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1994

EPA Superfund
Record of Decision:

USN AIR STATION CECIL FIELD
EPA ID: FL5170022474
OU 02
JACKSONVILLE, FL
09/30/1994

Text:

1.0 DECLARATION FOR THE INTERIM RECORD OF DECISION

1.1 SITE NAME AND LOCATION. The site name is Oil Disposal Area Northwest 5, Operable Unit (OU) 2 at Naval Air Station (NAS) Cecil Field in Jacksonv Florida. Site 5 is located east of Perimeter Road and to the west of Lake Fretwell. Site 5 is combined with Site 17 as OU 2 at NAS Cecil Field due their proximity and similarity as waste oil and fuel disposal sites.

1.2 STATEMENT OF BASIS AND PURPOSE. This decision document presents the selected interim remedial action for source control at Site 5, the Oil Dis Area Northwest. The selected interim remedial action was chosen in accord with the requirements of the Comprehensive Environmental Response, Compens and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and the National Oil and Hazardous Sub Pollution Contingency Plan (NCP, 40 Code of Federal Regulations [CFR] 300) decision document explains the factual basis for selecting the interim rem Site 5 and the rationale for the final decision. The information supporti interim remedial action decision is contained in the Administrative Record this site.

The purpose of the interim remedial action is to provide source control at 5. During this action contaminated soil and free product will be removed. will prevent further migration of contaminants to groundwater and reduce h risks from direct contact exposure to contaminated surface soils. The U.S Environmental Protection Agency (USEPA) and the Florida Department of Environmental Protection (FDEP) concur with the selected interim remedy.

1.3 ASSESSMENT OF THE SITE. Actual or threatened releases of hazardous substances from the site, if not addressed by implementing the response ac selected in the Interim Record of Decision (IROD), may present an imminent substantial endangerment to public health, welfare, or the environment as result of concentrations of contaminants in soil and groundwater in excess health-based levels.

1.4 DESCRIPTION OF THE SELECTED REMEDY. The preferred alternative for so control at Site 5 is Alternative RA-2, excavation and onsite biological tr of contaminated soil, which was developed and evaluated in the Focused Feasibility Study (FFS). Alternative RA-2 would involve the following tas

- ù Clear and prepare the site.
- ù Excavate and separate petroleum-contaminated soil and free-product saturated soil during seasonal low water table.
- ù Remove free product from free-product-saturated soil.
- ù Transport soil formerly saturated with a free-product to an offsit treatment and disposal facility.

- ù Treat petroleum-contaminated soils onsite in a constructed biological treatment area.
- ù Collect and analyze samples from the open excavation to verify the attainment of the cleanup criteria.
- ù Backfill the site with treated soil.
- ù Restore the site.

The preferred alternative uses biological methods to treat petroleum-conta soil. The technology creates the best possible conditions for growth of m ganisms. The microscopic organisms degrade the petroleum constituents fou the contaminated soil. To promote biological activity, soil from the exca is placed on a constructed treatment pad, supplied with water and nutrient mixed using farm equipment. The technology has been shown to be effective treatment of petroleum-contaminated soils. Treatment specifics including confirmatory sampling program will be provided in subsequent design docume

The Navy estimates that the preferred alternative would cost $1.6 million would take approximately 14 months to complete.

1.5 STATUTORY DETERMINATIONS. This interim action is protective of human and the environment, complies with Federal and State applicable or relevan appropriate requirements (ARARs) for this limited-scope action, and is cos effective. Although this interim action is not intented to fully address statutory mandate for permanence and treatment to the maximum extent pract this interim action uses treatment and, thus, is in furtherance of that st mandate. Because this action does not constitute the final remedy for all at the site, the statutory preference for remedies that employ treatment t reduces toxicity, mobility, or volume as a principal element, although par addressed in this remedy, will be further addressed by the final response Subsequent actions are planned to address fully the threats posed by the conditions at this site.

Because this is an IROD, review of this site and of this remedy will be on as the Navy continues to develop final remedial alternatives for this site this OU.

1.6 SIGNATURE AND SUPPORT AGENCY ACCEPTANCE OF THE REMEDY.

_____ _____

Captain Kirk T. Lewis
Commanding Officer, NAS Cecil Field Date

2.0 DECISION SUMMARY

2.1 SITE NAME, LOCATION, AND DESCRIPTION. NAS Cecil Field is located 14 southwest of Jacksonville in the northeastern part of Florida. Most of NA Field is located within Duval County; however, part is located in the nort part of Clay County

NAS Cecil Field was establisbed in 1941 and provides facilities, services, material support for the operation and maintenance of naval weapons, aircr and other units ot the operating forces as designated by the Chief of Nava Operations. Some of the tasks required to accomplish this mission include operation of fuel storage facilities, performance of aircraft maintenance, maintenance and operation of engine repair facilities and test cells for t jet engines, and support of special weapons systems.

Site 5 is located east of Perimeter Road and to the west of Lake Fretwell, shown on Figure 2-1. Site 5 is combined with Site 17 as OU 2 at NAS Cecil due to their proximity and similarity as waste oil and fuel disposal sites

Site 5 covers an area of approximately 2 acres as shown on Figure 2-2. Li wastes consisting of waste oil and fuel were disposed in a pit and allowed evaporate and drain into the soil. Visible staining of soil is evident at site and a distinct petroleum odor exists when soil is disturbed. Site 5 primarily vegetated with grasses and slash pines; however, areas of the si void of vegetation. The area north of the site is wooded. The site is fl a small gradient towards the east. Currently, surface waters drain wester a ditch chat parallels Perimeter Road, easterly to Lake Fretwell, and sout to a stream that runs along the southern border of the site. A small berm western and southern borders of the site may intercept such flow at the si direct it easterly to Lake Fretwell (Harding Lawson Associaces, 1988). Sh groundwater is also intercepted by the stream, which ultimately discharges Lake Fretwell approximately 900 feet to the east of the site (Envirodyne Engineers, 1985). There is some construction debris (i.e., bricks and con on the north side of the site that may be the result of disposal or the lo of a former structure (Harding Lawson Associates, 1988), and east of the s steel tanks have been deposited on the ground surface.

The land adjacent to the site is primarily wooded with a wetland located t east of the site (see Figure 2-2). There is no development on, or current of, adjacent lands. The nearest base housing is located approximately 3,0 northeast of the site.

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES. Disposal was conducted at S 5 in the 1950's. Unknown quantities of waste fuel and oil were dumped at site. Based on the appearance of the soil and the odor still present at t site, waste liquids may have been disposed at the site more recently than 1950's (Envirodyne Engineers, 1985). Solvents, paints, and paint thinners have also been mixed with waste oils and disposed at the site; however, sp records of such disposal are not available (Envirodyne Engineers, 1985). disposal pit can be seen on 1969 aerial pbotographs. To date there have b

enforcement activities at the site.

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2.3 PREVIOUS INVESTIGATIONS. Previous investigative activities completed Site 5 include an Initial Assessment Study (IAS) (Envirodyne Engineers, 19 a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RF (Harding Lawson Associates, 1988), and a Remedial Investigation (RI) (ABB Environmental Services, Inc. [ABB-ES], 1991-93). The results of these investigation are summarized below.

