



# Report to **STAKEHOLDERS**

February 2010

Volume 15 No. 2

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*Report to Stakeholders* is a publication of Edwards Air Force Base, 95th Air Base Wing, Civil Engineer Directorate, 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.

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## WHAT'S ON THE COVER?



*The Swainson's hawk is one of many birds that can be found on base during the spring. See page 5, for more information about birds nesting on base.*

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## Gearing up for Earth Day 2010

**E**nvironmental Management is gearing up for the 2010 Earth Day celebration with plans to make the event bigger and more educational than ever. 2010 marks the 40th anniversary of the first observance of Earth Day. Last year's event at the Center of Excellence broke all previous attendance records with an estimated 1,700 people of all ages participating in the activities offered at 36 booths and exhibits. The annual event also features live music, food booths and games.

Earth Day is celebrated by Team Edwards to showcase the base's environmental accomplishments and to encourage everyone to protect the environment around them. The 2010 festival is slated for April 21 at the Center of Excellence on Payne Avenue from 10 a.m. to 2 p.m.

Be sure to watch for updates and more announcements posted around Edwards and in future issues of *Report to Stakeholders*. Anyone interested in attending, hosting a display booth or volunteering at the Earth Day event may call Heidi Gesiriech at (661) 277-7049.

RTS

### What You Can Do: On the Road\*

The burning of fuels releases carbon dioxide into the atmosphere. By taking actions to reduce the amount of fuel you use, you can reduce your greenhouse gas emissions, reduce the nation's dependence on oil, and save money. Here are some tips from the U.S. Environmental Protection Agency:

- 1. Buy Smart** — Before buying a new or used vehicle (or even renting), check out the EPA's Green Vehicle Guide and the jointly run EPA/Department of Energy Fuel Economy Guide. These resources provide information about the emissions and fuel economy performance of different vehicles.
- 2. Drive Smart** — To improve fuel economy and reduce greenhouse gas emissions, go easy on the brakes and gas pedal, avoid hard accelerations, reduce time spent idling, and remove unnecessary items from your trunk to reduce weight. If you have a removable roof rack and are not using it, take it off to improve fuel economy by as much as 5 percent. Use overdrive and cruise control on your car if you have those features.
- 3. Tune Your Ride** — A well-maintained car is more fuel efficient, produces lower emissions, and is more reliable and safer. Keep your car well-tuned and follow the manufacturer's maintenance schedule.
- 4. Check Your Tires** — Check your tire pressure regularly. Underinflation increases tire wear, reduces your fuel economy by up to 3 percent, and leads to increased emissions of greenhouse gases and air pollutants.

### DID YOU KNOW ...

*Every five mph over 60 is equivalent to adding 24 cents to the cost per gallon of gas, according to [www.fueleconomy.gov](http://www.fueleconomy.gov).*

\*Information featured on the U.S. EPA's Web page, [www.epa.gov/climatechange/wyacd/road.html](http://www.epa.gov/climatechange/wyacd/road.html)

# Conservation and solar initiatives help preserve air quality and save money

**T**he clean air and 345 sunny days each year make Edwards Air Force Base an ideal place for flight testing. Unfortunately, summer heat goes along with that sun. Air conditioning, lights, computers, and everything else that needs electricity to support the mission used 190,000 megawatt hours and cost Edwards \$15 million during fiscal year 2009.

Base energy manager Enrique Torres is actively seeking ways to preserve the clean air and reduce energy costs through successful conservation measures. In addition, he's been working on an even sunnier future at Edwards — turning sunlight into electricity.

According to Torres, the base met Air Force fiscal year 2010 requirements for energy conservation two years ahead of schedule. "We're already on track to reduce our energy intensity by 30 percent by 2015," he said. Energy intensity is a ratio of energy consumption to a measure of demand, taking into consideration the number of buildings, total floor space, number of employees and so forth. Through shrewd use of government and Air Force initiatives, the base has conserved a lot of kilowatts and saved money in the process.

"Edwards took advantage of a State of California program to replace residential lighting with new compact fluorescent lighting in 700 homes for free," Torres said. This decision saved more than \$100,000 annually.

Through another program, temporary shut-off devices were attached to 649 air conditioners, at no cost to the government. This saves the Air Force between \$100 and \$200 per unit each year. "When there is big demand for electricity, the device turns off the condenser for 5 minutes a day," Torres said.

In addition, workers from the 95th Civil Engineer Directorate are replacing old air conditioning and heating systems, installing more efficient lighting, increasing building insulation and changing facility roofing materials to reduce the amount of heat the buildings absorb from the sun.

