



Guardian

America's First Choice for Environmental Restoration

A Publication of the Environmental Restoration Program

Travis Air Force Base, California

October 2016

INSIDE

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Editor's Corner

What's on your mind?

Each edition of the Guardian presents articles that describe the key environmental activities that have taken place over the previous three months and the progress that we are making to clean up soil and groundwater contamination from past industrial practices. Usually, we have a lot to say, but there are times when there is not a lot of new activities to report on.

Are there any burning questions or topics of interest that you would like to read about? If so, you can send them to us via the environmental public affairs e-mail account:

EnviroPA@us.af.mil. Short responses will be sent directly to you, and longer responses will be the basis of a future article (we will even give you credit for the idea!).



(Photo by Glenn Anderson)

Walk This Way: Mr. Lonnie Duke (left), Travis AFB Restoration Program Manager, explains to Mr. Randy Brown, Air Force Civil Engineer Center Director, a technology demonstration project where a new approach to speed up the cleanup of contaminated groundwater is under evaluation. Mr. Randy Brown also met with the Travis Installation Support Team and base representatives.

Out with the Old OWSs

Construction Season Focuses on Old Oil-Water Separators

By Glenn Anderson

Travis Environmental Project Manager

As an industrial facility ages, it replaces old infrastructure with new equipment to take advantage of newer technologies or just to avoid the cost of replacing worn systems on an emergency basis. Sometimes equipment becomes outdated or obsolete, usually because the mission changes or there is a more efficient or cost-effective way to perform necessary services.

For example, Travis AFB once had its own operational sewage treatment plant. Today, most of this aging infrastructure is still in

place but no longer functioning. The base now receives wastewater treatment services from the Fairfield-Suisun Sewer District. Also, a new fuel pipeline provides essential jet propulsion fuel to the base, replacing an older pipeline that is shut down and being decommissioned. Out with the old, and in with the new.

Often, it is not easy to remove the older infrastructure. Demolition projects are usually not cheap and have to compete with military construction projects for funding. If buildings or utilities were subsequently installed around the old infrastructure, any demolition project becomes more complex and time-consuming, which normally means more

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Visit our Environmental Program web site at <http://www.travis.af.mil/About-Us/Environment>



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The *Guardian* is published by the Air Force Civil Engineer Center's Western Region Restoration Support Team, located at Travis Air Force Base. The newsletter is designed to inform and educate the public about the ongoing environmental cleanup program at Travis Air Force Base. Contents expressed herein are not necessarily the official views of, or endorsed by, the U.S. government, the Department of Defense, or the Department of the Air Force. Additional information about the program can be obtained from the public web site at <http://www.travis.af.mil/enviro>. Questions and comments about the program may be sent to this address:

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Support Team Show and Tell

Last August, Travis AFB received a visit from the top civilian leader of the Air Force Civil Engineer Center in San Antonio, Texas. As the AFCEC director, Mr. Randy Brown leads a team of more than 1,900 engineers, scientists, geologists and environmental experts in providing responsive multi-discipline engineering services to all Air Force facilities in the United States and abroad.

Those services include facility management planning, design and construction, operations support, real property management, energy support, environmental compliance and restoration, and readiness and emergency management. To accomplish this work, Mr. Brown directly oversees the execution of \$11.8 billion in contracts, indirectly controls \$49 billion in contract vehicles, and manages \$7 billion housing and \$5 billion lease portfolios annually.

As you can imagine, Mr. Brown is a busy guy! So, it was with surprise, anticipation, and a little trepidation to learn that Travis AFB was on the list of Air Force installations that Mr. Brown planned to visit. Mr. Brown was already in California to participate in an Environmental Restoration Summit meeting in San Francisco with federal and state regulators, so he used the visit to meet with AFCEC team members assigned to Travis AFB. This was also an opportunity for this newly minted restoration program manager to show him our environment cleanup successes and tell him about our Green and Sustainable Remediation technologies and the great team that makes it happen.

