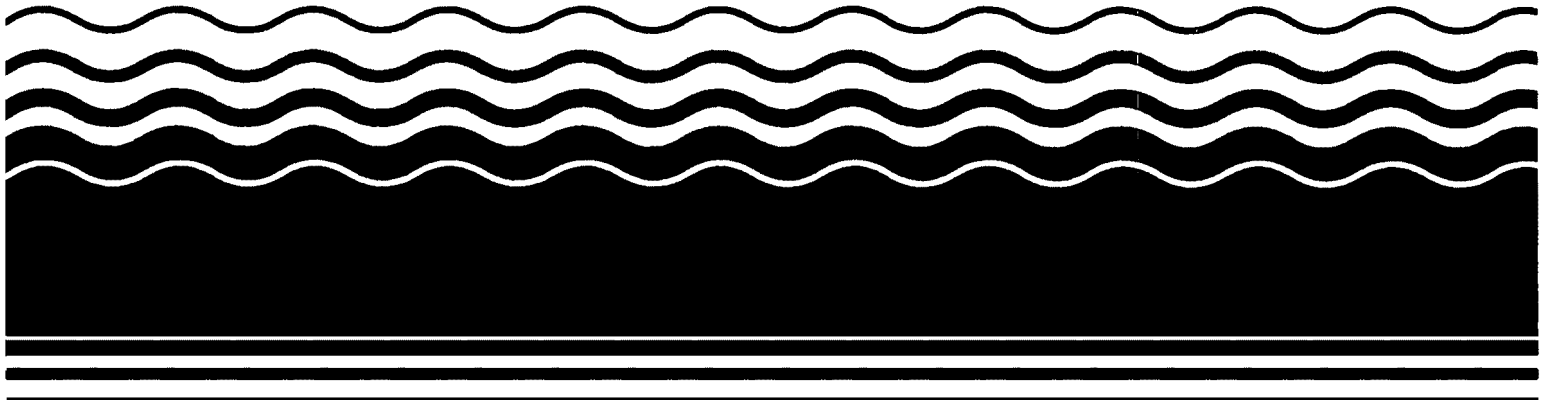




Superfund Record of Decision:

Naval Air Engineering Center
(Operable Unit 12), NJ



REPORT DOCUMENTATION PAGE		1. REPORT NO. EPA/ROD/R02-93/212	2	3. Recipient's Accession No.															
4. Title and Subtitle SUPERFUND RECORD OF DECISION Naval Air Engineering Center (Operable Unit 12), NJ Twelfth Remedial Action				5. Report Date 09/27/93															
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12. Sponsoring Organization Name and Address U.S. Environmental Protection Agency 401 M Street, S.W. Washington, D.C. 20460				13. Type of Report & Period Covered 800/800															
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15. Supplementary Notes PB94-963819																			
16. Abstract (Limit: 200 words) <p>The Naval Air Engineering Center (Operable Unit 12) site is part of the 7,400-acre Naval Air Warfare Center Aircraft Division located in Lakehurst, Ocean County, New Jersey, approximately 14 miles inland from the Atlantic Ocean. Land use in the area is predominantly undeveloped woodlands, open areas, and light commercial and industrial areas, with the closest residential area, the Borough of Lakehurst, located southeast of the facility. The Naval Air Engineering Center (NAEC), which lies within the Toms River Drainage Basin, contains over 1,300 acres of flood-prone areas. The estimated 65,400 people who reside in the vicinity of NAEC, use municipal wells to obtain their drinking water supply. Some private wells exist, but these are used primarily for irrigation purposes. In 1916, Eddystone Chemical Company leased the property to develop an experimental firing range for testing chemical artillery shells. In 1919, the U.S. Navy assumed control of the property, and it was formally commissioned Naval Air Station (NAS) Lakehurst in 1921. In 1974, the NAEC was moved from the Naval Base in Philadelphia to NAS Lakehurst. The NAEC's mission is to conduct research, development, engineering, testing and systems integration, limited production, and procurement for aircraft and airborne weapons systems. Historically, various operations at NAEC have required the use, handling, storage, and occasional onsite</p> <p>(See Attached Page)</p>																			
17. Document Analysis <table border="0"> <tr> <td>a. Descriptors</td> <td colspan="4">Record of Decision - Naval Air Engineering Center (Operable Unit 12), NJ Twelfth Remedial Action Contaminated Medium: None Key Contaminants: None</td> </tr> <tr> <td>b. Identifiers/Open-Ended Terms</td> <td colspan="4"></td> </tr> <tr> <td>c. COSATI Field/Group</td> <td colspan="4"></td> </tr> </table>					a. Descriptors	Record of Decision - Naval Air Engineering Center (Operable Unit 12), NJ Twelfth Remedial Action Contaminated Medium: None Key Contaminants: None				b. Identifiers/Open-Ended Terms					c. COSATI Field/Group				
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18. Availability Statement		19. Security Class (This Report) None	21. No. of Pages 19																
		20. Security Class (This Page) None	22. Price																