Saving taxpayer money through conservation efforts makes sense, but the Air Force is looking for environmental sustainability at the same time. In 2007, the federal Energy Information Administration estimated that generating electricity using conventional fossil fuel power plants put more than 2.5 billion metric tons of contaminants into the air nationwide. Data from the U.S. Environmental Protection Agency show that power plants are the single greatest industrial source of four air contaminants: 35 percent of the nation's carbon dioxide, 37 percent of its mercury, 23 percent of its nitrogen oxide, and 67 percent of its sulfur dioxide.

Torres said the base already buys clean energy — it has an agreement to get 90 percent of its electricity from existing renewable energy sources like wind, hydropower and solar. But he's looking to install onsite solar power generating facilities to cut the electricity bill even more.

Under the California Solar Incentive, the base plans to construct four small, 1-megawatt solar power generating stations as part of a technology demonstration. "The largest part of the base's electrical cost comes from demand cost when solar generation is at its best," Torres said. "Reducing our demand cost by 3.5 megawatts will lead to a significant savings on the base utility bill."

Demand cost is when the cost of energy is higher because

demand is greater. It is usually during daylight hours when more people heat or cool buildings, use lights, electronic equipment and so forth. Making use of solar power generating stations to supply the base with energy could help the base reduce its costs.

Edwards' biggest initiative to date, is a proposal to lease more than 3,200 acres of Air Force land for a solar energy plant. The plant would be located near the northwest corner of the base, approximately 2 miles east of the Backus Road exit on Highway 14, southeast of Mojave, Calif. "This location could support a utility-sized solar plant and the operator could sell any power the base doesn't need back to Southern California Edison," Torres said.

More than 110 individuals representing 77 different organizations including the Air Force, local utilities and companies interested in learning more about the project met at a solar-energy industry event at Edwards in July 2009. At the event, attendees toured the site and learned about the enhanced-use lease program. Environmental Management division chief Robert Wood shared information about some of the environmental requirements. Representatives from the Rosamond Community Services District spoke about providing water from a new wastewater treatment plant for cooling and other water requirements at the site. Southern California Edison representatives presented information on connecting to the local grid and California regulatory requirements.

Attendees' questions were collected and the Air Force posted the answers on a Web site for interested bidders. Proposals for the project were due to the Air Force Real Property Agency's contractor in September 2009. Presenters at the industry day said the bidding process would produce a winner by spring 2010. Construction would begin in 2012 and the plant would be up and running in 2014 or 2015.

A final initiative, currently in the early planning stages, is to install rooftop solar systems. "We're researching flat-roofed buildings and trying to get estimates for installing rooftop solar panels on 10 buildings," Torres said. "Once we see how well these operate, we can expand: every building manager will want one."

More information about the base solar energy plant will be featured in the Report to Stakeholders as the project progresses.



**PANEL** — Solar panels are already in use on base. This one is near the dormitory area.

# BASH pumps safety back into flight

**B**ird strikes can have devastating consequences, as evidenced by the US Airways plane forced to crash-land in the Hudson River, N.Y., in January 2009. That incident highlighted the need for air safety programs that prevent aircraft and birds from colliding midair.

At Edwards Air Force Base, one such program — called bird and wildlife aircraft strike hazard (BASH) — serves a dual purpose. The program supports the Air Force mission while promoting a safe environment for birds and wildlife.

“It’s a win-win situation,” said Amber Hoehn, a former biologist at Edwards. “Birds and wildlife are kept out of harm’s way and the base can safely perform flight missions.”

Edwards uses several different methods to discourage birds and other wildlife from settling near the runway areas. One of these methods involves land or habitat management. Officials rely on biological studies to decide on the best types of land management.

“Since 1999, we have been studying the behavior of birds that inhabit the base,” said Mark Hagan, natural resources manager at Edwards. “Now we know the migration patterns and what type of habitat encourages settlement. The use of habitat management minimizes the bird populations in close proximity to the runway.”

“Horned larks love open spaces,” Hoehn said. “So the more brush we have near the runway, the less likely the horned larks will be to inhabit the area.”

Another form of land management involves the restriction of man-made features built near runway areas, including landfills, wastewater treat-

ment plants and homes, all of which attract wildlife.

“Being a federal installation, we can limit the amount of urban development near the runway,” Hagan said. “We know not to build a landfill or homes near a runway. The lack of development means less food, water and shelter for potential wildlife.”

A more active method of dispersing birds and wildlife in the area is the use of noise-producing devices called pyrotechnics. According to Air Force Pamphlet 91-212, *BASH Management Techniques*, pyrotechnics have been proven to safely flush and direct flocks of birds in a desired direction.

“The loud noise sounds like a shotgun blast,” said Larry Ledford, airfield manager at Edwards. “Most of the time, pyrotechnics discourage the animals from coming back.”