Initial Assessment Study. The IAS was performed in 1985 by Envirodyne Eng to identify waste sites at NAS Cecil Field that warranted further investig The study included an investigation of historical data and aerial photogra well as field inspections and personnel interviews. A total of 18 sites w identified as a result of the IAS, including Site 5.

RCRA Facility Investigation. The RFI was performed in 1988 by Harding Law Associates. Field investigations completed at Site 5 included a geophysic survey using a magnetometer, the installation of two monitoring wells, and sampling and analyses of groundwater, sediment, surface water, and soil sa The geophysical survey identified anomalies associated with construction d in the woods in the northeast corner of the site.

Soil was found to be contaminated with ethylbenzene, methylene chloride, t polychlorinaced biphenyl (PCB) Aroclor-1260, and lead (12 micrograms per k (ug/kg), 22 ug/kg, 580 ug/kg, and 14 milligrams per kilogram (mg/kg) maxim respeccively). The sediment sample contained methylene chloride at 43 ug/ Groundwater contained bis(2-ethylhexyl)phthalate, naphthalene, 2-methylnaphthalene, and lead at concentrations as high as 13 micrograms per (ug/l), 10 ug/l, 10 ug/l, and 49 ug/l, respectively. No contaminants were detected in the surface water.

Remedial Investigation (RI), 1991. Additional sampling of environmental m was conducted as part of an RI by ABB-ES, during the fall of 1991 and spri 1992. These investigations included: ground penetrating radar surveying, groundwater headspace screening, piezocone surveying, surface water and se sampling, soil sampling, monitoring well installation, groundwater samplin hydraulic conductivity testing, and collection of groundwater elevation da The results from these investigations have been summarized in the Technica Memorandum for Supplemental Sampling at Operable Units 1, 2, and 7 (ABB-ES 1992). A synopsis of these activities for Site 5 is provided below.

Groundwater Headspace Screening. Six groundwater headspace screening anal

were conducted. Maximum concentrations of 1,1,1-trichloroethane (1,1,1-TC trichloroethene (TCE), and tetrachloroethene (PCE) detected were 0.4 ug/l, ug/l, and 0.01 ug/l, respectively.

Piezocone Survey. Two piezocone sampling probes were installed to 53 feet land surface (bls). Interpretation of piezocone data indicates silty to c fine sand, fine sand, and cemented sand to hardpan.

Surface Water and Sediment Sampling. Surface water and sediment samples w collected upstream and downstream of Site 5 in the drainage ditch along th southern border of the site. In the upstream sediment sample, bis(2-ethylhexyl)phthalate and di-n-butylphthalate were detected at concentratio 50 ug/kg and 56 ug/kg, respectively. In the downstream sediment sample, t

polychlorinated biphenyl (PCB) Aroclor-1260 was detected at 92 ug/kg. Mer was detected in the upstream surface water sample at 4.61 ug/l.

Soil Sampling. Volatile organic compounds (VOCs) detected in samples coll during soil borings at the site include benzene, ethylbenzene, toluene, TC xylene. Semivolatile organic compounds (SVOCs) detected include 4-methylp dibenzofuran, naphthalene, phenol, 2-methylphenol, 2-methylnaphthalene, an bis(2-ethylhexyl)phthalate. Total recoverable petroleum hydrocarbons (TRP were detected in all samples.

Installation of Monitoring Wells. Five monitoring wells were installed at 5 to monitor groundwater quality and contaminant migration in the surficia aquifer.

Groundwater Sampling and Analyses. Groundwater samples were collected fro five newly installed wells. VOCs detected included acetone, 2-butanone, a toluene. SVOCs detected included 4-methylphenol, benzoic acid, naphthalen phenol, 2-methylnaphthalene, and bis(2-ethylhexyl)phthalate. Lead and chr were also detected at levels that exceed Florida Drinking Water Quality St (Chapter 17-3.404, Florida Administrative Code [FAG]). TRPH was detected samples with a maximum detected concentration of 160 milligrams per liter

Hydraulic Conductivity Testing and Water Level Elevations. Slug tests wer performed in three wells at Site 5 to determine hydraulic conductivity. A hydraulic conductivity for the shallow aquifer at Site 5 ranged from 0.58 per day (ft/day) to 0.91 ft/day. Water level measurements were collected November 1991 and April 1992.

Remedial Investigation (RI), 1993. Additional sampling and analytical eff were performed at Site 5 in 1993 by ABB-ES. These activities included sur soil sampling, subsurface soil sampling, installation of additional monito wells, and groundwater sampling.

Surface Soil Sampling. Surface soil sampling consisted of collecting samp

both onsite and offsite analyses. Samples analyzed onsite were referred t screening samples and were collected from 133 locations across a comprehen grid covering the site on 40-foot centers. Based on results of the screen the locations for samples for offsite analyses, referred to as confirmator samples, were selected. Thirty-one surface soil locations were selected f confirmatory sampling. Confirmatory sample results were not available for interim action process. Table 2-1 presents a summary of compounds detecte surface soil screening samples.

Subsurface Soil Sampling. Subsurface soil sampling consisted of collectio screening and confirmatory samples. Initially, 36 screening soil borings installed and 2 soil samples from different depths were analyzed from each boring. Eighteen additional boring locations were selected for confirmato sampling, and two samples were collected and analyzed from each boring. E of these borings were subsequently completed as monitoring wells. Analyse performed on soil samples were the same as for surface soil samples descri above. Table 2-1 presents a summary of compounds detected in subsurface s samples.

Table 2-1
Contaminants Found in Surface Soil and Subsurf

Interim Record of Decision
Oil Disposal Area Northwest, Site
NAS Cecil Field, Jacksonville, F

Subsurface Soils

Volatile Organic Compounds	Pesticides and Polychlorinated Bipheny
Acetone	beta-benzene hexachloride
Methylene chloride	Dieldrin
2-Butanone	4,4-dichlorodiphenyldichloroethene
Carbon disulfide	4,4-dichlorodiphenyltrichloroethene
Chloroform	alpha-Chlordane
1,2-Dichloroethene (total)	gamma-Chlordane
2-Hexanone	Methoxychlor
4-Methyl-2-pentanone	Aroclor-1260
Benzene	
Toluene	
Ethylbenzene	
Total xylenes	
Chlorobenzene	
Trichloroethene	

Semivolatile Organic Compounds	Inorganics
Phenol	Calcium
2-Methylphenol	Cobalt
4-Methylphenol	Copper

2,4-Dimethylphenol
Pentachlorophenol
Benzoic acid
Naphthalene
2-Methylnaphthalene
Acenaphthalene
Dibenzofuran
Di-n-butylphthalate
Di-n-octylphthalate
Diethylphthalate
Fluorene
Phenanthrene
Anthracene
Carbazole
Fluoranthene
Pyrene
Benzo(a)anthracene
Chrysene
bis(2-Ethylhexyl)phthalate
Benzo(b)fluoranthene
Benzo(a)pyrene
Indeno(1,2,3-cd)pyrene
Dibenz(a,h)anthracene
Benzo(g,h,i)perylene
Total recoverable petroleum hydrocarbons

Magnesium
Potassium
Thallium

Notes: Surface soil results are available for field screening samples onl number of chemicals. More extensive sample results will be available in the (RI/FS) for operable unit (OU) 2.

