

Dear Stakeholders,

Our biggest news this quarter is somber: on April 5, Stephie Jennings, long-time Energy Technology Engineering Center (ETEC) deputy director, passed away. While my work at ETEC only briefly overlapped with Stephie's, I assure you that her legacy as a key part of the cleanup progress at Santa Susana Field Laboratory (SSFL) lives on. She will be missed.



Also in this newsletter, you will find details on what the Department of Energy (DOE) has been up to the past few months. This includes participating in the Simi Valley Street Fair and hosting Simi Valley elected officials on a site tour in May, and holding the public scoping meetings for our Supplemental Environmental Impact Statement (SEIS) in March.

My gratitude goes out to everyone who participated in our SEIS scoping process, whether you submitted a comment online, logged into our remote meeting, or came to our in-person open house. We appreciate your time and value your input. We know you are passionate about the cleanup at SSFL, and I don't make light of the time commitments you make to participate.

As DOE discussed at our scoping meetings, we are conducting a SEIS as part of the National Environmental Policy Act process to evaluate additional alternatives for soils cleanup at SSFL. This is a key step forward in achieving a final cleanup plan for SSFL. Examples of recent progress include our backfill and laboratory studies, where we are gathering additional data that will be presented in our SEIS to support soil remediation. The science corner activity in this newsletter is a fun way to help understand these studies better.

Please read the following pages to find the updates from DOE's cleanup at SSFL, including a story on the SEIS, and feel free to reach out to us if you have any questions.

Sincerely,

Dr. Josh Mengers

Local elected officials tour ETEC site

By Melissa Simon

Local elected officials toured the Department of Energy's (DOE) Energy Technology Engineering Center (ETEC) at Santa Susana Field Laboratory (SSFL) on May 6 to learn about the site, including an overview of past operations, cleanup progress and next steps.

Attendees included Simi Valley City Council member Joseph D. Ayala, Simi Valley City Manager Samantha Argabrite and Rancho Simi Recreation and Park District Director Eric Lundstrom. DOE representatives were Dr. Joshua Mengers, the federal project director/site manager for ETEC; Pamela Hartman, the federal deputy project director for ETEC; Melissa Simon, community outreach manager for ETEC; and DOE contractors Lucas Ray and Stewart Williford.

The group visited milkvetch hill, the Sodium Reactor Experiment, the Hazardous Materials Storage Area and the Former Sodium Disposal Facility.



(From left) Dr. Josh Mengers, the federal project director/site manager for ETEC; Eric Lundstrom, Rancho Simi Recreation and Park District director; and Joseph D. Ayala, Simi Valley City Council member. *Photo Courtesy of Melissa Simon.*

Former ETEC team member remembered

Stephanie Jennings dedicated 12 years to SSFL cleanup

By Melissa Simon

Kindness, resilience, integrity and service.

Those are just a few of the words Stephanie "Stephie" Jennings' family used to describe her character.

Jennings, the former federal project deputy director for the Department of Energy's (DOE) Energy Technology Engineering Center (ETEC) at the Santa Susana Field Laboratory (SSFL), died April 5 at the age of 76 from complications from chronic obstructive pulmonary disease and heart disease.

"Her loss leaves a profound void in the lives of her family, friends and the countless people she inspired," said Sarah Jennings, one of Stephie's daughters. "She was a source of inspiration and comfort to everyone fortunate enough to cross her path."



Photo courtesy of John Jones.

Melissa Thomas said her mother's smile and laugh were contagious and she loved everyone everywhere she went. "She was always giving and helping others – that's what she dedicated her life to. And she fiercely loved her family," Thomas said. "She would always find the good in every situation and she didn't dwell on the negative. Mom was always saying it will look better tomorrow."