In certain situations, the base alters flight operations to account for bird activity in the area. Biologists developed predictive capabilities for migration based on the biological surveys. Before the start of migration in the spring and fall, biologists notify Airfield Management. Airfield Management employees then advise the aircrews accordingly. By knowing ahead of time when the birds are coming, the aircrews are more aware of local conditions and may limit takeoffs and landings.

Hagan cited turkey vulture migrations as an example of something that might alter the base’s flight schedule.

“If biologists in the field spot turkey vultures headed toward the runway area, they will notify Airfield Management,” Hagan said. “Flight operations can be altered as needed until the vultures pass through the area.”

On the rare

occasion all preventative measures have failed, the base can exercise its right to depredation. A permit issued by the U.S. Fish and Wildlife Service allows the base to remove a bird, nest or eggs if necessary for flight safety.

“Depredation is a last resort,” Ledford said. “We only use this method after exhausting our options. So, it’s rarely used. There have only been two depredations performed on Edwards in the last 10 years.”

“Depredation is only used when all else fails,” Hagan said. “And we report all depredations to the U.S. Fish and Wildlife Service.”

The U.S. Fish and Wildlife Service also tracks the number of bird and wildlife strikes. Reportable incidents range from finding feathers in an engine to accidentally hitting a coyote while taxiing on the runway.

“Sometimes a pilot doesn’t know a bird has been hit,” Hoehn said. “It’s not until the plane has been docked that the maintenance crew finds evidence that something occurred. Any parts or feathers found must be properly identified and reported as an incident.”

If the bird remains cannot be identified locally, then they are shipped to the Feather Identification Lab at the Smithsonian Institution in Washington, D.C.

“Feathers act like fingerprints for species identification,” Hagan said. “With a feather, we can easily identify the type of bird.”

The type of animal being struck is closely tracked by the base Flight Safety Office.

We’re looking for trends that might point to an animal attractant we have to address,” Ledford said. “For example, if we

See BASH, page 7



*F-22 — This raptor shares the skies with many birds that make Edwards their home. The BASH program on base serves to keep pilots and aircraft safe through management of wildlife around the flightline.*

# Spring in the desert: When a bird's thoughts turn to nesting

It's that time again, when birds find places to build their nests and raise their young. Nesting season at Edwards Air Force Base generally falls between February and July, and it is at this time that people may come into a conflict of space with birds building their nests. These nests make for more than a mess — they can potentially hinder construction and demolition projects and cost the government a significant amount of time and money.

There are solutions to this conflict. Residents and workers can significantly decrease the chances of nest building around houses or work areas by taking preventative measures, like screening off vents or ledges so the birds are unable to gain access to those areas.

"There are guidelines that Environmental Management has put out to housing residents," said Mark Hagan, natural resource manager at Environmental Management. "We look at eliminating ledges to prevent birds from building nests. Residents can put up screens or bricks ... there are different ways to eliminate the ledge so the birds do not have a nesting location."

Base workers also are given the same suggestions when it comes to taking preventative measures. "An example is during housing demolition and construction. Biologists offered the same suggestions to the project proponents that were given to the housing residents. The project proponents have come up with some pretty innovative techniques where they used plastic foam to close off nesting areas," Hagan said.

Preventative measures are highly recommended before and during nesting season to keep birds from nesting in unwanted areas of houses, facilities and schools because once a protected bird has set up a nest with eggs in it, it is illegal to move it. These birds and their nests are protected under the *Migratory Bird Treaty Act of 1918* (MBTA). It was enacted to prevent the taking, collecting, harming or moving of migratory birds, their feathers, eggs, parts and active nests.

"The primary concern of the *Migratory Bird Treaty Act* is to protect most bird species and their active nests — nests that have either young or eggs in them," Hagan added. "It is of importance to workers because of projects that may affect either adult birds or their active nests. Biologists have to make sure both the birds and the nests are protected and we have to make sure the project can proceed."

Base biologists take important steps to ensure that proper MBTA procedures are followed. The first step a biologist takes is to conduct surveys to find out if there are any active nests before a project begins. "Birds are easy because they will move, so we're not as worried about them because they aren't usually impacted [directly] by a project," Hagan said. "However nests don't move, they are stationary, so once they are built they are protected ... [and we] can't move them."

The surveys include checking out eaves, ledges, holes in the



**MAKING USE** — *This cactus wren's nest is one of many that birds will create this spring in areas that are flat and somewhat secluded. This is the time of year when they lay eggs and raise their young.*

building and vegetation — like trees and shrubs — because those are the most likely sites for birds to nest. "If there are active nests then the project has to work around them and maybe that area is put on hold. We work with the engineers and project planners when it comes to major projects like the housing demolition and construction to try and plan their projects so they are working outside of the nesting season to prevent a work stoppage," Hagan said.

