Guardian

America's First Choice for Environmental Restoration

A Publication of the Environmental Restoration Program | Travis Air Force Base, California | October 2014

Inside

Acronyms

CAMU: *A Corrective Action Management Unit is a designated area within a facility that is designed to carry out a corrective action, such as contaminated soil management. The Travis AFB CAMU is a soil repository on a closed landfill, located in the northeast corner of the base.*

PBC: *A Performance-based Contract focuses on the results that a contractor must achieve but not the approach to reach them. The contractor must still follow environmental law and obtain approval of the lead and regulatory agencies to be successful.*

[Photos by Doug Berwick (CH2M HILL)]

Varmint in the Vault: A field mouse is spotted in an extraction well vault that supports the cleanup of contaminated groundwater. Often, small mammals will chew on the electrical wire that connect pumps to treatment systems, resulting in shutdowns and costly damage (shown in the inset).

Environmental Vandalism

Excessive Treatment Plant Repair Costs Add Up Quickly

By Lonnie Duke
Travis Environmental Project Manager

Humans tend to be industrious creatures, and we are often awestruck at our creations. In fact, the phrase "Seven Wonders of the World" refers to seven of the most notable man-made locales that were built by ancient civilizations. Sadly, the one trait that they all share is their absence today. They were either destroyed in war or fell into disrepair and eventually lost their former glory. That is the problem with our creations; they require a lot of maintenance and can be easily damaged by both natural forces and people's actions.

Even when our construction is designed to improve the world, Mother Nature finds ways to tear it down. We build a building, and a tornado knocks it down. We build a highway, and a flash flood (as recently seen in Arizona) washes it away. These occurrences seem to be reported in the news at least once a week.

There are also natural processes that do not get a lot of press but are constantly working against our best efforts. That shiny new beach cruiser eventually ends up in a recycling yard as a rusting hulk, thanks to iron oxidation and salt damage. The new as-

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Travis Air Force Base, California

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Dollars and Sense

Viewpoint

Mark H. Smith
Travis AFB Restoration Program Manager

Anyone involved with government work knows that funding is the life blood of any program. Funding allows us to make purchases and obtain the services of personnel with specialized experience and critical skills. However, we cannot simply hold out our hand and expect tax dollars to fall into it. We must identify and describe our requirements and accurately estimate the costs associated with them. This detailed and time-consuming process establishes a foundation for our government program that demonstrates to upper level decision-makers that the funds sent to us will be spent wisely and will achieve the desired results.

Recent government furloughs and budget cuts clearly point to the Federal Government's funding woes. Shrinking budgets and rising costs require upper level managers to make difficult funding decisions. These are not easy decisions, and future programs will undergo much greater scrutiny to ensure that they qualify for funding.

Notice that nowhere in my last paragraph will you find the word "environmental." That is because successful programming is essential to any government program, regardless of the organization's mission. Environmental cleanup is not much different than any other program. It requires a solid understanding of the problem, agreement from all involved stakeholders on programming decisions used to develop a plan, and a steady stream of funding to be successful.

Once the funds are in hand, they have to be attached to a contract in order to be spent. Funds obligation is another detailed and time-consuming task, and we are fortunate to have the services of the U.S. Army Corps of Engineers, Omaha District, to make this happen for us. That is why we refer to their office as a "service center;" their staff provides the contracting and finance services that are needed to establish and fund contracts. And they are particularly adept at multi-year performance-based contracts.

Multi-year contracts can either be funded all at once or in increments, but because the federal government has more requirements than funds to meet them, competition for funds is increasing and only those contractual requirements for the current year tend to be funded.

So how has the Travis AFB Environmental Restoration Program held up in this financially constrained world? Happily, I can report that our contractual requirements for the next couple of years have already been funded this year, so we are sitting in a financially strong position. To put this accomplishment into perspective, the funding outlook for the federal government for fiscal years 2016 and beyond is not looking very promising, which could result in reduced funding for other cleanup programs.

Our financially strong position did not happen overnight or by accident; this was a team effort by everyone who is involved in our program. That includes my staff, our service center, regulatory agency representatives, environmental contractors, our Restoration Advisory Board, and the staff at the Air Force Civil Engineer Center in San Antonio, Texas.

Also, past Guardian articles have talked about the signing of our Groundwater Record of Decision (ROD); by meeting this milestone we reached agreement on those cleanup strategies that are financially and technically feasible. We now have the legal backing to plan for, program and fund the work that is described in the ROD. Without it, it would be much more difficult to justify a defensible plan for our cost-effective groundwater cleanup strategy. So, for the foreseeable future, the heart of our cleanup program is beating strongly!

Vandalism

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phalt parking lot starts to crack and becomes overrun with weeds when not in use. The only way to protect our creations is through routine maintenance and replacement, both of which come with a cost.

Groundwater treatment systems are no exception; even under the best of conditions, they require a substantial amount of upkeep. Because they treat groundwater that contains dissolved salts, their metal parts are prone to oxidation. They are exposed to sunshine, wind and rain, so their plastic parts can become brittle and lead to breakage. It only takes one failed part to shut down an entire treatment plant.

