg/kg	1	.82 J	mg/kg	1
Silver	.22 U	mg/kg	2	.22 U	mg/kg	2
Sodium	120 J	mg/kg	1000	143 J	mg/kg	1000
Thallium	.88 U	mg/kg	2	.9 U	mg/kg	2
Vanadium	1.3 J	mg/kg	10	3.9 J	mg/kg	10
Zinc	117	mg/kg	4	34.3	mg/kg	4

NAS CECIL FIELD -- FACILITY 216/249  
 SOIL DATA -- REPORT REQUEST NO. 10308

Lab Sample Number:  
 Site  
 Locator  
 Collect Date:

C2WAV  
 CECILBRAC2  
 19S00301  
 06-FEB-96  
 VALUE QUAL UNITS

DL

VALUE

C2WAV  
 CECILBRAC2  
 19S00401  
 06-FEB-96  
 VALUE QUAL UNITS DL

Cyanide

.11 U mg/kg

.5

.11 U mg/kg

.5

U = NOT DETECTED J = ESTIMATED VALUE  
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R = RESULT IS REJECTED AND UNUSABLE

**APPENDIX C**

**SOIL EXCAVATION SPECIFICATIONS**

Excavation size = 10 feet by 12 feet  
 Excavation area = 120 sf  
 Excavate to 2 feet bls  
 Volume to be removed = 8.9 cy

Excavation size = 5 feet by 20 feet  
 Excavation area = 100 sf  
 Excavate to 1 foot bls  
 Volume to be removed = 3.7 cy

Fenced electrical  
 utilities area

Cooling  
 equipment

216

**Warning:**  
 Extensive utilities in this area.  
 Obtain full aboveground and  
 belowground utility clearance  
 before beginning work.