## Discourage nesting before it begins

Base biologists suggest checking for migratory birds, nests or eggs in any openings or potential nesting areas. If there is no evidence of bird activity, one can: remove or alter flat surfaces, enclose eaves and attic holes with mesh wire, fill other holes and prune vegetation. If there is evidence of bird nesting going on, one should leave active nests, eggs and birds undisturbed.

"Until the baby birds leave the nest or a biologist determines the eggs are no longer viable, the nest should remain untouched," said Misty Hailstone, a biologist at Environmental Management.

"Be prepared to live with birds for about four to six weeks, which is the time it takes most species to hatch and leave the nest," Hailstone added. "Once a bird lays eggs in a nest, there is nothing you can do but wait. Occasionally the adults will use the same nest again in the same season if it isn't immediately removed after the young have left."

"The key to discouraging birds from nesting is to be persistent," said Mark Bratton, a biologist at Environmental Management. "There have been times when we remove nests that do not have any eggs or young and see the birds taking new nesting materials to the same location to try and rebuild. That's why it is important to take measures that discourage birds from nesting in the first place."

"Brochures for housing residents and workers are readily available," Hagan said. "There also are various DVDs that appeal to different groups like workers, children, and housing residents. Nesting awareness and the *Migratory Bird Treaty Act of 1918* is also introduced and encouraged at various events that Environmental Management holds throughout the year."

Base residents and workers can call Environmental Management at (661) 277-1401 if they need more information on nest prevention or if they find an injured bird.

RTS

# Manager brings experience to cleanup

**A**fter 16 years of research and investigation, environmental program manager Rebecca Hobbs can finally start a new chapter of her career at Edwards Air Force Base. Before last summer ended, the Air Force and state and federal regulators had officially approved final cleanup remedies for two areas she manages — five sites at South Base and three chemical warfare materiel sites. Now Hobbs can move forward with implementing those remedies.

“It feels great to have the final remedies approved,” Hobbs said. “That’s what we’ve been working toward for 16 years.”

Her 16-year effort has not been without its challenges. A particular challenge has been getting three regulators and five attorneys to agree on one approach.

“We had to be sure that we chose remedies that would be acceptable to the regulatory agencies and the public, but were also in the best interest of the Air Force,” Hobbs said. “For example, the Air Force policy is to clean groundwater contamination to maximum contaminant levels [MCLs] established by the Environmental Protection Agency, but the Lahontan Regional Water Quality Control Board position is that we need to clean to

background levels. And those are two different levels. So we had to figure out a way where both sides could agree so that we could move forward with the remedy.”

The key, according to Hobbs, was in reaching a compromise. “Once we approach MCLs, we’ll analyze whether we can technically get to background levels and if it is economically feasible to do so,” she said. “The Lahontan Regional Water Quality Control

Board is not agreeing that we never need to reach background levels; instead, they are willing to wait until we approach MCLs to determine if we are able to and the need to do so.”

Establishing a unified approach is nothing new for the Lubbock, Texas, native. From 1994 to 2002, Hobbs managed the investigation and cleanup of a possible chemical warfare materiel storage yard. A search of base historical records discovered the yard had been located next to newly constructed airmen dormitories. The project was unlike anything Hobbs had ever tackled before.

“Site 426 was probably the biggest project I’ll ever have in my career,” Hobbs said. “It was the first time the Air Force and

Army teamed together to clean up a potential chemical warfare materiel site.”

Yet being in charge of such a massive undertaking did not faze Hobbs.

According to Joan Siegal, an environmental engineer who has worked with Hobbs continuously for the past 16 years, “Rebecca enjoyed bringing together the Air Force staff, contractors and the Army. She got everyone to work as a team. She also did a lot of coordination and planning beforehand to

ensure the project went off without a hitch.”

Environmental Management division chief Robert Wood, who headed up the restoration division when Hobbs first started at Edwards, assigned Site 426 to Hobbs in 1994. “I needed someone I could trust who would put safety above all else and there was only one choice: Ms. Hobbs,” he said. “It wasn’t just a regular cleanup job, because a mistake would hurt people. So her back-



**ZEPPELIN FUN** — Rebecca Hobbs, center, is pictured here with (from left) her husband, mother and parents-in-law while riding in a zeppelin. The program manager for Environmental Management’s Restoration Branch has managed cleanup activities at several sites during the last 16 years.

**SITE 5** — This is one of the cleanup sites Rebecca Hobbs manages for the Environmental Management Restoration Branch at Edwards.

ground, education and temperament made me totally comfortable with her being the program manager for that project.”

An industrial engineering major, Hobbs’ career in safety began when a Texas A&M University classmate recommended her for a safety engineering internship at Tinker AFB, Okla.

