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FACT SHEET ENVIRONMENTAL ACTIONS AT OPERABLE UNIT 4 (OU 4) NTC ORLANDO
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NAVFAC SOUTHERN



Update on Environmental Actions at Operable Unit 4 Naval Training Center Orlando, Florida



This fact sheet was prepared to inform interested citizens about the former Naval Training Center (NTC) Orlando environmental program. Fact sheets are distributed as needed to keep the community updated on cleanup progress. Additional information may be obtained by calling the Navy's Remedial Project Manager, Art Sanford, at (843) 743-2135.

Environmental Studies at Operable Unit 4

Environmental studies and cleanup actions are ongoing at Operable Unit (OU) 4, located at Area C of the former Naval Training Center (NTC) Orlando (see Figure 1). These studies have identified chlorinated solvents in groundwater (water below the ground surface). Chlorinated solvents are industrial chemicals commonly used in dry cleaning and to degrease and clean metal. While the studies completed to date do not show any health concerns associated with this contamination, the Navy is completing additional studies and cleanup actions to further ensure the health and safety of the community.

This fact sheet has been prepared to share the results of environmental studies and cleanup actions, present information about upcoming activities, and invite you to contact us with any questions or concerns.

Location of Clean up

A dry cleaning facility (Building 1100), operated by the former NTC Orlando, was located in the northern part of Area C, south of the Audubon Place City Condominiums along Plaza Terrace Drive. Lake Druid is located west of the former dry cleaning facility.



Figure 1. Location Map

History of the Site

Building 1100 was constructed in 1943 and used as the base laundry facility. Dry cleaning began around 1958, and the common chlorinated solvent tetrachloroethene or perchloroethene (also known as PCE) was used there.

As part of base closure, an environmental investigation was performed at the property in 1994 during which PCE contamination associated with the dry cleaning facility was found in the groundwater. Initial investigations identified contamination migrating west with groundwater flow toward Lake Druid.

To protect Lake Druid from impacts due to contaminated groundwater, the Navy installed a recirculation well system in 1997 between the laundry facility and the lake to intercept contaminated groundwater. In 2001, the system was upgraded to a groundwater extraction and treatment system that continues to operate to date.

In addition to operating the groundwater extraction and treatment system, the Navy has taken measures to clean up the source of contamination. In 2004, Building 1100 was demolished; giving access to the location where solvents were originally spilled (called the source area). This allowed direct treatment of the source area and allowed access for additional investigations directly beneath the building.

Shallow Groundwater Cleanup

The plan to clean up the shallow groundwater includes treating the contamination in the source area so that natural processes will reduce concentrations to safe levels before reaching Lake Druid. In the meantime, the groundwater extraction and treatment system will continue to collect and treat contaminated groundwater to prevent adverse impacts to the lake.

PCE naturally degrades in the ground over time, producing other chlorinated solvents as byproducts and eventually breaks down to harmless chemicals. Degradation occurs with the assistance of naturally-occurring bacteria. To encourage degradation, the Navy has injected a soybean product, known as emulsified oil substrate (EOS[®]) into the ground in the areas of highest contamination. EOS[®] acts as a food source for these bacteria, speeding up the cleanup process.

What is tetrachloroethene (PCE)?

PCE is a nonflammable, colorless liquid that evaporates easily and has a sweet odor. It has been used as an ingredient in consumer products such as spot removers and fabric finishers, and is also used at dry cleaning facilities and for cleaning metal. People who work with PCE have the greatest chance of exposure to it. It can be released to air and water by evaporation or emissions from industrial and dry cleaning plants, and from landfills. PCE is not very soluble in water and is denser than water (sinks).

Hawthorn Zone of Groundwater

Additional investigations performed following demolition of Building 1100 identified deeper contamination than previously observed. In 2006, samples were collected to further assess the size and depth of this deeper contaminated groundwater and to ensure the protection of the drinking water aquifer. The Floridan aquifer, which begins more than 300 feet below the ground surface, is a source of drinking water. No contamination from the site has reached the Floridan aquifer.

Because PCE has a higher density than water, some of the PCE migrated down to the Hawthorn water zone approximately 80 to 130 feet below ground surface. Figure 2 shows the zones of water and soil below ground at the site. Unlike the groundwater flow in the surficial aquifer that flows west toward Lake Druid, groundwater in the Hawthorn zone flows north. Groundwater flow in this zone is very slow – less than 9 feet per year and contaminants are approximately 120 feet below ground.