Abstract (Continued)

disposal of hazardous substances. During the operational period of the facility, there were reported and suspected releases of these substances into the environment. The Department of Defense's Installation Restoration Program (IRP) has identified 44 potentially-contaminated sites at NAEC, 16 of which have warranted further investigation to assess potential impacts. IRP investigations revealed soil, sediment, and surface water contamination at Sites 7, 22, 24, and 25. From 1958 to 1973, Site 7 reportedly was used for the disposal of waste solvents and oil. Currently, it is used as an outside storage area for test equipment. Site 22 is a Jet Blast Deflector test area. In 1981, a 9 by 9 foot area was found containing dark brown material consisting of hydraulic fluid and fuel oil mixed with soil. In 1985, further investigations could not locate this spill area; however, 15 empty drums and minor surface staining were found nearby. From the mid-1960s to the early 1970s, Site 24, a 360 by 105 foot area, was used for testing a shore-based experimental catapult. Leakage of various fluids occurred during the catapult's operational life resulting in the staining of the underlying soil with black, oily residue. Materials which may have leaked on this area include hydraulic fluid, lubricating oil, and jet fuel. Site 25 is an approximately 450 square foot area containing dark patches of soil, apparently contaminated by spilled oil, that was found during a clean-up operation in 1981. The cause of the contamination at this area is unknown; however, personnel described the area as a disposal area for the Test Department. Since this practice occurred when the area was used as an aircraft hangar, compounds associated with aircraft maintenance, such as chlorinated solvents, could be expected. Previous 1991 and 1992 RODs addressed OUs 1, 2, 3, and 4, and OUs 5, 6, and 7, respectively. This ROD addresses any potential remaining soil, sediment, and surface water contamination at Sites 7, 22, 24, and 25, as OU12. Other 1993 RODs address OUs 8, 9, 10, 11, 13, 14, 15, 22, and 23. EPA has determined that the endangerment assessments performed on the four site areas demonstrate that there are no human health or environmental risks in excess of EPA acceptable levels; therefore, there are no contaminants of concern affecting this site.

The selected remedial action for this site is no further action because the endangerment assessments performed on the four site areas determined that there are no human health or environmental risks in excess of EPA acceptable levels. There are no present worth or O&M costs associated with this no action remedy.

PERFORMANCE STANDARDS OR GOALS:

Not applicable.

ROD FACT SHEET

SITE

Name : NAWC Lakehurst
Location/State : Lakehurst, New Jersey
EPA Region : II
HRS Score (date): 49.48 (July 22, 1987)

ROD

Date Signed: September 27, 1993
Remedy: No Action
Operating Unit Number: OU-12 (Sites 7, 22, 24, 25)
Capital cost: None
Construction Completion: N/A
O & M in 1993: N/A
1994:
1995:
1996:
Present worth: None

LEAD

Enforcement
Federal Facility
Primary contact Jeffrey Gratz (212) 264-6667
Secondary contact Robert Wing (212) 264-8670
Main PRP U.S. Navy
PRP Contact Lucy Bottomley (908) 323-2612

WASTE

Type Metals, Semi-volatile organics
Medium Soil
Origin Assorted spills
Est. quantity N/A



**RECORD OF DECISION
FOR
SITES 7, 22, 24 AND 25**

OU-12

**NAVAL AIR WARFARE CENTER
AIRCRAFT DIVISION
LAKEHURST, NEW JERSEY
September 14, 1993**



RECORD OF DECISION
DECLARATION
SITES 7, 22, 24 AND 25
NAVAL AIR WARFARE CENTER
AIRCRAFT DIVISION
LAKEHURST, NEW JERSEY

FACILITY NAME AND LOCATION

Naval Air Warfare Center
Aircraft Division
Lakehurst, New Jersey 08733

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for four individual sites (Sites 7, 22, 24 and 25), located at the Naval Air Warfare Center, Aircraft Division (NAWCADLKE) in Lakehurst, New Jersey (Figures 1, 2 and 3). The selected remedial action was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan. This decision is based on the Administrative Record for these sites, which is available for public review at the Ocean County Library, 101 Washington Street, Toms River, New Jersey.

Both the United States Environmental Protection Agency (USEPA), Region II Acting Administrator, and the Commissioner of the New Jersey Department of Environmental Protection and Energy (NJDEPE) concur with the selected remedy.

DESCRIPTION OF THE SELECTED REMEDY

The United States Department of the Navy, the lead agency for these Sites, has selected the "no action" alternative for Sites 7, 22, 24 and 25.

DECLARATION STATEMENT

The United States Department of the Navy has determined that no additional remedial action is necessary at Sites 7, 22, 24 and 25 to ensure protection of human health and the environment.

