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NAVAL SUBMARINE BASE

ENVIROUPDATE

KINGS BAY, GEORGIA

Installation Restoration Program Newsletter

December 1996

Volume 3, Number 4

This newsletter is provided to the community by Naval Submarine Base (SUBASE) on a quarterly basis or when significant developments occur in the environmental cleanup program. Copies of previous editions of EnviroUpdate can be obtained through the Public Affairs Office. For more information, contact Robert Steller, Public Affairs Office, (912) 673-4714.

Fieldwork in Progress...

To upgrade the interim measure groundwater treatment system.

Many of the activities that we have reported in the last few newsletters have been completed or are currently underway. These activities include the redevelopment of existing wells, Phase II interim measure upgrades, and the pulsed pumping test.

✓ **Pumping wells redeveloped to improve system's efficiency.** The existing wells in the interim measure treatment system were recently redeveloped to increase the wells' efficiency in order to optimize the overall performance of the treatment system. Redevelopment of the wells was conducted from November 11 through November 27th. For more information on well development, see the March 1996 edition of *EnviroUpdate*.

The purpose of redeveloping the wells is to remove materials from the wells that may clog the screened interval and affect groundwater flow into the wells. After a well has been operating for a while, sediment, biological material, and mineral buildup needs to be removed from the well screen, filter pack, and surrounding soil. During the fieldwork, special materials used in the drinking water well industry were introduced into the well to attack and break down any buildup, biological growth, or fine-grained material that collected in and around the well over time. These materials were then removed from the well and tested for proper disposal. Tests were conducted during and after the redevelopment of the wells. These data will be evaluated to assess improvements in well performance following redevelopment.

✓ **New recovery well installed and added to the groundwater extraction and treatment system.**

In late November, SUBASE installed another recovery well near the landfill to increase the treatment system's ability to remove contaminants from the groundwater. As part of the Phase II upgrades, the well was located in the center of the capture zone in order to remove and treat groundwater from the areas with higher levels of contaminants (for more information on the capture zone and Phase II upgrades, see the December 1995, March 1996, and June 1996 newsletters).

The well was dug to a total depth of 75 feet below ground surface with the screened portion between 30 and 70 feet. After the well was installed and tests conducted, a general contractor connected the new well to the overall system. This work, completed in mid-December, entailed setting up the necessary electrical and mechanical connections between the new well and the treatment pad. With the new well connected to the system, several tests are underway to evaluate the system's overall performance. In addition, one of the original recovery wells, referred to as RW5, was filled in or abandoned during the fieldwork because of operational problems. These problems were associated with the recurring buildup of biological material in the well and related pipes. (*Continued on page 2*)

Remember:

Our next Restoration Advisory Board meeting will be held on Thursday, January 23, 1997 at St. Marys Library at 10:00 a.m.

Please join us!

Community Q&A

Is there information about SUBASE's Installation Restoration Program available through the Internet?

We are glad you asked! SUBASE is in the process of adding an environmental section to our existing homepage (see the highlighted box below for our Internet address). This newsletter, *EnviroUpdate*, and other program materials will be available on-line in the next few months. It is our intent to get information about the environmental cleanup program out to the public in the most convenient ways. Of course, we will continue to mail information, newsletters, and notices to interested individuals on the community mailing list. If you would like to be added to the current mailing list, please contact Bob Steller in the Public Affairs Office, 673-4714.

?? Keep your questions coming!

We want to hear your questions, comments, and suggestions. If we can get information out to you about the cleanup program in a more effective way, please let us know. Call Bob Steller or send us an email message at:

pao@subasekb.navy.mil

Our Internet address is
<http://www.gnatnet.net/>
~ kingsbay/



Pumping tests continue to help us better understand groundwater flow conditions. As we mentioned in the last newsletter (September), the second sequence of the pulsed pumping would be ongoing through the end of the year. We need to pump approximately six million gallons of groundwater out of the aquifer before we turn the pumps off and let the system rest. We expected that by mid-November we would have pumped the six million gallons and that the test would be completed by the end of the year. However, with all the fieldwork during the late fall and interruptions in the pumping schedule, we are slightly behind schedule with the pulsed pumping test. We have not pumped the needed volume of groundwater but expect that to happen during the first quarter of 1997. In addition, during an October meeting, the project team agreed to expand the scope of the test, which may impact the overall test schedule slightly.

Next Steps

Evaluation of the system's performance data is a 1997 priority. Now that the fieldwork described above is complete and additional data collected, our engineering consultants will be evaluating the technical data during the first quarter of 1997. Results from groundwater and air samples will be available and evaluated in relation to historical data. This information from the field program as well as the results from the second pulsed pumping test will help SUBASE assess the overall performance of the treatment system and long-term cleanup options at the landfill. In addition, our technical team will be preparing engineering drawings and revising the operation and maintenance manuals that reflect the modifications and upgrades to the treatment system.