“I developed a strong background in safety,” Hobbs said. “When I became an intern, I was sent to classes for almost 16 months solid. I was in training more than I was in the office. I took a lot of OSHA [Occupational Safety and Health Administration] and university classes.”

It was while attending one of these classes that Hobbs met her husband of 22 years, Bruce, who was an officer in the Air Force at the time. The couple married nine months after meeting and Hobbs moved to McClellan AFB, Calif., where she worked as a safety and environmental engineer for the hydraulics subdivision of maintenance. Once eligible for a promotion, Hobbs became the systems safety engineer for the directorate of maintenance.

“I conducted job safety analyses,”

Hobbs said. “I’d go into a shop, talk to the workers and figure out with them a way to do their jobs safer.”

One of her analyses led to a dead-man switch being added to a high-pressure water gun used to blast adhesives off aircraft. “It seems like an obvious thing,” Hobbs said. “But because someone has worked in a job forever, they may not recognize that what they are doing is unsafe. As a systems safety engineer, I would find out what tasks they needed to perform and then offer suggestions for doing the jobs safer.”

Her next job was as a safety engineer at Wright-Patterson AFB, Ohio, where Bruce had transferred to complete his master’s in computer engineering at the Air Force Institute of Technology. It wasn’t until Bruce was assigned to Edwards in 1993 that Hobbs made a move from safety to environmental engineering.

“When I first started in the restoration program, I went out in the field all the time and hung out with the contractors so that I could learn what they were doing,” Hobbs said. “It was my first time doing

this kind of environmental work and I had a lot to learn. So I documented how you drill a well, how you sample a well and how you perform geophysical surveys. I wanted to know the processes so I could ask questions and make sure we were doing the smartest thing. I felt if I didn’t know the processes, I wouldn’t be able to ask the right questions.”

Dedication to excellence is not something Hobbs takes lightly. Even after years in the same job, she remains passionate about her work.

“I’m still enjoying the work I do here at Edwards,” Hobbs said. “As my mom always says, this job has infinite variety. One day I’m doing something related to engineering and the next day I’m doing something related to scheduling. Actually, it’s usually all in the same day. I also support public relations activities, such as high school career days, college student tours and other outreach events. And that would be why after 16 years, I’m still enjoying my job, because it’s not the same every day.”

RTS

## Fun facts about Rebecca Hobbs

- Her hobbies include scrapbooking, quilting, reading and photography. Hobbs reads extensively about World War II and is very interested in Egypt and mummies.
- Hobbs loves traveling with her family, whether it is going to trapshooting competitions with her husband or on yearly jaunts with her sister, mom and mother-in-law. She also enjoys hanging out with her nephew, Daniel, 11, and niece, Maddie, 8.
- Hobbs and her husband share their home with two “very spoiled” German shepherds — Ruger Redhawk, 7, and Shiloh Sharps, 1.
- During her travels, Hobbs has met a WWII Navajo code talker, a defender of Pearl Harbor and the director of the Egyptian Supreme Council of Antiquities, Dr. Zahi Hawass.
- She co-authored two publications in *Remediation*, a professional journal.
- Hobbs and her husband decided to get their master’s in business administration together. Both graduated with 4.0 grade point averages from Webster University in 2002, after attending the same classes and working on the same projects together.
- Hobbs attributes her career choice to her parents, who “let me build Tinker Toy structures and keep them displayed in my room” and encouraged her to read “Cheaper by the Dozen” and “Belles on Their Toes” by the Gilbreths, the founders of modern industrial engineering.
- Her mother was a music and English major who instilled a love for reading and proper grammar into Hobbs at a very young age; her father is an attorney who taught her to enjoy painting and other forms of art.

## BASH Continued

From page 8

notice an increase in horned lark strikes, we may need to vegetate and add more natural brush in the area.”

“It’s all about habitat,” Hagan said. “We try to eliminate food, cover and water to minimize the amount of wildlife in the area.”

“The success of the BASH program really requires a team effort,” said Lt. Col. Daniel Wright, commander of the Flight Safety Office. “Our office works closely with Airfield Management, Civil

Engineering, Security Forces and Environmental Management to mitigate the flight risk.

“The base populace can help by not feeding the birds or other wildlife. Eliminating trash will also discourage visits from ravens and other scavenger animals,” Wright said.

“The unique thing about Edwards is that we are testing one-of-a-kind planes here,” Hagan said. “And many of them only have one engine that our pilots depend on for survival. So, we want to do everything we can to make each flight as safe as possible.”

