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NAS PENSACOLA  
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**CERCLA Remedial Response**

**Immediate Removal Action Contingency Plan**

**Naval *Air* Station Pensacola**  
**Pensacola, Fl.**

**Prepared by**

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## **IMMEDIATE REMOVAL ACTION PLAN**

### **1.0 INTRODUCTION**

#### **1.1 Location of removal action :**

The removal action will be conducted at Site 3 at the ~~Crash~~ Crew Training Area. Site 3 occupies approximately 850 feet by 2100 feet along the southwestern border of Forest Sherman Field. The site is bounded to the east by ~~aircraft~~ runway 19; to the ~~north~~ by a paved aircraft taxiway; to the west by partially wooded scrub lands; and to the south by an open field.

#### **1.2 Background :**

Site 3 contains at least eight different ~~burn~~ areas. The two northernmost burn areas are currently being ~~used~~ for training exercise.

#### **1.3 CERCLA status of NAS :**

NAS Pensacola is on the National Priority ~~List~~. The Navy ~~has~~ entered ~~into~~ a Federal Facility Agreement (FFA) (CERCLA 120.(e)(2)) with the EPA and ~~FDER~~.

#### **1.4 Purpose of Removal Action Contingency Plan :**

This Removal Action Contingency Plan (RACP) provides the background, authorization, and methodologies for the immediate removal and movement of contaminated soil if necessary.

### **2.0 AREA OF CONTAMINATION**

#### **2.1 Creation of Area Of Contamination (AOC) :**

The Navy is the Lead agency pursuant to executive Order 12580 and the National Contingency Plan (NCP) **40CFR300.120(b)(1)** for the CERCLA ~~response~~ at ~~this~~ location. The Navy informed both EPA and ~~FDER~~ by a letter dated 12 May 1992 of the Navy's creation of Site 3 as ~~an~~ AOC.

#### **2.2 Practicalities of AOC :**

In accordance with the interpretation stated in the Thursday, March 8, 1990, Federal Register, Vol. **55** No. **46**, page 8759, of the RCRA 3004(k) term 'Land ~~Disposal~~', movement of waste within this unit (AOC) ~~does~~ not constitute land ~~disposal~~ for the purposes of application of the RCRA LDRs.

### 3.0 IMMEDIATE REMOVAL ACTION IMPLEMENTATION :

#### 3.1 First Phase of Sampling :

RI/FS Phase I sampling has been conducted at Site 3. Four surface water samples, four sediment samples, thirty-four **soil** samples, and twelve **groundwater** samples were taken at Site 3. Surface water, sediment, soil, and surficial groundwater contamination **are** present on Site 3. Metals (chromium, lead, cadmium, and iron), TRPHs, VOCs, PAHs, and phenols-acid extracables are the primary on-site contaminants.

#### 4.0 REMOVAL ACTION PLAN :

An Immediate Removal Contingency Action is planned, with a planning **period** of less than six months (**40CFR300.415(b)(4)**), if it is determined that a **direct** and immediate threat to the health and safety of site workers exists. Accordingly, the Navy **will** declare a **CERCLA 104(b)** Immediate Response Removal Action (**40CFR300.415(b)(1)**). This removal action, a forbearer of the much larger CERCLA RI/FS effort **to** be conducted at the sites, shall contribute to the efficient performance of that effort (**40CFR300.415(c)**). The scheduling of the future response is provided in the Site Management **Plan** associated with the Navy's Federal Facility Agreement for NAS Pensacola. This action **shall** comply with applicable or relevant and appropriate requirements to the extent practicable, within the perspective of the urgency of the situation and the **scope** of the removal action.

#### 4.1 Excavation of contaminated soil :

4.1.1 Contaminated **soil** that due to its **quantity** of contamination **poses** a health and **safety risk** to the site workers shall be removed from the site.

4.1.2 When the contractor is involved **in** the excavation of contaminated material that **is** designated to be **disposed** of offsite, contractor personnel **are** involved in a Remedial Action Operation and the health and safety and training requirements as **stated** in **OSHA** standard 29CFR1910.120 **are** applicable. **We** recommend that these personnel be graduates of the 40 hour training course. Any other work that is **performed** at the work site other than this removal action is covered by OSHA standard 29CFR1926 and other applicable OSHA standards.

#### 4.2 Disposal of Contaminated Soil :

4.2.1 The **CERCLA** OffSite response action procedures **as** detailed in **Federal** Register Vol. 53 No. 229 of 29 November, 1988, pages 48218 - 48234 **shall** be followed. These procedures generally require **full** documentation certifying that the waste hauler, the

treatment facility, and the land disposal unit have valid operating permits, are not in violation of those permits, **are** specifically authorized to take the waste, and have the ability to handle the waste.

**4.2.2 Disposal to Landfill :** **Soil** that meets the acceptable **40CFR268** standards for disposal into a regulated permitted land fill **will** be **disposed** of in that manner.

**4.2.3 Disposal by treatment and then to landfill :** **Soil** that **fails** to meet the acceptable 40CFR268 standards for **disposal** directly into a regulated **permitted** land **fill** **shall** be treated by an acceptable **permitted** treatment facility and then **shall** be disposed of into a regulated permitted land **fill**.

**4.3 Movement of soil about the work site :**

During the Removal Action and as required by work about the work site, contaminated soil shall be moved **as** required. Movement of contaminated **soil** about the work site **shall** be restricted to the manner stated in Federal Register Vol. **55** No. **46** of 8 March, 1990, pages 8758 - 8760.

