



# Report to STAKEHOLDERS

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## CELEBRATING EARTH DAY

Many visit mobile home park at  
Edwards Air Force Base for Earth Day  
*page 4*



Dual-extraction system shut down,  
cleanup continues at Site 16

*page 3*

# Report to STAKEHOLDERS

*Report to Stakeholders* is a publication of Edwards Air Force Base, 95th Air Base Wing, Environmental Management. Its purpose is to inform and educate the public, base workers and residents about continuing environmental and safety efforts on base. It currently has a circulation of 6,000, including about 2,000 subscribers.

Contents of the *Report to Stakeholders* are not necessarily the official view of, or endorsed by, the U.S. government, the Department of Defense or the Department of the Air Force.

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## in this issue

Q&A: What is taxidermy?	2
Restoration efforts at Site 16 continue despite shutdown of cleanup system	3
Crowds flow into event at base mobile home park	4
What is in your drinking water?	6
Restoration budget big on cleanup	7
Information	8

**Q.** I have noticed stuffed animals at some Environmental Management events. What is it called when an animal that used to be alive gets stuffed?

**A.** A variety of desert animals is on display in the lobby of the Environmental Management building. All of these animals have been taxidermied. They were either hit by vehicles or died of natural causes.

Taxidermy procedures involve removing the natural skin from the specimen and replacing the skin over an artificial body and adjusting it until it appears lifelike.

According to [www.taxidermy.net](http://www.taxidermy.net), the modern practice of taxidermy incorporates many crafts like carpentry, woodworking, tanning, molding and casting. It also involves artistic talent like sculpture, painting and drawing.



**DISPLAY** — Shown are some animals used for display at various events at Edwards. These same animals, all taxidermied, are usually located in the Environmental Management building lobby.



### What's on the cover?

#### EARTH DAY/ARBOR DAY TREE

**PLANTING** — From left, Robert Wood, Environmental Management director, Col. Nancy Wharton, 95 Air Base Wing vice commander, Eddie the Edwards Tortoise and a few children plant a tree at the Earth Day event in April. Read article on page 4.

# Restoration efforts at Site 16 continue despite shutdown of cleanup system

**W**ith an eye toward rising costs and future mission support, Edwards Air Force Base restoration experts dismantled a dual-extraction system at Site 16 in early April 2008. The system removed nearly 400,000 pounds of contamination from the soil and groundwater over its 11-year lifetime on the Main Base Flightline, Operable Unit (OU) 1.

“The effectiveness of the groundwater extraction system dropped significantly,” said Paul Schiff, restoration program manager for OU 1. “The absence of increased concentration in the groundwater after the system was shut down in November 2006 led to our decision to dismantle the dual-extraction system.”

In fact, over the course of the system’s lifetime, it yielded low results in comparison to the vapor system, extracting only 1,957 pounds of contamination versus 388,328 pounds taken from the vapor-extraction wells.

Because of the high success rate of the vapor wells, and because elevated concentrations remain in the vadose zone above groundwater, at Site 16, those wells will still function in spite of the system being dismantled. The vadose zone extends from the top of the ground surface to the water table and is composed of different types of soil, such as sand or clay.

“Soil treatment at Site 16 will continue as we plan to link the vapor-extraction wells to a dual-extraction system at Site 18 later this year,” Schiff said.

“Although there will be costs to integrate the Site 16 vapor wells into the Site 18 system, this cost will be recovered in a few years with the money saved from not operating the Site 16 system.”

Another benefit of removing the Site 16 system is it frees up valuable real estate on the flightline.

“With the F-35 aircraft scheduled to arrive, those who work in the Joint Strike Fighter (JSF) program wanted to reclaim the land where the Site 16 system resided,” Schiff said. “The site location was returned to its pre-existing native condition. The area may be paved or a building may be constructed.



**DECONSTRUCTION** — A contractor stands on a lift next to the dual-extraction system at Site 16. The Environmental Restoration Program system was dismantled in early April.

“We try to do everything we can to support the flight test mission while protecting human health and the environment.”

Contamination at Site 16 includes the solvent trichloroethene (TCE) and a TCE breakdown product, cis-1,2-dichloroethene. The other primary contaminants are the fuel compounds benzene, toluene, ethylbenzene and xylenes, often referred to as BTEX. These contaminants are the remnants of past aircraft testing, operations and maintenance activities. The BTEX originated from a large jet fuel release that occurred in 1983 from a jet propellant type pipeline.

The presence of TCE is attributed to historical wastewater runoff from aircraft ramps located within the Site 16 area. Trichloroethene, normally used for degreasing metal parts, can naturally degrade to cis-1,2-DCE over time if the right conditions exist within the groundwater.

