



# Factsheet

America's First Choice for Environmental Restoration

A Publication of the Environmental Restoration Program

Travis Air Force Base, California

July 2020

## INSIDE

### Viewpoint:

*Just when we thought that most of our cleanup decisions had been made and it was time to look for another job, a new cleanup challenge emerges. The Travis Restoration Program Manager looks at what it took to overcome past challenges and what will take to meet this one.....* **2**

### Next RAB Meeting:

*The April Restoration Advisory Board meeting has been rescheduled for October 22, 2020, at 7 p.m. This will be a virtual meeting to ensure the health and safety of the participants. The October 2020 Guardian provides instructions on how to attend this meeting via the Internet.....* **4**

### Editor's Corner

#### More Acronyms Ahead!

*Same program; different acronyms. In future newsletters and fact sheets, you will see these acronyms again and again, so this is what they mean:*

*AFFF: Aqueous Film Forming Foam*

*PFAS: Per- and polyfluoroalkyl substances*

*PFOA: Perfluorooctanoic acid*

*PFOS: Perfluorooctane sulfonate*

*RRSE: Relative Risk Site Evaluation*



(Photograph by Glenn Anderson)

**Contractor Sighting:** Two field specialists collect water samples that will be analyzed in a lab. The resulting data from this type of work will help to determine which sites will be investigated first.

## Mile 1 of a Cleanup Marathon

Travis Focuses on a New Class of Environmental Contaminants

**By Glenn Anderson**

Travis Environmental Project Manager

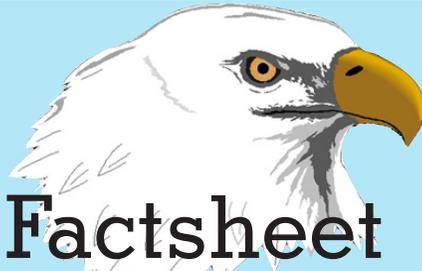
Marathon runners know that a long-distance race requires physical and mental preparation, a lot of dedication, and a strategy in order to successfully cross the finish line. They know that each course is different and offers a set of unique challenges that have to be overcome. They also know that an easy course can become difficult as a result of bad weather or injury, but their experiences with past challenges will help them to face and defeat adversity.

Long-time Guardian readers can probably see that a successful environmental cleanup program has several marathon-like qualities. It needs preparation (knowledgeable government representatives and contractor staff), dedication (long-term financial commitment), and a strategy (Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA]) to identify challenges (nature and extent of contamination) and overcome them with appropriate cleanup technologies.

Over the last three decades, the Travis AFB Environmental Restoration Program (ERP) has investi-

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Visit our Environmental Program web site at <https://www.travis.af.mil/Information/Environment/>



# Factsheet

Travis Air Force Base, California

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The *Factsheet* (a sister publication of the *Guardian*) is published by the Air Force Civil Engineer Center's Western Region Restoration Support Team, located at Travis Air Force Base. The fact sheet 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 <https://www.travis.af.mil/Information/Environment/>. Questions and comments about the program may be sent to this address:

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[enviropa@travis.af.mil](mailto:enviropa@travis.af.mil)

# Back to the Cleanup Future

If you've already read the cover story, you now know about AFFF and some of the chemicals that it contained, namely PFOS and PFOA. However, there is more to learn about these chemicals and the Air Force actions to address them.

First, a cleanup program is not really effective if the chemicals are still being released into the environment. At the same time, the Air Force still uses jet fuel and other petroleum products to conduct daily activities and has to be prepared to fight petroleum fires when they occur. So, I was happy to learn that Travis AFB replaced its legacy AFFF stockpiles with environmentally-friendly formulations to fight fires. Old AFFF containers have been shipped off for disposal, and the base has received new fire-fighting equipment that will not add to the amount of PFOS and PFOA to be cleaned up.

Second, as the Restoration Program Manager, I am involved in making decisions on how best to deal with this new class of chemicals. Fortunately, we still rely on the Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA) to provide the step-by-step framework for making cleanup decisions in order to protect human health and the environment. These familiar steps are the (1) Preliminary Assessment, (2) Site Inspection, (3) Remedial Investigation, (4) Feasibility Study, (5) Proposed Plan, (6) Record of Decision, and if necessary (7) Remedial Design and (8) Remedial Action. When all remedial actions are complete and all cleanup levels have been reached, then we can wrap up projects and close sites.

