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NAS KEY WEST
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PROPOSED PLAN FOR FORMER FLEMING KEY NORTH LANDFILL SITE 7 NAS KEY WEST
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10/18/1998
NAS KEY WEST



PROPOSED PLAN



Naval Air Station Key West, Florida

Facility/Unit Type: Military Installation/Former Fleming Key North Landfill (IR 7)
Contaminants: Organics, Metals, and Pesticides
Media: Soil, Sediment, Surface Water, Groundwater, and Biota
Remedy: Monitoring with Land-Use Controls

INTRODUCTION

This Proposed Plan is issued by the U.S. Navy, the lead agency for Naval Air Station (NAS) Key West remedial activities, with concurrence by U. S. Environmental Protection Agency (EPA) and Florida Department of Environmental Protection (FDEP). The proposed remedial activities are conducted under the Department of Defense's Installation Restoration Program (IRP) in accordance with Section 120 of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the National Contingency Plan (NCP). The Former Fleming Key North Landfill is the site of interest and is known as IR 7.

The purpose of this Proposed Plan is several-fold. The Proposed Plan identifies the proposed remedy for IR 7 at NAS Key West and explains the rationale for the preference, solicits public review and comment on conclusions of the CERCLA Remedial Investigation (RI), and provides information as to how the public can be involved in the remedy selection process. The Proposed Plan provides a summary of past environmental work at IR 7 at NAS Key West. This document provides key highlights of the Supplemental RCRA Facility Investigation and Remedial Investigation Report January 1998 (RI Report), but should not be used as a substitute. Additional details regarding the facility and the investigation conducted may be found in the RI Report that is kept as part of the information repository. Please refer to the Public Participation section for its location.

The public is encouraged to comment on the proposed remedy which is based on the conclusions of the RI Report. The U.S. Navy emphasizes that the proposed remedy is the initial recommendation of the Agency. Changes to the proposed remedy, or a change from the proposed remedy to another remedy, may be made if public comments or additional data indicate that such a change would result in a more appropriate solution.

PROPOSED REMEDY

As discussed above, the proposed remedy represents the U.S. Navy's initial recommendation for IR 7. The proposed remedy is land-use controls and groundwater monitoring because actions taken in the Interim Remedial Action (IRA) along with implementation of the proposed remedy will reduce the potential risks to human health and the environment to acceptable levels. The cost of implementing land-use controls and groundwater monitoring will be minimal particularly when compared with other remedial measures such as soil removal or groundwater remediation.

FACILITY BACKGROUND

The U.S. Navy owns 5,660 acres in Monroe County, Florida as part of NAS Key West. Currently, Fleming Key is the location of military and civilian government facilities. The key is a man-made island surrounded by the Gulf of Mexico.

Proposed Plan – IR 7

In 1987, an Initial Assessment Study (IAS) was conducted at NAS Key West. Based on the results of the IAS, an RI was recommended at IR 7, the Former Fleming Key North Landfill.

The Former Fleming Key North Landfill is located on Fleming Key north of the island of Key West (Figure 1). The former landfill site is the current location of the U.S. Department of Agriculture (USDA) Animal Import Center (Figure 2). The site was used from 1952 to 1962 as the landfill for NAS Key West and the city of Key West. Approximately 4,000 to 5,000 tons of unknown wastes were disposed of annually.

In 1977, the building housing the USDA Animal Import Center was constructed over a portion of the landfill. Some wastes were excavated and transferred to an area immediately west of the building site and buried under a soil and rock cover. Currently, the entire landfill area is covered with soil and is vegetated by grass, weeds, or trees.

Sampling was performed in 1986, 1990, 1993, and 1996 during a series of RIs at the site. Volatile and semi-volatile organic compounds (VOCs and SVOCs) were not detected in soil in excess of applicable or relevant and appropriate requirements and screening action levels

(ARAR/SALs). Metals and pesticides were most consistently detected in surface soil above ARARs/SALs at the north end of the site near Building 1419 (Figure 2). No polychlorinated biphenyls (PCBs) were detected.

Sediment from the Gulf of Mexico to the north, east, and west of the site was sampled. No VOCs were found at concentrations that exceeded ARAR/SAL levels. SVOC exceedances were only found during the 1990 sampling event. The pesticide 4,4'-DDT and its degradation products were detected most frequently in excess of ARAR/SAL levels as well as several metals (arsenic, beryllium, copper, lead, mercury, and silver).