**4.4 Termination of Removal Action :**

**This** removal action is intended to remove the health threat **imposed** on the construction workers. Once the **soil** that has been identified **as** inflicting an immediate health threat upon site workers is removed, **this** removal action shall be terminated. Assessment of **an** **air** inhalation threat while the removal action is underway **shall** be made by measuring **for** the **air** concentrations of analytically identified chemicals and metals and comparing those concentrations with the OSHA **standards**. After the **initial** amount of soil is removed, a comparison of analytical results from additional sampling to **OSHA standards** **shall** indicate any remaining threat to workers and to what extent additional **soil** removal is **required**. Assessment of **any** residual contamination after the removal action is terminated **shall** be addressed when the **CERCLA RI/FS Work** Plan for these sites **are** developed.

**4.6 Post Removal Action Termination Follow Up Activities :**

**4.6.1** **This** removal action shall not fully address the extent of the contamination **as** it is known. **This** action shall remediate the known **safety** threat to the site workers to allow them to continue on with the construction project. The scheduling of a **final** response action is provided in the Site Management Plan associated with the Navy's **FFA for NAS** Pensacola.

**4.6.2** The Navy shall **transmit** to the EPA and FDER within 15 **days** of its termination of this Removal Action a Notice of Termination.

**4.6.3** The Navy shall transmit to the **EPA** and **FDER** within 60 Days of its termination of this Removal Action a Completion Report that **details** the events of **this** Removal Action. This **report** shall be included in the Administrative Record.

**4.7 Community Relations :**

The Navy shall comply with the community relations aspects of this removal action as applicable and prescribed in **40CFR300.415(m)**.

**4.7.1** With **regards** to **40CFR300.415(m)(1)**, the designated spokesperson for **this** effort shall be the Public Affairs Officer for **NAS** Pensacola.

**4.7.2** With **regards** to **40CFR300.415(m)(2)**, the Navy's Southern Division, Naval Facility Engineering Command, with the assistance of and in **coordination** with NAS Pensacola, shall develop and generate an Administrative Record (**AR**) (**40CFR300.820**), publish a notice of availability of the **AR** within 60 days of the initiation of this removal action, and after providing a 45 day comment period, develop and generate a written response to **significant** comments for inclusion in the **record**.

**APPENDIX A**

Table 3-9

**SUMMARY TAL/TCL ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES  
(FROM PERMANENT MONITORING WELLS)  
NAS PENSACOLA SITE 3  
(All results in  $\mu\text{g/L}$ , unless noted)**

Parameter	Detection Limit	Sample Number (Well Number)				FPDWS/ FSDWS
		P03W021 (GM21)	P03W023 (GM23)	P03W024 (GM24)	P03W025 (GM25)	
<b>Total Metals</b>						
Aluminum	14	306	3,820	2,470	228	
Barium	5	20.7	9.6	5.7	6.9	1,000
Cadmium	3	--	3.9	--	3.4	10
Calcium	95	8,190	1,060	753	2,940	
Cobalt	5	6.4	8.1	7.6	7.9	
Copper	2	2.8	3.5	3.0	--	1,000
Iron	5	897 E)	643 E)	1,420 (E)	619 (E)	300
Lead	1	2.3	1.7	8.7	2.3	50
Magnesium	108	1,700	730	933	955	
Manganese	1	11.3	6.2	13.3	5.4	50
Nickel	8	12.7	--	--	--	
Potassium	268	3,060	1,120	--	--	
Sodium	74	5,770	3,000	3,400	4,120	160,000
Vanadium	4	5.4	8.0	6.2	7.0	
Zinc	3	17.2	17.6	13.8	10.2	5,000
<b>Dissolved Metals</b>						
Aluminum	14	103	158	91.3	142	
Antimony	33	52.6	--	--	--	
Barium	5	20.2	--	--	--	1,000
Cadmium	3	--	--	--	4.2	10
Calcium	95	8,510	1,060	162	3,020	
Chromium	9	14.3*	35.9	63.9*	81.6*	50
Cobalt	5	10.5	9.5	12.4	11.0	
Copper	2	15.2	--	--	--	1,000
Iron	5	621 (E)	298 (E)	283 (E)	758 (E)	300
Lead	1	--(W)	2.1	2.7	--	50
Magnesium	108	1,790	659	914	978	
Manganese	1	14.4	11.0	18.3	13.2	50
Nickel	8	--	14.5	16.0	17.7	
Potassium	263	4,190	1,410	1,140	920	
Sodium	74	6,280	3,100	3,290	4,230	160,000
Vanadium	4	6.9	7.2	6.8	7.1	
Zinc	3	19.4	11.3	4.3	4.2	5,000
Methylene Chloride	5	43(J) <sup>b</sup>	5	4(B <sup>a</sup> ,J)	4(B <sup>a</sup> ,J)	
Acetone	10	-- <sup>b</sup>	12	8(B <sup>a</sup> ,J)	17(B <sup>a</sup> )	
Carbon Disulfide	5	74 <sup>b</sup>	9	5	17	
Benzene	5	200 <sup>b</sup>	--	--	--	1
Ethylbenzene	5	83 <sup>b</sup>	2(J)	1(J)	2(J)	
Total Xylenes	5	790 <sup>b</sup>	2(J)	7	10	
2,4-Dimethylphenol	10	6(J)	--	--	--	
Naphthalene	10	35	--	--	9(J)	
2-Methylnaphthaleno	10	7(J)	--	--	6(J)	
Di-N-Butyl-Phthalate	10	1(J)	1(J)	1(J)	--	
Bis(2-Ethylhexyl) Phthalate	10	7(B <sup>a</sup> ,J)	6(B <sup>a</sup> ,J)	7(B <sup>a</sup> ,J)	4(B <sup>a</sup> ,J)	

14[NASP]UH8039:T0361/633/14

Key at end of table.