0 10 20  
 SCALE: 1 INCH = 20 FEET

**LEGEND**

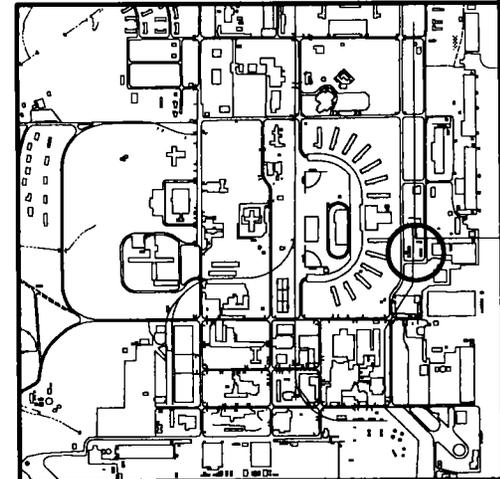
 Area to be excavated

sf Square feet

cy Cubic yards

bls Below land surface

 Fence



**GENERAL LOCATION PLAN**

Scale: 1 inch = 2,000 feet

**NOTES:**

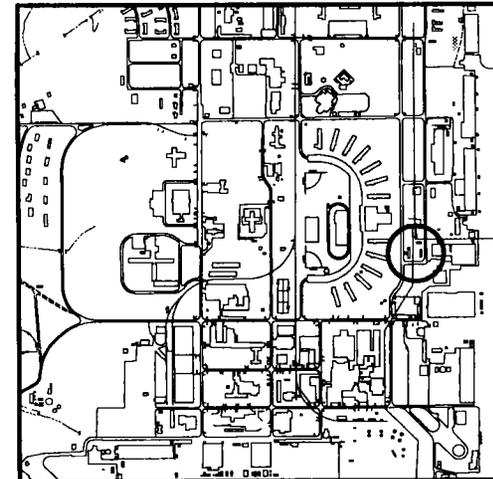
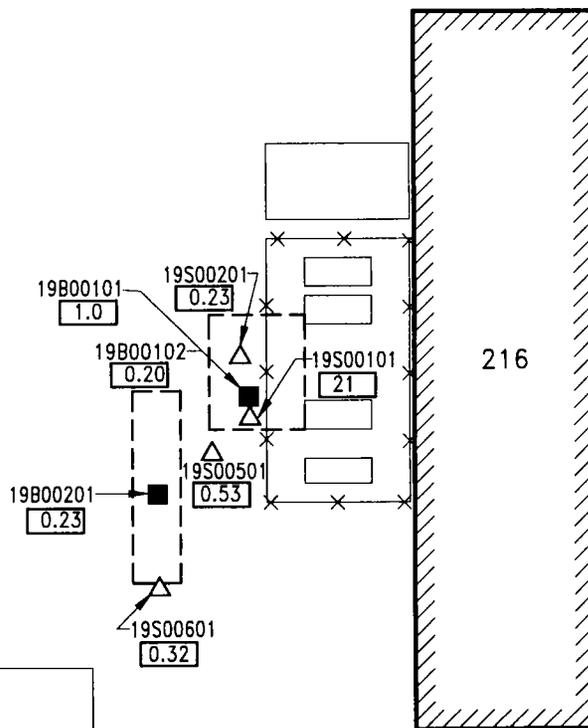
1. **WARNING:** Obtain utility clearance before excavating.
2. Extent of excavation to be marked by Harding Lawson Associates.
3. Contaminants of concern are polychlorinated biphenyls.
4. Waste characterization, transport, and disposal of all excavated soil is the responsibility of the remedial action contractor.
5. Return site to preexcavation conditions.

**FIGURE 1-5**  
**FACILITY 216/249**



**SAMPLING AND ANALYSIS REPORT**

**NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA**



**GENERAL LOCATION PLAN**  
Scale: 1 inch = 2,000 feet

**NOTES:**

1. All concentrations are in milligrams per kilogram.
2. Contaminants of concern are polychlorinated biphenyls.
3. Concentrations shown are for Aroclor-1260.
4. Residential cleanup goal for PCBs is 0.9 milligrams per kilogram.

**LEGEND**

19S00101 Surface soil sample location and designation

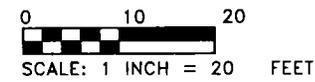
19B00101 Subsurface soil sample location and designation

PCB concentration

--- Area to be excavated

PCB Polychlorinated biphenyl

Fence

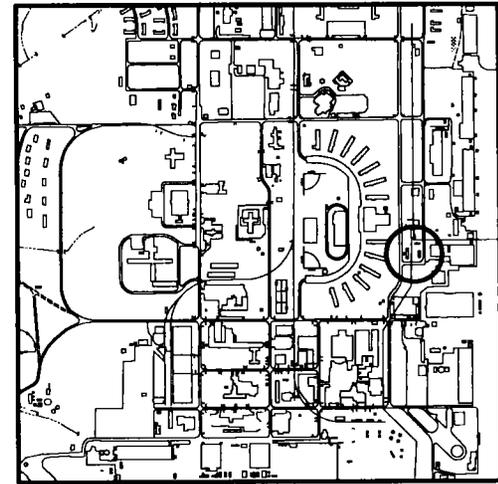
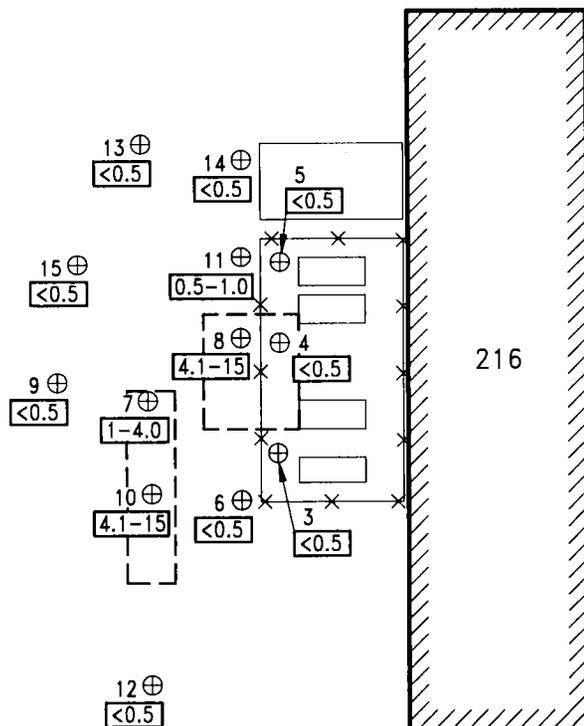