Surface soil samples were collected from 0 to 6 inches below land collected at 2-foot intervals from, 0 to 8 feet below land surface.

Contaminants listed were found during the 1991 and 1993 Remedial I

Groundwater Sampling. The 36 screening soil borings mentioned above were extended into the aquifer and groundwater screening samples were collected 2- to 6-foot zones at various depths to provide a better characterization groundwater contamination. Based on the results of the groundwater screen samples, 23 additional monitoring wells were installed. Groundwater sampl collected at each of the monitoring wells and analyzed for target compound (TCL) VOCs, TCL SVOCs, target analyte list (TAL) inorganics, and TRPH.

Free Product Investigation. Free product was observed in two monitoring w

during sampling. To estimate the depth and extent of free product, a bail test was performed in one of the wells and 13 temporary well points were installed around the wells with product. Free product was observed in fou the well points. Groundwater and free produce elevations at all well poin observed for approximately 4 weeks. The estimated volume of free produce at the site is 300 gallons.

2.4 HIGHLIGHTS OF COMMUNITY PARTICIPATION. The FFS report and Proposed P were completed and released to the public on August 12, 1994. A public me was held on August 25, 1994, to present information on the proposed interi remedial action at Site 5 and to solicit comments on the proposed cleanup. documents and other Installation Restoration program information are avail for public review in the Information Repository and Administrative Record. repository is maintained at the Charles D. Webb Wesconnett Branch of the Jacksonville Public Library in Jacksonville, Florida. The notice of avail of these documents was publisbed in The Florida Times Union on August 11, 21, and 24, 1994.

A 30-day public comment period was held from August 12, 1994 to September 1994. At the public meeting on August 25, 1994, representatives from NAS Field, USEPA, FDEP, and the Navy's environmental consultants presented information on the remedial alternatives and answered questions regarding proposed interim remedial action at Site 5. No written comments were rece during the public comment period; however, questions asked during the publ meeting are summarized and addressed in Appendix A, Responsiveness Summary

2.5 SCOPE AND ROLE OF INTERIM REMEDIAL ACTION. Investigations at Site 5 indicated the presence of free product and soil contamination from past oi disposal. The purpose of this interim remedial action is to remove the so of contamination to groundwater and reduce potential human health and ecol risk at Site 5. Based on previous investigations the following interim re action objectives were established for Site 5:

- clean up contamination in the unsaturated soil above the water tab reduce the source of contaminants to groundwater,
- remove free product to reduce the source of contamination to groun water, and
- clean up contaminated surface soil to reduce health risks from dir contact exposure.

Upon completion of the overall Remedial Investigation and Feasibility Stud (RI/FS) for OU 2, the need for remedial action to address groundwater con- tamination will be evaluated. This IROD addresses interim source control control of contaminants from deposited wastes that may migrate and pose ri human health and the environment) at Site 5. It is believed that this int action is consistent with any future remedial activities that may take pla

the site.

2.6 SITE CHARACTERISTICS. Characteristics of Site 5 are summarized below

Geology and Hydrogeology. The subsurface at Site 5 is composed primarily and silty sand to approximately 56 feet bls. Below 56 feet there are vary layers of sand and clay and, eventually, a layer of dolomite at about 101 bls. The surficial aquifer system extends from the water table to the fir layer approximately 56 ft bls. The hydraulic conductivities for the soils estimated to range from 0.58 foot per day (ft/day) to 0.91 ft/day. The el of the groundwater table is highly seasonable, ranging from 1 foot to 7 fe Groundwater is interpreted to flow to the southeast.

Soil Contamination. Soils contain organics typical of fuels (e.g., toluen ethylbenzene, and xylenes) and aged waste oils (phenols, polynuclear aroma hydrocarbons [PAHs], and TRPH). In addition, several samples included detections of PCBs with the maximum concentration detected being 4 mg/kg. majority of the PCB concentrations detected were below 1 mg/kg and are loc within the TRPH contamination. Potential PCB concentrations of soils satu with free product are discussed in greater detail under the free product paragraph of this section. Trichloroethene was detected in five samples a maximum concentration of 1.2 mg/kg. Pesticides were detected in five samp ranging from 0.00067 mg/kg dieldrin to 0.0045 mg/kg of 4,4-dichlorodipheny trichloroethene (4,4-DDT). TRPH results present the best characterization extent of contamination at Site 5. The volume of soil containing TRPH contamination greater than 50 mg/kg was estimated to be 16,300 cubic yards

Inorganic soil concentrations for 11 metals had exceedences greater than 2 the average detected concentrations in background samples for NAS Cecil Fi Inorganics in the soils at Site 5 may be contributing to detected inorgani groundwater concentrations above primary maximum contaminant levels (MCLs)

With the exception of one sample, inorganic and organic concentrations are than would be necessary for soil to show a hazardous waste characteristic would fall below Toxicity Characteristic Leaching Procedure [TCLP] regulat levels). The one exception had a detected lead concentration of 109 mg/kg all the lead were extracted by the TCLP extraction procedure, it would res a leachate concentration of 5.45 mg/l, which exceeds the TCLP regulatory l for lead of 5 mg/l. It is unlikely that the TCLP would actually extract a the lead from the sample.

Groundwater Contamination. Groundwater results from the 1991 RI sampling contamination with chlorinated solvents only, with TCE being the highest d compound (1,300 ug/l detected in the headspace) however, benzene, toluene, ethylbenzene, and xylene (BTEX) analyses were not conducted due to the malfunction of the flame ionization detector (FID). Results from the 1993 groundwater sampling and analyses show the presence of BTEX compounds, pet

related VOCs and SVOCs, TRPH, and inorganics. A non-aqueous phase liquid or free product, has been observed at Site 5 directly above the water tabl is described further below. In review of the groundwater analyses at Site following chemicals were found in at least one sample at a concentration a the Florida primary MCLs: benzene, trichloroethene, naphthalene, 2-methylnaphthalene, bis(2-ethylhexyl)phthalate, TRPH, arsenic, beryllium, c chromium, and lead. A complete evaluation of the distribution of groundwa contamination is not presented in this IROD but will be included in the RI OU 2.

Free Product. The thickness of free product was estimated to be 10 inches volume of free product was estimated to be 300 gallons. The product was a by the city of Jacksonville and found to contain 28 milligrams per liter (of PCBs. A sample of the product was also collected for a gas chromatogra fingerprint analysis. The fingerprint analysis indicated that the product closely resembles kerosene or jet fuel (ABB-ES, 1993). No sample of the f product has been analyzed to quantify concentrations of specific constitue other than PCBs.

2.7 SUMMARY OF SITE RISKS. The purpose of this Interim Remedial Action i clean up the source of contamination to groundwater at Site 5; namely, the petroleum hydrocarbon-contaminated soil and the free product. Results of field investigations indicate petroleum hydrocarbon contamination in and a the location of the former disposal pit and approximately 300 gallons of f product floating on the water table. This contamination is a continuing s of groundwater contamination and also represents a potential human health environmental risk.