Table 3-9 (Cont.)

Parameter	Detection Limit	Sample Number (Well Number)				FPDWS/ FSDWS
		P03W021 (GM21)	P03W023 (GM23)	P03W024 (GM24)	P03W025 (GM25)	
<b>Tentatively Identified</b>						
Molecular Sulfur		150(J)	--	--	9.0(J)	
Alkylated Benzene						
Isomer		(3)502(J)	--	--	(2)18(J)	
Dimethyl Benrene						
Isomer		140(J)	--	--	--	
Ethyl Dimethyl						
Benzene Isomer		22(J)	--	--	6.0(J)	
Ethyl Methyl						
Benrene Isomer		42(J)	--	--	--	
Methyl Naphthalone						
Isomer		--	--	--	5.0(J)	
Trimethyl Benzene						
Isomer		(2)67(J)	--	--	--	
Unknown Acid		--	27(J)	--	--	
Unknown Hydrocarbon		(2)19(J)	(5)30(J)	(7)43(J)	(3)15(J)	
Unknown Polynuclear						
Aromatic Hydrocarbon		--	--	--	5(J)	
Unknown Volatile						
Organic Compound		60(J)	(3)32(J)	8.0(J)	(3)28(J)	
Unknown Extractable						
Organic Compound		(11)223(J)	(9)226(J)	(5)56(J)	(4)31(J)	
Unknown Extractable						
Organic Compound		14(B <sup>a</sup> ,J)	49(B <sup>a</sup> ,J)	23(B <sup>a</sup> ,J)	--	
Total Alkalinity (mg/L as CaCO <sub>3</sub> )		25	1.0	--	4.5	
Total Hardness (mg/L as CaCO <sub>3</sub> )		47	2.0	6.0	2.0	
Total Organic Carbon (mg/L)		32	6.7	1.1	3.6	

14[NASP]UH8039:T0361/633/14

Note: The number within parentheses preceding the listed concentration value represents the number of tentatively identified compounds (TICs) in this parameter group. The listed concentration represents the sum of the individual group-member concentration.

**Key:**

<sup>b</sup> Detection limit for specified parameter increased by a factor of 10 in this sample.

FPDWS = Florida Primary Drinking Water Standard.

FSDWS = Florida Secondary Drinking Water Standard.

NA = Analyses not performed.

Dash (--) indicates compound not detected.

'Duplicate analysis not within control limits.

\*\*Values for TICs are estimated; no detection limits were established for TICs.

**Qualifiers:**

(B<sup>a</sup>) = Present in method blank.

(E) = Reported value is estimated because of the presence of interference.

(J) = For non-TICs, estimated value; compound present but below detection limit. Also indicates that TIC concentrations are estimated because no detection limits were established for TICs.

Source: Ecology and Environment, Inc., 1991.

Table 3-10

**SUMMARY TAL/TCL ANALYTICAL RESULTS FOR GROUNDWATER FIELD QA/QC SAMPLES  
(FROM PERMANENT MONITORING WELLS)  
NAS PENSACOLA SITE 3  
(All results in  $\mu\text{g/L}$ , unless noted)**

Parameter	Detection Limit	Sample Number (Well Number/Type)						FPDWS/ FSDWS
		PO3W025 (GM25)	PO3W025D <sup>a</sup> (GM25)	PO3WTB06 <sup>b</sup> (Bottle Trip Blank)	PO3WFB06 (Field Blank)	PO3WRB06 <sup>c</sup> (Sampling Equipment Rinsate)	PO3WTB06 <sup>d</sup> (Preservative Blank)	
<b>Total Metals</b>								
Aluminum	14	228	224	NA	--	--	34.1	
Barium	5.0	6.9	5.6	NA	--	--	6.9	1,000
Cadmium	3	3.4	4.0	NA	--	--	--	10
Calcium	95	2,940	2,790	NA	--	--	263	
Chromium	9	--	--	NA	10.5	--	--	50
Cobalt	5	7.9	8.5	NA	11.1	9.7	12.1	
Copper	2	--	--	NA	--	--	2.1	1,000
Iron	5	619(E)	618(E)	NA	265(E)	68.9(E)	90.2(E)	300
Lead	1	2.3	5.0(S)	NA	--	--(W)	2.0(W)	50
Magnesium	108	955	978	NA	--	--	--	
Manganese	1	5.4	5.5	NA	3.1	1.8	2.2	50
Nickel	8	--	--	NA	13.1	--	--	
Potassium	263	--	--	NA	--	--	346	
Sodium	74	4,120	3,920	NA	264	102	630	160,000
Vanadium	4	7.0	5.3	NA	5.1	4.9	6.2	
Zinc	3	10.2	19.5	NA	17.4	9.7	--	5,000
<b>Dissolved Metals</b>								
Aluminum	14	142	166	NA	20.1	--	NA	
Cadmium	3	4.2	--	NA	--	--	NA	10
Calcium	95	3,020	2,830	NA	114	--	NA	
Chromium	9	81.6*	--	NA	--	--	NA	50
Cobalt	5	11.0	--	NA	--	--	NA	
Copper	1	--	--	NA	2.7	--	NA	1,000
Iron	5	758(E)	480(E)	NA	20.8(E)	39.7(E)	NA	50
Lead	1	--	--	NA	--(W)	--	NA	50
Magnesium	108	970	985	NA	--	--	NA	
Manganese	1	13.2	4.5	NA	2.0	1.3	NA	50
Nickel	8	17.7	--	NA	--	--	NA	
Potassium	263	920	--	NA	--	--	NA	
Sodium	74	4,230	4,020	NA	403	213	NA	160,000
Vanadium	4	7.7	--	NA	--	--	NA	
Zinc	3	4.2	8.2	NA	4.7	10.3	NA	5,000

14 [NASP]UH8039:T0361/610/4

Key at end of table.

