(Continued from page 1)

low ground surface. To access the fuel, 31 recovery wells have been installed.

Since 1994, the remediation technology for this site has involved physical removal of the fuel layer in the three plumes. Several technologies have been applied in the time since 1994, including the vacuum-enhanced bioremediation technology, as well as belt skimmers and passive skimmers. Over 3,400 gallons of fuel have been removed from the site.

The current technology employed at the site is removal of the fuel layer by vacuum extraction. This technology involves applying a vacuum at the extraction well, with collection of the fuel layer and associated water in a vacuum truck at the site. The gas phase resulting from application of a vacuum is passed through an activated carbon column for removal of volatilized organics. The collected fluids are transported to a holding tank for recycle/reuse.

Current plans are to continue using the vacuum system for enhanced fluid recovery.

Mr. Jason Shannon of Ellis Environmental Group demonstrates use of oil/water interface probe at one of the Building 2070/ 2072 area recovery wells.

June RAB Snapshots

Restoration Advisory Board Members		
Mr. Steven Coyle, Robins AFB Installation Co-Chair	**Ms. Kathy Bragg, Macon** Community Member	**Mr. Broderick Lowe, Warner Robins** Community Member
Mr. James Harden, Warner Robins Community Co-Chair	**Dr. Dan Callahan, Warner Robins** Community Member	**Mr. Mike Maffeo, Macon** Community Member
Ms. Liz Wilde **U.S. EPA Region 4** Federal Facility, Hazardous Waste Div.	**Ms. Marianne Golmitz, Warner Robins** Community Member	**Dr. M.B. Neace, Macon** Community Member
Mr. Brent Rabon **GA EPD** Hazardous Waste Management	**Mr. Mike Hutchinson, Centerville** Community Member	**Dr. Brian E. Rood, Macon** Community Member
Mr. Kevin Long, Robins AFB Chief, Compliance and Restoration Division	**Dr. Joyce Jenkins, Fort Valley** Community Member	**Dr. Joseph Swartwout, Fort Valley** Community Member
	Mr. Steve Johnson, Macon Community Member	**Mr. Don Thompson, Macon** Community Member

Fact Sheet

Robins Air Force Base Restoration Advisory Board

A publication of Robins AFB

Volume IV, Issue 2, June 2001

The Robins AFB RAB

Robins Air Force Base (AFB) established the Restoration Advisory Board (RAB) in September 1994, recognizing the importance of public involvement. The Board, made up of members from the community and the Base, holds four public forums per year designed to encourage regulatory agencies, local communities, and the Base to work together in order to restore the environment. The RAB members advise Robins AFB personnel and disseminate information to all interested parties.

June RAB Meeting Held

The RAB held its summer meeting on June 14, 2001, at the Pine Oaks Golf Course Club House on Robins AFB. The meeting had the theme, ***"Field Activities in Support of Remedial Actions."*** The meeting was conducted as a tour of four remedial sites, including the enhanced fluid recovery system at Building 2070/2072; a groundwater well sampling demonstration; the enhanced bioremediation pilot system operating at Building 680; and the soil vapor extraction (SVE) system operating at Building 645. At the conclusion of the tour, attendees returned to the Clubhouse for a formal meeting.

What's Inside:

The RAB *Fact Sheet* provides a summary of the information and topics discussed in the last meeting. The next meeting will be held on September 13, 2001.

Visit us on the web at
www.em.robins.af.mil

Enhanced Fluid Recovery Success at Building 2070/2072

Supporting the mission of Robins AFB has always required that fuel be available in large quantities at various locations on the installation. One such location that was activated in the late 1950s was the Building 2070/2072 area adjacent to the flight line. During past operations at these facilities, fuel leaks and spills occurred. Addressing attendees at the tour site, **Ms. Debra Fitzpatrick**, Project Manager in the **Environmental Management Directorate** and **Ms. Carol Benton** of **Ellis Environmental Group** provided both site background and a demonstration of the current remediation technology in place.

Ms. Debra Fitzpatrick (right, center) describes the fuel recovery process at the Building 2070/2072 area. Ms. Fitzpatrick is assisted by Ms. Carol Benton (left of display) and Mr. Jason Shannon (right of display) of Ellis Environmental Group.

