



## Department of Toxic Substances Control



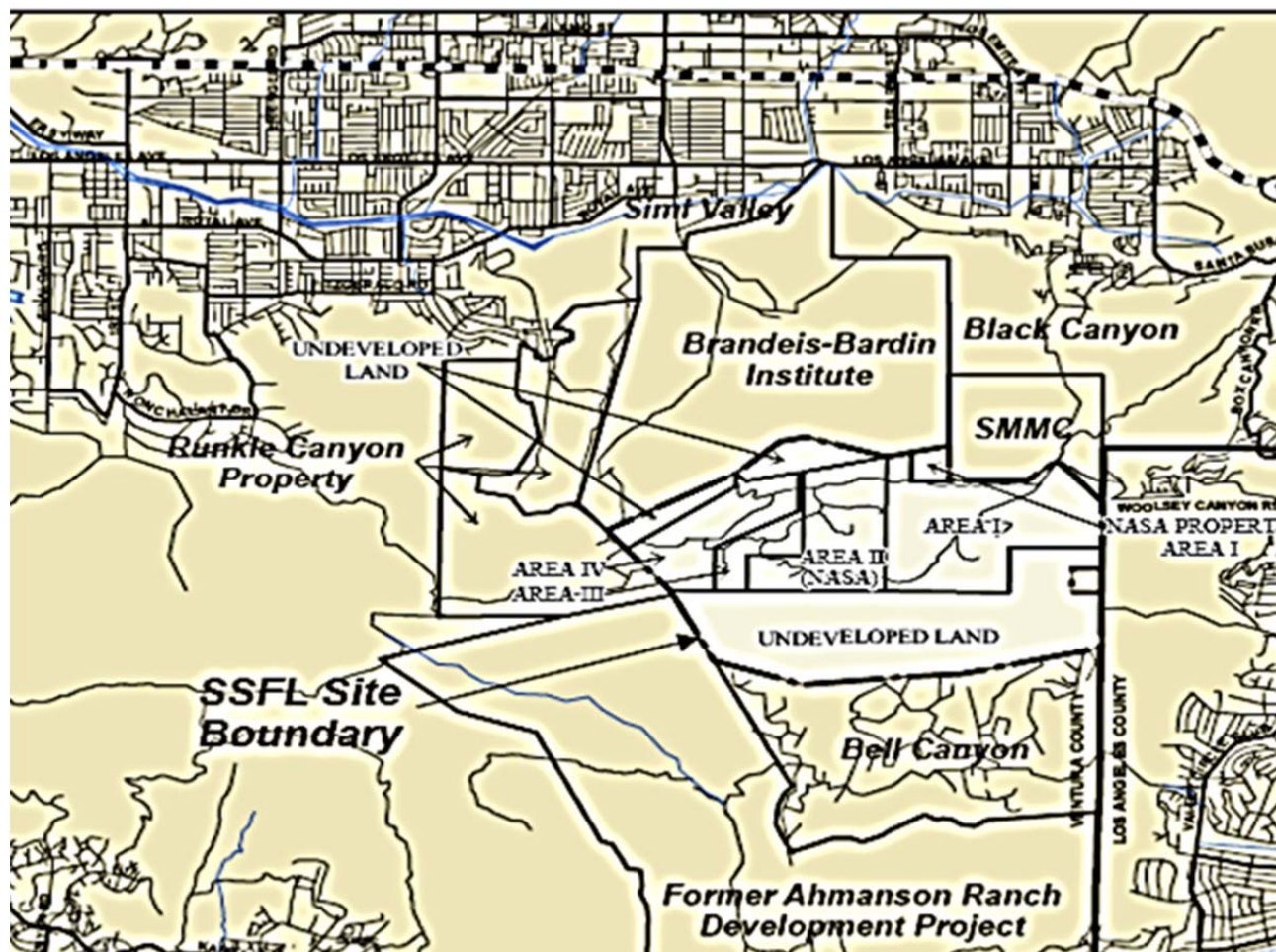
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### **SANTA SUSANA FIELD LABORATORY MONTHLY STATUS REPORT FEBRUARY 2012**

This monthly update is to inform the community of the Santa Susana Field Laboratory (SSFL) investigation and cleanup activities under the California Department of Toxic Substances Control's (DTSC) oversight that occurred between January 21, 2012 and February 20, 2012, and activities that are expected to occur in the next 30 days.