Table 3-10 (Cont.)

Parameter	Detection Limit	Sample Number (Well Number/Type)						FPDWS/ FSDWS
		P03W025 (GM25)	P03W025D <sup>a</sup> (GM25)	P03WTB06 <sup>b</sup> (Bottle Trip Blank)	P03WFB06 (Field Blank)	P03WRB06 <sup>c</sup> (Sampling Equipment Blank)	P03WPB06 <sup>d</sup> (Preservative Blank)	
Methylene Chloride	5	4(B <sup>a</sup> ,J)	2(J)	28	21,000(E <sup>a</sup> ) <sup>o</sup>	15(B <sup>a</sup> )	25(B <sup>a</sup> )	
Acetone	10	17(B <sup>a</sup> )	13(B <sup>a</sup> )	21(B <sup>a</sup> )	130(B <sup>a</sup> ) <sup>o</sup>	12(B <sup>a</sup> )	19(B <sup>a</sup> )	
Carbon Disulfide	5	17	19	23	---	---	---	
Ethylbenzene	5	2(J)	2(J)	---	---	---	---	
Total Xylenes	5	10	11	---	---	---	---	
Naphthalone	10	9(J)	4(J)	NA	---	---	NA	
2-Methylnaphthalene	10	6(J)	2(J)	NA	---	---	NA	
Bis(2-Ethylhexyl)Phthalate	10	4(B <sup>a</sup> ,J)	4(B <sup>a</sup> ,J)	NA	---	5(B <sup>a</sup> ,J)	NA	
<b>Tentatively Identified</b>								
Compounds:**								
Molecular Sulfur		9.0(J)	---	---	---	---	---	
Alkylated Benzene Isomer		(2)18(J)	(5)76(J)	---	---	---	---	
Dihydro Methyl 1H-Indene Isomer		---	6.0(J)	---	---	---	---	
Ethyl Dimethyl Benzene Isomer		6.0(J)	---	---	---	---	---	
Methyl Naphthalone Isomer		5.0(J)	---	---	---	---	---	
Unknown Hydrocarbon		(3)15(J)	(5)26(J)	---	(4)24(J)	(4)26(J)	---	
Unknown Polynuclear Aromatic Hydrocarbon		5.0(J)	10(J)	---	---	---	---	
Unknown Volatile Organic Compound		(3)28(J)	5(J)	(2)29(J)	---	(3)30(J)	(3)26(J)	
Unknown Extractable Organic Compound		(4)31(J)	(4)46(J)	---	(2)19(J)	8.0(J)	---	
Unknown Extractable Organic Compound		---	---	---	48(B <sup>a</sup> ,J)	53(B <sup>a</sup> ,J)	---	
Total Alkalinity (mg/L as CaCO <sub>3</sub> )		4.5	4.5	NA	1.5	NA	NA	
Total Hardness (mg/L as CaCO <sub>3</sub> )		2.0	8.0	NA	2.0	3.0	---	
Total Organic Carbon (mg/L)		3.6	3.3	NA	---	NA	NA	

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Table 3-10 (Cont.)

Note: The number within parentheses preceding the listed concentration value represents the number of tentatively identified compounds (TICs) in this parameter group. The listed concentration represents the sum of the individual group-member concentrations.

Key:

FPDWS = Florida Primary Drinking Water Standard.

FSDWS = Florida Secondary Drinking Water Standard.

NA = Analyses not performed.

Dash (--) indicates compound not detected.

\*Duplicate analysis not within control limits.

\*\*Values for TICs are estimated; no detection limits were established.

<sup>a</sup>Duplicate of sample P03W025.

<sup>b</sup>Analyzed for VOCs only.

<sup>c</sup>Analyzed for total metals, dissolved metals, TRPHs, cyanide, VOCs, BNAs, pesticides, PCBs, and hardness only.

<sup>d</sup>Analyzed for total metals, TRPHs, cyanide, VOCs, and hardness only.

<sup>e</sup>Detection limit for specified parameter increased by a factor of 10 in this sample.

Qualifiers:

(B<sup>a</sup>) = Present in method blank.

(E) = Reported value is estimated because of the presence of interference.

(E<sup>a</sup>) = Identifies compounds with concentrations exceeding calibration range of the GC/MS instrument for the specific analysis.

(J) = For non-TICs, estimated value; compound present but below detection limit. Also indicator that TIC concentrations are estimated because no detection limits were established for TICs.

(S) = The reported value was determined by the method of standard additions.

(W) = Post digestion spike for furnace M analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.

Source: Ecology and Environment, Inc., 1991.

Table 3-6 (Cont.)

