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FACT FINDER NUMBER 24 ENVIRONMENTAL UPDATE FOR FIVE-YEAR REVIEW  
OPERABLE UNITS 1, 2, 3 AND 4 (OU1) (OU2) (OU3) (OU4)NAS JACKSONVILLE FL (PUBLIC  
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NAS JACKSONVILLE

# NAS JACKSONVILLE

## FactFinder Environmental Update

0003 Fact Sheet #24  
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### Five-Year Review Operable Units (OUs) 1, 2, 3, and 4

#### Introduction

The Installation Restoration Program is an ongoing Department of Defense program conducted at military bases nationwide to identify and address potential sites of contamination resulting from past operational and waste disposal practices. This fact sheet is one in a series to inform interested citizens of environmental investigations and remedial actions at Naval Air Station (NAS) Jacksonville.

The purpose of NAS Jacksonville's Installation Restoration (IR) Program is to identify and cleanup sites where contamination or possible contamination could pose a risk to people and/or the environment. This fact sheet summarizes the results of the five-year review conducted at Operable Units (OUs) 1, 2, 3, and 4. The purpose of the five-year review is to determine whether the selected remedies at the OUs are protective of human health and the environment. Five-year reviews are required by law to ensure that corrective actions are protecting humans and the environment.

#### Site Background

The OUs covered by this five-year review are shown on Figure 1. A brief introduction to each follows.

**OU 1:** There are two potential sources of contamination (PSCs) at OU 1. PSC 26, the Old Main Registered Disposal Area (a.k.a., Oil and Solvents Disposal Pits Area), operated from 1940 to 1979. PSC 27, the former PCB Transformer Storage Area was used until 1978, when a release of dielectric fluid containing polychlorinated biphenyls (PCBs) occurred.

There are six sites within OU 2: PSCs 2, 3, 4, 41, 42, and 43. PSC 3 managed more than 20,000 tons of sewage sludge containing metals and organic compounds. PSC 4 was used for the disposal of paint shavings, sewage sludge, asbestos, oil, and other petroleum products until 1975. An average of 90 gallons per day of heavy metal containing sludge was dewatered in PSC 41 drying beds. From 1970 to 1987 PSC 42 was used to as a polishing pond to separate suspended solid waste from the aqueous stream. PSC 43 was used from 1980 to 1988 to dewater metal sludges from electroplating operations.

There are seven PSC sites (PSCs 11, 12, 13, 14, 15, 16, and 48) and eight isolated areas (Areas A through G and Building 780) of elevated groundwater contamination within OU 3. PSC 11 was

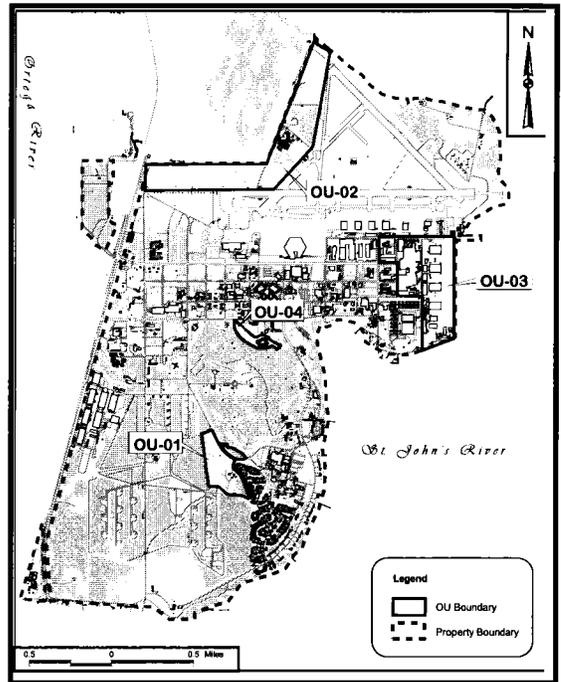


Figure 1. OU Site Map

the former Plating Shop with a waste water treatment system, where electroplating operations were conducted between the 1940s and 1990. PSC 12 was the old Test Cell Building used for chemical storage. PSC 13 was operated as a radium paint disposal pit from World War II until the late 1950s. PSC 14 was the Battery Shop and included a seepage pit that was used from 1959 to 1982. PSC 15 was a 10,000-square foot paint sludge and solvent disposal pit that reportedly operated from 1968 to 1978. PSC 16 has reportedly experienced multiple spills including JP-5 fuel, hydraulic oil, chrome, and cyanide. PSC 48 was the station's dry cleaners from 1962 until 1990. During site investigation activities groundwater contamination Areas A through G were identified. Building 780 was discovered as a source of soil and groundwater contamination during its construction.