As a result of previous fuel releases, a layer of fuel (JP-4 and JP-8) exists as a separate layer atop the groundwater in the area of the Building 2070/2072 facilities. Past investigations have determined that three separate plumes exist at an average depth of six to eight feet be-

(Continued on page 4)

Sampling of Groundwater Wells Demonstrated

Ensuring the quality of the groundwater flowing under Robins AFB is of primary importance to the Environmental Management Directorate. This crucial task involves routine assessment of groundwater quality in the vicinity of remediation sites on Base. An annual Basewide sampling program is performed to ensure that areas of impacted groundwater are fully identified and that this groundwater does not affect the drinking water wells.

Mr. Fred Otto (right of display), EM Directorate, and Mr. Don Wandling (left of display), Earth Tech, describe the well purging technique being demonstrated by members of the Earth Tech groundwater sampling team.

At the March 2001 RAB meeting, attendees had been presented details of the wellhead protection program in place. At the June meeting, attendees saw demonstrated first-hand the detailed procedures used to sample a typical groundwater well. **Mr. Fred Otto**, Project Manager for Basewide Sampling in the **Environmental Management Directorate**, and **Mr. Don Wandling** of **Earth Tech** briefed the RAB members, and Mr. Wandling led a demonstration team through sampling procedures.

The raw numbers themselves indicate the scale of the sampling effort. The installation has approximately 750 groundwater monitoring wells; in the most recent annual sampling event just completed, 572 wells were sampled over approximately 27 days. The remaining wells are currently not part of the routine monitoring network.

During the demonstration, RAB members observed the techniques for water level measurement and scanning for volatile organic compounds (VOCs) in the breathing zone of a well, watched a well purge procedure demonstration, observed well sampling procedures from the two types of well pumps routinely employed (submersible and peristaltic pumps), and learned the details of sample management and chain-of-custody procedures. The briefing team pointed out the meticulous decontamination procedures used to ensure that no cross-contamination results from well to well or sample to sample.

Mr. Don Wandling, Earth Tech, demonstrates the sample collection protocol used in the Basewide groundwater sampling program.

Naturally Occurring Microbes Make Enhanced Bioremediation Work

"Enhanced bioremediation" is a fancy way of saying, "Help existing microbes at a site clean up the contamination." Attendees at the June RAB meeting visited one such site, located adjacent to Building 680. Briefings by **Mr. Ted McKim**, Project Manager in the **Environmental Management Directorate**, and **Mr. Dave Woodward** of **Earth Tech**, highlighted the technology and the tour of the Building 680 site showed the hands-on aspects.

RAB members were invited into the enhanced bioremediation unit for a detailed explanation of the process.

Ms. Liz Wilde (above right), U.S. EPA Region 4, and Mr. Brent Rabon, (above center) Georgia EPD, observe the enhanced bioremediation unit at Building 680 site.

According to the briefers, this site contains subsurface contamination including the chemicals methyl ethyl ketone (MEK) and toluene. Both of these compounds provide an excellent food source for naturally occurring microorganisms. By providing the other necessities (oxygen and additional nutrients) through injection into the contamination area, the natural biodegradation process is "enhanced," or made faster.

As a three-month pilot test, results have been impressive. Levels of MEK dropped from approximately 50,000 parts per billion (ppb) in the subsurface to below detection limits, and levels of toluene dropped from 300,000 ppb to 56,000 ppb during the first two months of operation. The engineers and scientists monitoring this site are hopeful to receive a time extension for the pilot test to enable complete remediation.

Soil Vapor Extraction Demonstrated at Building 645

As briefed in the March 2001 RAB meeting, soil vapor extraction (SVE) is a technology for removing organic vapors from the subsurface environment. A tour of the SVE program underway at Building 645 was conducted during the June RAB meeting by **Mr. Ken Wharam**, Project Manager in the **Environmental Management Directorate**. RAB members saw the components of an operating SVE system and observed how successful such a system can be.

The Building 645 site contains concentrations of trichloroethylene (TCE) in the subsurface. TCE is volatile, and significant quantities of the compound exist in the vapor phase in the subsurface. An SVE system consisting of six recovery wells and associated aboveground components has been operated since January 2001. The TCE removed from the subsurface is adsorbed onto activated carbon contained in a vessel at the site. To date, approximately 540 pounds of TCE have been removed from the subsurface, or 4.5 pounds per day of operation. The system continues to show significant success as a viable remedial action at this site.

Mr. Ken Wharam (center), EM Directorate, provides an overview of the Building 645 SVE system configuration and summarizes operational performance to date.

For more information regarding the RAB, contact **Ms. Charline Logue**, **Robins AFB RAB Manager** (478) 926-1197, ext. 128.