Parameter	Detection Limit	Sample Number (Location and Depth Interval)						PCAL <sup>a</sup>
		P03S013A (B013A)	P03S013AD <sup>b</sup> (B013A)	P03S014A (B014A)	P03S015A (B015A)	P03S016A (B016A)	P03S017A (B017A)	
Chromium (mg/kg)	1.0	1.1	--	--	--	--	1.8	4x10 <sup>2</sup>
Zinc (mg/kg)	2.0	5.7	9.0	9.2	3.0	--	--	1.6x10 <sup>4</sup>
Lead (mg/kg)	4.0	13	22	21	9.4	--	10	
Cadmium (mg/kg)	0.50	0.51	--	0.66	--	--	--	4x10 <sup>1</sup>
Copper (mg/kg)	2.5	9.7	25	--	--	--	--	2.5x10 <sup>3</sup>
TRPHs (mg/kg)	5.0	19,000	16,000	13,000	480	--	230	
Toluene	1,000	30,000	(L) <sup>d</sup>	-- <sup>e</sup>	--	--	--	2x10 <sup>7</sup>
Ethylbeneeno	1,000	24,000 <sup>d</sup>	(L) <sup>d</sup>	7,100 <sup>e</sup>	--	--	--	8x10 <sup>8</sup>
Total Xylonos	1,000	200,000 <sup>d</sup>	150,000 <sup>d</sup>	43,000 <sup>e</sup>	--	--	--	2x10 <sup>8</sup>
Methylene Chloride	1,000	-- <sup>d</sup>	-- <sup>d</sup>	-- <sup>e</sup>	--	--	--	9x10 <sup>4</sup>
Total PAHs as Benzo-a-pyrene	1,000	11,000	10,000	2,800	--	--	--	
Phenols as Trichlocophonol	2,000	360,000	230,000	300,000	--	--	12,000	

14 [NASP]UH8039:T0361/643/5

Key at end of table.

Table 3-6 (Cont.)

Parameter	Detection Limit	Sample Number (Location and Depth Interval)						PCAL <sup>a</sup>
		P03S018A (B018A)	P03S019A (B019A)	P03S020A (B020A)	P03S021A (B021A)	P03S022A (B022A)	P03S023A (B023A)	
Chromium (mg/kg)	1.0	2.3	1.0	1.6	1.3	--	--	4x10 <sup>2</sup>
Zinc (mg/kg)	2.0	13	--	--	--	6.2	--	1.6x10 <sup>4</sup>
Lead (mg/kg)	4.0	71	--	--	15	--	--	4x10 <sup>3</sup>
Cadmium (mg/kg)	0.50	0.82	--	--	--	--	--	4x10 <sup>3</sup>
Copper (mg/kg)	2.5	21	--	--	--	--	--	2.5x10 <sup>4</sup>
TRPHs (ug/kg)	5.0	2,000	15	17	--	--	19	
Toluene	1,000	--	--	--	--	--	--	2x10 <sup>7</sup>
Ethylbenzene	1,000	--	--	--	--	--	--	8x10 <sup>6</sup>
Total Xylenes	1,000	--	--	--	--	--	--	2x10 <sup>8</sup>
Methylene Chloride	1,000	--	--	--	--	--	--	9x10 <sup>4</sup>
Total PAHs as Eonso-a-pyreno	1,000	--	--	--	--	--	--	
Phenols as Trichlorophenol	2,000	30,000	--	--	--	--	--	

14[NASP]UH8039:T0361/643/5

Key at end of table.

Table 3-6 (Cont.)

Parameter	Detection Limit	Sample Number (Location and Depth Interval)						PCAL <sup>a</sup>
		P03S024A (B024A)	P03S025A (B025A)	P03S025AD <sup>c</sup> (B025A)	P03S026A (B026A)	P03S027A (B027A)	P03S028A (B028A)	
Chromium (mg/kg)	1.0	1.5	--	--	--	1.0	--	4x10 <sup>2</sup>
Zinc (mg/kg)	2.0	--	7.0	6.7	2.0	--	--	1.6x10 <sup>4</sup>
Lead (mg/kg)	4.0	22	23	15	--	14	--	4x10 <sup>1</sup>
Cadmium (mg/kg)	0.50	--	0.77	0.74	--	--	--	4x10 <sup>1</sup>
Copper (mg/kg)	2.5	--	13	8.5	--	--	--	2.5x10 <sup>4</sup>
TRPHs (mg/kg)	5.0	3,700	13,000	12,000	950	1,700	--	
Toluene	1,000	-- <sup>e</sup>	39,000 <sup>f</sup>	39,000 <sup>f</sup>	--	-- <sup>g</sup>	--	2x10 <sup>7</sup>
Ethylbenzene	1,000	-- <sup>o</sup>	16,000 <sup>f</sup>	18,000 <sup>f</sup>	--	-- <sup>g</sup>	--	3x10 <sup>8</sup>
Total Xylenes	1,000	10,000 <sup>e</sup>	110,000 <sup>f</sup>	130,000	--	2,500 <sup>i</sup>	--	2x10 <sup>4</sup>
Methylene Chloride	1,000	-- <sup>e</sup>	-- <sup>f</sup>	-- <sup>f</sup>	--	-- <sup>g</sup>	--	9x10 <sup>4</sup>
Total PAHs as Benzo-a-pyrene	1,000	3,200	8,600	9,000	--	1,300	--	
Phenols as Trichlorophenol	2,000	130,000	380,000	360,000	13,000	61,000	--	

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Key at end of table.

Table 3-6 (Cont.)