SUBASE will be developing the scope and approach for completing the risk assessment for Site 11. Since the Georgia Department of Natural Resources (GADNR) recently issued risk assessment guidance, SUBASE is evaluating the guidance and preparing a workplan for the agency's review. Completing the risk assessment is an important step in the cleanup program. Results of the risk assessment may be used in developing the cleanup goals for groundwater at Site 11. *More detailed information about risk assessments is provided on page 3.*

How Cleanup Decisions Are Made

The Navy and regulatory agencies, as part of the cleanup process, carefully evaluate the potential risks to human health, plants, or animals resulting from exposure to chemicals at the site. This evaluation, called a risk assessment, is a scientific study that may help the decision-makers decide what to do as far as cleaning up the site. Let's take a closer look at what it is and how it is done.

What is a risk assessment?

A risk assessment is a scientific estimation of the probability of harm from exposure to chemicals at a site. It involves identifying what chemicals are present, estimating how and to what extent people, animals, and plants might be exposed to them, and assessing any health or ecological effects associated with the chemicals.

When is a risk assessment conducted?

An evaluation of potential risks is done throughout the cleanup process. It can be done at any time if sufficient data are available. Typically a risk assessment is conducted during the RCRA Facility Investigation, when the nature and distribution of contamination is being determined. The results of the risk assessment are used to answer some important questions:

- Should we clean up the site or leave it as is?
- What levels should the cleanup action achieve?
- What cleanup method should be used?

How is the risk assessment done?

A baseline risk is estimated by using mathematical models and by making certain assumptions to predict the potential risk of health or ecological problems occurring *if no cleanup action is taken at a site*. Spec-

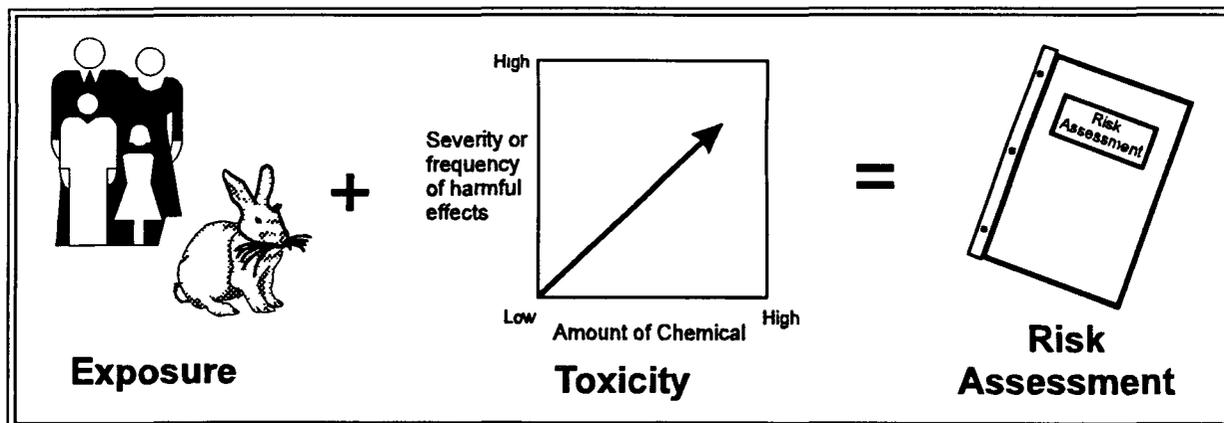
ialists in this field collect data to identify the type and form of chemicals present at the site. It is also important to know where the chemicals are located and at what levels as well as whether or not they are moving in the environment. Assumptions are also made about the following:

- How and to what extent people are exposed to the chemicals;
- Health effects associated with the chemicals and how they interact with the human body, animals, or plants; and
- Current and future uses of the site.

Risk assessment has three major steps: exposure assessment, toxicity assessment, and risk characterization. The *exposure assessment* first identifies humans, plants, or animals (referred to as "receptors") that may contact contaminated surface water, groundwater, sediment, or soil and just how the "receptors" may be exposed (e.g., by contact with skin or through ingestion). The *toxicity assessment* then lists each chemical found at the site, provides the levels at which it is measured, and identifies possible harmful effects of each chemical.

What happens to the results?

The results of the exposure and toxicity assessments are then combined, evaluated, and summarized. The risk assessor determines the kinds of risks and whether or not the risks are great enough to cause health or ecological problems. In making assumptions for the exposure and toxicity assessments, factors are often increased so that the results of the risk assessment are overestimated. By doing this, the scientists and the regulatory agencies tend to overestimate potential risks to ensure their decisions are protective of human health and the environment.



Questions & Answers

Naval Submarine Base, Kings Bay - Who To Call?

For general questions or information about SUBASE and the environmental program, contact:



Robert Steller
Public Affairs Officer
(912) 673-4714



An Information Repository containing documents related to the environmental cleanup activities at SUBASE is also available to the public.

The Information Repository is located at:

St. Marys Public Library
100 Herb Bauer Drive
St. Marys, Georgia 31558
Telephone: (912) 882-4800

Become involved in the environmental program at SUBASE, attend a RAB meeting!
These meetings are held quarterly and are open to the public.
Mark your calendars for the next meeting scheduled for January 23rd at 10:00 a.m.

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