There are several thoughts that I took from Mr. Brown's visit. First, he is an excellent listener and truly wanted to hear unfiltered information, both positive and negative, from the people in the field. All members of the Travis Installation Support team got their chance to describe their areas of responsibility and their points of view on how things were going.

Second, Mr. Brown tends to focus on energy issues and particularly on methods that bases employ to reduce energy consumption. The Department of Defense uses over 90% of the fuel that is allocated to the federal government, and the Air



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Lonnie A. Duke
 Travis AFB Restoration
 Program Manager

Force consumes about half of that. So, if Travis AFB has a way to complete its missions with less energy, the AFCEC director is definitely interested in it.

After the meeting with all of the IST members, we took Mr. Brown on a short base tour. One of the stops was a groundwater cleanup site on the eastern side of the base. Site SD031 has a small solvent plume that has slowly been shrinking in size, thanks to the work of naturally occurring microbes in the groundwater, known as natural attenuation.

Site SD031 groundwater had originally been treated using a groundwater extraction and treatment system, and we are using that system to test an innovative way to improve the performance of our active groundwater remedies that involve the injection of vegetable oil. The oil creates an oxygen-poor environment that allows a particular set of microbes to use solvents as their food source. The trick is to spread the vegetable oil throughout the solvent plume in order to increase the size of the treatment zone.

We hope to use the groundwater extraction system to promote this vegetable oil spreading, and that was one point that I made with Mr. Brown. However, another point that I strongly emphasized was the energy savings that comes from both the use of natural attenuation to clean up small plumes and the use of solar panels to power many of our active groundwater treatment systems. Groundwater extraction and treatment systems tend to be very energy-intensive, so one of the common benefits of transitioning to a biology-based cleanup technology is the energy savings. The solar panels do not need to generate a lot of electricity to run the newer treatment systems, so most of these systems are off the Travis electrical grid.

And that leads to my final thought on Mr. Brown's visit. I was proud to represent
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expensive. Projects that involve excavation must be coordinated with a number of local offices, and those projects near the flight line require a Federal Aviation Administration waiver. Additionally, work that temporarily shuts down a runway requires the Wing Commander's approval.

Unless there is a huge demand for the property, and as long as there is no perceived concern of environmental contamination, the aging infrastructure just remains in place.

A classic example of this issue is the oil-water separator (OWS). An OWS is a concrete structure that is designed to separate oil and other petroleum-based materials from wastewater generated from industrial sources. It relies on the principle that petroleum products float on water, so the floating oily waste can

be diverted off of the surface of the water and either recycled or sent off-base for disposal. Any solid material (usually metal particles and industrial sludge) that is heavier than water settles to the bottom of the separator, where it can be scooped up and disposed of. The remaining water usually requires additional filtering and treatment before it can be returned to a water body, such as Union Creek.

There are a number of OWSs on Travis AFB that are no longer needed, because they supported maintenance on aircraft that have been retired from active service, or this industrial work is being performed at another Air Force or commercial depot-level facility.

In the early 2000's, the Air Force cre-

ated a Compliance Restoration Program to begin evaluating the OWS issue. Orphaned OWSs were identified, and initial soil and groundwater samples were collected and analyzed. Eleven obsolete OWSs that are suitable for decommissioning were identified on Travis AFB and transferred to the Travis Environmental Restoration Program. The units accounted for more than 25% of the active ERP sites.

"One task that we really wanted to

ate landfill for disposal. If contaminated groundwater is found, it will be evaluated for future treatment.

Before this sampling could even begin, it was determined that two unused OWSs were located within Accident Potential Zones. Any work within these zones requires a Temporary Airfield Construction Waiver, an additional coordination step that is approved by the Wing Commander. These waivers take more time to complete and add complexity to demolition projects.