The decision to clean up any remaining contamination at the site (i.e., gr water, remaining soil, and sediment) will be made upon finalization of the baseline risk assessment, and FS. A baseline risk assessment will be comp as part of the overall RI for OU 2. The RI, baseline risk assessment, and scheduled for completion during the first quarter of 1995.

Cleanup levels were established for the site to estimate the volume of soi requiring treatment. Petroleum hydrocarbon was chosen as the main paramet which to base the cleanup level. The majority of the other detected compo are located within the area defined by the petroleum hydrocarbon cleanup l These compounds will be treated along with the petroleum hydrocarbons.

The specific cleanup level for petroleum hydrocarbon is 50 mg/kg. This le equivalent to that published in the Florida Regulations for Thermal Treatm Petroleum Contaminated Soils. The estimated volume of soil containing pet hydrocarbon concentrations greater than 50 mg/kg is 16,300 yd3.

The State of Florida has adopted the Federal guidance on establishing heal based cleanup levels for PCBs in soils. The Guidance on Remedial Actions Superfund Sites with PCB Contamination (USEPA, 1990) states that the risk remaining after remediation should generally fall within the range of 10-4 individual excess cancer risk. Based on the standard exposure assumptions associated with residential land use, concentrations of 0.1 part per milli (ppm) to 10 ppm PCBs will generally fall within the protective range. A

concentration of 1 ppm PCBs equates to approximately a 10-5 excess cancer assuming no soil cover or management controls. Data collected from the 19 1993 investigations is summarized below:

	PCB Detection Frequency	Concentration Range (mg/kg)	Concentration Average (mg/kg
Surface Soils	16/33	0.006 to 4.0	0.827
Subsurface Soils	35/52	0.008 to 1.5	0.477

Note: Eight of the 51 detections were greater than or equal to 1.0 per kilogram (mg/kg) or part per million (ppm).

The cleanup level for PCBs for this interim remedial action is 1 mg/kg. T indicates that all PCB detections in soil fall within the acceptable risk and that the average PCB concentration in soil are below the cleanup level mg/kg and therefore, do not require treatment for PCBs. Free product and saturated with free product will be handled as outlined in Section 2.10.

2.8 DESCRIPTIONS OF ALTERNATIVES. Table 2-2 presents a description of th alternatives evaluated for Site 5. The alternatives are numbered to corre with the alternatives provided in the FFS report (available at the Informa Repository).

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Table 2-2
Alternatives Evaluated for Interim Remedial Action at Site

Interim Record of Decision
Oil Disposal Area Northwest, Site 5, OU 2
NAS Cecil Field, Jacksonville, Florida

Alternative	Alternative RA-1: excavation and offsite thermal treatment of contaminated soil.	Alternative RA-2: excavation and on offsite biological treatm contaminated soil
Soil Treatment Method	ù Excavate contaminated soil.	ù Excavate contaminated s soil.

RA-4:

			cistern and
		ù Separate free product and transport for offsite treatment and disposal.	ù Separate free product and transport for treatment and disposal.
		ù Transport contaminated soil to offsite thermal treatment facility.	ù Treat soil bio onsite.
		ù Backfill with clean soil.	ù Backfill with soil.
	Activities Common to all Activities	ù Clear and prepare site	
		ù Monitor treatment performance	
		ù Demobilize and restore site to previous condi	
	Cost	$4,960,000	$1,597,000

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Three of the alternatives (RA-1, RA-2, and RA-4) include excavation of 16, of soil. Three of the alternatives (RA-1, RA-2, and RA-3) include treatme technologies to reduce TRPH contamination. Evaluation of the no action alternative, typically required in a Feasibility Study, is not necessary i FFS because designation of a cleanup action as an interim remedial action requires that some action be taken.

2.9 SUMMARY OF COMPARATIVE ANALYSES OF ALTERNATIVES. This section evalua and compares each of the alternatives with respect to the nine criteria us assess remedial alternatives as outlined in Section 300.430(e) of the NCP. Comparative analyses of source control remedial alternatives for the nine criteria are provided in Table 2-3.

2.9.1 Overall Protection All alternatives would provide an increased leve protection of human health and the environment. Risks are reduced by remo or treating petroleum-contaminated soils and free product, thereby prevent exposure and reducing a source of groundwater contamination.

2.9.2 Compliance with Applicable or Relevant and Appropriate Requirements (ARARs). Alternatives RA-2, RA-3, and RA-4 meet ARARs. Alternative RA-1, thermal treatment, would require a variance to the Florida Regulations for Thermal Treatment of Petroleum Contaminated Soils because of the presence in the soil to be remediated. A listing of chemical-specific and action-s

ARARs identified for this interim remedial action is shown in Tables 2-4 a respectively. The only potential location-specific ARAR at Site 5 is 40 C Part 6, Protection of Wetlands, Executive Order No. 11990, and Chapter 17- FAC, Florida Wetlands Application Regulations, November 1990. None of the alternatives is expected to impact the wetlands east of the site.

2.9.3 Long-term Effectiveness and Permanence. Three of the alternatives permanent treatment technologies that provide long-term effectiveness. Al tives RA-1 provides the greatest reliability for treatment of petroleum-re compounds. Alternative RA-2 is also reliable; however, treatment could ta longer than expected. Alternative RA-3 is an innovative approach; however ability to obtain cleanup levels is less certain. Alternative RA-4 provid long-term solution at Site 5; however, soils are not treated.

2.9.4 Reduction of Toxicity, Mobility, or Volume of the Contaminants Alternatives RA-1, RA-2, and RA-3 would provide a permanent reduction in toxicity, mobility, and volume of contaminants through treatment. An esti 16,300 yd3 of soil containing 55,000 kilograms of petroleum hydrocarbon wo treated at the site. Alternative RA-3 may also provide some reduction in contamination in groundwater as well, although groundwater remediation is objective of the interim action. Alternative RA-4 does not include treatm contaminants.

2.9.5 Short-Term Effectiveness This evaluation addresses how quickly an effectively site risks are reduced. Site workers would be required to fol approved Health and Safety Plan for all alternatives. Unauthorized statio personnel will not be allowed onsite. Alternatives RA-1, RA-2, and RA-4 w include dust control and monitoring during excavation. Alternatives RA-1 4 would take an estimated 5 months to complete. Alternative RA-2 would ta estimated 14 months and Alternative RA-3 would take 2 years or more to com

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Criterion	Alternative RA-1	Alternative RA-4
Overall Protection of Human Health and the Environment		
How risks are eliminated, reduced, or controlled.	Alternative RA-1 would provide an increased level of protection to human health and the environment because risks via direct con-	Analysis is the same as that for Alterna-

RA-1.		tact with contaminants at the site are minimized. Worker health and safety requirements would be maintained.
Short-term or cross-media effects.	Analysis is the same as for Alternative RA-1.	No short-term adverse effects are expected to occur during implementation of this alternative. Care will be taken to prevent cross-media contamination during remedial action although some volatilization during excavation and handling may occur.
Compliance with ARARs		
Chemical-, location-, and action-specific ARARs.	Would comply if 50 Alternative RA-1 with additional risk reduction from reducing exposure to PCBs.	Would not comply with Florida regulations for treatment of petroleum-contaminated soil (Chapter 17-775, FAC). A variance would be required.
Long-term Effectiveness and Permanence		
Magnitude of residual risk	Analysis is similar to Alternative RA-1 with additional risk reduction from reducing exposure to PCBs.	The reduction in risk at Site 5 would be permanent because contaminated soil would be removed from ths site. Actual magnitude of residual risk at the site remaining after implementation of the Interim remedial action would be addressed in the overall Feasibility Study (FS) for Operable Unit 2. Risk associated with hazardous constituents in soil is reduced through treatment for destruction of TRPH constituents. PCBs risks would not be significantly changed.