During the Site 16 interim removal action, Schiff focused on the area of high TCE concentration, an area referred to as a ‘hot spot.’

“We accomplished our interim removal action goal of reducing the TCE hot spot

and other contaminants,” Schiff said. “Now that we’ve reached the limitations of the groundwater extraction system, we have to use a more effective method of addressing the remaining groundwater contamination.”

Base remediation experts have proposed an amendment for *in situ*, or in place technologies — either bioremediation or chemical oxidation — to further reduce what remains of the contaminant ‘hot spot.’

“Granitic bedrock makes all cleanup approaches difficult,” Schiff said. “We calculate the *in situ* treatment will have better success because it will be able to desorb, or remove, the remaining contaminants from the bedrock. A pump-and-treat system could not do that.”

*In situ* treatment is just one of many cleanup alternatives being considered by base officials. Restoration experts recently completed the OU1 feasibility study, which evaluated and compared these various alternatives. Currently, they are working on completing a proposed plan for OU1 to present these alternatives for public review and comment before a final cleanup remedy can be selected and subsequently implemented.

# EARTH DAY



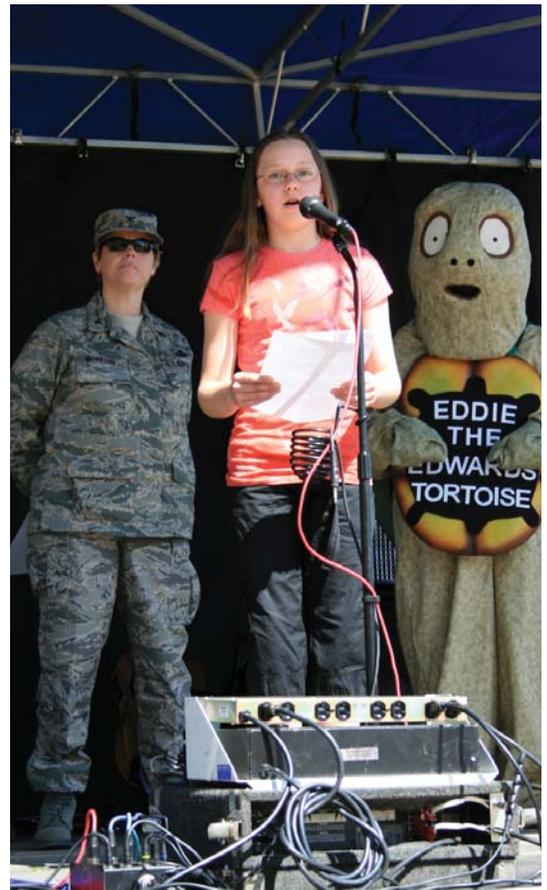
**SLITHERIN'** — Biologist Jennifer Beich, left, holds on to a gopher snake while students touch it.



**FACE TIME** — A boy puts camouflage face paint on himself while visiting the Security Forces booth at the Environmental Management Earth Day event.



**SWEET**  
Children visiting the Base Environmental Analytical Laboratory booth experience liquid nitrogen ice cream.



**SPOKEN WORD** — One of the winning students who participated in this year's Earth Day essay writing contest reads her essay, while Col. Nancy Wharton, left, and Eddie the Edwards Tortoise look on.

# Crowds flow into event at base's mobile home park

**H**undreds of people celebrated Earth Day at Edwards Air Force Base with educational exhibits and fun activities for all ages at the mobile home park across from the Base Exchange, April 17.

Nearly 700 people attended the event themed “Confronting Climate Change in California and Around the Globe” and hosted by Environmental Management. Every aspect of the event was designed to educate people on reducing waste and limiting their negative impact on the environment.

“Our job at Environmental Management is to educate people, make them think about their lifestyles and how they can make a difference,” said Bob Wood, director of Environmental Management (EM).

The event included workshops on global climate change; corporate vendors promoting renewable energy, hybrid vehicles and other ways to become more environmentally conscious; displays from the various groups within EM, including archaeology and air quality; information on carpooling; and Southern California Edison’s mobile education unit. Visitors were able to test their knowledge and win prizes with the Environmental Buzz game, tour the Edwards Fire Department’s Hazardous Materials vehicle, and winners of the poster and essay contests from base schools were presented certificates during the opening ceremony from Wood and Col. Nancy Wharton, 95th Air Base Wing vice commander.

Arbor Day also was observed with the planting of a tree at the park. Eddie, the Edwards Tortoise, and McGruff, the crime fighting dog, entertained the children while live music helped to create a festive atmosphere.

