



Two deer joined a tour by Native Americans  
See page 3

October 2011

Message from the managers

## Greetings and good news on progress

Key studies necessary to development of clean-up standards are underway, and plans for evaluating soil treatment technologies are taking shape.

In fact, so many pieces of the puzzle leading to cleanup of SSFL Area IV are falling into place that we've jumped to the front page of this issue of the **CleanUpdate** to share our view of the latest with you. Articles on the inside offer more detail.

But first, an overview of the key activities:

- **Phase I of the co-located sampling program** is winding up and results of the soil sampling at Area IV will be reported throughout the coming year as the labs complete their analyses. See "First phase of chemical co-located soil sampling nears completion" (page 3).

- **Radiological and chemical background studies** will provide perspective on Area IV contaminants with data from similar soils outside of Area IV that have not been impacted by past SSFL activities. The U.S. Environmental Protection Agency (USEPA) issued its draft *SSFL Radiological Background Study Report* in July, and the California Department of Toxic Substances Control (DTSC) will issue its draft *Chemical Background Study Report* in the spring of 2012. See "How will clean-up levels be established for Area IV?" (page 2).

- **June saw the end of Groundwater U**, a public information program sponsored by the U.S. Department of Energy (DOE), NASA, and Boeing, in collaboration with the DTSC. Some 160 individuals attended one or more GWU sessions, and more than one-third of them responded to our request for their feedback. See "Community members offer feedback, suggestions after GWU" (page 3).

- **Plans for the Building Survey are underway.** As we noted in the June 2011 *CleanUpdate* (page 2), the building survey is needed so that DOE can decontaminate and remove remaining buildings. Once they have been removed, the soils

underneath will be sampled for radionuclide contamination. DOE plans to conduct the survey as funding becomes available.

- **Planning for Soil Treatability Studies with extensive public outreach is underway:** DOE is developing plans to identify, screen, and evaluate potential soil treatment technologies to determine whether any could meet requirements. See "DOE to initiate public involvement process for soil treatability study" (page 3).

Finally, we are very pleased with interactions around vigorous community



involvement efforts we have undertaken this year. We extend our heartfelt thanks to everyone for your ongoing interest, feedback, and continued investment of your personal time to participate in the multitude of SSFL activities. The Area IV cleanup will be the better for it.

John Jones  
Federal Project Director, DOE

Stephie Jennings  
Deputy Federal Project Director, DOE

# First phase of chemical co-located soil sampling nears completion

The first phase of chemical soil sampling is nearing completion at Area IV under the co-located sampling program prescribed by the December 2010 Administrative Order on Consent (AOC). As USEPA has collected surface and subsurface samples for radiological analysis, it also has provided samples to DOE for chemical analysis.

Validated results from the chemical sampling and analysis will be available over the coming months (see map for status of the 11 sub-areas in Area IV).

From the first set of validated sampling data (Sub-Area 5C), we can report that the sampling data both confirmed and added to the soil contamination knowledge from earlier sampling conducted as part of the Resource Conservation and Recovery Act (RCRA) Facility Investigations (RFI).

**Will the results be available to the public?** The validated results of chemical sampling will be presented in separate reports (by sub-area) upon approval by DTSC. The reports will identify the chemicals found in the sampled soils and the levels at which they were detected. The public may read the first report and others as they become available on DOE's website at:

<http://www.etec.energy.gov>.

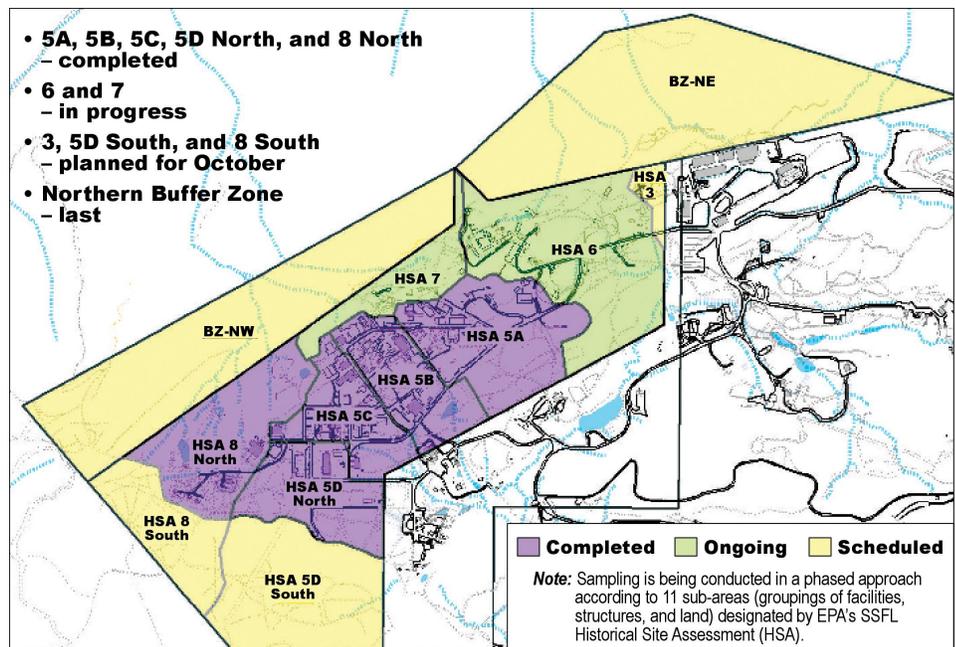
**What's next?** This first phase focused on areas where contamination was expected. Phase 2 is sampling from random locations chosen by USEPA for its radiological sampling. Fewer detections are expected during Phase 2. The validated laboratory