RTS



# ERP Fact Sheet

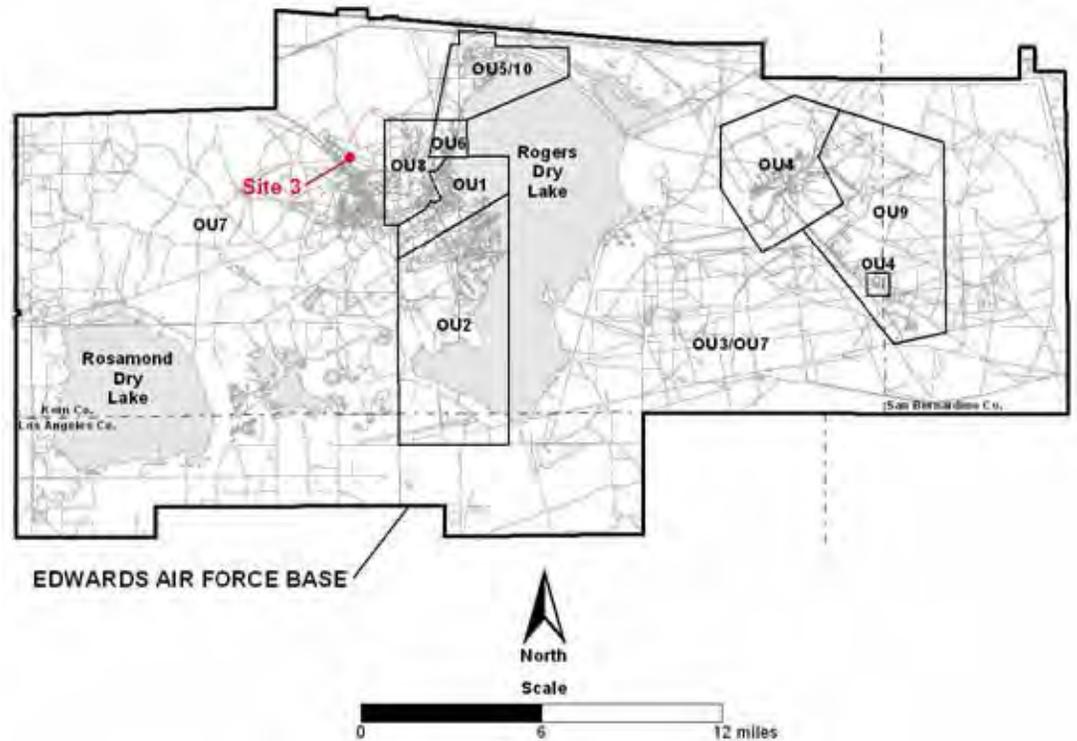
February 2010

**Site 3 Proposed  
Plan Public  
Comment Period**  
Feb. 17 to  
April 2, 2010

**Base Availability  
Session:**  
March 9, 2010  
11 a.m. to 1 p.m.  
*Conference Room 1  
5 E. Popson Ave.  
Edwards AFB, Calif.*

**Off-Base Public  
Availability Session:**  
March 9, 2010  
5 to 7 p.m.  
*Wanda Kirk Branch  
Library  
3611 Rosamond Blvd.  
Rosamond, Calif.*

## Public Comment Period Opens for Site 3, Edwards Main Base Inactive Landfill



Location of Site 3 within Edwards Air Force Base.

**A**ir Force officials are accepting public comment on proposed cleanup approaches to address an inactive landfill located in the northwest quarter of Edwards Air Force Base.

The proposed cleanup approaches can be viewed in detail in the *Proposed Plan for Site 3, Main Base Inactive Landfill, Operable Unit 7 (OU7)*. One of these four approaches will be chosen as the final cleanup remedy for the site.

The Air Force recommends a cleanup approach that includes waste consolidation, an evapotranspiration cover, stormwater

controls, land-use controls and monitored natural attenuation. This approach is referred to as Alternative 3 in the Proposed Plan for Site 3.

Located three miles southeast of the nearest base boundary, Site 3 operated from the mid-1960s until 1976, accepting household waste and construction debris. The Air Force investigated the site to address concerns that contamination from the landfill may have leaked into the soil, groundwater and air.

Low levels of organic compounds, metals and other elements were detected in the soil

For more information, contact:  
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samples collected above and below the buried waste. Although landfill gas (such as methane and carbon dioxide) is being generated within the landfill, analytical results indicate no significant migration of these gases beyond the perimeter of the landfill.

Based on the soil and landfill gas results, any possible risk for hypothetical future residents and industrial or construction workers falls within an acceptable range. However, the groundwater at the site exceeds drinking water standards called Maximum Contaminant Levels. The groundwater contamination is limited to 60 feet beyond the footprint of the landfill.

Due to the distances involved, Site 3 does not pose a current threat to any on- or off-base drinking water wells or create a threat to current on-base residents or workers. In addition, because of the low groundwater yield in the area, the groundwater at the site

is not used as a source of drinking water, nor is it likely to be developed as a drinking water source in the future.