**FIGURE 1-5A**  
**FACILITY 216/249**  
**PCB CONFIRMATORY SAMPLE RESULTS**



**SAMPLING AND ANALYSIS REPORT**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**



**GENERAL LOCATION PLAN**

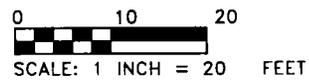
Scale: 1 inch = 2,000 feet

**NOTES:**

1. All concentrations are in milligrams per kilogram.
2. Contaminants of concern are polychlorinated biphenyls.
3. Concentrations shown are for Aroclor-1260.
4. Residential cleanup goal for PCBs is 0.9 milligrams per kilogram.

**LEGEND**

- 6 ⊕ PCB Immunoassay sample location and designation
- 2.8 PCB concentration
- Area to be excavated
- PCB Polychlorinated biphenyl
- X—X Fence



**FIGURE 1-5B  
FACILITY 216/249  
PCB IMMUNOASSAY RESULTS**



**SAMPLING AND ANALYSIS REPORT**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

# Building 216

## Site Background

Polychlorinated biphenyls (PCBs) were detected at concentrations in excess of the residential soil cleanup goal (0.9 mg/kg) in surface soil samples collected in the area to be excavated. The contaminants are likely present due to a release of oil from the adjacent electrical equipment in Building 249. Analytical results were reviewed by the BCT (June 1997), and a decision was made to delineate the extent of contaminated surface soil. Additional site background information may be obtained through reference to the Sampling and Analysis Outline for Building 216/249 (ABB-ES, February 1995) and the Environmental Baseline Survey (ABB-ES, November, 1994).

## Guidance Notes

1. This information is provided for general guidance purposes only. The actual extent of the excavation will be defined by HLA with white spray-down paint (or equivalent), prior to the execution of the removal action.
2. The schedule and methods of excavation will be determined by the RAC.
3. All aspects of work-site health and safety will be the responsibility of the RAC.
4. Verification and avoidance of all aboveground and underground utilities or other manmade structures will be the responsibility of the RAC.
5. Except where necessary for avoidance of structures or utilities, or where otherwise specified by HLA, the depth of the excavation should extend to 1' below ground surface. If observations indicate contaminants may extend beyond the planned lateral or vertical limits of the excavation, the RAC should notify HLA.
6. Excavated soil should be stockpiled on, and covered with, heavy duty polyethylene sheeting at the site. This should be done in such a manner as to avoid the potential for contaminating surrounding soil or surface water. Alternatively, soils may be stockpiled in properly covered rolloff bins.
7. The BCT may approve stockpiling of materials from different sites, provided that similar types and concentrations of contaminants are involved, and contaminants were generated by similar processes.
8. Waste characterization, transport (both on and off site), and disposal of all excavated soils will be completed by the RAC.
9. Materials used to backfill the excavations should be from an uncontaminated source, and should be capable of supporting the same type of vegetation as the soils removed. Except where otherwise approved by the installation manager, the ground surface should be restored to a similar, or better condition, than that which existed prior to excavation.

Excavation size = 10 feet by 12 feet  
 Excavation area = 120 sf  
 Excavate to 2 feet bls  
 Volume to be removed = 8.9 cy

Excavation size = 5 feet by 20 feet  
 Excavation area = 100 sf  
 Excavate to 1 foot bls  
 Volume to be removed = 3.7 cy