“Small acts of environmental conservation by each person can make a huge difference in the long run,” Wood said. “Each year, the attendance at Earth Day grows, proving that more people are hoping to learn how to make that difference.”

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**GOT PRINTS?**  
Staff Sgt. Melanie Slagle of Security Forces takes a child's fingerprints at the Security Forces booth, which featured child identification kits.



**STRINGS ATTACHED** — Archaeologist Ivan Sergejev, left, and Range Rider Jessica Porter-Rodriguez assemble plastic arrowhead and bead necklaces for visitors at the Cultural Resources booth.



**GEAR UP** — An Edwards Air Force Base firefighter looks on while two youngsters try on hazardous materials gear.



**WATER CHECK** — Staff Sgt. Luis Magana, left, and Airman 1st Class Caleb Hayes, right, of BioEnvironmental Engineering assist one another as they do a weekly water sampling for arsenic at South Base.

## What is in your drinking water?

**T**here is nothing like a cold glass of water on a hot summer day. Water is a resource that connects every living organism on Earth — we all need it to survive. Yet, we often wonder if the water we drink is safe and free from contaminants.

Under the Consumer Confidence Reporting Rule of the *Federal Safe Drinking Water Act of 1974*, community water systems are required to report water quality information to their consuming public. At Edwards Air Force Base, environmental health technicians are responsible for routinely sampling the drinking water on base, and reporting those findings in the annual Consumer Confidence Report (CCR).

This report, published each year on Centernet, the base Website, and in the *Desert Eagle*, provides information on the sources of water, the constituents of the water being tested and the health risks associated with any contaminants. The latest report, published in the *Desert Eagle* June 6 with data from 2007, reports that the water at Edwards is safe to drink.

“The CCR covers all chemicals required to be sampled by the U.S. Environmental Protection Agency (EPA) and the state Department of Health Services (DHS),” said Jeanette Van Norden, environmental health technician at the base Bioenvironmental office. “All of the data on the current 2008 report is actually compiled from

the prior year because we cannot prepare a report with data that we don't have yet," Van Norden added. "The report breaks down the quality of our water so that anyone can understand it, and this in effect gives our consumers the confidence they need to have that the water they drink while at Edwards and at the Air Force Research Laboratory is safe for consumption."

The Edwards Main Base drinking water system draws water from two sources — seven on-base groundwater wells and surface water supplied by the Antelope Valley East Kern (AVEK) Water Agency. According to the CCR, the water supplied by AVEK is finished drinking water quality. The same water line that supplies the base serves other customers including the community of Boron. The AVEK water primarily comes from the California Aqueduct, and additional chlorine is added to maintain microbial control as the water travels through the system.

Before the water makes it into the California Aqueduct, it originates from rivers, lakes, streams, ponds, reservoirs, springs and wells. According to the CCR, as water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material. It can pick up contaminants from the presence of animals or human activity.

There are five categories of contaminants that may be present in source water. They include: microbial contaminants, inorganic contaminants, pesticides and herbicides, organic chemical contaminants, and radioactive contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk

because regulations are in place that limit the amount of certain contaminants in water provided by public water systems, as well as in bottled water.

At Edwards, environmental health technicians monitor for lead and copper, as well as radioactivity, every three years. Additionally, they annually monitor for inorganic chemicals, volatile organic chemicals, and taste, odor and appearance factors.

The 2008 CCR will be published by July in the *Desert Eagle* and on the Centernet.

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## Water conservation tips

- Turn water off when shaving and brushing your teeth
- Run only full loads in washing machine and dishwasher
- Adjust lawn sprinklers to water the grass not the street
- Take shorter showers; turn water off while lathering up
- Use the garbage can rather than the garbage disposal