results from Phase 1 will be needed to begin the planning for Phase 2. Phase 3 is a chemical data gap investigation. The data gap analysis will help determine if and where additional sampling data are needed to fully understand the extent of chemical contamination at Area IV.

DOE will work with DTSC, USEPA, and stakeholders over the coming months to plan these remaining phases of soil sampling.

For information on radiological sampling progress in SSFL Area IV, see USEPA's website at:

<http://www.epa.gov/region09/SantaSusana>.



**Status of Area IV Co-Located Sampling (by sub-area)**

## How will clean-up levels be established for Area IV?

DOE is obligated to clean up the soils in Area IV and the Northern Buffer Zone (NBZ). These are the areas impacted by past research by DOE and its predecessor agencies.

DTSC, as the regulator for the SSFL cleanup, will establish the final clean-up levels for the soils consistent with the December 2010 AOC. The final clean-up levels will be specific concentration ceilings for all the contaminants of concern in Area IV and the NBZ and will become what the AOC describes as "look-up" tables.

The AOC specifies that the "end state after cleanup will be as close to local background levels as practicable." To understand background, USEPA and DTSC are studying similar soils in close proximity to SSFL that were not impacted by past SSFL activities. This understanding will contribute to the knowledge needed by DTSC, and others in the collaborative process, to develop the final clean-up levels.

The key activities include the following:

- **Determine radiological background** – To determine background radiological levels, USEPA has conducted a Radiological Background Study. A draft of the study report was issued for public comment in July 2011. (See USEPA's website at: <http://www.epa.gov/region09/SantaSusana>. The report documents background levels of radionuclides that were identified by sampling soils near SSFL that were not impacted by SSFL activities.
- **Determine chemical background** – DTSC is directing a Chemical Background Study (currently underway), which will document background levels of chemicals by sampling nearby soils not impacted by SSFL activities. See DTSC's website at: [http://www.dtsc.ca.gov/SiteCleanup/Santa\\_Susana\\_Field\\_Lab](http://www.dtsc.ca.gov/SiteCleanup/Santa_Susana_Field_Lab).

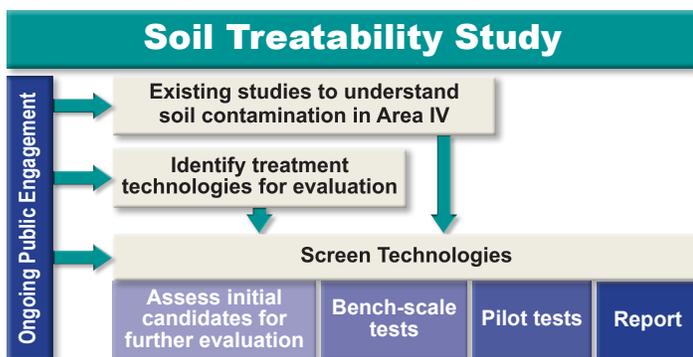
- **Establish clean-up levels ("look-up tables")** – Based on the results of the above background studies, along with other considerations discussed in the AOC, DTSC will develop a set of look-up tables that will contain limits on chemical and radionuclide concentrations (final clean-up levels) in the soils to be cleaned up. DOE, USEPA, and the public will have an opportunity to participate in the development of the look-up tables. These opportunities will be announced by DTSC on their website at: [http://www.dtsc.ca.gov/SiteCleanup/Santa\\_Susana\\_Field\\_Lab](http://www.dtsc.ca.gov/SiteCleanup/Santa_Susana_Field_Lab) and will also be available on the DOE website for SSFL at: <http://www.etec.energy.gov>.

# DOE to initiate public involvement process for soil treatability study

DOE is preparing to evaluate whether one or more soil treatment technologies could effectively address contamination in Area IV soils. The AOC specifies cleanup of soils to “as close to background levels as practicable” – which means that the end-state of the Area IV soils should be similar to soils in close proximity to SSFL that were not impacted by past SSFL activities.

Cleanup of the soils in accordance with the AOC may necessitate excavation and transport of contaminated soils to an off-site disposal facility. However, the AOC also included provisions for on-site treatment if it can be demonstrated that such an approach would offer equivalent protection to adjacent communities.

The Soil Treatability Study is being designed to evaluate whether any innovative in-place (or *in situ*) treatment technologies could effectively meet the requirements in the AOC. DOE plans to begin this effort this fall. The public will have multiple opportunities to participate throughout the process.



