DTSC FACT SHEET

Department of Toxic Substances Control – Our mission is to protect the people, communities, and environment of California from harmful chemicals by cleaning up contaminated sites, enforcing hazardous waste laws, and compelling the development of safer products.

Background on Background

Soil Smarts Fact Sheet #1

Santa Susana Field Laboratory (SSFL) is a 2,850-acre site in Simi Valley where rocket engine testing and nuclear research took place. DTSC is the lead regulatory agency overseeing the cleanup along with multiple state, federal and local government agencies. DTSC certified the final Program Environmental Impact Report (PEIR) for the SSFL in July 2023, progressing sitewide cleanup efforts of SSFL. The SSFL cleanup must follow agreements with the three Responsible Parties, National Aeronautics and Space Administration (NASA), Boeing, and the Department of Energy (DOE). Groundwater cleanup for all three Responsible Parties is directed by the 2007 Consent Order. Boeing is subject to a risk-based soil cleanup governed by the 2022 Settlement Agreement. DOE and NASA must follow the 2010 Administrative Orders on Consent (AOCs), the legal agreements which direct soil cleanup to local background levels.

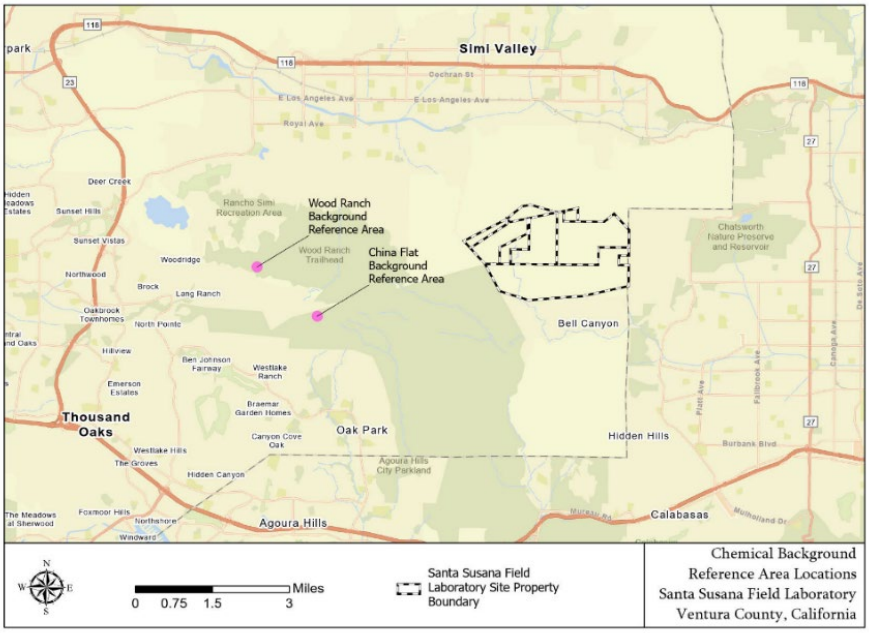
This fact sheet explains the DTSC Chemical Background Study and how the Background Reference Locations were chosen and is part of *Soil Smarts: DTSC's Interactive Learning Series on the Background Cleanup at SSFL.* This series focuses on the cleanup of chemicals in soil to local background levels at NASA and DOE areas. Background levels refer to concentrations of chemicals found in soil that are not influenced by site releases. In 2012, DTSC completed a Chemical Background Study to evaluate local background levels. To help guide the site cleanup, DTSC developed the Chemical Look-Up Table (LUT) using the data from the Background Study.

Acronyms

AOCs	Administrative Orders on Consent
BTVs	Background threshold values
LUT	Look-Up Table
MRL	Minimum method reporting limit
PEIR	Program Environmental Impact Report
RPs	Responsible Parties
SVOCs	Semi Volatile Organic Compounds