For more information about the environmental cleanup at NAS Jacksonville, call the Public Affairs Office, (904) 542-3846, or the Installation Restoration Manager at (904) 542-4229. A public information repository is also available at the Charles D. Webb Wesconnett Branch of the Jacksonville Public Library, 6887 103rd Street, Jacksonville, FL 32210, (904) 778-7305.

Elevated concentrations of contaminants of concern were detected during storm sewer sampling activities.

OU 4 consists of only PSC 21 (a.k.a., Casa Linda Lake), which is an 11-acre man-made surface water body surrounded by Casa Linda Oaks Golf Course. The lake was identified as a PSC because of a one-time fish kill that occurred on May 6, 1979.

### Investigations

Numerous environmental investigations were conducted at OU 1 between 1990 and 1996. The environmental investigations were completed in 1996 with the Remedial Investigation/Feasibility Study for OU 1. The sampling and testing at the site showed that the soil on the landfill contained metals, PCBs, and radionuclides. The soil just outside the landfill contained petroleum products, metals, and PCBs. Petroleum was discovered floating on the groundwater in the area where oil was disposed of in pits in the ground, and the sediment in the creek that passes through the area contained pesticides, PCBs, and metals. The shallow groundwater in the area contained low levels of petroleum products and chlorinated solvents. Chlorinated solvents are used as cleaning compounds and degreasers. The materials found at OU 1 are a result of the past landfill disposal practices.

At OU 2, numerous environmental investigations were conducted from 1993 to 1997. Focused remedial investigations were conducted at the sites starting in 1993. The sampling and testing showed levels of metals in soil and sediment (e.g., cadmium, chromium, lead, nickel, and silver) at higher levels than those naturally occurring in the area. The materials were a result of past sludge disposal practices. Petroleum contamination was found at PSC 2 and the site was transferred to the State program, which oversees petroleum cleanup.

From 1992 to 2000, numerous environmental studies were conducted at OU 3. The environmental investigations were completed in 2000 with the Remedial Investigation/Feasibility Study for OU 3. The sampling and testing showed isolated sites of elevated groundwater contamination and a localized area of sediment containing "tar balls" in the St. Johns River near PSC 16. Also, the water in the storm sewers at the southern end of OU 3 exceeded the Florida Surface Water Standards.

At OU 4, environmental studies were conducted from 1997 to 1999. Focused remedial investigations were conducted at the site starting in 1997. A fish kill in 1979 was attributed to the application of a pesticide that was washed into the lake by heavy rains. Along with pesticides, other contaminants of concern included semivolatile organic compounds (SVOCs), PCBs, and metals in sediment, surface water, and/or fish tissue.

### Cleanups

At OU 1, an interim remedial action (cleanup) was started in 1995 to remove the petroleum floating on the groundwater. In September 1997, a Record of Decision (ROD), which specified the corrective action requirements for OU 1, was signed and required the petroleum recovery system to continue operating as the final remedy, along with soil removal and natural attenuation of groundwater contamination. In 1998, the contaminated soil and sediment designated in the ROD was excavated and landfilled. The OU 1 landfill was capped and covered protecting

the surrounding environment. In 1999, a long-term groundwater and surface water monitoring program to monitor the natural attenuation of the groundwater contaminants was started.

At OU 2, interim actions (cleanups) were designed to address contamination at each PSC. PSCs 3 and 4 were investigated and a small area of contamination was consolidated with the PSC 42 polishing pond cleanup and has been treated. The contaminated soil from PSCs 41 and 43 were also consolidated into PSC 42. PSC 42 underwent "in place" stabilization. The area, which was backfilled and seeded, is now a large green field on the northwest corner of the station. The cleanup at PSC 42 was completed in March 1997. As a result of the individual cleanups at PSCs at OU 2, the final remedial investigation for OU 2 recommend that no further remedial action was required except for land use controls (LUCs) and monitoring in accordance with the station's Resource Conservation and Recovery Act (RCRA) permit.

In September 2000, the ROD was signed for OU 3 and specified that the interim actions (cleanups) for two PSCs would continue to operate as the final remedy. Additionally, the cleanup of isolated areas of elevated groundwater contamination were addressed. Due to no evidence to suggest an ongoing potential source of contamination in the soil above groundwater, the ROD specified No Further Remedial Action Planned (NFRAP) for PSC 11, 12, and 13. It also specified NFRAP with implementation of LUCs for an industrial scenario for PSC 14 and 15. Isolated areas of elevated groundwater contamination at Areas A and E were withheld from the ROD to allow for additional investigations. A ROD was signed for groundwater at Area A in September 2006. A ROD has yet to be signed for Area E

Cleanup for PSC 16 involved the removal of tar balls from the storm water outfall area. The cleanup was performed in mid-2002. Cleanup for PSC 48 involved an air sparging system injecting air into the groundwater and off-gas treatment via two granular activated carbon beds. The interim remedial action for Building 780 involved a groundwater extraction treatment and a Soil Vapor Extraction system. Both of these systems have discontinued operations due to a lack of long-term effectiveness. The Navy is currently re-evaluating these sites and will select alternative cleanup options for each site.