This Record of Decision concerns Sites 7, 22, 24 and 25 only. Other areas of concern at NAWCADLKE have been or will be the subject of separate Records of Decision. The locations of these Sites within NAWCADLKE are shown in Figures 2 and 3.

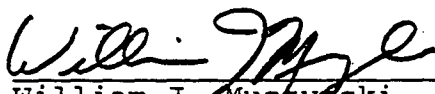


Captain Leroy Farr
Commanding Officer
Naval Air Warfare Center
Aircraft Division
Lakehurst, New Jersey

13 SEP 93

(Date)

With the concurrence of:



William J. Muszyński, P.E.
Acting Regional Administrator
U.S. Environmental Protection Agency,
Region II

9/27/93

(Date)

SITE DESCRIPTION

NAWCADLKE is located in Jackson and Manchester Townships, Ocean County, New Jersey, approximately 14 miles inland from the Atlantic Ocean (Figure 1). NAWCADLKE is approximately 7,400 acres and is bordered by Route 547 to the east, the Fort Dix Military Reservation to the west, woodland to the north (portions of which are within Colliers Mill Wildlife Management Area), Lakehurst Borough and woodland, including the Manchester Wildlife Management Area, to the south. NAWCADLKE and the surrounding area are located within the Pinelands National Reserve, the most extensive undeveloped land tract of the Middle Atlantic Seaboard. The groundwater at NAWCADLKE is currently classified by NJDEPE as Class I-PL (Pinelands).

NAWCADLKE lies within the Outer Coastal Plain physiographic province, which is characterized by gently rolling terrain with minimal relief. Surface elevations within NAWCADLKE range from a low of approximately 60 feet above mean sea level in the east central part of the base, to a high of approximately 190 feet above mean sea level in the southwestern part of the base. Maximum relief occurs in the southwestern part of the base because of its proximity to the more rolling terrain of the Inner Coastal Plain. Surface slopes are generally less than five percent.

NAWCADLKE lies within the Toms River Drainage Basin. The basin is relatively small (191 square miles) and the residence time for surface drainage waters is short. Drainage from NAWCADLKE discharges to the Ridgeway Branch to the north and to the Black and Union Branches to the south. All three streams discharge into the Toms River. Several headwater tributaries to these branches originate at NAWCADLKE. Northern tributaries to the Ridgeway Branch include the Elisha, Success, Harris and Obhanan-Ridgeway Branches. The southern tributaries to the Black and Union Branches include the North Ruckles and Middle Ruckles Branches and Manapagua Brook. The Ridgeway and Union Branches then feed Pine Lake; located approximately 2.5 miles east of NAWCADLKE before joining Toms River. Storm drainage from NAWCADLKE is divided between the north and south, discharging into the Ridgeway Branch and Union Branch, respectively. The Paint Branch, located in the east-central part of the base, is a relatively small stream which feeds the Manapagua Brook.

Three small water bodies are located in the western portion of NAWCADLKE: Bass Lake, Clubhouse Lake, and Pickerel Pond. NAWCADLKE also contains over 1,300 acres of flood-prone areas, occurring primarily in the south-central part of the base, and approximately 1,300 acres of prime agricultural land in the western portion of the base.

There are 913 acres on the eastern portion of NAWCADLKE that lie

within Manchester Township and the remaining acreage is in Jackson Township. The combined population of Lakehurst Borough, Manchester and Jackson Townships, is approximately 65,400, for an area of approximately 185 square miles. The average population density of Manchester and Jackson Townships is 169 persons per square mile.

The areas surrounding NAWCADLKE are, in general, not heavily developed. The closest commercial area is located near the southeastern section of the facility in the borough of Lakehurst. This is primarily a residential area with some shops but no industry. To the north and south are State wildlife management areas which are essentially undeveloped. Adjacent to and south of NAWCADLKE are commercial cranberry bogs, the drainage from which crosses the southeast section of NAWCADLKE property.

For the combined area of Manchester and Jackson Townships, approximately 41 percent of the land is vacant (undeveloped), 57 percent is residential, one percent is commercial and the remaining one percent is industrial or farmed. For Lakehurst Borough, 83 percent of the land is residential, 11 percent is vacant, and the remaining 6 percent commercially developed.

In the vicinity of NAWCADLKE, water is generally supplied to the populace by municipal supply wells. Some private wells exist, but these are used primarily for irrigation and not as a source of drinking water. In Lakehurst Borough there is a well field consisting of seven 50-foot deep wells, located approximately two-thirds of a mile south of the eastern portion of NAWCADLKE. Three of the seven wells (four of the wells are rarely operated) are pumped at an average rate of 70 to 90 gallons per minute and supply drinking water for a population of approximately 3,000. Jackson Township operates one supply well in the Legler area, approximately one-quarter mile north of NAWCADLKE, which supplies water to a very small population (probably less than 1,000) in the immediate vicinity of NAWCADLKE.