Third, Travis AFB has been managing its Environmental Restoration Program (ERP) for nearly 30 years and has participated in all of the CERCLA steps listed above. Over the 20 years that I have been a part of the Travis ERP, I have seen a lot of success while investigating and cleaning up chlorinated solvents, metals and fuel contaminants. It feels strange to start the



## VIEWPOINT

Lonnie A. Duke  
Travis AFB Restoration  
Program Manager

CERCLA process again, even though it has become a path well-travelled for many of us, and I know that I will not see the end of it. As most readers know, it takes time to collect data, evaluate risk, develop cleanup options, gain consensus from regulatory agencies and community members, and carry out selected remedies. Sadly, I will be retired before the base sees the first major cleanup decision, and it will be up the next group of environmental professionals to complete the process and clean up this next batch of sites.

Finally, for PFOS and PFOA, Travis has completed the first two steps and is preparing for the start of the Remedial Investigation and the first round of soil and groundwater sample collection and laboratory analysis. At this point, I want to emphasize the importance of community involvement in our restoration efforts and ask personally for your comments on the Relative Risk Site Evaluation. You will find it on our public website, and it is used to compare our sites with every other site in the Air Force. I admit that it appears to be fairly technical, and it took a while for me to get through it. However, the evaluation itself is relatively easy to understand, and your participation is valuable and will help the Air Force to establish a timeline for our upcoming Remedial Investigation.

If I could talk to Marty McFly before he jumps into his time traveling DeLorean, I would ask him to tell AFFF manufacturers to find better formulations that do not contain PFOS and PFOA so that we wouldn't have to clean them up now! But, time travel is not a reality (yet!), so no matter how much fun it is to think about, we have a big PFOS and PFOA challenge in front of us now, so it is back to the cleanup future for Travis AFB!

# PFAS

■ From page 1

gated and cleaned up contaminated soil, sediment and groundwater; achieved residential cleanup standards; and closed sites. It has faced a multitude of different contaminants (various metals, pesticides, petroleum products and solvents), matched each contaminant with a cleanup approach, worked with regulatory agency representatives to make the best cleanup decisions, and built the infrastructure to make those decisions a reality. The end result is cleaned property that can be used to build office spaces or school playgrounds.

The purpose of this fact sheet is to introduce the local community to a new class of contaminants that has made it into the environment, describe how it was released, present the short- and long-term strategies to address them, and provide a way for our readers to get involved with the start of the cleanup process.

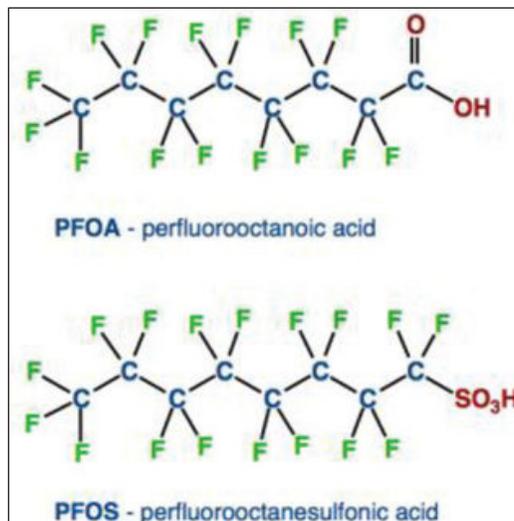
Per- and polyfluoroalkyl substances (PFAS) are compounds that are made by attaching fluoride atoms to carbon chains. The Travis ERP will be looking initially at two PFAS: Perfluorooctane sulfonate (PFOS) and Perfluorooctanoic acid (PFOA). This is because the Air Force started to use Aqueous Film Forming Foam (AFFF) that contained these compounds in the 1970's to put out petroleum fires. Although AFFF excelled at fire suppression, its potential impact on human health when it is released into the environment took a while to understand and is now the reason why Travis AFB is actively engaged in using the CERCLA process to deal with these contaminants. This is what the ERP has done so far:

**Mile 1: Preliminary Assessment.** This is the first step in the CERCLA process and involves the identification of potential release areas. We interviewed first re-

sponders, fire chiefs, managers of aircraft hangars, and anyone else on the base who might have handled AFFF to learn where AFFF could have been used or released (for example, aircraft crash sites or an accidental hangar AFFF spills). You can find the Travis AFB PFAS Preliminary Assessment report on our public website.

