

Santa Susana

is located on 2,850 acres of land in the Simi Hills area of eastern Ventura County. In addition to its spectacular natural beauty, the site of the former field laboratory also includes such significant biological, cultural and historical features as riparian woodlands, prehistoric Native American art and rocket engine test stands. Santa Susana overlooks Simi Valley to the north; Chatsworth, West

Hills and Canoga Park to the east; Woodland Hills and Thousand Oaks to the south and Moorpark to the west.

Boeing owns approximately 2,398 acres of the site, of which, approximately 90 acres are leased to the US Department of Energy (DOE). The federal government owns the remaining 452 acres, administered by NASA.



The Boeing Company

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Online: www.boeing.com/aboutus/environment/santa_susana/index.html

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More information about our clean-up activities can be found at the following locations:

U.S. Environmental Protection Agency - Region 9
75 Hawthorne Street
Mail Code WST-5
San Francisco, CA 94105
415-972-3347
<http://www.epa.gov>

U. S. Department of Energy
P.O. Box 10300
Canoga Park, CA 91309
818-466-8730
<http://www.etec.energy.gov>

National Aeronautics and Space Administration/JPL
4800 Oak Grove Dr
Pasadena, CA 91109-8099
818-393-0754
<http://ssfl.msfc.nasa.gov>

Department of Toxic Substances Control
9211 Oakdale Avenue
Chatsworth, CA 91311
818-717-6567
<http://www.dtsc-ssfl.com>

Regional Water Quality Control Board, Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013
213-576-6600
<http://www.waterboards.ca.gov/losangeles>



Santa Susana



Protecting human health,
restoring the environment,
and preserving open space
for future generations



Boeing is committed to a thorough and timely cleanup of Santa Susana that protects human health and preserves the biological, cultural and historical resources at the site.

History: America's Space Program

The Santa Susana Field Laboratory started operations in 1950 as post-World War II America began preparations for a national space program. At the time, the United States was in the midst of the Cold War and a short time later, a race to see which country could make the fastest and furthest advancements into space.

The site was home to rocket engine testing that supported virtually every major space program in U.S. history, including the earliest satellites and the Space Shuttle. From Atlas, Thor and Jupiter engines to the Space Shuttle Main Engine, the work at Santa Susana took us to the moon and back.

Rocket engine testing at Santa Susana was conducted by Rocketdyne, which was established in 1955 as a separate division of North American Aviation, Inc. Rocketdyne later became a part of Rockwell International Corporation.

Through the Atomics International division of North American Aviation, then later through the DOE, energy-related research, testing and development projects were conducted at Santa Susana's Energy Technology Engineering Center (ETEC). Phasing out of most energy research began during the mid 1960s and by 1988, the remaining operations were closed. (For more information about the ETEC closure, please visit www.etc.energy.gov.)

In 1996, Boeing acquired the aerospace and defense operations of Rockwell, which included Rocketdyne. In 2005, Boeing sold Rocketdyne yet retained ownership of Santa Susana.



Cleanup: Protecting Human Health

Boeing—under regulatory oversight from the California Department of Toxic Substances Control (DTSC) and Los Angeles Regional Water Quality Control Board (Regional Board)—is committed to continuing to fulfill its responsibilities to clean up locations affected by past business operations. Protecting human health and the environment in the communities where we live and work is one of Boeing's top priorities and we are committed to an open dialogue with interested stakeholders regarding the cleanup efforts at Santa Susana.

Surface Water Monitoring and Cleanup

Surface water, defined as storm water run-off and treated groundwater, is regulated under a permit by the Regional Board. The permit requires Boeing to monitor storm water runoff at outfall, or drainage locations, for numerous constituents such as metals and dioxins.

Boeing has installed sophisticated drainage controls and multi-stage filtration systems at a number of the outfalls utilizing filter media to determine which are most effective in reducing constituents.

However, managing storm water runoff from the site continues to be a technical challenge because limits for certain constituents such as dioxins, which can be found naturally in the environment, are thousands of times more stringent than drinking water standards.

Boeing is taking action to meet our permit limits by improving existing storm water technologies used on site. In some cases, this involves collecting storm water runoff in holding tanks and treating it with advanced filters and chemicals before release.

In addition, Boeing is working to implement the Regional Board's 2008 Interim Source Removal Action (ISRA) Order to remove soil that may be contributing to violations of constituent limits contained in the permit. Boeing will continue to work with the Regional Board to explore other alternatives to ensure full compliance with water quality laws.

Soil and Groundwater Characterization and Cleanup

With oversight from DTSC, the soil and groundwater cleanup program is currently in the investigation phase. The goals of the program are to characterize the nature and extent of chemical contamination, evaluate risks to humans and the environment and gather data to support the cleanup. The characterization is proceeding along two parallel paths, one for soil and the other for groundwater.

The soil characterization has included 15,000 soil samples analyzed for numerous chemical constituents. Under the approval and oversight of DTSC, more than 16 interim, or

temporary, cleanups have been completed amounting to the removal of 50,000 cubic yards of contaminated soil and debris as well as in situ, "in place," bioremediation.

Groundwater investigations include analyzing groundwater from more than 400 on and off-site wells, mapping the geology of Simi Hills and identifying and sampling seeps and springs. Several new techniques have been developed and used for the first time at the site to provide a detailed look into the fractured bedrock and deep groundwater at Santa Susana. This includes drilling core holes to depths of 1,400 feet, analyzing more than 7,800 samples for chemicals and monitoring and installing measuring devices in numerous wells to study the distribution of the chemical contamination.

In order to remove contaminants from groundwater in source zones, an updated extraction treatment system will pump and treat groundwater from wells throughout the site. The system will use a series of regulatory approved

treatment technologies, including filtration, ion exchange, air stripping, carbon adsorption, and ultra violet oxidation. Once online, the system will be able to treat approximately 100 gallons of water per minute and remove chemicals such as trichloroethylene and perchlorate.

Future: Cultural and Biological Resources

Once soil sampling and analysis is complete and the extent of contamination is understood, a cleanup plan will be created for DTSC's review and, when approved, cleanup will begin. The cleanup will need to take into consideration potential impacts on the enormous cultural and biological resources at Santa Susana. Home to rare and protected species, magnificent riparian oak woodlands and other biota, Santa Susana's biological value is unmistakable. It sits within a rare and vital wildlife corridor that connects the Sierra Madre Ranges of Los Padres National Forest to the Santa Monica Mountains and the Pacific Ocean.

According to a South Coast Wildlands 2008 report, this 125,000-acre "Santa Monica-Sierra Madre Connection" is one of the few coastal-to-inland linkages remaining in California's South Coast Ecoregion and is crucial to numerous animals and plants.

Additionally, Santa Susana has a tremendously rich cultural history. The area was inhabited by indigenous Native American tribes and is home to one of the finest examples of prehistoric Native American art in North America and is recorded in the National Register of Historic Places.

Santa Susana