The history of the site dates back to 1916, when the Eddystone Chemical Company leased from the Manchester Land Development Company property to develop an experimental firing range for the testing of chemical artillery shells. In 1919, the U.S. Army assumed control of the site and named it Camp Kendrick. Camp Kendrick was turned over to the Navy and formally commissioned Naval Air Station (NAS) Lakehurst, New Jersey on June 28, 1921. The Naval Air Engineering Center (NAEC) was moved from the Naval Base, Philadelphia to Lakehurst in December 1974. At that time, NAEC became the host activity, thus, the new name NAEC. In January 1992, NAEC was renamed the Naval Air Warfare Center Aircraft Division Lakehurst, due to a reorganization within the Department of the Navy.

Currently, NAWCADLKE's mission is to conduct programs of

technology development, engineering, developmental evaluation and verification, systems integration, limited manufacturing, procurement, integrated logistic support management, and fleet engineering support for Aircraft-Platform Interface (API) systems. This includes terminal guidance, recovery, handling, propulsion support, avionics support, servicing and maintenance, aircraft/weapons/ship compatibility, and takeoff. The Center provides, operates, and maintains product evaluation and verification sites, aviation and other facilities, and support services (including development of equipment and instrumentation) for API systems and other Department of Defense programs. The Center also provides facilities and support services for tenant activities and units as designed by appropriate authority.

NAWCADLKE and its tenant activities now occupy more than 300 buildings, built between 1919 and 1989, totaling over 2,845,000 square feet. The command also operates and maintains: two 5,000-foot long runways, a 12,000-foot long test runway, one-mile long jet car test track, four one and one-quarter mile long jet car test tracks, a parachute jump circle, a 79-acre golf course, and a 3,500-acre conservation area.

In the past, the various operations and activities at the Center required the use, handling, storage and occasionally the on-site disposal of hazardous substances. During the operational period of the facility, there have been documented, reported or suspected releases of these substances into the environment.

INITIAL INVESTIGATIONS

As part of the DOD Installation Restoration Program and the Navy Assessment and Control of Installation Pollutants (NACIP) program, an initial Assessment Study was conducted in 1983 to identify and assess sites posing a potential threat to human health or the environment due to contamination from past hazardous materials operations.

Based on information from historical records, aerial photographs, field inspections, and personnel interviews, the study identified a total of 44 potentially contaminated sites. An additional site, Bomarc, was also investigated by NAWCADLKE. The Bomarc Site is the responsibility of the U.S. Air Force and is located on Fort Dix adjacent to the western portion of NAWCADLKE. A Remedial Investigation (RI) was recommended to confirm or deny the existence of the suspected contamination and to quantify the extent of any problems which may exist. Following further review of available data by Navy personnel, it was decided that 42 of the 44 sites should be included in the Remedial Investigation. Two potentially contaminated sites, an ordnance site (Site 41) and an Advanced Underground Storage Facility (Site 43), were deleted from the Remedial Investigation because they had already

been addressed. In 1987 NAWCADLKE was designated as a National Priorities List (NPL) or Superfund site under the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

STATUTORY DETERMINATIONS

NJDEPE Soil Cleanup Criteria (SCC) were utilized as guidance for the cleanup of soil at all sites. NJDEPE SCC includes soil cleanup levels for residential and non-residential direct contact scenarios and separate impact to ground water soil cleanup criteria for the protection of ground water. The National Oceanic and Atmospheric Administration (NOAA) guidance for sediment was used as a screening aid to determine ecological risk. A brief discussion of each of the criteria follows.

NJDEPE SCCs:

The NJDEPE soil cleanup criteria are To Be Considered (TBC) criteria for determining the need for site cleanup. Although the NJDEPE soil cleanup criteria are not promulgated requirements, these criteria are considered an appropriate means by which to assess the risk to human health and the environment posed by contaminants found in soil. Therefore, NAWCADLKE has been determining the need for site cleanup based upon NJDEPE SCC as well as EPA risk-based levels and other factors, such as aiding the effectiveness and duration of existing groundwater remediation systems.

The cleanup criteria provide health based levels for residential use, non-residential use and impact to groundwater (subsurface) land uses and/or impacts. NAWCADLKE has assumed a non-residential land use due to its mission and facilities is support of Naval aviation. Due to our location in the Pinelands National Preserve (Class I-PL (Pinelands)) and the shallow groundwater table, the most stringent of the surface and subsurface (impact to groundwater) non-residential cleanup criteria have been utilized in our site comparisons.