See notes at end of table.

Table

Comparative Analysis of Sour

Interim R
Oil Disposal Area
NAS Cecil Field,

Criterion	Alternative RA-1	Al
Alternative RA-4		
Long-term Effectiveness and Permanence (continued)		
Adequacy of controls	Implementation of alternative would provide immediate and long-term source control at Site 5.	Anal similar to Alternative RA- would not sour be a
		Analysis is similar to Alternative RA-1.
Reliability of controls	Thermal treatment is highly reliable for TRPH.	Biol treatment is demonstrat- able howe may pect ment reli
		Land disposal is reli- able at isolating wastes to prevent migration and expo- sure.
Reduction of Mobility, Toxicity, and Volume		
Treatment process and remedy.	Soil would be treated via thermal desorption and after burner to destroy organic TRPH contaminants. PCBs are not treated significantly.	Soil same as Alternative micr TRPH are
		Contaminants are contained but not treated.
Amount of hazardous material destroyed or treated.	16,300 yd3 of contaminated soil containing 55,000 kg of TRPH would be treated for this alternative.	Anal same as Alternative Alte
		Analysis is the same as that for Alternative RA-1 except that possibility that addi- contaminants are

Reduction of mobili-	Would achieve significant and per-	Anal	
same as Alternative	No treatment occurs.		
ty, toxicity, or volume	manent reduction in toxicity, mobili-	Alte	
through treatment.	ty, and volume of TRPH contami		
	nants in soil. PCBs would not be		
	significantly treated.		
Irreversibility of treat-	Thermal treatment is irreversible.	Biol	
as for Alterna-	No treatment occurs.		
ment		irre	

See notes at end of table.

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Table
Comparative Analysis of S

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Criterion	Alternative RA-1	Alternative RA-4
Type and quantity	A limited amount of ash would be pro-	Th
residuals	Analysis the same	
of treatment	duced during afterburning of vapors and	as
produced if this	as for alternative RA-	
residuals.	would be handled by offsite vendor.	wo
implement-	2.	
	Decontamination water would be treated	wa
	at NAS Cecil Field wastewater treatment	
	plant.	
Short-term Effec-		
tiveness		
Protection of com-	Dust control would be required during	An
posters	Analysis is the same	
munity during reme-	excavation of soil. Fact sheets and post-	Al
information to the	as for Alternative	
dial action.	ers providing information to the public	
	RA-1.	
	regarding the remedial action would be	
	distributed.	
Protection of work-	Workers would be required to follow an	An
the same as for	Analysis is the same	
ers during remedial	approved Health and Safety Plan. Work-	Al

RA-1. as for Alternative
actions. ers within the exclusion zone would be
RA-1.
dressed in modified Level D protection
and would be on a special medical moni-
toring program.

Environmantal Ef- Minimal effects to surrounding environ- An
same as for Analysis is the same
fects ment expected. Releases to air are ex- Al
as for Alternative
pected to have minimal environmental
effect.

Time until remedial Approximately 5 months are necessary to Ap
time required is un- Analysis is the same
action objectives are meet the remedial action objectives for ar
assumed as for Alternative
achieved. Site 5. re
RA-1.
fo

Implementability

Ability to construct No construction necessary. Ma
installa- No construction
technology. a
Necessary.
ar
co

See notes at end of table.

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Comparative Analysi

Oil Dis
NAS C

Criterion	Alternative RA-1	Alternative RA-4
Implementability (Continued)		
Reliability of technology	Treatment standards for contaminated soil Land disposal reliably would be met by thermal desorption.	Reliability of technology

undetermined due to reduces migration and exposure.		
Ease of undertaking additional remedial actions if necessary.	Would provide no impediment to additional remediation. Soil could bo reprocessed un Would provide no impediment to additional treatment standards are met.	Analysis is the same as Alternative RA-1.
Monitoring considerations. Air monitoring would be appropriate during excavation. Medical monitor of workers within the exclusion zone would required.	Air monitoring would be conducted as appro Analysis is the same as for Alternative RA-1.	Air monitoring would be appropri-
Coordination with other regulatory agencies.	Coordination with NAS Cecil Field personne required for duration of remedial activiti for Alternative RA-2. Coordination with county, USEPA, FDEP, and city for soil handling necessary.	Analysis is the same as Alternative RA-2.
Availability and capacity of treatment, storage, and disposal services.	Availability of permitted TSD facilities f ment of contaminated soil would be require at the time of remedial action. Local ven handle non-hazardous wastes only. Availab of vendors who accept soil with PCBs in Florida is limited.	Analysis is the same as for Alternative RA-2.
Availability of technologies, equipment, and specialists.	Construction contractors, equipment, and laboratories are available.	Analysis is the same as for Alternative RA-1.
Ability to obtain approvals from other agencies.	Approval from State and USEPA necessary prior to offsite treatment of contaminated	Analysis is the same as for Alternative RA-1.
Cost		
Total present worth, 7-foot depth (including contingency)	$4,960,000	$4,776,000

Notes: ARARs = applicable or relevant and appropriate.
FAC = Florida Administrative Code.
Agency.
PCBs = polychlorinated biphenyls.
Protection.
yd3 = cubic yard.
kg = kilogram.

Table 2-4
Synopsis of Potential Federal and S
Applicable or Relevant and Appropriat

Interim Record o
Oil Disposal Area North
NAS Cecil Field, Jack

Federal Standards and Requirements	Requirements Synopsis
Occupational Safety and Health Act (OSHA), Occupational Safety and Health Regulations (29 Code of Federal Regulations [CFR] Part 1910, Subpart Z)	Established permissible exposure l for for work-place exposure to a speci chem- listing of chemicals.
Resource Conservation and Recovery Act (RC- RA), Identification and Listing of Hazardous Waste (40 CFR Part 261)	Defines those solid wastes subject define regulation as hazardous wastes und delineating 40 CFR Parts 262-265.
Clean Water Act (CWA) Ambient Water Quality Criteria [40 CFR Part 131]	Federal Ambient Water Quality-Crit Because of the (AWQC) are non-enforceable, health and based criteria for surface water. Fretw- provide levels of exposure from dr consider- ing water and consuming aquatic li that are protective of public heal

	AWQC also provide acute and chroni concentrations for protection of f water and marine organisms.
Chapter 17-302, Florida Administrative Code (FAC), Florida Surface Water Standards, June, 1992	Defines classifications of surface the ters, and establishes water qualit dards (WQS) for surface water with Fret- the classifications. The State's antidegradation policy is also est lished in this rule.
Safe Drinking Water Act (SDWA), Maximum Contaminant Level Goals (MCLGs) [40 CFR Part 141]	Establishes drinking water quality greater at levels of no known or anticipat appropriate adverse health effects with an ade current margin of safety. These criteria sider treatment feasibility or cos ments.
SDWA, National Primary Drinking Water Standards, Maximum Contaminant Levels (MCLs) [40 CFR Part 141]	Establishes enforceable standards rele- specific contaminants that have be the determined to adversely affect hum ARARs. health. These standards, MCLs, ar that protective of human health for ind water al chemicals and are developed usi MCLGs, available treatment technol gies, and cost data.