Limited contamination was found in surface-water and groundwater samples. As in soil and sediment, inorganics were the most common class of contaminants detected in surface water. However, antimony was the only metal that consistently exceeded the screening criteria. Groundwater sample results indicated metals in all investigations; however, in 1996 the frequency and magnitude of the detections were reduced from previous investigations. In addition, a few VOCs and SVOCs were detected above ARAR/SALs during the investigations; however, the compounds detected differed from

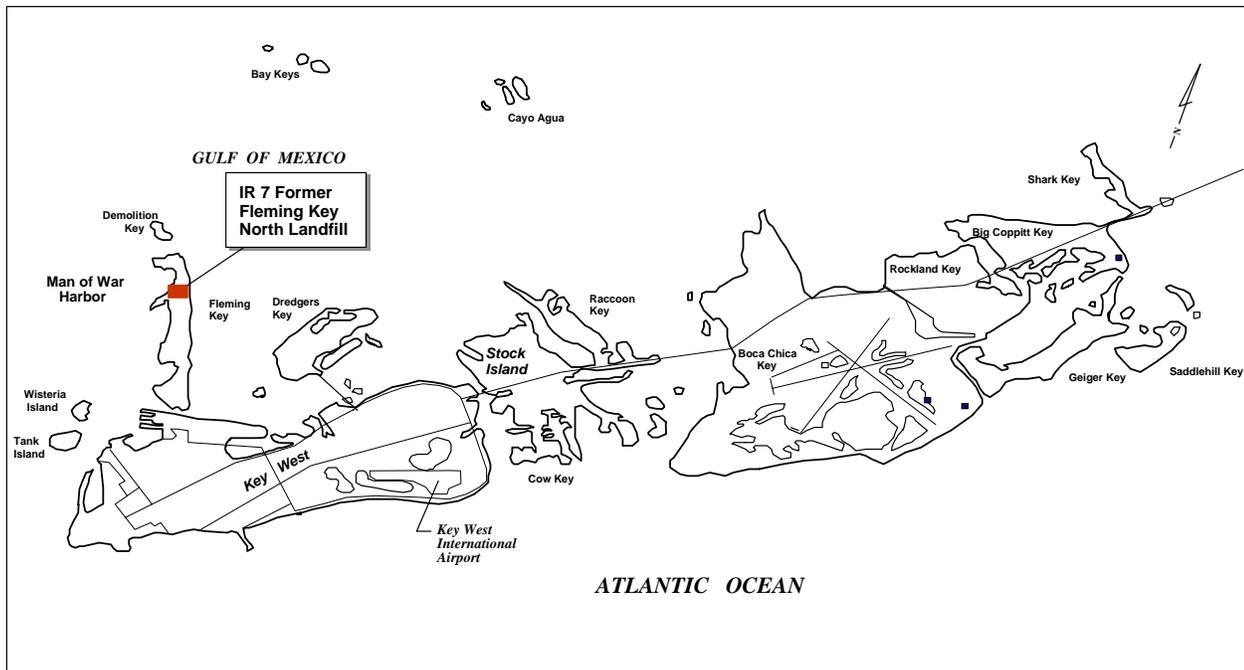


Figure 1. NAS Key West IR 7 Former Fleming Key North Landfill.