To satisfy the requirement for establishing EPA risk-based cleanup criteria, an Endangerment Assessment was performed in October 1992 which included calculated Preliminary Remedial Goals or PRGs. The PRGs are chemical specific criteria which were developed using fate and transport and the exposure equations associated with the relevant pathways. The PRGs determined by calculation the contaminant concentrations in affected media that would result in acceptable exposure levels. PRGs were developed for each site based upon one or more (current or potential) land-use scenarios. Typically the NJDEPE SCC are more stringent than the calculated PRGs. With this in mind, the SCC are also

considered preliminary clean-up goals at those sites at the Lakehurst facility which are determined to require active remediation.

NOAA

Since no chemical specific ARARs exist for sediment contamination, the National Oceanic and Atmospheric Administration (NOAA) sediment quality criteria have been utilized at NAWCADLKE as TBC cleanup criteria for sediment. These criteria are provided in the 1990 report, "The Potential for Biological Effects of Sediment-sorbed Contaminants Tested in the National Status and Trends Program".

This report assembled and reviewed currently available information in which estimates of the sediment concentrations of chemicals associated with adverse biological effects have been determined or could be derived. The biological data for each compound was statistically calculated. An Effects Range-Low (ER-L), a concentration at the low end of the range in which effects had been observed, and a Effects Range-Median (ER-M), a concentration approximately midway in the range of reported values associated with biological effects, were derived.

In a very qualitative sense, the ER-L value can be taken as a concentration above which adverse effects may begin or are predicted among sensitive life stages and/or species. The ER-M value is taken as a concentration above which effects were frequently or always observed or predicted among most species.

NAWCADLKE has utilized the chemical specific ER-L and ER-M values to determine the need for sediment remediation. Where values have generally exceeded ER-M, further evaluation, site visits, and contaminant specific literature searches have been conducted to refute or confirm the potential for existing or future adverse ecological effects. Site information and NOAA criteria have been weighed to determine if sediment remediation is advantageous or potentially destructive to the aquatic habitat (as may be the case with excavation of sediment).

For sediments requiring remediation, the NOAA criteria are considered preliminary clean-up goals. ARARs affecting the chosen remedial alternative for sediments include the Clean Water Act (40 CFR 404) which prohibit actions that may adversely impact a wetland unless no other alternatives are available, and the NJ Water Supply Management Act (NJAC 58:1A-1 et.seq.) which require permits for groundwater diversion during recovery operations. Other ARARs which may apply include the Endangered Species Act (16 USC 1531) where adverse impacts on endangered species or their habitats must be considered in the implementation of a remedial action.

ENVIRONMENTAL INVESTIGATIONS

Phase I of the Remedial Investigation (RI-Phase I) was conducted from 1985 to 1987 to (a) confirm or refute the existence of contamination at potentially contaminated sites identified during previous studies; and (b) develop recommendations for further Phase II investigations. The results of the RI-Phase I were presented in a report issued in 1987.

Phase II of the RI was initiated in the summer of 1988 to: (a) confirm the results of the Phase I study, specifically the presence or absence of contamination; (b) identify where contamination is located; (c) assess the potential for contaminant migration; (d) define the sources of contamination; and (e) support a feasibility study and final actions at the sites. Based on the results of the Phase II investigation, several remedial actions were initiated.

Phase III of the RI was initiated in the summer of 1991 to: (a) confirm the presence or absence of contamination at sites where the results of previous investigations were not definitive; (b) delineate the lateral and vertical extent of contamination; (c) collect and evaluate data to perform a risk assessment and assess the need for remedial action at sites.

These investigations indicated no significant contamination present at levels of concern at Sites 7, 22, 24 and 25.

The individual Site histories and summaries of past remedial activities at each of the Sites are provided in the following sections.

It should be noted that NJDEPE Soil Cleanup Criteria (SCC) were utilized as guidance for the cleanup of soil at both sites. NJDEPE SCC includes soil cleanup levels for residential and non-residential direct contact scenarios and separate impact to ground water soil cleanup criteria for the protection of ground water. The National Oceanic and Atmospheric Administration (NOAA) guidance for sediment was used as a screening aid to determine ecological risk.

Site 7: Site Description and Background

Site 7 is located to the north of Buildings 370, 369, 341 and 398, which are shops and storage areas where fabrication and testing is done (Figure 4). The location is described as a 50 by 100 foot area where waste solvents and oil were reportedly disposed of between 1958 and 1973. Presently, the site is an outside storage area for test equipment.

Site 7: Summary of Remedial Investigations

During the fall of 1988, four test pits were dug to a depth of about four feet in the reported disposal area. The only contaminant detected in any of the sampling conducted was cadmium at one location at 5.4 mg/kg. To confirm this finding three test pits were excavated to a depth of 5 feet near the sampling location where the cadmium had been detected and samples were taken from each pit. Cadmium was not detected in any of the samples. Current investigation of the site shows no surface staining or discoloration. In addition, several 5 to 6 foot long trenches dug two to three feet deep during utility installation did not reveal any odors or staining. All contaminants of concern for soil at Site 7 are listed in Table 1.