Still, the Air Force is required to clean up the groundwater in accordance with the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*.

Because the groundwater is not in direct contact with the landfill waste, the Air Force determined through computer models that stormwater was most likely flushing contamination into the groundwater at Site 3.

Stormwater cannot only penetrate the landfill cover to directly dissolve contaminants out of the waste, but it also can flush out contaminant leachates and condensates from the landfill. Leachates and condensates are liquids produced by the decomposition of landfill waste.

Based on the computer modeling, base officials prefer a cleanup

approach that will minimize the amount of stormwater entering the landfill and reduce the potential for contaminants in the landfill to enter the groundwater.

None of the proposed cleanup approaches involves any active treatment of the groundwater.

Instead, officials will rely on natural attenuation — natural decomposition of the contaminants — to reduce the contamination over time. Both existing data and modeling indicate that the size of the groundwater plumes are stable (not increasing).

Alternative 1, or the No Action Alternative, is a standard baseline proposal that involves no further action. The fences, signs and gates already in place will remain, but will not be maintained. The cost for this alternative is \$0.

Alternative 2 involves land-use controls and monitored natural attenuation. Current fences, signs and gates will be maintained until the contamination naturally decomposes. The groundwater and landfill gas will be monitored to watch for migration. This remedy is estimated to cost approximately \$7.4 million, reaching groundwater cleanup goals within 139 years.

Alternatives 3 and 4 include the land-use controls and monitored natural attenuation outlined in Alternative 2. In addition, both cleanup approaches involve waste consolidation, an evapotranspiration (ET) cover and stormwater controls. An ET cover is a type of landfill cover that consists of a layer of soil covered by native plants. Water is held in the soil layer until it evaporates or is absorbed by the plant root systems, minimizing movement of water into the buried waste. This will reduce leachate formation and the potential for leachate from entering the groundwater.



Aerial view of Site 3 showing groundwater contaminant plumes.

*Conceptual layout of Alternative 3 at Site 3.*

*A waste cell on the south side of Landfill Road will be relocated within the waste consolidation boundary. The land-use control boundaries reflect the consolidated landfill footprint.*



Alternative 3 calls for waste consolidation that would reduce the landfill footprint from 67 to 32.7 acres. The ET cover would be graded to promote runoff and minimize water infiltration and erosion. Stormwater controls, such as diversion ditches, would be built to divert surface water away from the landfill surface. The projected cost for Alternative 3 is approximately \$14.5 million, with a cleanup goal of 84 years.

Alternative 4 differs slightly from

Alternative 3 in that the waste consolidation is not as extensive. The landfill footprint would be reduced to only 56.2 acres. A passive soil gas venting system would also be installed to control landfill gases from migrating outside of the Site 3 area. The ET layer would be enhanced by a gravel geotextile layer to further reduce the potential for stormwater infiltration into the landfill. The cost for this approach would be \$23 million, with a cleanup goal of 23 years.

The Air Force recommends Alternative 3 for several reasons:

- Alternative 3 will be protective of human health and the environment, would comply with federal and state environmental laws and would be cost effective.
- The groundwater will be cleaned up by natural attenuation.
- Alternative 3 makes cost effective use of available cover

Low points in the Site 3 landfill cover currently allow ponding of stormwater which could seep into the buried debris.



the base or public availability session on March 9.

### More Information Available

The Air Force encourages the public to gain a more complete understanding of Site 3 and the cleanup activities that were conducted there. Documents used by the base to make decisions about cleanup alternatives at Site 3 are in the base's administrative record. To view the full administrative record, you must contact Gary Hatch.

To view a subset of decision documents, you may visit one of the Information Repository locations.

materials, has a lower impact on base operations and energy use (in comparison to Alternative 4) and achieves groundwater cleanup within 84 years.

- The additional \$8.5 million in expense for Alternative 4 is not warranted because it is unlikely that the groundwater at Site 3 will ever be used for drinking water purposes.

### Proposed Plan and Public Comment Period

The public may obtain a copy of the Proposed Plan for Site 3 online at <https://bsx.edwards.af.mil/environmental>. Click on the folder labeled Documents for Public Review

and click on the Proposed Plan for Site 3. Environmental Public Affairs can send you a copy if you contact Gary Hatch at:

**95 ABW/PAE**  
**Attn: Gary Hatch**  
**5 E. Popson Ave.**  
**Edwards AFB, CA 93524-8060**  
**Phone: (661) 277-1454**  
**Fax: (661) 277-6145**  
**E-mail: [95abw.pae@edwards.af.mil](mailto:95abw.pae@edwards.af.mil)**

The public may also view a copy at one of the local libraries listed in the Information Repository box to the right.