There are other materials in groundwater that create significant challenges for the equipment operators. "Our groundwater contains a lot of suspended clay particles and acts like liquid sandpaper," stated Mr. Mark Smith, Travis AFB Restoration Program Manager. "It is not unusual for extraction pumps that should last for more than five years of continuous operation to seize up and fail after only two years." Also, groundwater with large amounts of suspended solids is heavier than tap water, so it takes more energy to extract the groundwater and move it to the surface. This puts a greater strain on internal pump components and can lead to early pump failure.

To add insult to injury, there are times when it appears that Mother Nature seems willing to sabotage the cleanup efforts on Travis AFB. Doug Berwick, field manager for CH2M HILL, the environmental consultant that oversees the base groundwater cleanup program, has had to replace over seven miles of wire that connect the pumps to the system controllers. The reason for this time-consuming task: field mice.

"These small mammals can squeeze themselves through the smallest of openings to get into our control panels and chew on our power and connecting cables," said Mr. Berwick. "One day, everything is working fine, and the next day the pumps refuse to start. Field mice are nocturnal, so most of their damage takes place at night, and we don't discover the extent of this vandalism until the following morning."

Cleanup Coronary: Groundwater pumps can change the chemistry of extracted water, bringing dissolved chemicals out of solution and resulting in the clogging of transfer piping. When the flow of water through piping is restricted, the treatment system's efficiency drops. [Photo by Doug Berwick (CH2M HILL)]

Fieldwork Follies: Suspended sediment in groundwater can coat an extraction pump (shown on the left), causing excess wear and tear and often leading to early pump failure. When field technicians discover the mechanical problems and visit the site to conduct repairs, they are often greeted by the local inhabitants, such as the non-poisonous snake shown in the right photo. [Photos by Eric Phelps (CH2M HILL)]

Other residents of Travis AFB that can complicate the cleanup of contamination include racoons, snakes, feral cats, and various bird species. When they choose a treatment plant as their home, field technicians have to encourage them to move without hurting them before carrying out any needed repairs.

So, what can be done to avoid these pitfalls and keep groundwater cleanup performance at an optimum level? As has been documented in previous Guardian articles, the Travis AFB solution is to select cleanup remedies that make Mother Nature a formidable ally and not an adversary. These remedies rely upon biological processes rather than engineered systems to convert groundwater contaminants into harmless compounds. There are naturally-occurring colonies of microbes that can break down contaminants into harmless compounds, sometimes using the contaminants as a source of food. By creating a welcoming environment for these colonies to thrive, the cleanup takes place in the subsurface and does not use extraction pumps and other man-made infrastructure. Without the need for this equipment, the reliability and efficiency of the groundwater cleanup improves substantially.

"For now, we still have to run several legacy groundwater cleanup systems at specific portions of the base, but we hope to replace these systems with biology-based strategies at most of our sites by 2021," said Mr. Smith. "Then, reports of chewed wires and gummed-up pumps and the bills from repair work will become a distant memory."

Meeting Agenda

6:30 - 7:00 p.m. Open Forum:

The open forum allows RAB and community members to discuss ongoing Travis AFB restoration program activities with the Travis AFB environmental staff on a one-to-one basis.

7:00 - 9:00 p.m. RAB General Meeting

I. **Welcome and Introductions**

II. **Approval of Minutes**

III. **Additional Agenda Items and Questions**

IV. **Discussion Topics**
- Groundwater ROD Completion
- Groundwater Remedy Implementation

Break

V. **Cleanup Program Status**
- Future Cleanup Funding
- Community Involvement Plan
- Future RAB Participation

VI. **Regulatory Agency Reports**

VII. **Focus Group Reports**

VIII. **RAB/Public Questions**

IX. **Set Time and Place for Next RAB Meeting**

X. **Set Focus Group Meeting Times**

Adjourn

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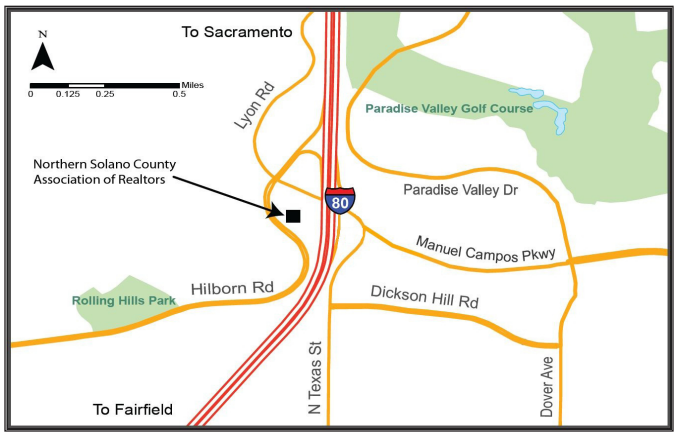
Travis AFB Restoration Advisory Board Meeting

October 23, 2014
7 p.m.

Northern Solano County Association of Realtors
3690 Hilborn Road
Fairfield, CA



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 would like more information or need special accommodations for the RAB meeting, please contact Mark Smith, (707) 424-3062. You can also view our web site at http://www.travis.af.mil/enviro

For more information about Travis AFB's restoration program, please contact:

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