Table 2-4 (Conti
Synopsis of Potential Federal and S
Applicable or Relevant and Appropriat

Interim Record of
Oil Disposal Area Northw
NAS Cecil Field, Jacks

Federal Standards and Requirements	Requirements Synopsis

Chapter 17-520, FAC Florida Water Quality Standards, May 1990	Establishes the groundwater classification system for the State and provides qualitative minimum criteria for groundwater based on the classification.
Chapter 17-550, FAC, Florida Drinking Water Standards, January 1993	Established to implement the Federal Safe Drinking Water Act by adopting the national primary and secondary drinking water standards and by creating additional rules to fulfill State and Federal requirements.
Toxic Substances Control Act (TSCA), prior to Polychlorinated Biphenyl (PCB) Requirements [13 USC 2601-2629, 40 CFR Part 761]	Authorizes U.S. Environmental Protection Agency (USEPA) to establish regulations governing chemical substances or mixtures that present an unreasonable risk injury to human health and the environment. Establishes requirements for marking, storing, disposing, recording, cleaning spills, and reporting wastes containing PCBs.
Chapter 17-770, FAC, Florida Petroleum Contaminated Site Cleanup Criteria, February 1990	Establishes a cleanup process to be followed at all petroleum contaminated sites. Cleanup levels for G-I and G-II groundwater are provided for both the gasoline focused kerosene and mixed product analytical groups.
Chapter 17-775, FAC, Florida Soil Thermal Treatment Facilities Regulations, December 1990	Establishes criteria for the thermal treatment of petroleum or product contaminated soil. The rule further outlines procedures for excavating, receiving, handling, and stockpiling contaminated soil prior to thermal treatment in both

hydrocarbons
stationary and mobile facilities.

Notes: OU = operable unit.
NAS = naval air station.

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Table 2-5
Synopsis of Potential Federal and State Act

Interim Record of Deci
Oil Disposal Area Northwest,
NAS Cecil Field, Jacksonvil

Federal and State Standards and Requirements	Requirements Syno
Remedial Response Process	
Clean Air Act (CCA), National Ambient Air Quality Standards (NAAQS) (40 Code of Fedaral Regulations [CFR] Part 50)	Establishes primary (health-b (welfare-based) standards for monoxide, lead, nitrogen diox ozone, and sulfur oxides.
Site remedial activities must comply with NAAQS. The most standard is for particulate matter less than 10 microns in defined in 40 CFR Section 50.6. The PM10 standard is based particulate matter to the lungs ot humans. The	
micrograms per cubic meter	
year. Remedial con-	
include controls to ensure	
attainment and maintenance of	
protect human health and	
transportation, and economic values).	
activities, such as soil exca-	
chemicals through dust and	
CAA, New Source Performance	This regulation establishes n

		appropriate. Because NSPS are source-specific requirements,
	Standards (NSPS) (40 CFR Part 60)	standards (NSPS) for specifie
	generally considered applicable to Comprehensive Environmental	
		incinerators. This rule esta
	Liability Act (CERCLA) cleanup actions.	
		emission standard of 0.08 gra
	applicable for an incinerator; or may be a relevant	
		cubic foot corrected to 12 pe
	the pollutant emitted and the technology	
		sources.
	sufficiently similar to the pollutant	
	Department of Transportation Rules	This regulation establishes t
	These requirements will be applicable for transport of hazardous	
	for Transportation of Hazardous	aging, labeling, and transpor
	for laboratory analysis, treatment, or disposal.	
	Materials (49 CFR Parts 107, 171,	materials.
	173,178, and 179)	
	Chapter 17-2, Florida Administrative	Establishes permitting requir
	Standards for PM10 would be applicable during remediation.	
	Code (FAC). Florida Air Pollution	operators of any source that
	controls and monitoring to control dust would be required.	
	Rules, September 1990	This chapter also establishes
		standards for sulfur dioxide,
		and ozone.
	Resource Conservation and Recov-	This rule establishes minimum
	a remedial alternative for Site 5 involves the management of	
	ery Act (RCRA), Standards for Ow-	define the acceptable managem
	at an offsite treatment, storage, or disposal unit, the substantive	
	ners and Operators of Hazardous	wastes for owners and operato
	this rule would be applicable. The requirements may be	
	Waste Treatment, Storage, and Dis-	store, or dispose of hazardou
	appropriate for onsite activities.	
	posal Facilities (TSDF) (40 CFR Part	
	264)	

Table 2-5 (Continued
Synopsis of Pote

Oil
NA

Federal and State Standards and
Requirements

in the Remedial Response Process

RCRA, Use and Management of Containers (40 CFR Part 264, Subpart I)

Sets standards for the management and treatmen

Relevant and appropriate. Remedial action implemented at Site 5 of containers that may contain RCRA study-generated RCRA wastes

These requirements are

hazardous wastes at CERCLA

appropriate for wastes not

Chapter 17-775, FAC, Florida Soil Thermal Facilitles Regulations

This rule establishes c leum- or petroleum prod

Applicable. This requirement is applicable to treatment alternatives employ thermal treatment technologies. It may be relevant and other treatment alternatives.

contamination of other provided. Chapter 17-7 ments for soil thermal soil must be screened o soil particles greater thermal treatment unit. excavating, receiving, prior to thermal treatm

RCRA, Manifest System, Recordkeeping, and Reporting (40 CFR Part 264, Subpart E)

This rule outlines proc owners and operators of store, or dispose at ha

Applicable. These regulations apply if a remedial alternative involves the offsite treatment, storage, or disposal of hazardous remedial actions involving onsite treatment or disposal of

relevant and appropriate

Hazardous Materials Transportation Act (49 CFR Parts 171, 173, 178, and 179) and Hazardous Materials Transportation Regulations

These regulations estab labeling, manifesting,

Applicable. For remedial actions involving offsite treatment, storage, disposal, contaminated hazardous materials would need to be and transported to a licensed offsite facility in regulations.

RCRA, Standards Applicable to Transporters of Hazardous Waste (40 CFR Part 263, Subparts A - C,

This rule establishes p waste within the United manifest under 40 CFR P

Applicable. If a remedial alternative involves offsite transportation of hazardous waste for treatment, storage, or disposal, these require-

be attained.