Fenced electrical  
 utilities area

Cooling  
 equipment

216

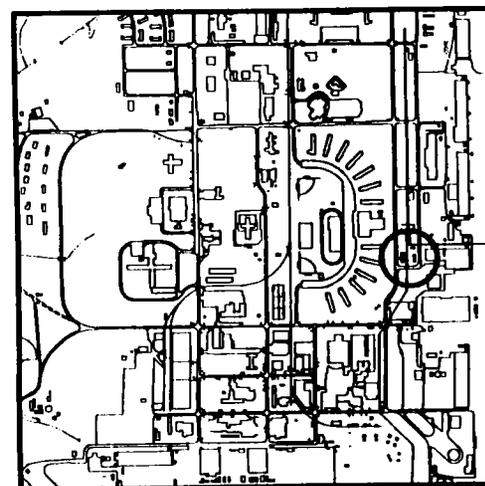
**Warning:**  
 Extensive utilities in this area.  
 Obtain full aboveground and  
 belowground utility clearance  
 before beginning work.

0 10 20  
  
 SCALE: 1 INCH = 20 FEET

**LEGEND**

-  Area to be excavated
- sf Square feet
- cy Cubic yards
- bls Below land surface

**FIGURE 1-5**  
**BUILDING 216**



**GENERAL LOCATION PLAN**

Scale: 1 inch = 2,000 feet

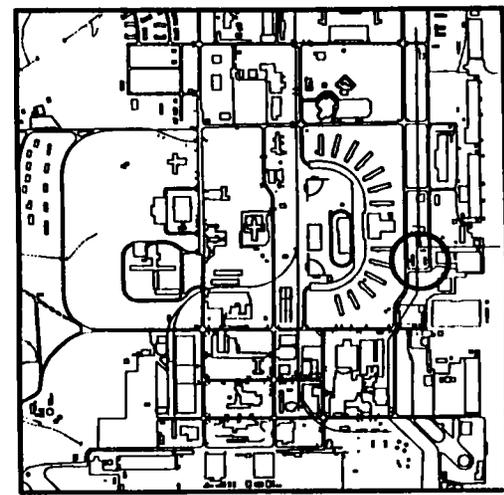
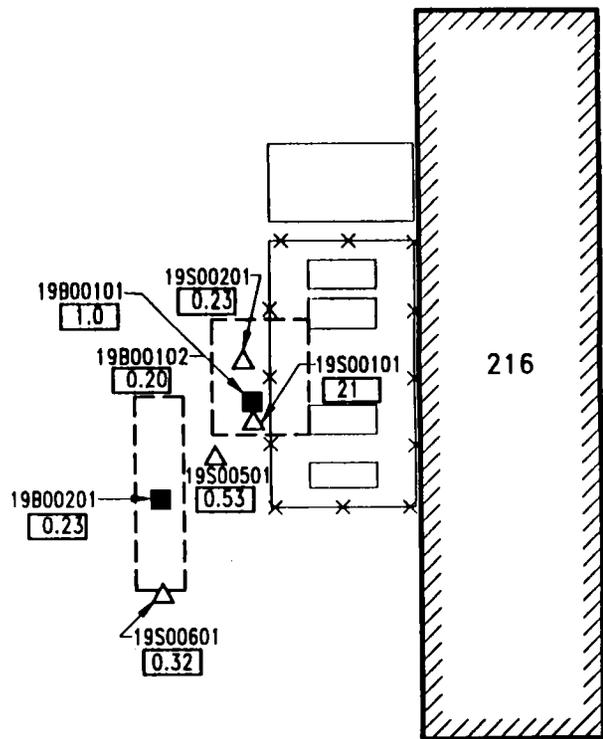
**NOTES:**

1. **WARNING:** Obtain utility clearance before excavating.
2. Extent of excavation to be marked by Harding Lawson Associates.
3. Contaminants of concern are polychlorinated biphenyls.
4. Waste characterization, transport, and disposal of all excavated soil is the responsibility of the remedial action contractor.
5. Return site to preexcavation conditions.