# Restoration budget big on cleanup

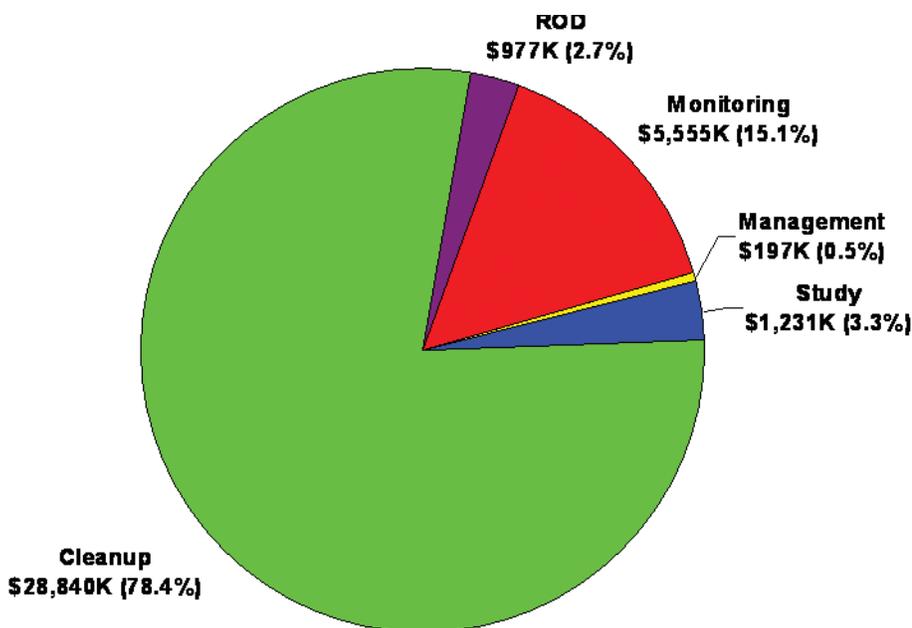
The Restoration Program introduced its fiscal year 2009 budget to the Restoration Advisory Board at the February 2008 meeting.

"The program requested \$32 million of funding, but was awarded \$37 million," said Ai Duong, Restoration chief. "That funding amount could change once the Restoration oversight transition is complete from Wright-Patterson Air Force Base, Ohio to the Air Force Center for Engineering and the Environment at Brooks Air Force Base, Texas." The excess funding was allocated to Site 3, an inactive landfill site within Operable Unit 7, basewide miscellaneous.

Each project under the Environmental Restoration Program is ranked. "The ranking assigned for allocated funds is not a firm ranking," Duong added, "if any RAB member feels that a project should be given a higher ranking, we will consider their request in our overall prioritization."

The majority of the funds will go toward cleanup at approximately 78 percent, monitoring comes next at about 15 percent, study and Records of Decision will be around 3 percent and management is less than 1 percent (refer to pie chart).

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## Where to Find More INFORMATION



Published data and documents relating to Environmental Management are available for public review in information repositories at three locations. The current information repositories are located in the cities of Lancaster and Rosamond, as well as Edwards Air Force Base. They are updated when new documents are released.

For questions about information in the repositories, you may contact Gary Hatch, Environmental Public Affairs at (661) 277-1454 or by e-mail at [95abw.pae@edwards.af.mil](mailto:95abw.pae@edwards.af.mil). Here is a list of our current information repositories:

### Edwards Air Force Base Library

5 W. Yeager Blvd.  
Building 2665  
Edwards AFB, Calif.  
(661) 275-2665  
Hours of operation: Mon-Thu 9:30 a.m. – 7 p.m.  
Fri 9:30 a.m. – 6 p.m.  
Sat-Sun 10:30 a.m. – 6 p.m.

### Kern County Public Library

**Wanda Kirk Branch**  
3611 Rosamond Blvd.  
Rosamond, Calif.  
(661) 256-3236  
Hours of operation: Tue-Wed 12 p.m. – 8 p.m.  
Thu-Sat 10 a.m. – 6 p.m.

### Los Angeles County Public Library

601 W. Lancaster Blvd.  
Lancaster, Calif.  
(661) 948-5029  
Hours of operation: Mon-Wed 10 a.m. – 8 p.m.  
Thu-Fri 10 a.m. – 5 p.m.  
Sat 11 a.m. – 5 p.m.

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## Restoration Advisory Board (RAB) Information

The RAB is made up of elected representatives from communities in and around Edwards Air Force Base, regulators from federal and state agencies and base officials. The board's purpose is to provide a forum for two-way communication among base restoration officials, regulators and representatives regarding the cleanup of contamination from past military activities.

The board meets quarterly, rotating meeting locations in communities surrounding the base. The public is welcome to attend. If you have any questions or concerns about the cleanup activities going on at Edwards, you

may contact your community's RAB member or Gary Hatch, Environmental Public Affairs, at (661) 277-1454.

### Next Quarterly Meeting

Date: Aug. 21, 2008  
Time: 5:30 p.m.  
Location: To be determined  
California City, CA 93505

## RAB Members

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Vacant

#### California City

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#### Main Base Test Wing

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#### North Base

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#### South Base

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#### AF Research Laboratory and Propulsion

**Directorate**  
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## Remedial Project Managers

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#### Edwards AFB

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### Lahontan Regional Water Quality Control

#### Board

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### U.S. Environmental Protection Agency

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