263.10-263.31)

RCRA, Standards Appilcable to Generators of Hazardous Waste (40 CFR Part 262, Subparts A - D, 262.10-262.44)

These rules establish s
Applicable. If an alternative involves the offsite transportation of
wastes that address: ac
hazardous wastes, the material must be shipped in proper contain-
waste for shipment, and
ers that are accurately marked and labeled, and the transporter must
manifest. These requir
proper placards. These rules specify that all hazardous
ment ot Transportation
be accompanied by an appropriate manifest.

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Table 2-5 (Continu
Synopsis of Pote

O

Federal and State Standards and Requirements Consideration in the Remedial Response Process

RCRA, Identification and Listing of Hazardous Waste (40 CFR Part 261, 261.1-261.33)

This rule defines thos
Applicable. Contaminated soil could be classified as an RCRA
hazardous waste under
hazardous waste. Historical records do not suggest soil would be a
RCRA regulations to wa
listed waste and soil contamination does not indicate soil would be
waste meeting one of t
characteristically hazardous; however, specific testing would have to
generated through a RC
conducted to evaluate this possibility. Residuals from treatment
RCRA-listed wastes fro
methods may also be classified as RCRA hazardous wastes and
characteristically haz
have to be tested for RCRA hazardous characteristics.
or toxicity.

RCRA, Land Disposal Restrictions for Newly Usted Wastes and Hazardous Debris (40 CFR Parts 148, 260, 261, 262, 264,

This rule sets forth f
Applicable. Debris at Site 5 is not anticipated; however, it encoun-
(1) treat the debris t
tered, it would be classified as hazardous debris if it is contaminat-
through one of 17 appr
ed with RCRA listed waste that has LDR standards or with waste that
U.S. Environmental Pro

exhibits a hazardous characteristic. Under CERCLA, removal of
265, 270, and 271) longer contains hazard
contaminants from debris by decontamination and replacing the
technology approved th
within an area of concern (AOC) is permitted. As long as
demonstration", (4) tr
of waste is conducted within the AOC and outside of a
Restriction (LDR) stan
separate RCRA unit, placement of wastes has not occurred and,
continue to manage und
therefore, LDRs are not triggered. However, if the debris is deter-
in a Subtitle C landfi
be hazardous, and placement is determined to occur, one
variance for hazardous
five listed options must be selected for management of the
1994.

RCRA, Corrective Action Man- This rule establishes
Applicable. The substantive requirements of this rule are a potenti
agement Units; Corrective Ac- and temporary units (T
ARAR at Site 5 because hazardous wastes may be stored onsite for
tion Provisions Under Subtitle permitted RCRA facilit
remedial alternative implemented.
C (40 CFR Parts 260, 264, 265,
268, 270, and 271)

RCRA, Land Disposal Regula- This rule establishes
Applicable. Treatment standards for wastes removed at Site 5
tions (LDRs) (40 CFR Part 268) hazardous wastes and p
would be established upon completion of testing of materials. If it is
banned wastes. Under
determined that wastes removed from Site 5 are subject to these
tablished for most lis
the wastes must be treated prior to disposal in a

RCRA, Contingency Plan and This regulation outlin
Relevant and appropriate. These requirements are relevant and
Emergancy Procedures (40 followed in the event
appropriate for remedial actions involving the management of
CFR Subpart D, 264.30-264.37) other emergency event.
hazardous waste.

TABLE 2-5 (C
Synopsis of Potential Fede
ARARs

Decision

Oil Disposal Area North

Site 5, OU 2

NAS Cecil Field, Jack

Florida

Federal and State Standards and Requirements		Requirements S
Occupational Safety and Health Act (OSHA), General Industry Standards (29 CFR Part 1910)	This act requires establishment o worker health Applicable. Under 40 CFR 300.38, requirements apply and safety at hazardous waste sit requirements.	
OSHA, Recordkeeping, Report- ing, and Related Regulations (29 CFR Part 1904)	Provides recordkeeping and report to Applicable. These requirements apply to all site contractors and remedial activities.	
OSHA, Health and Safety Stan- dards (29 CFR Part 1926)	Specifies the type of safety to Applicable. All phases of the remedial response project should be be used during site investig	
RCRA, General Facility Stan- dards (40 CFR Subpart B, 264, 10-264.18)	Sets the general facility require anal- Applicable. Because the remedial action planned for Site 5 m ysis, security measures, ins requirements. involve the management of RCRA wastes at an offsite TSDF	
RCRA, Preparedness and Pre- vention (40 CFR Part 264, Subpart C)	This regulation outlines requirem spill- Applicable. Safety and communication equipment should be control for hazardous waste be designed, incorporated into all aspects of the remedial process an maintained, constructed, and operated possibility of authorities should be familiarized with site operations. an unplanned release that could threaten hu or the environment.	
Chapter 17-4, FAC Florida Rules on Permits, May 1991	Establishes procedures for o sources of pollution. Relevant and appropriate. The substantive permitti	
Chapter 17-736, FAC, Florida Florida Rules on Hazardous Waste Warning Signs, July 1991	Requires warning signs at Nationa Florida Applicable. Because Naval Air Station (NAS) Cecil Field Department of Environmental Prote Florida De- listed on the NPL, this requirement is applicable. partment of Environmental Re identified hazardous wastes sites to inform the public of t potentially harmful conditions.	

RCRA, Soild Waste Land Disposal Requirements (40 CFR Part 258)	This rule sets forth requirements within a soild waste landfill. Also sets f monitoring require- ments of Subtitle D landfills.	Applicable. This rule stipulates that no free liquids, no ha wastes, and no reactive wastes may be deposited wit	

Notes: ARARs = Applicable or Relevant and Appropriate Requirements
OU = operable unit.
NAS = naval air station.

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2.9.6 Implementability All alternatives use technologies that are relative easy to implement and are readily available. Treatment will take place ei on the base (onsite) or off the base (offsite). Approval by the FDEP and would also be required prior to treatment.

2.9.7 Cost The estimated cost for the preferred alternative is $1.6 millio The estimated costs for all alternatives range from $1.3 million for Alter RA-3 to $5.0 million for Alternative RA-1.

2.9.8 State and Federal Acceptance The FDEP and USEPA have concurred with Navy's selection of Alternacive RA-2.

2.9.9 Community Acceptance The community has accepted the selected remedy No written comments were received during the public comment period. In ge comments raised during the public meeting on August 25, 1994, supported th selected alternative and the expedient implementation of the interim remed action.

2.10 SELECTED REMEDY. The preferred alternative for source control at Sit Alternative RA-2. Alternative RA-2 would involve the excavation of approx 16,300 yd3 of contaminated soil, collection and analyses of samples from t excavation, separation of free product from the soil, treatment of soil on constructed biological treatment pad in three stages, offsite disposal of product and highly contaminated soil (soil formerly saturated with free pr testing of treated soil to ensure cleanup criteria have been obtained, and backfilling of treated soil.

The preferred alternative uses biological methods to treat petroleum-conta soil. The technology creates the best possible conditions for growth of m ganisms. The microscopic organisms degrade the petroleum constituents fou the contaminated soil. To promote biological activity, soil from the exca is placed on a constructed treatment pad, supplied with water and nutrient mixed using farm equipment. The technology has been shown to be effective treatment of soil at other locations.