Remedial alternatives were also chosen for the isolated areas of elevated groundwater contamination. Enhanced biodegradation was chosen for Areas C and D, which is accomplished by injecting nutrients to enhance bacterial growth and increase natural degradation of organic compounds. In-situ Chemical Oxidation was selected as the preferred alternative for Area F. Monitored natural attenuation was selected for areas B and G. The remedial alternative for the storm sewer is to collect storm sewer samples after remediation of Area F. If the concentrations exceed Florida Surface Water Standard, cured-in-place pipe will be the selected remedial alternative. Otherwise no further action is planned.

A ROD was signed in September 2000 for OU 4, and specified a remedial alternative for the lake that involved monitoring with institutional and passive habitat controls. The corrective actions were implemented in 2001 and continue.

## Five-Year Review Purpose

The purpose of the five-year review is to ensure that the cleanup methods selected at the OUs worked, or are working as planned, and that the actions are protecting human health and the environment.

As part of the five-year review three items were reviewed.

- The sites were inspected to make sure that the cleanup and protective measures are operating as designed.
- The historical OU documents were reviewed to determine if the remedial actions were implemented as designed, to determine if any new information has come to light since that time, and to determine if the remedial actions selected are working as designed.
- Current regulations were reviewed to make sure that no new laws have emerged making the selected cleanups inappropriate or ineffective.

## Five-Year Review Findings

The five-year review for NAS Jacksonville was conducted between December 2004 and April 2005. The results of the five-year review found that the selected cleanup methods at OU 1, OU 2, and OU 4 were implemented and completed to date as designed. The five-year review found that the cleanup actions performed to date are protective of human health and the environment. The review found that the Navy is meeting the requirements of the decision documents, and that the LUCs and long-term monitoring of the OUs are protective of human health.

At OU 3, PSC 14 and PSC 15 were found to be protective of human health and the environment. Area B at OU 3 is expected to be protective and, in the interim, exposure pathways are being controlled. PSC 48 and Building 780 were not protective because the monitoring well networks do not encompass the extent of groundwater contamination, and the response actions for these sites are not expected to achieve cleanup levels. Work is ongoing to identify the contamination area. Areas C and D were not protective because the monitoring well networks were not able to define the extent of groundwater contamination. A protectiveness determination cannot be made at this time for OU 3 Areas F and G until the remedial design is complete and implemented. Also, a protectiveness determination cannot be made at this time for PSC 16 until further information is obtained by making a formal determination of the actions required for this site.

Actions that need to be taken for PSC 48 and Building 780 include 1) implement groundwater restrictions and LUCs at the site to ensure short-term protectiveness, 2) completely assess the horizontal and vertical extent of groundwater contamination at each site, and 3) through the optimization effort, provide an alternate remedy for each site that will meet the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) criteria. The action that needs to be taken for Areas C and D is to implement groundwater restrictions and LUCs at the site to ensure short-term protectiveness.

For optimization, and to ensure the cleanup methods remain protective, several recommendations and required actions were noted. The more significant recommendations from the five-year review for each OU are listed below.

OU 1: Investigate soil and groundwater northwest of landfill.

OU 2: No significant recommendations.

OU 3: Ensure monitoring well networks encompass the entire contamination plume, complete the required actions from the optimization efforts, implement LUCs at various locations within OU 3, and complete activities at PSC 16 to achieve remedial action objectives.

OU 4: No significant recommendations.

## What's Next

With the finding that the cleanup actions at OU 1, OU 2, and OU 4 are protective of human health and environment, no major changes will occur. The majority of cleanup actions have occurred and long-term monitoring and maintenance programs are in place. The long-term monitoring at OU 1 and OU 2 are expected to continue and the recommendations will be implemented as detailed in the five-year review. With the finding that all the cleanup actions at OU 3 are not protective of human health and the environment, groundwater use restrictions and LUCs will need to be implemented, an assessment of the horizontal and vertical extent of the groundwater contamination will need to be made, and a different remedy will need to be provided for PSC 48 and Building 780 in order to meet CERCLA criteria. The next five-year review will occur in 2010, and OU 1, OU 2, OU 3, OU 4, and other sites undergoing cleanup at the station will be included in the review to ensure that human health and the environment are protected.

## Available Information

Information on the five-year review, as well as materials regarding environmental cleanups at NAS Jacksonville, are available for public review at the Webb Wesconnett Branch of the Jacksonville Public Library, 6887 103<sup>rd</sup> Street, Jacksonville, Florida 32210.

## Written Comments/Mailing List

If you would like more information or would like to become a member of NAS Jacksonville's Restoration Advisory Board (RAB), which meets regularly to discuss cleanup actions on the installation, please contact:

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