## **Activities Completed:**

### **Soil Investigations:**

#### ***U.S. Department of Energy (DOE)***

DTSC and DOE are participating in chemical soil sampling efforts in Area IV of the SSFL property where former DOE activities occurred on the Site. Area IV is a 290-acre area located in the northwestern section of the site. It is currently owned by Boeing, with a 90-acre section that is leased to the U.S. Department of Energy (DOE). Area IV includes the Energy Technology Engineering Center (ETEC) facility where nuclear research, development, and testing began in the 1950's.

The Area IV radiological soil sampling effort is being conducted by the United States Environmental Protection Agency (US EPA). The US EPA approached the investigation by splitting the Area IV and Northern Buffer Zone (NBZ, collectively referred to as the "Site") investigation into historical site assessment (HSA) subareas. The chemical soil sampling efforts follow the same HSA subarea designations. DOE and DTSC are participating in Area IV and NBZ co-located soil sampling for chemical contaminants, which includes three phases, as specified in the December 2010 Administrative Order on Consent for Remedial Action (AOC), signed by DTSC and DOE:

- Phase 1 - co-located sampling for chemical analysis at US EPA's first phase of radiological sampling locations in Area IV and the NBZ.
- Phase 2 sampling is identified as randomly selected sampling locations, and
- Phase 3 sampling is identified as the Chemical Data Gap Investigation, which shall be used to determine the locations at the Site where insufficient chemical data exists and additional chemical investigation is necessary.

US EPA in coordination with DTSC and DOE is implementing its second round of sampling efforts based upon the validated sampling results they received from Phase 1 to most effectively define the nature and extent of radiologic contamination in Area IV.

Findings of the chemical data gap investigation may not result in sampling at all of the same locations that US EPA identifies for additional sampling during the second round. Not all of US EPA's Round 2 sample locations will need to be sampled for chemical contaminants, and chemical data gap investigation locations may be required where no radiological sampling is needed. The rationale and selection of sampling locations are provided in the HSA technical work plan, and discussed with the community. Phase 3 activities are anticipated to begin in early 2012. Below is a summary of the Phase 1 efforts.

#### **Sediment Drainage Sampling**

- All field work completed
- All chemical analytical data received and validated.
- Technical Memorandum summarizing analytical results in progress and will be submitted soon.

**Soil Investigations: (continued)**  
**DOE**

HSA-5C

- All field work completed
- All chemical analytical data received and validated.
- Technical Memorandum summarizing analytical results issued (available on DOE and DTSC web sites).

HSA-5B

- All field work completed
- All chemical analytical data received and validated except for four samples collected in December 2011
- Technical Memorandum summarizing analytical results in progress and will be submitted soon.

HSA-5A

- All field work completed
- All chemical analytical data received and validated.
- Technical Memorandum summarizing analytical results in progress will be submitted soon.

HSA-8N

- All field work completed
- All chemical analytical data received and validated
- Technical Memorandum summarizing analytical results in progress and will be submitted soon

HSA-5D North

- All field work completed
- All chemical analytical data received and validated.

HSA-6

- All field work completed
- All chemical analytical data received and validated.

HSA-7

- All field work completed
- All chemical analytical data received with 98% of the data validated.

HSA-3

- All field work completed
- All chemical analytical data received and validated.

**Soil Investigations: (continued)**  
**DOE**

HSA-5D South

- All field work completed
- All chemical analytical data received and validated

HSA-8 South

- All field work completed.
- All chemical analytical data received and validated
- Technical Memorandum summarizing analytical results in progress and will be submitted soon.