Parameter	Detection Limit	Sample Number (Location and Depth Interval)						PCAL <sup>a</sup>
		P03S029A (B029A)	P03S030A (B030A)	P03S031A (B031A)	P03S032A (B032A)	P03S033A (B033A)	P03S034A (B034A)	
Chromium (mg/kg)	1.0	--	--	--	--	--	--	$4 \times 10^2$ <sup>4</sup>
Zinc (mg/kg)	2.0	--	--	--	--	--	--	$1.6 \times 10^4$
Lead (mg/kg)	4.0	--	--	--	--	--	--	
Cadmium (mg/kg)	0.50	--	--	--	--	--	--	$4 \times 10^1$ <sup>1</sup>
Copper (mg/kg)	2.5	--	--	--	--	--	--	$2.5 \times 10^3$
TRPHs (mg/kg)	5.0	1.6	21	13	6.1	11	11	
Toluene	1,000	--	--	--	--	--	--	$2 \times 10^7$
Ethylbenzene	1,000	--	--	--	--	--	--	$8 \times 10^6$
Total Xylenes	1,000	--	--	--	--	--	--	$2 \times 10^8$
Methylene Chloride	1,000	--	--	--	--	--	--	$9 \times 10^4$
Total PAHs as Benzo-a-pyrene	1,000	--	--	--	--	--	--	
Phenols as Trichlorophenol	2,000	--	3,900	--	--	--	--	

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## Key:

PCAL = RCRA Proposed Corrective Action Level.

Dash (--) indicator compound not detected.

<sup>a</sup>PCAL listed for chromium is for chromium (VI).<sup>b</sup>Duplicate of sample P03S013A.<sup>c</sup>Duplicate of sample P03S025A.<sup>d</sup>Detection limit for specified parameter increased by a factor of 20 in this sample.<sup>e</sup>Detection limit for specified parameter increased by a factor of 5 in this sample.<sup>f</sup>Detection limit for specified parameter increased by a factor of 10 in this sample.<sup>g</sup>Detection limit for specified parameter increased by a factor of 2 in this sample.

## Qualifier:

(L) = Present below stated detection limit.

Source: Ecology and Environment, Inc., 1991.

Table 3-8

**SUMMARY ANALYTICAL SCREENING RESULTS FOR GROUNDWATER SAMPLES  
(FROM TEMPORARY MONITORING WELLS)  
HAS PENSACOLA SITE 3  
(All results in  $\mu\text{g/L}$ , unless noted)**

Parameter	Detection Limit	Sample Number (Location)							FPDWS/ PSDWS
		P03GW023 (TW023)	P03GW024 (TW024)	P03GW025 (TW025)	P03GW026 (TW026)	P03GW027 (TW027)	P03GW027D <sup>a</sup> (TW027)	P03GW028 (TW028)	
Chromium	10	140	78	19	--	150	150	--	50
Zinc	20	64	84	56	31(B)	62(B)	75(B)	24(B)	5,000
Lead	40	160	1,800	740	95	560	580	--	50
Cadmium	5.0	11	--	15	--	7.9	9.5	--	10
Nickel	40	64	--	--	--	--	41	--	--
Copper	25	72	89	62	--	160	180	--	1,000
TRPHs (mg/L)	1.0	--	10	11	7.3	5.2	4.4	--	--
Benzene	10	--	810 <sup>b</sup>	-- <sup>c</sup>	-- <sup>d</sup>	-- <sup>e</sup>	-- <sup>e</sup>	--	1
Toluene	10	--	-- <sup>b</sup>	3,900 <sup>c</sup>	-- <sup>d</sup>	-- <sup>e</sup>	-- <sup>e</sup>	--	--
Total Xylenes	10	--	1,500 <sup>b</sup>	2,400 <sup>c</sup>	220 <sup>d</sup>	1,400 <sup>e</sup>	1,600 <sup>e</sup>	--	--
Total PAHs as Benzo-a-pyrene	100	--	200	120	(L)	--	--	--	--
Phenols as Trichlorophenol	100	--	1,400	3,700	--	800	930	--	--

14[NASP]UH8039:T0361/642/5

Key at end of table.

Table 3-8 (Cont.)

Parameter	Detection Limit	Sample Number (Location)						FPDWS/ FSDWS
		P03GW029 (TWO29)	P03GW030 (TWO30)	P03GW031 (TWO31)	P03GW032 (TWO32)	P03GW033 (TWO33)	P03GW034 (TWO34)	
Chromium	10	--	58	12	11	14	25	50
Zinc	20	24(B)	33	--	30	--	24(B)	5,000
Lead	40	--	--	--	--	--	--	50
Cadmium	5.0	--	5.3	--	5.0	7.3	--	10
Nickel	40	--	--	--	--	--	--	
Copper	25	--	--	--	--	--	--	1,000
TRPHs (mg/L)	1.0	--	--	--	--	--	--	
Benzene	10	-- <sup>b</sup>	--	--	--	--	--	1
Toluene	10	-- <sup>b</sup>	--	--	--	--	--	
Total Xylenes	10	1,200 <sup>b</sup>	--	--	--	--	--	
Total PAHs as Benzo-a-pyrene	100	--	--	--	--	--	--	
Phenols as Tcichlocophenol	100	200	--	--	--	--	--	

14[NASP]UH8039:T0361/642/5

## Key:

<sup>a</sup> Duplicate of sample P03GW027.<sup>b</sup> Detection limit for specified parameter increased by a factor of 20 in this sample.<sup>c</sup> Detection limit for specified parameter increased by a factor of 100 in this sample.<sup>d</sup> Detection limit for specified parameter increased by a factor of 5 in this sample.<sup>e</sup> Detection limit for specified parameter increased by a factor of 50 in this sample.

Dash (--) indicates compound not detected.

## Qualifiers:

(B) = Present in method blank.

(L) = Present below stated detection limit.