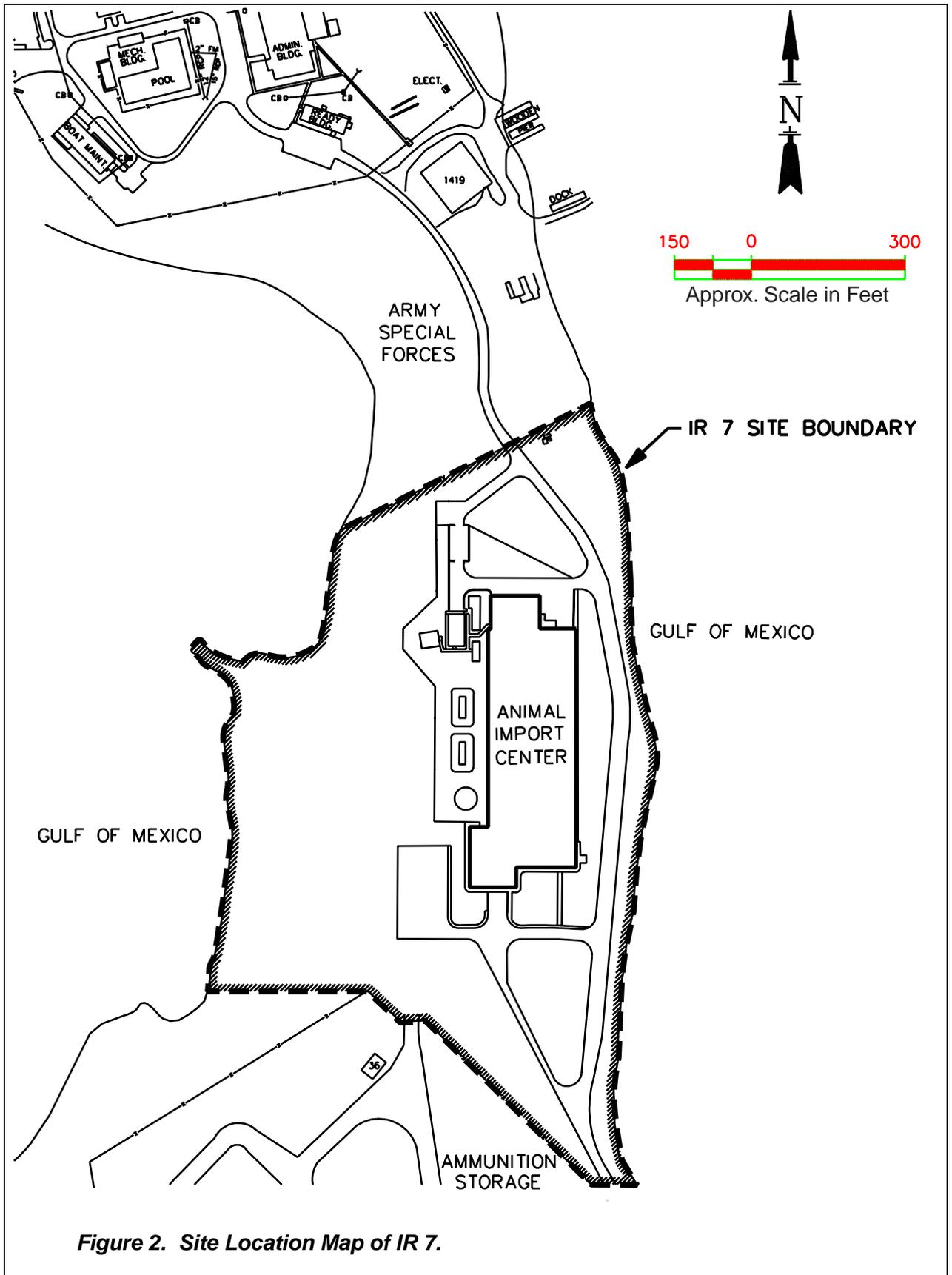


Figure 2. Site Location Map of IR 7.

year to year. Lastly, pesticides were consistently found in 1996, but were detected infrequently in previous investigations.

In September 1995, an IRA was performed to minimize infiltration of rainwater through the former landfill waste. Clean topsoil was imported to fill low areas and promote runoff, and vegetative cover was established to prevent erosion.

SUMMARY OF FACILITY RISKS

A Human Health Baseline Risk Assessment (BRA) and an Ecological Risk Assessment (ERA) were performed as part of the RI Report. The IR sites at NAS Key West were evaluated for risk following CERCLA guidance at the request of FDEP and EPA Region IV.

In the BRA, human health risks associated with the exposure to detected contaminants in soil, sediment, and surface water were estimated for each potential receptor. Although groundwater was sampled and analyzed, it was not considered a pathway of concern since groundwater at this site meets the FDEP criteria for a Class G-III nonpotable aquifer. The full BRA is in the RI Report.

The potential receptors were based on current and future land uses. The current potential receptors identified for IR 7 include adolescent/adult trespasser, occupational worker, and site maintenance worker. Under the future land-use scenario, the most likely potential receptor is believed to be an excavation worker. Also considered under the future land-use scenario are a residential child and adult, although residential development of IR 7 is considered unlikely. Under the master plan for land use on NAS Key West, the future land use for the area where IR 7 is located is as a restricted-access military base, with future zoning to limit access at the site. In addition, the memorandum of agreement has been developed and signed and land-use controls have been developed. Although residential development is highly unlikely as explained above, there would be potential for a future resident to be exposed to concentrations of contaminants that may cause limited carcinogenic and noncarcinogenic risks. This potential risk was modeled for possible human receptors.

The chemicals of potential concern (COPCs) were selected within a medium based on comparison of the detected concentrations to risk-based screening levels. The selected COPCs represent those chemicals at IR 7 that are expected to contribute significantly to one or more of the exposure pathways selected for risk estimation. The BRA identified antimony and arsenic as COPCs in soil for all receptors. Arsenic, beryllium, several polynuclear aromatic hydrocarbon compounds and pesticides were identified in sediment, and several inorganics (i.e., aluminum, antimony, barium, iron, mercury, tin, vanadium, and zinc) and the SVOC naphthalene were identified in surface water as COPCs for the current adolescent and adult trespasser and potential future residents. Lastly, mercury and pesticides (i.e., heptachlor epoxide, heptachlor, and aldrin) were selected as COPCs in shellfish for the future adult resident. Conservative risk-based screening levels are used in the exposure pathway model for sediment and surface water. This results in the selection of COPCs that do not contribute significantly to the quantitative risk.