**Mile 2: Site Inspection.** This step consists of the collection of soil and groundwater samples from the potential release areas. The laboratory analysis of these samples provides the data to show that a release occurred. You can find the Travis AFB PFAS Site Inspection report on our public website.

**Mile 3: Relative Risk Site Evaluation (RRSE).** This step is not a part of the CERCLA process, but it will help us to make the best programming decisions. The RRSE



**What They're Made Of:** This diagram shows the chemical structure of the two compounds that will be the focus of the upcoming Remedial Investigation. Both are made up of a string of 8 carbon atoms and a large number of fluorine atoms. The bond between carbon and fluorine is very strong, and it takes a lot of energy to break it. This explains why these compounds held up well under high temperatures and were used in AFFF to put out hot petroleum fires.

is a tool used to compare all of the release areas in the Air Force and to prioritize funding so that the installations with the highest priority sites can begin the next step in the CERCLA process: the Remedial Investigation (RI). The RI is a

thorough environmental field effort that determines the nature and extent of contamination, evaluates the risk associated with the contamination, and provides enough data to make technically efficient and cost effective cleanup decisions.

On the Travis AFB public web page, you will find a fact sheet that describes in more detail the RRSE as well as the RRSE itself. Even though we have just started the PFOS/PFOA investigation and have a lot of work before cleanup decisions can be made, the Air Force recognizes that early community involvement is important to our success and is reaching out for your feedback. This is how you can help.

**Step 1:** Read the RRSE fact sheet. It defines relative risk and how it is used to prioritize sites.

**Step 2:** Read the RRSE. The information in the RRSE is fairly technical, but the evaluation process is easy to understand. We will hold a 30-day public comment period to send in your comments and help the Air Force to prioritize the AFFF areas on Travis AFB.

**Step 3 and beyond:** Learn more about this relatively new class of contaminants. For example, you find more information about the Air Force response to PFOS and PFOA at: <https://www.afcec.af.mil/WhatWeDo/Environment/Perfluorinated-Compounds/>. In future newsletters and fact sheets, we will point to other excellent sources of online information about these compounds.

Like an experienced marathon runner, we know that this is just the start of a long journey that will be filled with technical and programmatic obstacles. However, with the help of interested community members who care about Travis AFB and a clean environment, we will enjoy this finish line as much as the ones we have already crossed.

## Meeting Agenda

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
  - PFOS/PFOA Expanded Site Inspection
  - Relative Risk Site Evaluation
  - PFOS/PFOA Remedial Investigation
- V. Cleanup Program Status
  - FY21 Optimized Remediation Contract
- VI. Regulatory Agency Reports
- VII. Focus Group Reports
- VIII. RAB/Public Questions
- IX. Set Time and Place for Next RAB Meeting (15 April 2021)
- X. Set Focus Group Meeting Times

*Adjourn*

## Travis AFB Virtual Restoration Advisory Board Meeting

October 22, 2020  
7 p.m.

From the Comfort of  
Your Computer

## Editor's Virtual Meeting Key Points

1. This is our first virtual RAB meeting, so please be patient as we work out the technical issues. We will post meeting instructions at [www.travis.af.mil/Information/Environment/Environmental News/](http://www.travis.af.mil/Information/Environment/Environmental%20News/) by 20 October 2020.
2. If attending in a public area, we recommend the use of headphones to clearly hear the discussion without disturbing your neighbors.
3. If you have any questions, comments, or suggestions for future RAB topics; please send them by email to [enviropla@travis.af.mil](mailto:enviropla@travis.af.mil).



## 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.

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*If you would like more information or need special accommodations for the RAB meeting, please contact Lonnie Duke, (707) 424-7520.*

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