Site 22: Site Description and Background

Site 22 consists of the Jet Blast Deflector (JBD) test site (Figure 5). In 1981, a 9 by 9 foot area east of building 558 (see Figure 5) was found containing dark brown material consisting of hydraulic fluid and fuel oil mixed with soil. During further investigations in 1985, this area could not be found; however, 15 empty drums and minor surface staining were found in the area north and east of Building 559. The site remains a JBD test area.

Site 22: Summary of Remedial Investigations

During 1988, two test pits were excavated at the site. One of the pits was in the reported area of the 9 by 9 foot stain while the other was taken approximately 50 feet southeast of Building 559 where elevated levels of hydrocarbons were detected in soil gas. Samples were taken from each of the pits at a depth of 3 to 3.5 feet, however, no elevated concentration of contaminants were detected. All contaminants of concern for soil at Site 22 are listed in Table 2.

Site 24: Site Description and Background

Site 24 consists of a 360 by 105 foot area which was used for testing a shore based experimental catapult between the mid-1960s to the early 1970s (Figure 6). Leakage of various fluids occurred during the catapults operational life resulting in the staining of the underlying soil with black oily residue. Materials which may have been leaked at this site include hydraulic fluid, lubricating oil and jet fuel. The quantities of leaked fluids are unknown.

During field investigations in the fall of 1988, no stained soil was observed to be present at the site. All of the equipment associated with the experimental catapult including concrete pads had been removed and the site was covered with a gravelly soil. Occasionally, standing water is observed in minor surface depressions in the area. No oily sheen or other visual evidence of contamination has been found on the surface of this water.

Site 24: Summary of Remedial Investigations

One test pit was excavated at the site in 1988 and soil samples were collected at a depth of 3 feet. The only compound detected was a low concentration of toluene (26 ppb). Two additional soil borings were conducted in late 1991 and one sample was collected from each boring immediately above the water level (4 to 6 feet below grade). No targeted Volatile Organic Compounds (VOCs), Semi Volatile Organic Compounds (SVOCs) or Total Petroleum Hydrocarbon (TPHC) were detected in either sample. Each boring was also sampled continuously for visual examination of the soil and screening with an Organic Vapor Analyzer (OVA), which revealed no evidence of contamination.

During investigations in the spring of 1992, screening with an Photo-Ionization Detector (PID) showed levels of 300 to 400 ppm in three soil borings at the site. In May of 1992, samples were taken at these three locations and tested for TPHC, VOC and base neutrals. All samples were below NJDEPE SCC for targeted compounds as shown in Figure 6. All contaminants of concern for soil at Site 24 are listed in Table 3.

Site 25: Site Description and Background

Site 25 consists of an approximately 450 square foot area northwest of Building 386 (Figure 7). The site was found during a clean up operation in 1981 and contained dark patches of soil apparently contaminated by spilled oil. At the time of discovery the soil was raked by Navy personnel. The cause of contamination at the site is unknown; however, the area was described by personnel as a "disposal area" for the Test Department. Since this practice occurred when building 355 (See Figure 7) was used as an aircraft hangar, compounds associated with aircraft maintenance, such as chlorinated solvents, could be expected.

Site 25: Summary of Remedial Investigations

In 1988, three test pits were excavated to a depth of three feet. No staining was observed in any of the excavations nor was any soil staining observed at the site. No contaminants were detected in a sample taken from one of the pits. In addition, three rounds of sediment samples taken from a drainage swale

north of the site revealed no significant levels of contamination. No contaminants of concern for soil or sediment exist at Site 25.

SUMMARY OF SITE ENDANGERMENT

An Endangerment Assessment (EA) was conducted at NAWCADLKE to assess the potential current and future human health risks and potential environmental impacts posed by contaminated soils, ground water, sediment and surface water detected during past and on-going site investigations.

For all sites, four different scenarios representing current and potential future land uses were evaluated to assess applicability to the site. Evaluated scenarios included military, light industrial, construction and residential land uses. For each of these scenarios, human exposure is affected by mechanisms that include direct contact, inhalation and ingestion.

More complete EA information for Sites 7, 22, 24 and 25 can be found in volume VI of the Phase III RI, which is available as part of the NAWCADLKE Administrative Record.

It should be noted that ground water contamination which exists beneath sites 7, 24 and 25 is not emanating from these sites. The source areas of contamination and the ground water contamination itself are being addressed in separate RODs and will not be addressed here.

For all sites, the summaries will discuss; (1) the chemicals identified by the EA as contaminants of concern (COCs), (2) the land use assumptions upon which estimates of potential human exposure to site contaminants are based, (3) the quantitative estimates of carcinogenic risk and noncarcinogenic hazard, (4) a summary of the ecological concerns at the site and, (5) a summary interpretation of the EA findings with regard to need for site remediation.

