

# **EPA's Radiological Studies**

Santa Susana Field Laboratory

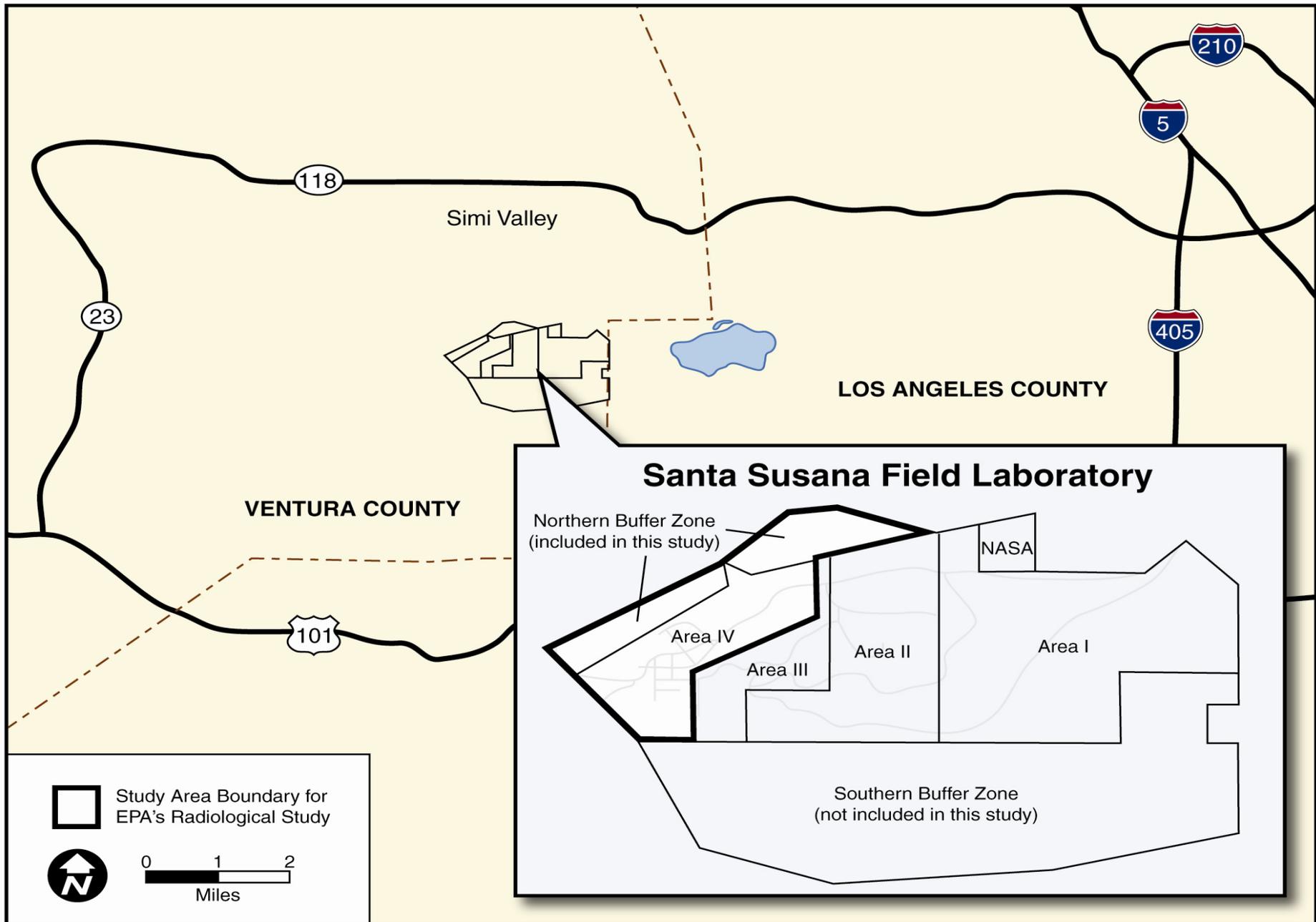
Presented by: EPA Region 9

Presented For: SSFL Interagency Workgroup

November 9, 2010

# Tonight's Presentation

- Summary of EPA field work at SSFL to date
  - Key Project Dates for 2010

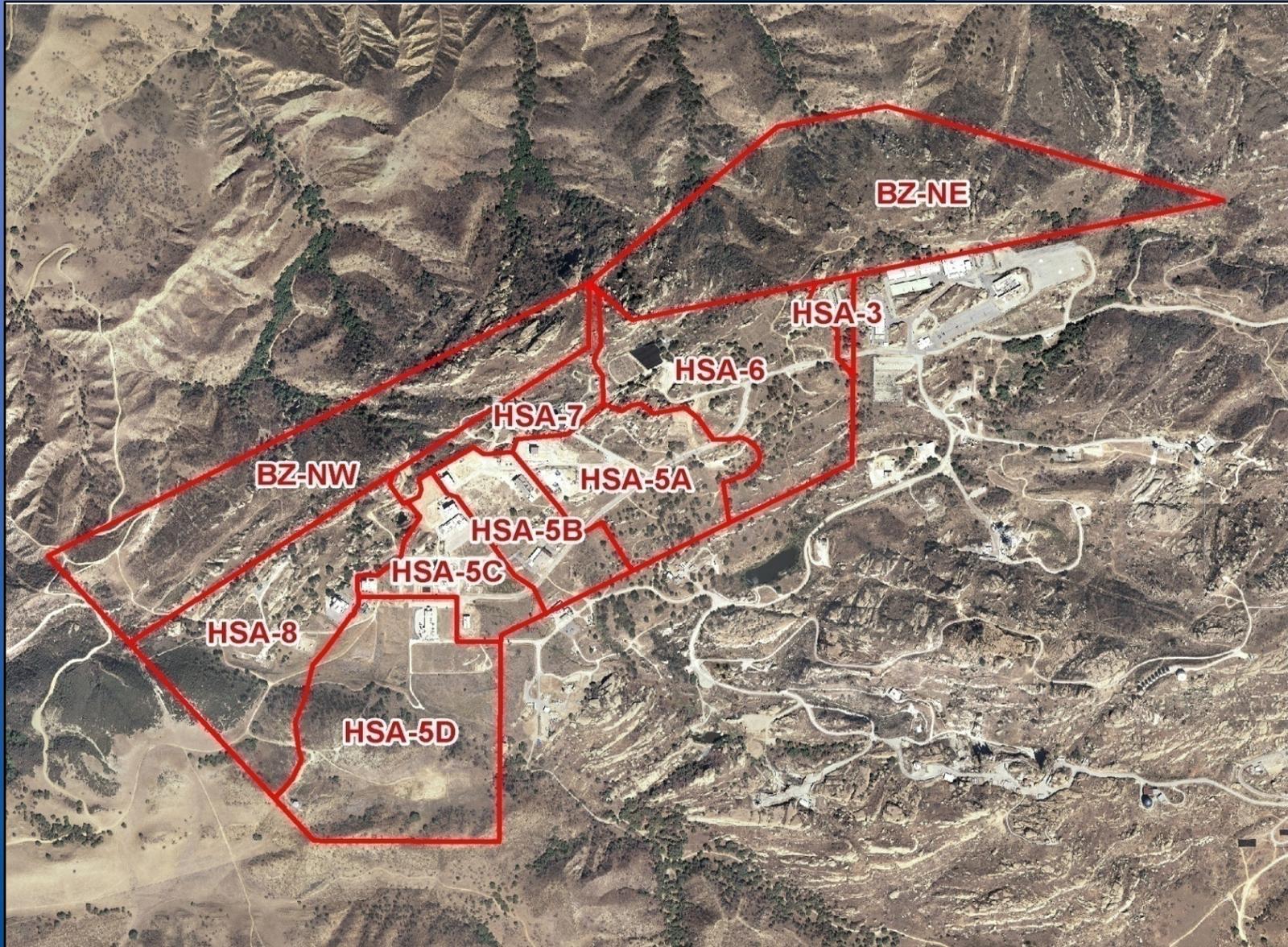


**Figure 1: Study Area Boundary for EPA's Radiological Study, Santa Susana Field Laboratory**

A large, faint, light blue logo is centered in the background. It features a circular sun with a smaller circle inside, positioned above a horizontal line. Below this line are two large, stylized leaves that curve upwards and meet at a point at the bottom. The entire logo is rendered in a lighter shade of blue against the darker blue background.