Free product that is separated from excavated soil will be transported to site treatment and disposal facility. Treatment will be conducted in comp

with RCRA and Toxic Substance Control Act (TSCA) regulations and will invo incineration of the free product. Soil that was saturated with free produ be sampled and analyzed for PCBs. If the soil contains less than 50 mg/kg PCBs, they will be disposed offsite as a special waste. If the soil conta PCBs greater than 50 mg/kg they will be incinerated or disposed in a TSCA landfill.

Alternative RA-2 is protective of the environment, a permanent remedy, and effective. The Navy estimates that the preferred alternative would cost $ million and would take approximately 16 months to implement.

2.11 STATUTORY DETERMINATIONS. The interim remedial action selected for implementation at Site 5 is consistent with CERCLA and the NCP. The selec remedy is protective of human health and the environment, attains ARARs, a cost effective. The selected remedy also satisfies the statutory preferen treatment that permanently and significantly reduces the mobility, toxicit

selected remedy uses alternate treatment technologies or resource recovery technologies to the maximum extent practicable. Any soil contamination re onsite after this interim remedial action will be addressed during the RI for this OU and the resulting Record of Decision.

2.12 DOCUNENTATION OF SIGNIFICANT CHANGES. There are no significant chang the interim remedial action from that described in the Proposed Plan.

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APPENDIX A

RESPONSIVENESS SUMMARY

Responsiveness Summary

Interim Record of Decisi
Oil Disposal Area Northwest, S
NAS Cecil Field, Florld

Comment

Questions from the Public Meeting

What by products do you expect to get from the bioremediation of the soils the end products are usually water and carbon since they do contain PCBs?

biocell is not

start with and are

What is EPAs responsibility of cleaning up these sites with the time frame to ensure that the Navy cleans the sites up to
you've got?
and the subsequent

It the risk assessment scheduled?

Are the taxpayers of Jacksonville going to be stuck with the cleanup bill? commitment to finish the cleanup even after they

Was EPA involved in the selection of the Navy's contractors (i.e., ABB and contract, neither the State of Florida nor EPA was
Bechtel)?
way. The contracts

Division out of

Is EPA involved in the interim actions all along as they progress? Does t ongoing relationship between EPA, FDEP, the
EPA come in and just comment afterwards or are they a party to the effecti All parties are involved on a daily basis.
cleanup?

I'm trying to find out who is responsible for cleaning up the work, work t cleanup work and must obtain concurrence
done and when it's done, what will be done. Who is responsible for that? facets of the process, from the initial investigation
EPA a party to the start-up of the cleanup of the site?

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Responsiveness Summary

Interim Record o
Oil Disposal Area North
NAS Cecil Field,

Comment

I'm concerned with the methodology that's being proposed. Why removal of question, how do we determine how far to dig,
the soil is the preferred treatment when it seems these solvents and PCBs

down to the water table, not extend below
low because it gets fluids all the way down to the water level? How can y
determine how far to go before you've reached the bottom of the pit, so to
speak, and then afterwards why refill the pit when this is only an interim
fluctuates. It fluctuates from approximately 1 to
action? You're going to have to take further action later compounding the
7 or 8 feet below the surface, according to
cost. Why not leave the pit open?
and so forth during the year.

during the low

So we would

soils that are

based on our

contamination that's

groundwater

be determined in

Any

levels will be small

groundwater.

conditions and cause

directions.

So your assumption is that the groundwater have carried away the balances
tend to flow on top of the water. They are
rather than allowing the leachates to continue down below ths groundwater
By removing soil, most oil related contaminates
level. That seems absurd to me. It seems that these contaminants because
already in groundwater (below the water
viscosity would leach below the water level. They are solid as well, and
efficiently removed by groundwater cleanup actions.
addressing PCBs that would leach further down, perhaps hundreds of feet, i
the aquifer.
that only the shallow

Responsiveness Summary

Interim Record of
Oil Disposal Area Northwes
NAS Cecil Field,

Comment

wells indicating that

limestone that is

aquifer and the

drinking water.

How many wells have gone through the dolomite?
dolomite at Site 17 and site

Since we know that there may be other options, can we continue to investig
is so shallow is because we do have shallow
other options or at least make a determination ot the depth that is beyond
continue to evaluate remedial actions for
doubt to being adequate, just stopping at the water level versus a 15-foot
water table as part of the final remedial
as you indicated to be the normal maximum depth of PCBs concentration?

Consideration to other needs or alternative three on Site 5, the air injec
both media, in other words, groundwater and
and the biological treatment, are there other vehicles by which perhaps a
is acting as a source of contamination to the
broader leaching of those chemicals and a more permanent solution might be
to as long as the soil is there.
reached in a single phase?

process. In other

both soil and

where we have

that is

what the final

Did we look at other technologies?
believed to fit the criteria the best.

remedial alternatives,

prescribed by

You mentioned a moment ago in your presentation that the work would begin
contractor. They may obtain subcontractors as
in October. Are contracts actually let for the people in the field to per
remediation.
work by Bechtel, for example? In other words, is it too late at this poin
event that the comment period might cause you to change your selection of
the alternatives that might delay when we
the recommended alternative? I mean how can it start in October?
remedial action. The October date assumes

process of trying to

alternative. Any

effect planning

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Comment

If you've already selected a remedy -- are the contracts already let, does
comment period is to listen to public
mean a remedy has already bean selected?
remedy fits what needs to be

alternative described, but

that the proposed

against and one

Of the nine is one of them cost?

Of the nine how is cost weighed?
should be taken into

Well, what about digging it up and transporting it up to Georgia and havin
concern. We have done our very best to
recycled into concrete or asphalt for 35 bucks? What's the matter with th
alternative, not necessarily the cheapest. The

part of their job is

onsite was

liabilities.

Who is providing the guarantee for the cleanup? Is that Bechtel?
and we sample after the cleanup is

If you find it's not cleaned up, what happens?
contractor or the Navy will take on

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Responsiveness Summary

Interim Record of
Oil Disposal Area Northwes
NAS Cecil Field F

Comment

Is there a guarantee in the contract on the part of the contractor that he
specification in our remediation contract, and when
what the specs call for as far as the cleanup goes and what he has to do?
subcontractor to do thermal, biological, etc.,

he has to meet.

system does

was ineffective,

problem.

Action based on its

source. And we

idea is to pick

What is it that keeps the contaminants from leaving the field and moving o
a site we install wells at the site to
somewhere else and establish them somewhere else? The way the water runs
groundwater flows and whether groundwater contamination
in the aquifer and everything is away from Cecil Field. So what has kept
contamination from the site outward until we find
from leaving there from these sites and going somewhere else and coming
misconception that the groundwater flows
back up in a different place and contaminate somawhere else? As long as
groundwater flows a quarter of an inch a year to
they have been there and as much rain and as much water that flows down it
would have leached out on the other ground in between the two.

and then

has not migrated

Oral comment from John Austin to Bert Byers

Are your consultants looking at innovative technologies, such as cross-flo
innovative technologies for possible
pervaporation, for these interim actions?
actions a proven technology is

pervaporation is an

waste stream.

technology in