For the BRA, the carcinogenic and noncarcinogenic risks associated with detected contaminants are considered negligible. Further, both types of risks are calculated for certain receptors that in all probability will never be present at the site (e.g., residential). The land use for that part of NAS Key West does not include residential use in the foreseeable future, and access is restricted because it is part of a military installation. The IR 7 BRA identified three exposure scenarios resulting in risk exceeding the one in one million (1×10^{-6}) cancer threshold. The principal constituent contributing to the cancer risks is arsenic in soil and sediment. However, the uncertainty analysis indicates that the estimate of the cancer risk associated with arsenic for the three receptors (current adolescent or adult trespasser, future resident) is very conservative.

The BRA also identified a single noncarcinogenic risk scenario for the future resident exceeding the hazard index threshold of 1.0. The principal constituent contributing to the noncarcinogenic risk is antimony in surface water. However, the uncertainty analysis indicates that the estimate of the noncarcinogenic risk is very conservative as it involves exposure of hypothetical future residents.

An ERA was conducted to evaluate the possibility that aquatic or terrestrial ecological receptors may be at risk from site-related contaminants. The ERA was based on laboratory analyses of groundwater, surface-water, sediment, and soil samples; and laboratory analyses of shellfish collected from near-shore waters of IR 7. Contaminant concentrations in all media did not appear to pose significant risks to plants or animals. The ERA concluded that potential risk to terrestrial and aquatic receptors at IR 7 is negligible.

The proposed remedy for IR 7 is groundwater monitoring with land-use controls. The previous soil grading activities at IR 7 eliminated the need for additional remedial action. Monitoring with land-use controls will therefore be protective of human health and the environment at IR 7. The cost of implementing land-use controls and groundwater monitoring will be minimal particularly when compared with other remedial measures such as soil removal or groundwater remediation.

SCOPE OF THE REMEDIAL ACTION

The U.S. Navy considers that CERCLA Remedial Action allows various options for implementing remedies based on site conditions. For IR 7 at NAS Key West, the RI Report indicates that the IRA (soil cover) performed at the site reduced the threat to human health and the environment to acceptable levels in accordance with CERCLA and the NCP. Therefore, there is sufficient justification to propose the remedy of land-use controls and groundwater monitoring.

PUBLIC PARTICIPATION

To make a final decision and incorporate a remedy into the Decision Document, the U.S. Navy is soliciting public review and comment on this Proposed Plan for the proposed remedy to IR 7 at NAS Key West. CERCLA requires a comment period for the public to review and comment of the proposed remedy.

The comment period will begin on Sunday, October 18, 1998, which is the date of publication of the public notice in *The Citizen* newspaper. Friday, December 18, 1998 is the end of the comment period.

The Proposed Plan and the associated administrative file, including the RI Report, may be viewed and copied at the FDEP Office in Tallahassee, Florida between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday, except legal holidays. Additional copies of the RI Report and Proposed Plan are available for public review at the information repository in the Local and State History Department at the Monroe County Library, 700 Fleming Street, Key West, Florida (Phone 305-292-3595).

Further, the U. S. Navy has determined there is sufficient need to hold a public meeting. It will occur at 7:00 p.m. on Monday, November 16, 1998, at the Holiday Inn Beachside, N. Roosevelt Blvd., Key West, Florida. Please call Phillip Williams at 305-293-2061 for directions to the public meeting. At the meeting, the proposed remedy will be discussed and questions will be answered. The public meeting will also address the proposed remedies for IR 3 and AOC B. To request information about the public meeting or comment period, to obtain more information concerning this Proposed Plan, or to submit written comments, please contact Phillip Williams at the following address:

NAS Key West Contact

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All comments must be postmarked by Friday, December 18, 1998.

NEXT STEPS

Following the 60-day public comment period, the U.S. Navy will issue a final decision on the proposed remedy. The Decision Document, which will describe the remedy chosen for IR 7, will include responses to oral and written comments received during the public comment period. Concurrence from EPA and FDEP will be obtained before implementing the final remedy.

**Comments on Proposed Plan
Former Fleming Key North Landfill (IR 7)**

Place
Stamp
Here

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