# **Gamma Radiation Scanning Status Update**

# 10 Study Areas



# Photos of Gamma Scanning Equipment



## Enhanced Radiation Gamma Scanner (ERGS) II

- Ability to scan with highest sensitivity.
- Scanning height 15 inches above ground surface.
- Scanning rate of 2 feet/second.
- Field of view of 60 inches.

# Photos of Gamma Scanning Equipment



## Mule Mounted Gamma Scanner (MMGS)

- Ability to scan in steep and hard to reach areas with high sensitivity.
- Scanning height 35 inches above ground surface.
- Scanning rate is dependent upon the mule's gait.
- Field of view is dependent upon the mule's height.

# Photos of Gamma Scanning Equipment



## Wheel Mounted Gamma Scanner (WMGS)

- Ability to scan with high sensitivity
- Scanning height 12 inches above ground surface
- Scanning rate of 2 feet/second
- Field of view of 24 inches

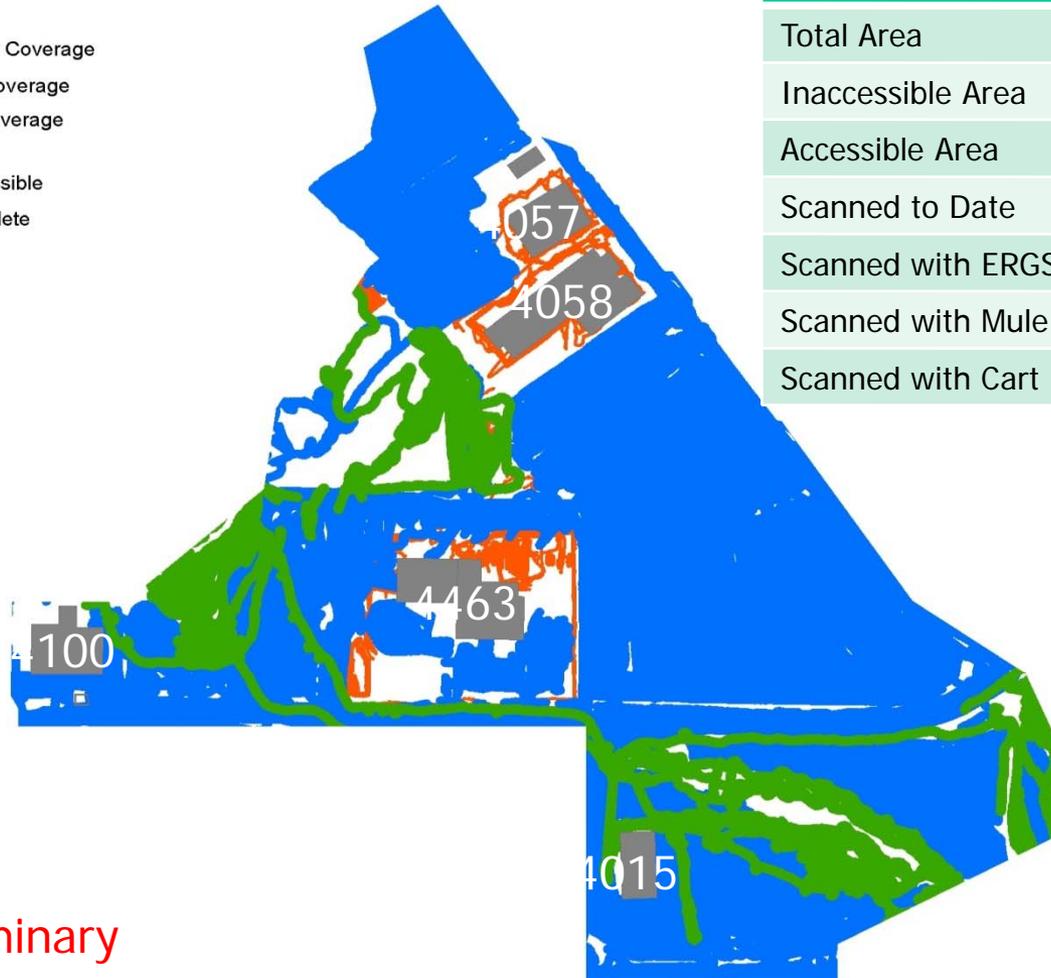


## Hand Held Gamma Scanner (HHGS)

- Ability to scan with moderate sensitivity
- Scanning height 9 inches above ground surface
- Scanning rate of 1 feet/second
- Field of view of TBD

# HSA-5C Detector Coverage Map

- ERGSII Coverage
- Mule Coverage
- Cart Coverage
- Inaccessible
- Incomplete



Description	Acres
Total Area	21.9
Inaccessible Area	1.3
Accessible Area	20.6
Scanned to Date	18.3
Scanned with ERGS II	15.8
Scanned with Mule	3.6