Jennings brought that same positivity and dedication to her career of more than 40 years in environmental remediation project management, including work with the U.S. Environmental Protection Agency (EPA), Advanced Sciences, Inc., and DOE. Prior to joining DOE in 2007, Jennings worked at Los Alamos National Laboratory and led the team that developed national safety standards for transuranic waste facilities. She also participated in the National Environmental Policy Act (NEPA) activities in Idaho and Washington and at the Waste Isolation Pilot Plant (WIPP) in New Mexico. During her tenure at ETEC, Jennings was an integral part of remediation activities in Area IV and the Northern Buffer Zone at SSFL, the portion of the 2,850-acre former rocket engine testing and nuclear research facility where DOE's Office of Environmental Management (EM) is charged with cleanup. She also oversaw the federal environmental review process in her role as the NEPA compliance officer for the site.

Thomas said their family moved to Simi Valley to support Jennings and her work at SSFL. "We [as a family] felt strongly about cleaning up the site and were committed to making the community better for her grandchildren. It was often something she said at public meetings," she said.

John Jones, the National Nuclear Security Administration's Deputy Associate Director for infrastructure and lifecycle management, started working with Jennings in 2011 when he served as the federal project director for ETEC. "Stephie Jennings was a consummate professional, intelligent, efficient and one of the hardest workers I have ever had the pleasure to work with. She was also very competitive and had a fiery spirit," Jones said. He added that they were a great team with a "Yin-Yang energy" while working toward remediation for the site, and they maintained contact after Jennings' retirement in 2019. "I will miss my dear friend and will pray for her loved ones as they grieve Stephie's loss," Jones said.

Jennings is survived by her daughters, Melissa Thomas and Sarah Jennings; sons-in-law Eric Thomas and Joshua Ludwick; grandchildren, Lauryn Thomas, William Thomas and Zackary Thomas; and many nieces, nephews, grandnieces and grandnephews.

ETEC shares new proposed soils cleanup alternatives with the public

By Melissa Simon

Why now, what's changed?

This was the main question from many community members at recent public scoping meetings for the U.S. Department of Energy <u>Office of Environmental Management</u> (EM) Supplemental Environmental Impact Statement (SEIS) for cleanup at the <u>Santa Susana Field Laboratory</u> (SSFL).

Joshua Mengers, EM's federal project director for SSFL, said the <u>SEIS</u> builds on the <u>2018 Final Environmental Impact</u> <u>Statement</u> (FEIS) that includes cleanup alternatives for soils and groundwater and building removal at the <u>Energy</u> <u>Technology Engineering Center</u> (ETEC).

"Since 2018, we have made a lot of progress at ETEC: EM demolished all our remaining buildings, accelerated groundwater remediation and conducted additional soils studies," Mengers said.

Other changes prompting a SEIS include the state regulator, the California Department of Toxic Substances Control, certifying its <u>Final Program Environmental Impact Report</u> and proposing a new soil remediation alternative based on multiple lines of evidence.

Preparing a SEIS is part of the National Environmental Policy Act (NEPA) process for EM to evaluate additional alternatives for soils cleanup at SSFL.

EM is charged with cleaning up residual contamination remaining in Area IV, including ETEC, and the Northern Buffer Zone at the 2,850-acre former rocket engine testing and nuclear research facility located in Ventura County, adjacent to Los Angeles County.

Although additional alternatives are being considered, EM is committed to its agreements and a safe cleanup protective of human health and the environment, Mengers said.

"We want to make sure we don't needlessly remove clean soil and destroy habitats and cultural sites," he said.

EM is pursuing a SEIS to find solutions to challenges in implementing a background cleanup standard that were outlined in its FEIS. The SEIS will include soils remediation alternatives not previously evaluated in the FEIS.



About 40 people attended the DOE's in-person open house on March 18. Attendees had the opportunity to engage oneon-one with experts, share ideas and provide comments on the SEIS. *Photo courtesy of Lucas Ray.*

"Nothing has been decided. We are proposing solutions so EM can continue the cleanup the community deserves," Mengers said.

EM held a virtual meeting on March 6 to present the alternatives to the public and gather comments. An in-person open house was held March 18, where attendees could engage with experts one-on-one, share ideas and provide comments.