Depending on its location and how it was built, an OWS can be decommissioned simply by breaking up the concrete into rubble, excavating the OWS for recycling, or filling it with concrete. Although the preference is to break up the walls and floor of each structure and transport off-base the con-



Tearing Down the OWS: A track-mounted hydraulic excavator with a concrete breaker attachment works on one side of an oil-water separator. When complete, the demolition of 11 OWSs will remove unused infrastructure, including two airfield obstructions, and will free up property to support future mission requirements. (Photograph by Lorenzo Lujan [CH2M])

accomplish this year is to get rid of these OWSs," said Mr. Lonnie Duke, Travis AFB Restoration Program Manager. "Besides being eye sores, they tend to get in the way when we look for the best locations to carry out new mission-essential projects."

What does it take to get rid of an OWS? First, the field team must verify that the operating OWS did not contaminate the adjacent soil or local groundwater. This is done by drilling a hole through the bottom center of the OWS to collect samples. If no contamination is found, the concrete and metal components of the OWS can be decommissioned. If contaminated soil is found, it will be excavated and shipped to an appropri-

ate concrete rubble and rebar, when the OWS lies next to a building, the OWS is filled in with concrete to ensure that the structural integrity of the building is not damaged.

At the time of this writing, more than half of the unused OWSs on Travis AFB have been decommissioned. In some cases progress was slow, because the OWS was located in or near high-security aircraft parking ramps or taxiways. The field team requires an escort to enter one of these areas, and they also must coordinate with base operations and security forces.

"In one case, the concrete floor of the OWS was over two feet deep," said Mr. Duke. "So, it took a lot longer to com-

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sent the Travis environmental restoration program team and put our accomplishments on display. This was probably the only time in my career that I will have to discuss our program with an AFCEC director, so I made the most of it. And I believe that Mr. Brown departed Travis AFB with the confidence that this cleanup effort is in good hands.

To read more about Mr. Brown’s background and accomplishment, you can access the following AFCEC public web page: <http://www.af.mil/AboutUs/Biographies/Display/tabid/225/Article/108331/andy-e-brown.aspx>. Also, you can find more information about our attempts to improve the performance of vegetable oil cleanup technologies in the January 2016 Guardian, which can be found on the Travis AFB public environmental website: <http://www.travis.af.mil/About-Us/Environment/News>.

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plete the drilling and collect the samples. We do not have access to drawings that show how each OWS was constructed, so each case is unique and usually gives us a surprise.”

Of course, the job is not done until the paperwork is finished. When all of the field work is complete and no contamination is found (or the contamination is properly addressed); all field notes, waste

manifests, and other required documentation will be compiled in a remedial action report for review by regulatory agency and Restoration Advisory Board representatives.

“We hope to close as many of these OWS sites as possible this year,” said Mr. Duke. “It is not every year that we can shrink our cleanup program by a quarter, so that is our 2016 target. I will report on how well we achieve this goal in the next Guardian.”



LOCATION OF INFORMATION REPOSITORIES

Vacaville Public Library
1020 Ulatis Drive
Vacaville, CA 95688

(707) 449-6290

Monday-Thursday: 10 a.m. - 9 p.m.
Friday-Saturday: 10 a.m. - 5 p.m.
Sunday: 1 p.m. - 5 p.m.

Fairfield-Suisun Com. Library
1150 Kentucky Street
Fairfield, CA 94533

(707) 421-6500

Monday-Thursday: 10 a.m. - 9 p.m.
Friday-Saturday: 10 a.m. - 5 p.m.
Sunday: 1 p.m. - 5 p.m.

Mitchell Memorial Library
510 Travis Boulevard
Travis AFB, CA 94535

(707) 424-3279

Monday-Thursday: 10 a.m. - 9 p.m.
Friday: Closed
Saturday: 12 p.m. - 6 p.m.
Sunday: 12 p.m. - 6 p.m.

If you have any questions or would like more information about the RAB tour, please contact Lonnie Duke, (707) 424-7520.



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