Scanned with Cart	1.1

Preliminary

# Phase I Groundwater Sampling Summary of Activities

- Phase I groundwater sampling began on August 17, 2010 and was completed on September 9, 2010.
  - Phase I consists of all accessible wells in Area IV – a total of 66 wells were sampled



## Water Level Monitoring



## Groundwater Sampling Rig

Sampling rig travels from well to well.



## Sample Cooler

Bottles packed in cooler prior to daily shipment off-site to laboratory for analysis.

# Geophysical Investigation

- Goal of Geophysical investigation is to identify potential buried materials to be tested during soil sampling program
- Geophysical investigation plan issued August 6
- Survey target areas (87 acres) based on aerial photo analysis and historical information
- Geophysical Surveys in Subareas 5C & 5B: Completed Thru October (20 Acres)
- Data processing and interpretation of results underway

# Geophysical Survey Equipment

- Magnetometer: Used to detect buried metal objects
- EM-31: Used to detect differences in soil conductivity
- Ground penetrating radar (GPR): Used to detect changes in subsurface properties (e.g., location of trenches)

# Geophysical Survey in Area 5C



# Photos of Geophysical Survey



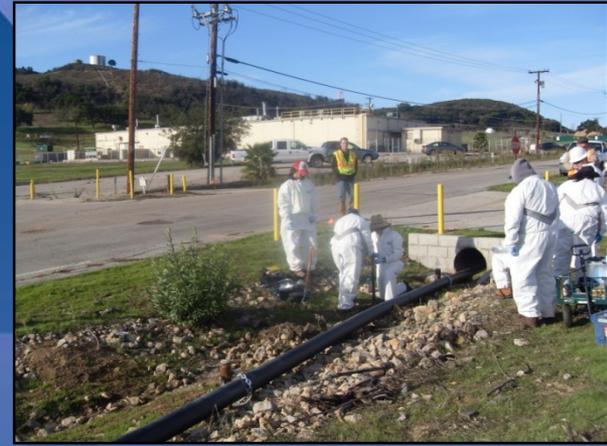
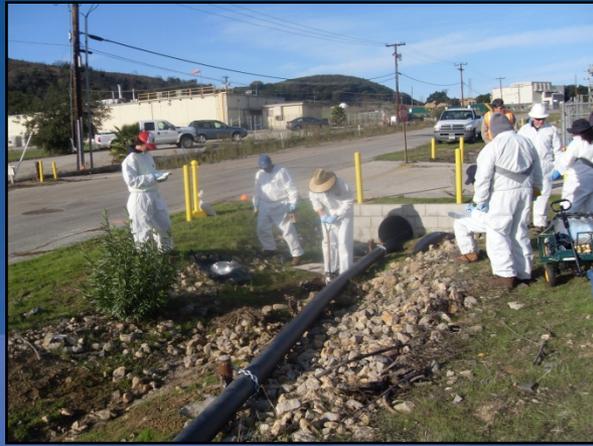
# Soil Sampling Program