**BASE REALIGNMENT  
 AND CLOSURE  
 SOIL EXCAVATIONS**

**NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA**



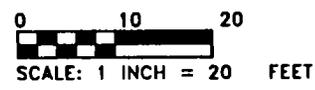
**GENERAL LOCATION PLAN**  
Scale: 1 Inch = 2,000 feet

**NOTES:**

1. All concentrations are in milligrams per kilogram.
2. Contaminants of concern are polychlorinated biphenyls.
3. Concentrations shown are for Aroclor-1260.
4. Residential cleanup goal for PCBs is 0.9 milligrams per kilogram.

**LEGEND**

- 19S00101 Surface soil sample location and designation
- 19800101 Subsurface soil sample location and designation
- PCB concentration
- Area to be excavated
- PCB Polychlorinated biphenyl

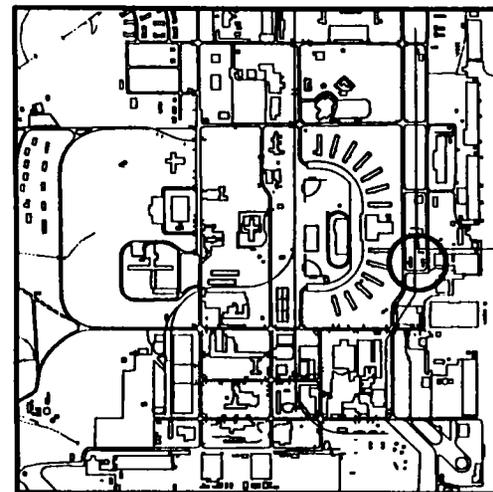
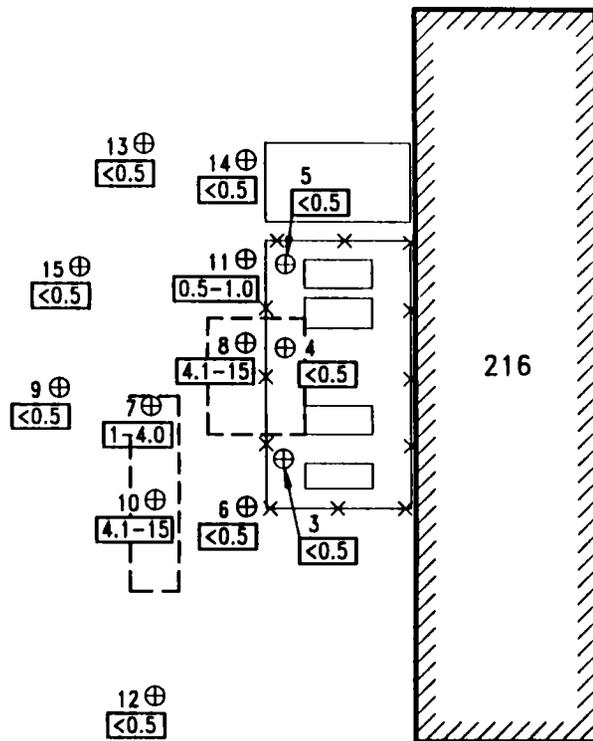


**FIGURE 1-5A**  
**FACILITY 216**  
**PCB CONFIRMATORY SAMPLE RESULTS**



**BASE REALIGNMENT  
AND CLOSURE  
SOIL EXCAVATIONS**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**



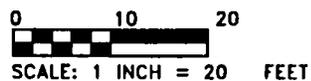
**GENERAL LOCATION PLAN**  
Scale: 1 inch = 2,000 feet

**NOTES:**

1. All concentrations are in milligrams per kilogram.
2. Contaminants of concern are polychlorinated biphenyls.
3. Concentrations shown are for Aroclor-1260.
4. Residential cleanup goal for PCBs is 0.9 milligrams per kilogram.

**LEGEND**

- 6 ⊕ PCB Immunoassay sample location and designation
- 2.8 PCB concentration
- Area to be excavated
- PCB Polychlorinated biphenyl
- ✕—✕ Fence



**FIGURE 1-5B**  
**FACILITY 216**  
**PCB IMMUNOASSAY RESULTS**



**BASE REALIGNMENT  
AND CLOSURE  
SOIL EXCAVATIONS**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**