**How will the study be conducted?** Sandia National Laboratories will provide technical direction for this study. The process will begin with identification of a universe of potential treatment technologies, with suggestions from the public, other agencies, and professional organizations. Screening will be used to select those with the greatest likelihood for success.

Later phases will include bench-scale tests (testing in a laboratory environment on a small scale) and larger “pilot tests”

## Questions to be addressed

- What is the universe of technologies that might work in Area IV? Could any “green” technologies work?
- What criteria should be used to narrow down that list of potential technologies to those that might be most promising for addressing the contamination found at SSFL?
- How should the bench tests and pilot tests be designed to demonstrate whether any technologies can accomplish the rigorous requirements established in the AOC?

using actual soils under existing site conditions at SSFL Area IV. At completion of the pilot tests, Sandia will submit a report on the results, with recommendations of which technologies, if any, can be considered for cleanup of SSFL soils, and the proposed technologies will be included in the Soil Remedial Action Implementation Plan.

**How can the public be involved?** The public will be invited to participate throughout the process, starting by helping to identify technologies that should be considered.

- **The first public event will be a kick-off presentation on October 25, 2011, 6:30 p.m.,** at the Grand Vista Hotel. The purpose is to share the overall study design and screening criteria and to solicit suggestions for technologies that should be considered.
- **Public invited to join investigation group.** Interested community members are invited to participate in a “Soil Treatability Investigation Group.” The group will meet throughout the entire process to review plans and provide input to the screening process as it progresses. Individuals who are interested in becoming a member of the group can notify DOE by contacting Debbie Kramer via telephone (818 466 8898) or email [debbie.kramer@emcbc.doe.gov](mailto:debbie.kramer@emcbc.doe.gov).

Please check DOE’s website for up-to-date information on public involvement opportunities for this study at: <http://www.etec.energy.gov>.

## Community members offer feedback, suggestions after GWU

More than a third of the 160 people who attended one or more of the Groundwater U sessions responded to the sponsors’ invitation to evaluate the program. (NASA, Boeing, and DOE sponsored the program, in collaboration with DTSC.) DOE is now reviewing the feedback.

“The SSFL community’s feedback on the seminars will help us learn what worked well and how we can improve in explaining complex scientific studies,” said Stephanie Jennings, DOE Deputy Project Director.

“We want to do similar programs for other issues of interest to the community regarding the SSFL cleanup,” Ms. Jennings said. (See article, above.)

For a summary of the GWU attendees’ feedback from the evaluation forms, log on to DOE’s website at: <http://www.etec.energy.gov>.

## DOE consults with Native Americans

Archaeologists met with local Native Americans on September 12 to discuss plans to dig trenches in Area IV. Hydrologists used aerial photos to identify locations where digging below the surface will help to develop a better understanding of the subsurface geology and groundwater. Before they begin digging (called “trenching”), however, they invited nearby Chumash, Fernandño, and Tataviam neighbors into consultation. Their guests toured the five potential trench locations and agreed to protocols to avoid damage to archaeological resources. Native American monitors will observe all trenching work.



Shown in the photo above are: Stephen Bryne, Randy Guzman-Folkes, Wendy Lowe, Stephanie Jennings, Beverly Salazar Folkes, Dave Dassel, Ray Corbett, Alan Salazar, Garrett Hazelton, and Patrick Tumamait. The group was treated to a visit by two deer during the tour (see photo, page 1).

## Want to learn more? Visit the site, attend a meeting

**Site visitation days** – DOE/DTSC will continue to host public visitation days at Area IV on the second Wednesday each month, and EPA will host public visitation days at Area IV on the 4th Wednesday of the month (10:30 to noon). These visitation days offer an opportunity to observe the radiological and chemical co-located sampling activities in Area IV and the Northern Buffer Zone. To make a reservation, send an email to Debbie Kramer of DOE at [debbie.kramer@emcbc.doe.gov](mailto:debbie.kramer@emcbc.doe.gov).

**Soil treatability study presentation** – As reported on page 3, DOE is beginning a study to determine if there are suitable technologies that can meet AOC requirements for cleaning up the soils at Area IV. DOE will hold a kick-off presentation for the public on October 25, 2011, at the Grand Vista Hotel. Further details about the meeting will be announced on DOE's website at: <http://www.etec.energy.gov>.



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## Making it easier to be "green"

Interested in receiving a paperless **CleanUpdate**? We are seeking to reduce resource consumption of our newsletter and invite readers to notify us if you are willing to receive the **CleanUpdate** by email only. Please call Debbie Kramer at 818 466 8898 or email her at [debbie.kramer@emcbc.doe.gov](mailto:debbie.kramer@emcbc.doe.gov).

You may view past issues of **CleanUpdate** on DOE's website at:  
<http://www.etec.energy.gov/Cleanup/Cleanup-Status.html>.

### For more information

<http://www.etec.energy.gov>  
Ms. Stephanie Jennings, Deputy Federal Project Director  
U.S. Department of Energy  
P.O. Box 10300, Canoga Park, CA 91309  
Fax: 818 466 8730  
email: [Stephanie.Jennings@emcbc.doe.gov](mailto:Stephanie.Jennings@emcbc.doe.gov)