"It was great to see all the public engagement, allowing opportunity for our stakeholders to provide their input in developing alternatives to keep this project moving forward," Mengers said about the scoping period, which closed March 27.

Comments collected during the scoping period will be reviewed and incorporated into the draft SEIS. Once the draft SEIS is released, the public will have another chance to provide comments.

Community feedback will help EM get to a final, implementable soils cleanup plan at SSFL.

More information on the SEIS is available on the DOE's <u>NEPA website</u>.



Sometimes small amounts can make a big difference,

like the amount of chlorine needed to keep a swimming pool clean or nutrients needed in soil to grow healthy crops. Small concentrations are often measured in parts per million (ppm). A million is a large number and can be hard to visualize. This experiment is intended to demonstrate how small 1 ppm is and help to explain laboratory detection limits.



1 ppm is like:

- A few drops of dye in a bathtub
- One minute out of two years
- One grain of salt in a sack of sugar

PROCEDURE:

We will be making different concentrations of flour and baking soda mixtures. When baking soda is mixed with vinegar, it reacts by releasing bubbles of carbon dioxide. But flour does not react with vinegar. We will add vinegar to each mixture to see how much reaction is visible for different concentrations.

Start by adding 1 part baking soda (1 teaspoon) with 9 parts flour (9 teaspoons) to a bowl and mix well. This is now a 10% or 100,000 ppm baking soda mixture. If you take 1 part of this 10% mixture and mix it with 9 parts flour, it makes a 1% or 10,000 ppm mixture. You can repeat these steps in a method known as serial dilution to get lower concentration mixtures.



Parts per million (ppm)	100,000	10,000	1,000	100	10	1
Percent	10%	1%	0.1%	0.01%	0.001%	0.0001%
Fraction	1/10	1/100	1/1,000	1/10,000	1,100,000	1/1,000,000

OBSERVATIONS:

Now take a ¼ teaspoon sample of each mixture in a separate container and add 2 mL (~½ teaspoon) of vinegar. Observe and record what happens:

Sample A: %/ppm	Sample B:%/ppm	Sample C:%/ ppm

CONCLUSIONS:

Record below what you learned from this experiment.

WHY THIS MATTERS:

One part per million is a tiny amount, but sometimes tiny amounts matter -

substances present at parts per million or even smaller concentrations may be important. This is why laboratories use specific procedures and instruments designed to detect very small concentrations for the substance of interest. A laboratory can show their results are accurate by reporting the correct result for a sample where the actual concentration is known. They can show their results are precise by repeating the test multiple times and getting the same results.

Laboratory instruments have detection limitations. The detection limit is the lowest concentration the instrument can reliably see. When a laboratory cannot detect a substance in a sample, the result is labeled with a "U" for undetected. The laboratory also reports the instrument detection limit for the substance. If a result is labeled with a "U," that doesn't mean the substance isn't there, it just means that the instrument didn't detect it. For example, when we test for baking soda with vinegar, what is the estimated detection limit for this method? (**Hint**: What is the lowest concentration mixture where bubbles were seen?)



https://www.energy.gov/etec/energy-technology-engineering-center



Activity courtesy of U.S. DOE Office of Environmental Management





The Santa Susana Field Laboratory (SSFL) is home to Botta's pocket gopher (*Thomomys bottae*), one of five species of pocket gophers most often encountered in California. The native Botta's pocket gopher is differentiated from the other species by its size of 5 to 10 inches in length, tiny eyes and ears, short tail, large yellow incisor teeth and large curved front claws. The curved claws are perfect for digging, making pocket gophers master burrowers.

Did You Know?

Why it's special: Pocket gophers are important to the ecosystem because their burrowing activities move nutrients through soil, change soil conditions and create patches of bare mounds that bring different seeds to the landscape. Gophers are also important during wildfire recovery because their underground engineering helps plants above ground to regrow and flourish.

Typical habitat: Environments with a diversity of vegetation and soil that is moist and easy to dig.