Two monitoring wells were installed north of the OU 4 property boundary on the Audubon Place City Condominiums property in March 2009. No contaminants have been detected in these two wells. Natural degradation processes appear sufficient to clean up the contamination in the Hawthorn zone without adverse impacts to human health or the environment.

Current Conditions

Ongoing evaluations of monitoring data and performance of the groundwater extraction and treatment system have shown that most of the contaminated groundwater is captured by the extraction system. The contaminated groundwater that was either already near

the lake or that has migrated beyond the reach of the extraction system, has naturally degraded primarily to the breakdown chemical cis-1,2-dichloroethene (DCE) which is not harmful to surface water. Contamination has not been detected in Lake Druid due to further dilution of the small quantities of solvents.

What's Next?

Although the OU 4 property has been transferred, the Navy remains responsible for the environmental cleanup associated with past site operations. Future use of the property is limited to non-residential uses and groundwater use is restricted.

The eastern portion of OU 4 is currently owned by Orlando Heights, LLC and the planned future use is industrial. The western portion of the property has been transferred to the City of Orlando through the Department of Interior for future use as a park.

Groundwater will continue to be sampled twice each year at OU 4 to evaluate cleanup progress. The groundwater treatment system will continue to operate, including monthly maintenance and sampling. Additional EOS® injections may be performed if necessary.

For More Information...

If you have questions about OU 4 or about the environmental program at the former NTC Orlando in general, please contact the Navy Base Environmental Coordinator (BEC) Mark Davidson at (843) 743-2124. Reports on the work at the former NTC can be reviewed at the Orange County Public Library, Orlando Branch (4th floor), 101 East Central Boulevard, Orlando, Florida 32801 (407) 835-7323.

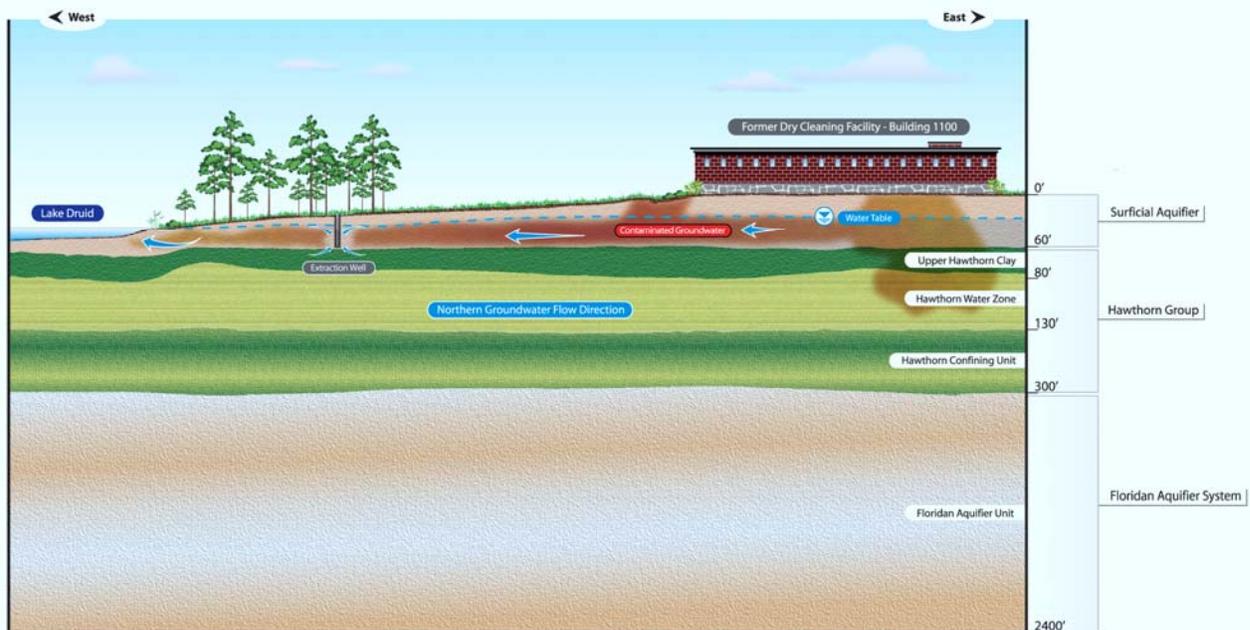


Figure 2. Water-bearing Zones and Soil Below Ground Surface