SITE 7 CATAPULT TEST FACILITY STORAGE AREA Endangerment Assessment Summary

This is a summary of the endangerment assessment findings for Site 7 (Catapult Test Facility Storage Area). Soil is the medium of interest for this site.

CONTAMINANTS OF CONCERN

For soil, cadmium and lead were the only COCs.

LAND USE AND EXPOSURE ASSUMPTIONS

For soil, a light industrial land use was assumed due to the site's location near an existing facility building and work (testing) areas. Under this land use scenario direct exposure to contaminated soil could occur via incidental ingestion and inhalation.

HUMAN HEALTH RISK AND HAZARD FINDINGS

For soil, the results of the EA indicate that the hazard resulting from the only noncarcinogen COC (cadmium) is not elevated above EPA's hazard index criteria value of 1.0. The hazard index value estimated for cadmium is 5.29×10^{-3} , which is also the overall site hazard quotient. The carcinogenic risks posed by cadmium are also below EPA's criteria level of 10^{-6} . The estimated cadmium risk is 4.43×10^{-8} , which is also the overall soil risk.

Due to uncertainty regarding lead toxicity, neither a noncarcinogenic hazard or carcinogenic risk estimate is provided. Lead was detected at a maximum concentration of 22 mg/kg in soil at Site 7. It is noteworthy that this maximum observed lead concentration is well below the USEPA criteria value for lead which is 500 mg/kg for surface soils.

ECOLOGICAL ASSESSMENT

Site 7 is a storage area that is adjacent to two active shops and two storage buildings and is not considered a wildlife dwelling. No endangered or threatened species were found in this area. Soil contamination at the site is below the surface and not a threat to transient wildlife receptors. In addition, surface water and sediment are not contained in this site, therefore, no aquatic receptors exist.

SITE 7 CONCLUSION

In summary, the results of the endangerment assessment indicate that soil at Site 7 does not pose unacceptable levels of risk to human health and the environment.

SITE 22 JET BLAST DEFLECTOR SITE Endangerment Assessment Summary

This is a summary of the endangerment assessment findings for Site 22 (Jet Blast Deflector). The medium that is the subject of the EA is soil.

CONTAMINANTS OF CONCERN

For soil, mercury was the only contaminant of concern.

LAND USE AND EXPOSURE ASSUMPTIONS

For soil, a military land use scenario was assumed because of the lack of extensive facilities in the immediate vicinity of the site. The exposure assumptions such as duration and frequency of contact are less for the military land use scenario as compared, for example, to a light industrial scenario.

HUMAN HEALTH RISK AND HAZARD FINDINGS

For soil, the results of the EA indicate that hazards resulting from noncarcinogens are not elevated for mercury above EPA's hazard index criteria value of 1.0. The hazard index value estimated for mercury is 5.94×10^{-5} , which is also the overall site hazard quotient. No carcinogenic COCs were found at the site, therefore, no carcinogenic risk was calculated.

ECOLOGICAL ASSESSMENT

Site 22 is an active test area containing storage buildings and is not considered a wildlife dwelling. No endangered or threatened species were found in this area. Soil contamination at the site is below the surface and not a threat to transient wildlife receptors. In addition, surface water and sediment are not contained in this site; therefore no aquatic receptors exist.

SITE 22 CONCLUSION

In summary, the results of the endangerment assessment indicate that soil at Site 22 does not pose unacceptable levels of risk to human health and the environment.

SITE 24 CATAPULT TEST SITE NO. 7419 Endangerment Assessment Summary

This is a summary of the endangerment assessment findings for Site 24 (Catapult Test Site No. 7419). The medium that is the subject of the EA is soil.

CONTAMINANTS OF CONCERN

For soil, toluene, isophorone, bis(2-ethylhexyl)phthalate, di-n-octylphthalate and acetone are the COCs.

LAND USE AND EXPOSURE ASSUMPTIONS

For soil, a military land use scenario was assumed because of the lack of extensive facilities in the immediate vicinity of the site. The exposure assumptions such as duration and frequency of contact are less for the military land use scenario as compared, for example, to a light industrial scenario.

HUMAN HEALTH RISK AND HAZARD FINDINGS

For soil, the results of the EA indicate that the hazards resulting from noncarcinogens are not elevated for any chemical above EPA's hazard index criteria value of 1.0. The hazard index value estimated for soil was 1.9×10^{-5} . The carcinogenic risk estimate for soil at Site 24 also is not elevated for any chemical above EPA's criteria risk level of 10^{-6} . The estimated risk for soil overall is 2.12×10^{-10} .