Ecosystem engineers of underground fortresses, known as burrow systems:

- Burrow systems can range from 200 to 2,000 square feet.
- Feeding burrows are typically 6 to 12 inches below ground, while nests and food storage chambers can be as deep as 6 feet.
- Gophers are active year-round and don't hibernate.

Food source: As herbivores, gophers love all kinds of shrubs, flowers, roots, bulbs and other fleshy portions of plants underground. They will also eat bark that's several feet up a tree or shrub.



A Botta's pocket gopher seen at SSFL in January 2024. *Photo courtesy of Alex Walters*.



Pocket gophers create patches of bare mounds that bring different seeds to the landscape. *Photo courtesy of Getty Images.*

Fun facts:

- Gophers don't need a water source because they get enough from the food they eat.
- **Gophers are notorious hoarders** and get their name from the external fur-lined pockets/pouches in their cheeks that extend from their mouth to the shoulders. They use these pockets to forage and carry food.
- **Predators include owls, snakes, cats, dogs and coyotes.** Gophers defend themselves by using an earthen plug to block the opening of their burrow.
- Gophers tend to live alone, except during breeding season or when females are caring for the young.
- The population of gophers could be as high as 60 or more per acre.
- Gophers can live up to 3 years.

Information provided by Tara Schoenwetter, biologist at SSFL since 2011.

DOE draws visitors to booth at Simi Valley street fair

By Melissa Simon

Gloomy weather didn't do much to dampen the spirits of the thousands of community members who attended the Simi Valley Street Fair.

On May 3, the U.S. Department of Energy (DOE) was among the 400 vendors that hosted a booth at the biannual event sponsored by the Simi Valley Chamber of Commerce. Attendees could see the wares of local artists and crafters, taste culinary delights, and learn about local businesses, community leaders, civic organizations, police and fire departments, and school districts.

Visitors at DOE's booth not only had the opportunity to learn about the department's work at the Santa Susana Field Laboratory (SSFL) but could also pick up a copy of the December 2024 CleanUpdate newsletter, snag some local California poppy seeds or register to receive email updates about the site.

DOE team members also heard from some people who either worked at the 2,850-acre former rocket engine testing and nuclear research facility in Ventura County, California, or knew someone who did.

DOE's Office of Environmental Management is charged with remediating Area IV at SSFL where the department formerly operated the Energy Technology Engineering Center.

Aside from questions about SSFL and DOE's work at the site, visitors also had the chance to learn about soil backfill sampling and laboratory studies, where they got to see an example of detection limits using flour, baking soda and vinegar to see how different parts mixed together would react. The activity was inspired by questions raised at the recent public scoping meetings for DOE's Supplemental Environmental Impact Statement on cleanup at SSFL.



Dr. Josh Mengers, the federal project director/site manager for ETEC, teaches Noelle Saenz about detection limits as part of a science experiment activity at the Simi Valley Street Fair on May 3. *Photo courtesy of Melissa Simon*



(From left) Deb Kramer, executive assistant for ETEC; Melissa Simon, community outreach manager for ETEC; Dr. Josh Mengers, the federal project director/site manager for ETEC; and Lucas Ray, radiological control technician at SSFL. *Photo courtesy of Melissa Simon*



(Community members ask about DOE's work at SSFL during the May 3 street Fair. Also pictured are Lucas Ray, radiological control technician at SSFL, and Dr. Josh Mengers, the federal project director/site manager for ETEC. *Photo courtesy of Melissa Simon*



We want to hear from you! What questions do you have about the Santa Susana Field Lab? Tell us what you'd like to learn about the wildlife, plants, or other cleanup-related questions.

Email questions and comments to <u>etec@emcbc.</u> <u>doe.gov</u>.

Scan the QR code to read the *CleanUpdate* online.





Monkey flower blooming at SSFL in April. Photo courtesy of Pam Hartman

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ETEC CleanUpDate | JUNE 2025 | PAGE 8