- Collected first sample on October 18, 2010
- First round: "Targeted Sampling"
- Second round: Targeted sampling where elevated levels have been identified and some random sampling
- Analytical lab procurement process ongoing and scheduled for completion in December

# Progress to Date

- 89 Soil Samples Collected in Subarea 5C
  - 64 Surface Soil Samples
  - 13 Drainage Discharge Points and Channels Soil Samples
  - 12 Subsurface Soil Samples

# Photos of Soil Sampling in Area 5C



Sampling Soil by use of Slide Hammer, Shovel, and Trowels, then decontaminated to use again.



Samples put into Metal Sleeves, Glass Jars and Resealable Bags after Inspection.

# Radiological Background Study Schedule

<b>Activity</b>	<b>Planned Date</b>
Laboratory Analysis Completion	November 2010
Data Validation Completion	December 2010
Tech Memo	December 2010/January 2010

# Key Area IV Project Milestones

Task	Estimated Start Date	Actual Start Date
Gamma Scanning	July 2010	July 2010
Ground Water Sampling	August 2010	August 2010
Surface Water and Sediment Sampling	November 2010	---
Soil Sampling	October 2010	October 2010---
Laboratory Analyses	November 2010	---
Task	Estimated Completion Date	Actual Completion Date
Environmental Compliance	July 2011	---
All Field Activities	December 2011	---

# EPA Radiological Characterization Study Area IV and Northern Undeveloped Land Action Status - October 25, 2010

Major Action	% Complete	Present Status
Environmental Compliance	90%	Consultation with US Fish and Wildlife Service, California State Fish and Game for ESA Compliance; Consultation with State Historic Preservation Office (Section 106 National Historic Preservation Act) SHPO Package for Northern Undeveloped Land Survey last piece still to be completed sent to SHPO October 18
Historic Site Assessment	60%	Subarea Group 5C completed Subarea 5B to be issued to Stakeholders by October 25. Internal drafts for subsequent subareas under preparation. NUL subareas will be incorporated with last Area IV subarea for total of 8 HSA memos
Former Worker Interviews	85%	Joint EPA/DOE Interviews completed; Most of the EPA-only and DOE-only interviews completed. Referral interviews on going and to be completed by 1/1/2011. Final reports by both Agencies due 4/1/2011.
Geophysical Survey	20%	87 acres targeted. Work began August 10, 2010. Geophysical survey of Subarea 5C and 5B is complete
Gamma Scanning	15%	Approximately 105 acres total surveyed to date and work is continuing. Accessibility of NUL being re-examined
Vegetation Trimming	25%	Approximately 100 acres in Area IV have been cleared to date. Currently, all vegetation has been cut in Subareas 5C, 5B, and 5A. Cutting has begun in Subarea 5D.
Water Sampling	45%	First round (of two rounds) groundwater sampling completed; lab results anticipated in January. Lab procured for first round groundwater only. First round sediment testing set for late November and surface water testing this winter.
Lab Procurement	55%	\$16.3M budgeted. Proposals received and several labs have been shortlisted for additional review and auditing-on schedule for contract award in November 2010.
Soil Sampling	<5%	Sampling began on October 18 in Subarea 5C. Up to two rounds per Subarea inclusive of collection of soil samples for DOE/DTSC chemical testing. Intensive community involvement.
Data Packages and Lab Results	0%	Water sampling currently being analyzed at the laboratory. Soil samples will start in November 2010
On-going Stakeholder Technical Work Group meetings	On-going	Stakeholder meetings are held approximately every 6 weeks, larger scale public meetings held 3 times a year, tours on-site to observe work will be scheduled 2 times per month

# EPA Website

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

- Fact Sheets
- EPA's Role at SSFL
- Maps
- Technical Documents (workplans, reports)
- PowerPoint Presentations
- Contact information
- Information on how to observe EPA's work – 2<sup>nd</sup> and 4<sup>th</sup> Wed of every month