**Recently Completed**

Deep Soil Borehole Soil Sampling completed per DTSC-approved Addendum No. 7 to Master Work Plan/Field Sampling and Analysis Plan (CDM, January 2012): nine of twelve borings completed. The remaining three borings will be completed the week of February 20, 2012.

**Soil Investigations:**  
**NASA**

NASA is currently conducting chemical data gap investigations to complete soil and surficial media characterization at the two SSFL areas under its administration, which include the 41-acre NASA portion of Area I (the former Liquid Oxygen (LOX) Plant) and 409-acre Area II. Area II was used primarily for rocket engine testing and includes the Alfa, Bravo, Coca, and Delta Test Stands and support structures. Under the terms of the December 2010 Administrative Order on Consent (AOC), NASA is developing and implementing a series of five Field Sampling Plans (FSPs) to address data gaps in the soil investigations. The review process for each of these FSPs includes a public roundtable meeting and site tour of the sites. A sixth NASA surficial media FSP will be prepared in late 2012 to account for any data gaps remaining from the initial five FSPs.

A summary of the five current NASA surficial media FSPs is provided below:

FSP-1 (Alfa-Bravo Fuel Farm, Coca-Delta Fuel Farm, Propellant Load Facility)

- All soil chemical field work completed
- Samples submitted for chemical analysis
- Data Summary Report anticipated in Summer 2012

**Soil Investigations: (continued)**

**NASA**

FSP-2 (Incinerator/Ash Pile/Sewage Treatment Plant, Building 204, Storable Propellant Area, and Skyline Road)

- All soil chemical field work completed
- Samples submitted for chemical analysis
- Data Summary Report anticipated in Summer 2012

FSP-3 (Alfa Test Stand, Bravo Test Stand)

- Field sampling in progress, complete in April 2012
- Data Summary Report anticipated in Summer 2012

FSP-4 (Liquid Oxygen Plant, Area 2 Landfill, Expendable Launch Vehicle)

- Workplan in DTSC review
- Approval anticipated in mid-March 2012

FSP-5 (Coca Test Stand, Delta Stand, R2 Ponds)

- Draft workplan public meeting scheduled for March 8, 2012
- Workplan review anticipated for mid-April 2012

**Public Outreach**

On January 26, 2012, DTSC and NASA hosted a community roundtable discussion and site tour for the NASA FSP-4, which proposes data gap sampling to complete the investigation for chemical contamination at the former LOX Plant, Area II Landfill, and Expendable Launch Vehicle (ELV) site. Public input on the draft FSP-4 workplan was noted during the discussion and site tour. Written comments will be accepted through February 26, 2012.

**Boeing**

Boeing owns most of Area I and all of Areas III and IV. Areas I and III total 791 acres and are operated by Boeing. Boeing also owns the 1143 acre southern buffer zone and 182 acre northern buffer zone. Soils in Area IV and the northern buffer zone are being characterized in the DOE portion of the project.

Boeing continues to investigate and characterize soils in Area I, Area III, and the southern buffer zone. Data Gap Sampling and Analysis Plans (Data Gap SAPs) will be prepared to address data gaps identified in the RCRA Facility Investigation Reports submitted to date. DTSC anticipates these activities will complete the characterization of the Boeing sites.

Boeing sites are located in Reporting Groups 1A, 1B, 5, 9 and 10. Boeing intends to prepare the Data Gap SAPs in subgroups identified as Boeing RFI Groups:

- 1A North, 1A Central, 1A South
- 1B North, 1B Southwest, 1B Southeast

- 5/9 North, 5/9 South, and
- Group 10

### **Recently Completed**

On February 16, 2012, Boeing hosted a community site tour of the proposed building demolition areas.

On February 17, 2012, DTSC issued a letter reviewing the Boeing document "Notification of Planned Demolition, Buildings and Major Structures Located at the Former Hydrogen Lab, Boeing Santa Susana Field Laboratory", dated October 20, 2011. DTSC found that there is no chemical contamination in the area of the proposed demolition activities, and concurred with the planned structure removal and debris disposal activities.