ECOLOGICAL ASSESSMENT

Site 24 is a grassy area that is adjacent to a test runway and high speed aircraft taxiway and is not considered a wildlife dwelling. No endangered or threatened species were found in this area. Soil contamination at the site is below the surface and not a threat to transient wildlife. In addition, surface water and sediment are not contained in this site, therefore no aquatic receptors exist.

SITE 24 CONCLUSION

In summary, the results of the endangerment assessment indicate that soil at Site 24 does not pose unacceptable levels of risk to human health and the environment.

SITE 25 TEST DEPARTMENT DISPOSAL AREA Endangerment Assessment Summary

This is a summary of the EA findings for Site 25 (Test Department Disposal Area). The media that were the subject of the site-specific EA for this site were soil, surface water, and sediment.

CONTAMINANTS OF CONCERN

For soil, no organic compounds were detected in the analysis of samples collected at the site. Further, none of the metals detected were selected as COCs based on the results of screening against background data and essential nutrient data.

For sediment, analytical results are also available, however, no detected chemicals were selected as COCs based on the results of screening against background data and essential nutrient data.

For surface water, COCs were aluminum and lead. From an ecological perspective, additional COCs included additional inorganics: copper, iron and zinc.

LAND USE AND EXPOSURE ASSUMPTIONS

For surface water, direct human exposure is unlikely due to the setting of the site. Rather, criteria for the protection of aquatic life were considered.

HUMAN HEALTH RISK AND HAZARD FINDINGS

For soil and sediment, the results of the EA indicate that hazards are not estimated because of the absence of contaminants of concern.

For surface water, the results of the EA also indicate that hazards are not estimated for these media because direct human exposure is considered unlikely.

ECOLOGICAL ASSESSMENT

Site 25 is a grassy area that is adjacent to an office building and is not considered a wildlife dwelling. No endangered or threatened species were found in this area. The sediment that is adjacent to the site contained no COCs from an ecological standpoint. To evaluate the potential for ecological effects associated with contaminants in surface water samples, results were compared to applicable criteria. This revealed that the maximum detected iron concentration was slightly above EPA's chronic ambient water quality criteria for iron; however, no other surface water contaminants exceeded their respective criteria. Contaminants in surface water that were noted in the vicinity of Site 25 can be attributed to flow from Site 6. Site 6 will be remediated and is the subject of a separate ROD.

SITE 25 SUMMARY

In summary, the EA demonstrates that soils and sediment at Site 25 do not pose an unacceptable risk to human health and the environment.

SUMMARY

In summary, the EA demonstrates that soil, surface water and sediment at the four sites do not pose human health risks in excess of EPA acceptable levels. Likewise, the sites do not pose unacceptable ecological hazards. All soil contaminants were below EPA acceptable risk levels and NJDEPE SCC.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

The Proposed Plan for Sites 7, 22, 24 and 25 was issued to interested parties on June 7, 1993. On June 16 and 17, 1993, a newspaper notification inviting public comment on the Proposed Plan appeared in The Asbury Park Press and The Ocean County Observer. On June 18, 1993, a notification also appeared in The Air Scoop, the Center's weekly publication. The comment period was held from June 21, 1993 to July 21, 1993. The newspaper notification also identified the Ocean County Library as the location of the Information Repository.

A Public Meeting was held on July 7, 1993 at the Manchester Branch of the Ocean County Library at 7:00 P.M.. At this meeting representatives from the Navy, USEPA and NJDEPE were available to answer questions about the four Sites, and the "No Action" determination. A list of attendees is attached to this Record of Decision as Appendix A. Comments received and responses provided during the public hearing are included in the Responsiveness Summary, which is part of this Record of Decision. No written comments were received during the public comment period. A transcript of the meeting is available as part of the Administrative Record.

The decision document presents the selected action (i.e., No Action) for Sites 7, 22, 24 and 25 of NAWCADLKE in Ocean County, New Jersey, chosen in accordance with CERCLA, as amended by SARA and, to the extent practicable, the National Contingency Plan (NCP). The decision for the four Sites is based on the information contained in the Administrative Record, which is available for public review at the Ocean County Library, 101 Washington Street, Toms River, New Jersey.

SCOPE AND ROLE OF RESPONSE ACTION

The results of environmental investigations conducted show no evidence of any significant contamination remaining at Sites 7, 22, 24 and 25. No unacceptable risks to human health or the environment exist at these sites; no action is necessary for these four Sites.

SUMMARIES OF SITE CHARACTERISTICS

The locations of each of the four Sites within NAWCADLKE are shown in Figures 1, 2 and 3. Maps of the individual sites are provided in Figures 4 through 7.

Summaries of the chemicals detected in the analyses of soil, sediment and surface water samples collected at each of the Sites are provided in Tables 1 through 3.

The results of the Remedial Investigations, including the analytical data summarized in Tables 1 through 3, indicate that conditions at Sites 7, 22, 24 and 25 pose no unacceptable risks to human health and the environment.