Please submit your comments before the public comment period ends. You may make your comments in person at

### Information Repositories

Edwards AFB Library  
 5 W. Yeager Blvd.  
 Edwards AFB, Calif.  
 (661) 275-2665

Kern County Public Library  
 Wanda Kirk Branch  
 3611 Rosamond Blvd.  
 Rosamond, Calif.  
 (661) 256-3236

Los Angeles County Public Library  
 601 W. Lancaster Blvd.  
 Lancaster, Calif.  
 (661) 948-5029

### To Make a Comment About the Proposed Cleanup Approaches for Site 3

Comments can be submitted at the base or public availability session on March 9, or by mail, e-mail or fax. Send comments to Gary Hatch at 5 E. Popson Ave., Edwards AFB, CA 93524-8060.

Mr. Hatch can also be reached by phone at (661) 277-1454, fax (661) 277-6145 and e-mail [95abw.pae@edwards.af.mil](mailto:95abw.pae@edwards.af.mil). Comments must be received no later than April 2.

You can obtain a copy of the *Proposed Plan for Site 3* at the Information Repositories listed above or online at <https://bsx.edwards.af.mil/environmental> (Documents for Public Review).



# 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.  
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-Thu 11 a.m. – 7 p.m.  
Sat 9 a.m. – 5 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.

For general information about Edwards and an electronic version of the latest issue of *Report to Stakeholders* or other documents of public interest, you may visit the following link: [www.edwards.af.mil/library/environment](http://www.edwards.af.mil/library/environment).

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95 ABW/PAE  
RTS Subscription  
5 E. Popson Ave., Bldg. 2650A  
Edwards AFB, Calif., 93524-8060

# Restoration Advisory Board (RAB) Information

The RAB is made up of elected representatives from communities in and around Edwards Air Force Base, and 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 the elected, community 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: Feb. 21, 2010

Time: 5:30 p.m.

Location: Strata Sports Center

10350 Heather Ave., California City, Calif.

## RAB Members

### OFF-BASE COMMUNITIES

**Boron**  
Julie English (762) 762-6208 Home  
[brontesisters2003@yahoo.com](mailto:brontesisters2003@yahoo.com)

**California City**  
Bob Smith (760) 373-4317 Home  
[bsmith@ccis.com](mailto:bsmith@ccis.com)

**Lancaster**  
Peter Zorba (661) 945-6896 Work  
[pzorba@cityoffancasterca.org](mailto:pzorba@cityoffancasterca.org)  
ALTERNATE: Ed Sileo (661) 723-6019 Work  
[esileo@cityoffancasterca.org](mailto:esileo@cityoffancasterca.org)

**Mojave**  
Victor Yaw (661) 824-2886 Home  
[vicyaw@yahoo.com](mailto:vicyaw@yahoo.com) (661) 275-4296 Work

**North Edwards**  
Vacant

**Rosamond**  
David Newman (661) 722-6433 Work  
[newmanispwest@yahoo.com](mailto:newmanispwest@yahoo.com)  
ALTERNATE: Leslie Uhazy (661) 256-8209 Home  
[luhazy@avc.edu](mailto:luhazy@avc.edu) (661) 722-6417 Work

### ON-BASE COMMUNITIES

**Housing**  
Vacant

**Main Base Air Base Wing**  
Vacant

**Main Base Test Wing**  
Richard Salazar (661) 275-3275 Work  
[richard.j.salazar@lmco.com](mailto:richard.j.salazar@lmco.com)

**NASA Dryden**  
Vacant

**North Base**  
Vacant

**South Base**  
Brenda Weems-Hunter (661) 275-0456 Work  
[brenda.weems-hunter.ctr@us.af.mil](mailto:brenda.weems-hunter.ctr@us.af.mil)

**AF Research Laboratory and Propulsion Directorate**  
Milton McKay (661) 275-5191 Work  
[milton.mckay@us.af.mil](mailto:milton.mckay@us.af.mil)

## Remedial Project Managers

### California Department of Toxic Substances Control

Kevin Depies (916) 255-3688 Work  
[KDepies@dtsc.ca.gov](mailto:KDepies@dtsc.ca.gov)

**Edwards AFB**  
Ai Duong (661) 277-1474 Work  
[ai.duong@edwards.af.mil](mailto:ai.duong@edwards.af.mil)

### Lahontan Regional Water Quality Control Board

Tim Post (760) 241-4942 Work  
[tpost@waterboards.ca.gov](mailto:tpost@waterboards.ca.gov)

**U.S. Environmental Protection Agency**  
James Ricks (415) 972-3023 Work  
[ricks.james@epa.gov](mailto:ricks.james@epa.gov)

Joseph Healy (415) 972-3269 Work  
[healy.joseph@epa.gov](mailto:healy.joseph@epa.gov)



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