### **Groundwater Characterization and Cleanup**

The groundwater characterization and cleanup program is being conducted by Boeing on behalf of the three parties at the site; Boeing, DOE and NASA. The groundwater characterization and cleanup program consists of:

- Investigation and characterization of groundwater contamination
- Ongoing groundwater monitoring of existing wells,
- Sampling of new groundwater locations, and
- Treatment and disposal of contaminated groundwater.

### ***Groundwater Interim Measures***

- Evaluation of pumping at WS-09A ongoing. This pumping is being done to lower groundwater elevation and reduce the amount of trichloroethene (TCE) contamination in the groundwater in this area of the Site. WS-09A is located along the southern boundary of the property. Pumping at WS-09A has been intermittent as modifications to the treatment plant have been made.
- Water levels at WS-09A, at newly installed wells, and the condition of area springs have been monitored to confirm that discharge from the springs is controlled during both periods of pumping and non-pumping.
- The technical memorandum for WS-09A is being developed for submittal to DTSC.

### ***Groundwater Remedial Investigation (RI) Report***

The Groundwater RI Report provides information on chemicals and radionuclides in groundwater at the site including where the contaminants are, and how they move through the sandstone and shale bedrock.

- Boeing is reviewing DTSC's comments on the Groundwater RI report.

### ***Groundwater Monitoring***

- Boeing is continuing with 2012 Q1 Groundwater Monitoring Program sampling.
- The 3<sup>rd</sup> Quarter Groundwater Monitoring Report submitted in November 2011 is scheduled for DTSC review.
- The Site-Wide Low-Flow Implementation Summary report submitted in December 2011 is scheduled for DTSC review.

### ***Feasibility Study***

A feasibility study (FS) identifies, develops, and evaluates a range of potential technologies, including experimental technologies that can be used for the containment, treatment, remediation, and/or disposal of contamination. Additionally, treatability studies of appropriate technologies are identified and evaluated for consideration in the feasibility study.

Boeing developed a feasibility study (FS) workplan for SSFL site-wide groundwater and for bedrock/soils at Boeing sites. The FS workplan lays-out the process for how the FS will be implemented. DTSC continues the FS workplan review.

Because the 2010 Administrative Orders on Consent dictate cleanup levels, NASA and DOE may conduct treatability studies for soils, but they are not required to perform feasibility studies.

### ***Treatability Studies***

Treatability studies are being conducted on several technologies to be evaluated in the feasibility study. The treatability studies address both soil/bedrock and groundwater contamination. Treatability studies can be either field studies or laboratory studies.

Four laboratory studies, all for groundwater, are being conducted:

- Chemical oxidation using potassium permanganate;
- Thermal heating of rock core;
- Microbial characterization of rock core and porewater; and
- Bio Stimulation.
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Two field tests have been proposed:

- Bedrock Vapor Extraction; and
- In-situ chemical oxidation (groundwater)
- Boeing's contractors are continuing work on the chemical oxidation, microbial characterization, and biostimulation laboratory studies.

**Treatability Studies: (continued)**

- Boeing submitted addenda for the bedrock vapor extraction and in-situ chemical oxidation workplans on January 31, 2012. DTSC is currently reviewing the documents.

**Chemical Background Study (Soil):**

- The chemical background samples have gone through preliminary analysis and continue under data validation review.

**Building Demolition:**

- The demolition of CTL-III is complete.

**Risk Assessment:**

- DTSC submitted comments on Boeings Group 1A RCRA Facility Investigation (RFI) report, human health risk assessment.
- DTSC submitted comments on the human health risk assessment portion of the Group 5 RFI report.

**CEQA:**

- A Memorandum of Agreement was signed by DTSC and Boeing for funding a DTSC identified contractor to perform initial CEQA work on SSFL.

**Public Outreach:**

- On January 30, 2012, DOE hosted a public meeting where participants learned more about on-site soil remediation technologies that might help address soil contamination at Santa Susana Field Laboratory.
- On January 31, 2012, DOE hosted a technical discussion for the Soil Treatability Study Group. The meeting agenda was designed to support discussion about topics related to the soil remediation expert survey process.
- On February 15, 2012, EPA, DOE and DTSC jointly hosted a public tour from 10:30 to noon to discuss and view Area IV activities.