Source: Ecology and Environment, Inc., 1991.

Table 3-4

**SUMMARY ANALYTICAL SCREENING RESULTS FOR SURFACE WATER SAMPLES  
NAS PENSACOLA SITE 3**  
(All results in  $\mu\text{g/L}$ , unless noted)

Parameter	Detection Limit	Sample Number (Location)					FSWS
		P03SW001 (SW001)	P03SW002 (SW002)	P03SW002D <sup>a</sup> (SW002)	P03SW003 (SW003)	P03SW004 (SW004)	
Chromium	10	61	--	10	--	--	50
zinc	20	48(B)	26(B)	64(B)	--	50(B)	30
TRPHs (mg/L)	1.0	--	--	--	3.0	--	
Benzene	10	--	--	--	56	--	
Toluene	10	21	--	--	--	--	
Ethylbenzene	10	10	--	--	--	--	
Total Xylenes	10	150	--	--	87	--	
Phenols as Trichlorophenol	100	--	--	230	140	--	1.0

14{NASP}UH8039:T0361/669/19

Key :

"Duplicate of sample P03SW002.

FSWS = Florida Class III Surface Water Quality Standard/Fresh Water.

Dash (--) indicates compound not detected.

Qualifier:

(B) = Compound also present in method blank.

Source: Ecology and Environment, Inc., 1991.

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**Table 3-5**  
**SUMMARY ANALYTICAL SCREENING RESULTS FOR SEDIMENT SAMPLES**  
**IUS PENSACOLA SITE 3**  
**(All results in mg/kg, unless noted)**

Parameter	Detection Limit	Sample Number (Location)				
		P03SD001 (SD001)	P03SD002 (SD002)	P03SD002D <sup>a</sup> (SD002)	P03SD003 (SD003)	P03SD004 (SD004)
Chromium	1.0	1.8	--	--	7.0	1.3
zinc	2.0	4.0	18	14	32	9.5
Lead	4.0	13	--	10	180	--
Cadmium	0.50	--	--	--	1.4	--
Copper	2.5	--	--	--	31	--
TRPHs	5.0	11	--	--	770	9.7
Total Xylenes (µg/kg)	1,000	1,600	--	--	1,200	--
Total PAHs as Benzo-a-pyreno (µg/kg)	1,000	1,700	--	--	(L)	(L)
Phenols as Trichlorophenol (µg/kg)	2,000	--	5,300	3,700	21,000	--

14[NASP]UH8039:T0361/670/19

Key :

<sup>a</sup>Duplicate of sample P03SD002.  
 Dash (--) indicates compound not detected.

Qualifier:  
 (L) = Present below stated detection limit.

Source: Ecology and Environment, Inc., 1991.

Table 3-6

**SUMMARY ANALYTICAL SCREENING RESULTS FOR SOIL SAMPLES  
 NAS PENSACOLA SITE 3**  
 (All results in  $\mu\text{g}/\text{kg}$ , unless noted)

Parameter	Detection Limit	Sample lumber (Location and Depth Interval)						PCAL <sup>a</sup>
		P03S001A (B001A)	P03S002A (B002A)	P03S003A (B003A)	P03S004A (B004A)	P03S005A (B005A)	P03S006A (B006A)	
Chromium (mg/kg)	1.0	--	1.3	1.4	1.2	1.0	--	$4 \times 10^2$
Zinc (mg/kg)	2.0	--	--	--	2.5	--	--	$1.6 \times 10^4$
Lead (mg/kg)	4.0	--	--	--	--	--	--	$4 \times 10^3$
Cadmium (mg/kg)	0.50	--	--	--	--	--	--	$2.5 \times 10^3$
Copper (mg/kg)	2.5	--	--	--	--	--	--	$2.5 \times 10^3$
TRPHs (mg/kg)	5.0	23	15	15	--	23	--	
Toluene	1 000	--	--	--	--	--	--	$2 \times 10^7$
Ethylbenzene	1 000	--	--	--	--	--	--	$8 \times 10^6$
Total Xylenes	1 000	--	--	--	--	--	--	$2 \times 10^8$
Methylene Chloride	1 000	--	--	1,000	--	--	--	$9 \times 10^4$
Total PAHs as Benzo-a-pyrone	1 000	--	--	--	--	--	--	
Phenols as Trichlorophenol	2,000	--	--	--	--	--	--	

14 [NASP]UH8039:T0361/643/5

Key at end of table.