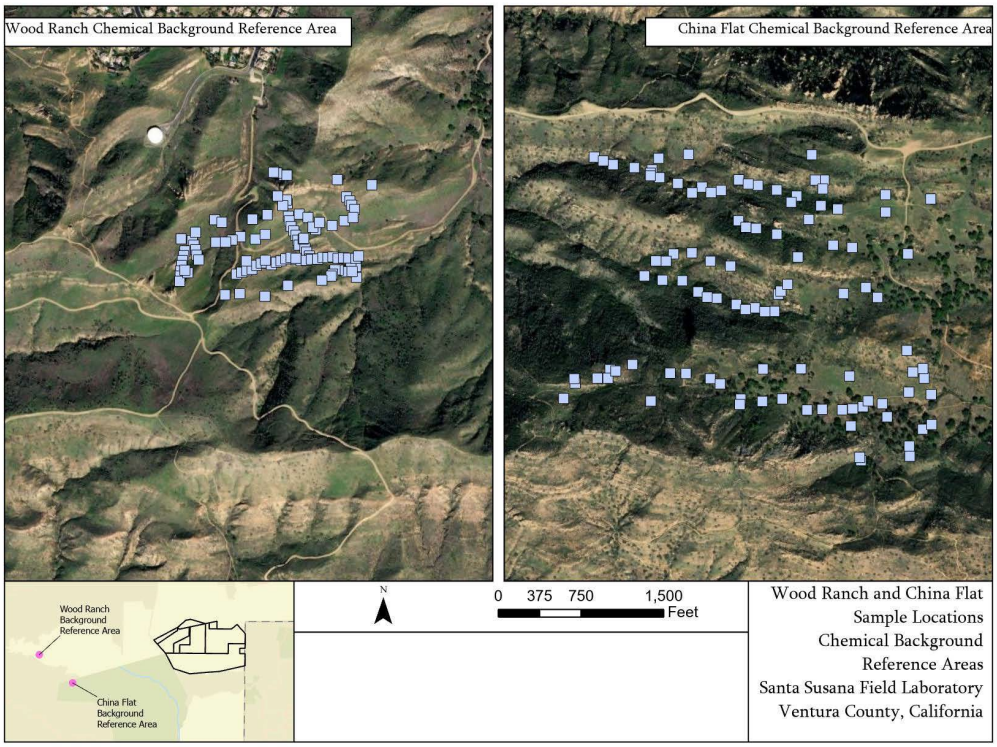
Determination of Chemical Soil Local Background Levels

Chemical Background Reference Areas: DTSC identified the Chemical Background Reference Areas with public involvement, which included public visits to the reference areas in 2009 and 2010. To ensure that the reference areas had not been impacted by SSFL activities, DTSC completed detailed evaluation work reviewing aerial photographs and fire history. The reference areas were also within the same geologic formation as SSFL and undisturbed. Two locations met these conditions and were chosen as chemical background reference areas: China Flat, 3 miles from the SSFL western border, and Wood Ranch, 4 miles from the western border.



Sample Collection & Chemical Analysis: In 2011, a total of 295 soils were collected from the reference areas and submitted for laboratory analysis. DTSC tested the soil for chemicals that are naturally occurring in the area, including from impacts related to wildfires. DTSC also tested for chemicals that might be present from activities unrelated to SSFL, like pesticide and herbicide applications. Chemical analysis included:

- metals
- dioxin-furans
- perchlorate
- pesticides
- herbicides
- SVOCs
- formaldehyde
- cyanide



- ethanol
- methanol

In the DTSC Chemical Background Study, special methods were used to achieve the lowest possible reporting limits. These non-standard methods were used to detect low concentrations in the background soils.

Statistical Evaluation of Data: The results from the Background Study were used to develop background threshold values (BTVs), which represent local background concentrations for individual chemicals. For chemicals frequently detected in the Background Study, the BTVs were used to develop the LUT values. For chemicals that were detected at a very low frequency in the Background Study, the LUT values are based on the minimum method reporting limit (MRL) achievable at the time. MRL means the minimum level that a laboratory can report with a reliable result. Please see *Soil Smarts Fact Sheet and Video 2* for more details on the chemical LUT.

Additional Information

DTSC has prepared a set of educational materials called *Soil Smarts* that offer video shorts and fact sheets like this one. The companion video for this fact sheet, *Background on Background,* is available on our Soil Smarts webpage: www.dtsc.ca.gov/santa_susana_field_lab/soilsmartsbackgroundcleanup

Questions or Comments?

Please visit STREAM: SSFL Tool for Response, Engagement, and Answer Management: https://stream.ssfl.dtsc.ca.gov/