**Interim Source Removal Actions:** (Note: ISRA activities are conducted under the authority of the Los Angeles Regional Water Quality Control Board (LA-RWQCB))

- DTSC participated in project status meetings on January 25 and February 10 held once every two weeks. The February 22 ISRA meeting was canceled due to no significant activity or new information.
- As of January 25, all ISRA excavation work is on hold until end of rainy season. Excavation activity status for Ash Pile/Sewage Treatment Plant (AP/STP) areas:
  - AP/STP-1E-1, -3: Excavation complete; restoration activities to occur once AP/STP-1E-2 is complete.
  - AP/STP-1C-2, -1E-2: Planned excavation completed; confirmation sample results received; additional excavation to continue after the rainy season.
  - AP/STP-1B: Planned excavation partially completed (eastern portion); confirmation sample results received; additional excavation to continue after the rainy season.
  - AP/STP-1C-1: Agencies/Boeing/NASA delineated soil below radiological trigger levels; excavation to begin after the rainy season.

**Proposed for the Next 30 Days:**

**Soil Investigations:**

**DOE**

- On March 21, 2012, EPA, DOE and DTSC will jointly host a public tour from 10:30 to noon to discuss and view Area IV activities. Reservations required - please contact Debbie Kramer ([debbie.kramer@emcbc.doe.gov](mailto:debbie.kramer@emcbc.doe.gov)) or call 818-466-8898 no later than March 19, 2012 to RSVP.
- Draft Phase 3 Master Work Plan, including Field Sampling and Analysis Plan, Quality Assurance Project Plan, and Site-Specific Health and Safety Plan
- Draft Addendum to Phase 3 Master Field Sampling and Analysis Plan for Subarea 5C
- Draft Addendum to Phase 1 Master Field Sampling and Analysis Plan for the Northern Buffer Zone

**NASA**

- DTSC anticipates approval of the revised NASA FSP-3 document during the week of February 27, 2012.
- On March 8, 2012, NASA and DTSC will host a community roundtable and site tour for the NASA FSP-5 to complete the investigation of surficial media at the Coca Test Stand, Delta Test Stand Site, and R2 Ponds. Attendance at this meeting requires an RSVP to Yvette LaDuke at [yladuke@dtsc.ca.gov](mailto:yladuke@dtsc.ca.gov) by March 2, 2012.

### **Boeing**

- DTSC will complete review and submit comments on the DQO (data quality objectives) technical memorandum (submitted September 2011) to Boeing by March 1, 2012.
- Boeing will begin work on Data Gap Sampling and Analysis Plans based on the outcome of the DQO test run meeting.

### **Chemical Background Study:**

- DTSC continues to oversee and work with its contractor on the laboratory analytical and data validation efforts. DTSC anticipates having the complete validated dataset available to present to community stakeholders in early-April 2012, and a draft chemical background report available for public comment in May 2012.

### **Groundwater Investigations:**

- Boeing will continue to develop responses to DTSC comments on the draft Groundwater RI report.

### **Groundwater Monitoring:**

- The 2011 annual report is being prepared and will be submitted to DTSC.

### **Groundwater Interim Measures:**

- DTSC is working on the CEQA document for the Groundwater Interim Measures effort that includes installation of eight source zone groundwater wells.

### **Interim Source Removal Actions:** *(Note: ISRA activities are conducted under the authority of the Los Angeles Regional Water Quality Control Board (LA-RWQCB))*

- DTSC will continue to participate in ISRA bi-weekly project meetings.
- ISRA performance monitoring and BMP subarea monitoring inspections and sampling in Outfall 008/009 watersheds will be conducted as necessitated by rain events.

### **Public Outreach:**

- At the request of the LA-RWQCB, DTSC will provide an SSFL project update at the March 1, 2012 LA-RWQCB general meeting.
- DTSC will continue to provide monthly updates regarding the progress of the site investigation and cleanup process to the community.