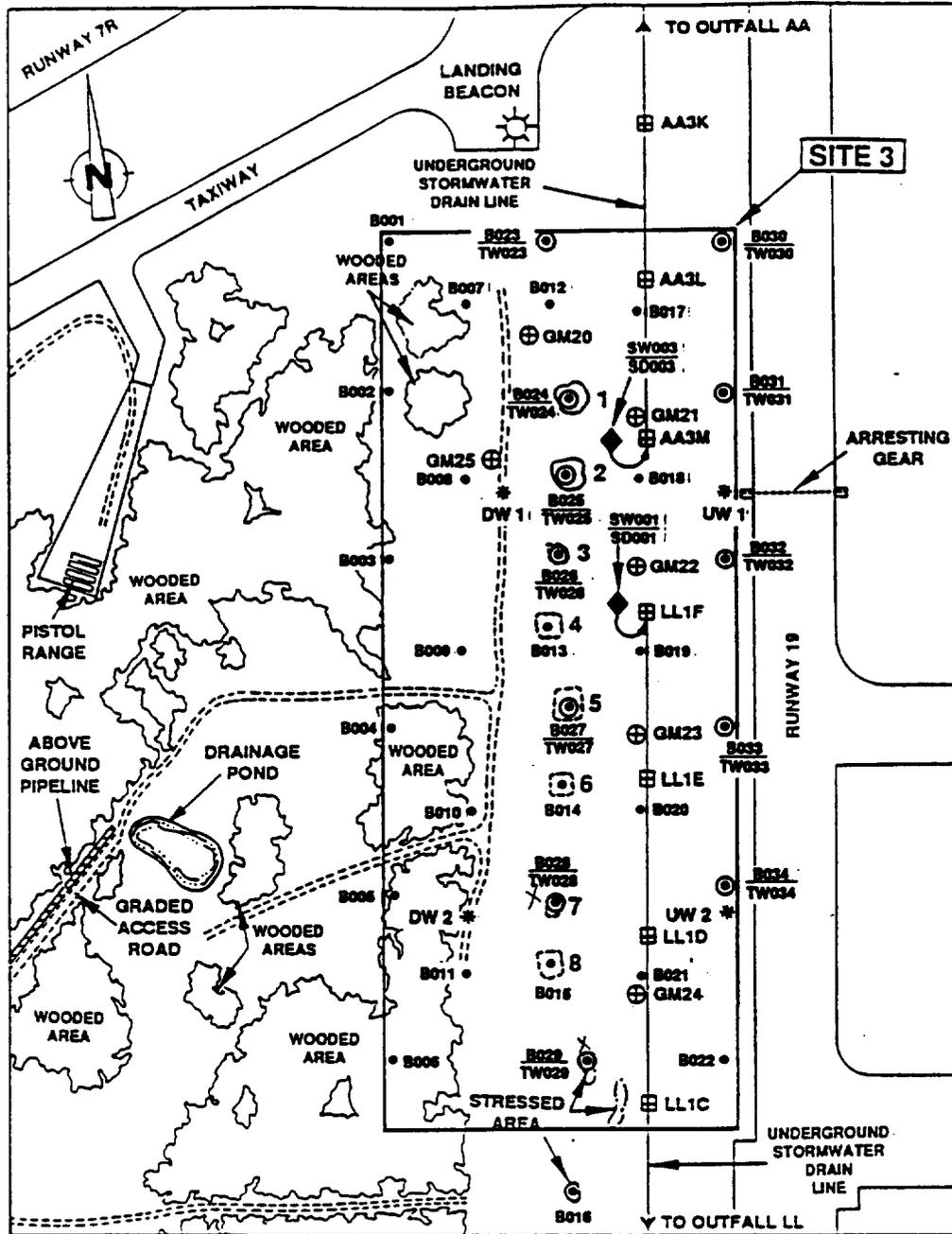
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Table 3-6 (Cont.) •

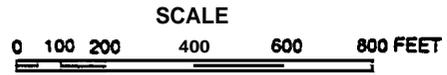
Parameter	Detection Limit	Sample Number (Location and Depth Interval)						PCAL <sup>a</sup>
		P03S007A (B007A)	P03S008A (B008A)	P03S009A (B009A)	P03S010A (B010A)	P03S011A (B011A)	P03S012A (B012A)	
Chromium (mg/kg)	1.0	2.1	--	2.0	--	--	--	4x10 <sup>2</sup>
Zinc (mg/kg)	2.0	--	--	--	2.9	3.1	--	1.6x10 <sup>4</sup>
Lead (mg/kg)	4.0	6.1	--	--	--	--	--	
Cadmium (mg/kg)	0.50	0.53	--	--	--	--	--	4x10 <sup>1</sup>
Copper (mg/kg)	2.5	--	--	--	--	--	--	2.5x10 <sup>3</sup>
TRPHs (mg/kg)	5.0	14	--	--	--	--	20	
Toluene	1,000	--	--	--	--	--	--	2x10 <sup>7</sup>
Ethylbenzene	1,000	--	--	--	--	--	--	8x10 <sup>6</sup>
Total Xylenes	1,000	--	--	--	--	--	--	2x10 <sup>8</sup>
Methylene Chloride	1,000	--	--	--	--	--	--	9x10 <sup>4</sup>
Total PAHs as Benzo-a-pyrene	1,000	--	--	--	--	--	--	
Phenols as Trichlorophenol	2,000	--	--	--	--	--	--	

14[NASP]UH8039:T0361/643/5

Key at end of table.



SOURCE: U.S. Naval Air Station, Pensacola, Florida 1991; Ecology and Environment, Inc. 1991



- KEY:**
- == Jeep Trail
  - ☐ Stormwater Catch Basin with Grate
  - AA3K/LL1C Stormwater Catch Basin Designation
  - Active Burn Area
  - ⋯ Former Burn Area
  - 1 Burn Area Number
  - ⊕ Existing Permanent Shallow Monitoring Well
  - GM21 Permanent Monitoring Well Number
  - \* Particulate Air Screening Location
  - DW 1/UW 1 Particulate Air Screening Location Number (downwind/upwind)
  - ◆ Surface Water and Sediment Sample Location
  - SW001 Surface Water Sample Number
  - SD001 Sediment Sample Number
  - Soil Boring
  - Temporary Monitoring Well
  - B023 Soil Boring Number
  - TW023 Temporary Monitoring Well Number

**Figure 14-2 PARTICULATE AIR SCREENING, ON-SITE SURFACE WATER AND SEDIMENT SAMPLING, SOIL BORING, AND TEMPORARY MONITORING WELL LOCATIONS—NAS PENSACOLA SITE 3 — PHASE I**