



Santa Susana Field Lab

FREQUENTLY ASKED QUESTIONS

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→ SSFL What's New

The Santa Susana Field Laboratory (SSFL) project team is constantly publishing materials and reports. These reports range from monitoring data, information from investigations, proposed cleanup measures, information related to the California Environmental Quality Act (CEQA), community outreach and other topics. Listed below are the most recently published SSFL documents. If you are looking for older documents and reports please [click here](#) to visit the searchable Document Library.

We encourage public participation and comments and are always searching for ways to collaborate on our efforts. Please contact Michelle Banks-Ordone at Michelle.Banks-Ordone@dtsc.ca.gov or visit one of our upcoming meetings listed in the calendar to the left for opportunities to collaborate on the SSFL cleanup process.

DRAFT CLOSURE PLANS FOR THE U.S. DEPARTMENT OF ENERGY HAZARDOUS WASTE MANAGEMENT FACILITY AND THE RADIOACTIVE MATERIALS HANDLING FACILITY AT THE SANTA SUSANA FIELD LABORATORY

- Public Notice: DTSC extends the Public Comment Period for the Draft Closure Plans for the U.S. Department of Energy Hazardous Waste Management Facility and the Radioactive Materials Handling Facility at SSFL from 45 days to 60 days
- Community Update: Notice of Extension of the Public Comment Period for the Draft Closure Plans for the U.S. Department of Energy Hazardous Waste Management Facility and the Radioactive Materials Handling Facility at SSFL
- SSFL DOE Draft Closure Plan Community Update
- SSFL DOE Draft Closure Plan Public Notice
- DRAFT RADIOACTIVE MATERIALS HANDLING FACILITY (RMHF) RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) CLOSURE PLAN, COVER LETTER
- DTSC Letter of Receipt of Radioactive Materials Handling Facility (RMHF) Resource Conservation and Recovery Act (RCRA) Closure Plan for Interim Status Facility; Rev 0
- "RCRA Closure Plan, Radioactive Materials Handling Facility, Buildings 4021, 4022, and 4621, ETEC, Santa Susana Field Laboratory, Area IV, Ventura County, California", Revision 0, July 16, 2015
- DRAFT HAZARDOUS WASTE MANAGEMENT FACILITY (HWMF) RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) CLOSURE PLAN, Cover Letter, 08/17/2015
- DTSC Letter of Receipt of Closure Plan Hazardous Waste Management Facility (HWMF): Buildings T029 and T133; Rev 0
- DRAFT CLOSURE PLAN HAZARDOUS WASTE MANAGEMENT FACILITY (HWMF): Building T029 and T133, ETEC, SANTA SUSANA FIELD LABORATORY, AREA IV, VENTURA COUNTY, CALIFORNIA, (Part 1 OF 2), (Report Body, Appendix A), REV 0
- DRAFT CLOSURE PLAN HAZARDOUS WASTE MANAGEMENT FACILITY (HWMF): Building T029 and T133, ETEC, SANTA SUSANA FIELD LABORATORY, AREA IV, VENTURA COUNTY, CALIFORNIA, (Part 2 of 2), (APPENDIX B-F), REV 0
- Supporting documentation for the draft Closure Plans, "Department of Energy (DOE) Draft Standard Operating Procedure (SOP) for Demolition of Facilities in Area IV at the Santa Susana Field Laboratory" Revision C, August 2016

SSFL BI-ANNUAL UPDATE MEETING - APRIL 10, 2018

- April 2018 Bi-annual Meeting Presentation
- DTSC Update Regarding Boeing Monitoring
- DTSC Update Regarding DOE Monitoring
- DTSC Update Regarding NASA Monitoring

DTSC - SSFL Calendar

Today ◀ ▶ Friday, August 24, 2018

Showing events after 8/24.

[Look for earlier events](#)

Showing events until 9/30.

[Look for more](#)



→ Related Links:

- ◆ US EPA
- ◆ NASA SSFL News
- ◆ Boeing
- ◆ DOE ETEC

SUBSCRIBE TO SSFL ELIST

- [Groundwater Monitoring Update](#)
- [Poster - DTSC Update Regarding Boeing](#)
- [Poster - DTSC Update Regarding NASA Status](#)
- [Poster - Status of Offsite Investigations](#)
- [Poster -Total Petroleum Hydrocarbons](#)
- [Poster Regarding DOE Progress](#)
- [Poster Regarding Groundwater Status Update](#)
- [Poster Regarding Shooting Range Investigations Update](#)
- [SSFL Frequently Asked Questions](#)
- [SSFL Loop Trail Detour](#)
- [Total Petroleum Hydrocarbons Fact Sheet](#)
- [Update Regarding Offsite Investigations](#)
- [Update Regarding Shooting Range Investigations](#)

DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

- **Media Advisory:** [DTSC Extends Public Comment Period for SSFL Draft Program Environmental Impact Report](#)
- **Public Notice:** [DTSC Extends by 45 Days the Public Comment Period for the Santa Susana Field Laboratory Draft Program Environmental Impact Report and Program Management Plan](#)
- **Notice of Availability:** [Extended Public Comment Period for the Santa Susana Field Laboratory Draft Program Environmental Impact Report](#)
- [Notice of Availability](#)
- [Public Notice](#)
- [Community Update](#)
- [Draft Program Environmental Impact Report Document](#)
- [Appendix A: Program Management Plan](#)
- [Appendix B: Preliminary Screening Levels](#)
- [Appendix C: Notice of Preparation / Scoping Report, Part 1 of 4](#)
- [Appendix C: Notice of Preparation / Scoping Report, Part 2 of 4](#)
- [Appendix C: Notice of Preparation / Scoping Report, Part 3 of 4](#)
- [Appendix C: Notice of Preparation / Scoping Report, Part 4 of 4](#)
- [Appendix D: Air Quality Worksheets](#)
- [Appendix E: Greenhouse Gas Worksheets](#)
- [Appendix F: Health Risk Modeling](#)
- [Appendix G: Risk of Upset Worksheets](#)
- [Appendix H: Traffic Study](#)
- [Appendix I: Noise Calculations](#)
- [Appendix J: Transportation Feasibility Analysis](#)
 - [Appendix J - Transportation Feasibility Analysis Reference Documents, Part 1 of 2](#)
 - [Appendix J - Transportation Feasibility Analysis Reference Documents, Part 2 of 2](#)
- [Appendix K: Draft Excavation and Offsite Disposal Volume Estimate for Boeing Areas I, III, and Southern Buffer](#)

SSFL CAG MEETING - OCTOBER 18, 2017

- [Meeting Agenda](#)

SSFL CAG MEETING - SEPTEMBER 20, 2017

- [Meeting Agenda](#)

SSFL CAG MEETING - JUNE 21, 2017

- [Meeting Agenda](#)

SSFL COMMUNITY UPDATE MEETING – MAY 2, 2017

- [Community Fact Sheet on the Brandeis Bardin Campus](#)
- [Technical Memo on the Brandeis Bardin Campus](#)
- [Executive Summary of Technical Memo on the Brandeis Bardin Campus](#)
- [Shooting Range Cleanup Progress Poster](#)
- [RCRA Corrective Action Process Poster](#)
- [Overall Cleanup Progress Poster](#)
- [Boeing Project Update](#)

- [Detection Limit Poster](#)
- [DOE Area IV Sites Map](#)
- [DOE Cleanup Progress Poster](#)
- [DOE Update Poster](#)
- [NASA Cleanup Progress Poster](#)
- [NASA Update Poster](#)

SSFL CAG MEETING - FEBRUARY 15, 2017

- [Meeting Agenda](#)

SSFL CAG MEETING - JANUARY 18, 2017

- [Meeting Agenda](#)

MONTHLY STATUS REPORT

- [May 2018](#)
- [April 2018](#)
- [March 2018](#)
- [February 2018](#)
- [January 2018](#)
- [December 2017](#)
- [FAQs](#)

PREVIOUS MONTHLY REPORTS

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Total Petroleum Hydrocarbons

Diesel was used in Area IV to power vehicles, construction equipment, and back-up generators. This resulted in releases to the environment. Total Petroleum Hydrocarbons (TPH) describes petroleum-derived fuel hydrocarbon mixtures, like kerosene, gasoline, and diesel. A TPH analytical result is reported for a range of carbon atoms in the sample (e.g., C15-C20). TPH with lower carbon range (lighter) fractions usually degrade more quickly than higher (heavier) carbon-range fractions.

California Polytechnic State University evaluated the rate of natural attenuation of TPH in soil in Area IV at SSFL as part of the U.S. Department of Energy's (DOE's) soil treatability studies. Natural attenuation of TPH in soil can potentially result in reduced contaminant concentrations of soil in place and reduce the volume of soil needing to be excavated and hauled off-site.

There were difficulties in achieving accurate analytical TPH results in soils from Area IV at lower concentrations approaching the TPH Method Reporting Limit specified in DTSC's Look-Up Table (5 mg/kg). A follow up study was done to address these issues. The researchers noted that TPH (residual range oil) cleanup levels varied nationwide from 99 mg/kg to 10,000 mg/kg*. The report can be found at: http://www.dtsc-ssfl.com/files/lib_doe_area_iv/soiltreatstudies/evaluation_report/66906_SSFL_AreaIV_STS_TPH_NOM_report.pdf

*The CA-Regional Water Quality Control Board's Case Closure Policy does not contain cleanup criteria for TPH in any medium, and concludes that the potential threat to human health and water quality is adequately captured by the individual "criteria" analytes for each medium. TPH is included in the Case Closure Policy only to ensure that site characterization is adequate.

What's in the soil? Results suggest that the contamination of Area IV soils being characterized as TPH consists of high molecular weight hydrocarbons, suggestive of residual range oil (RRO). These types of hydrocarbons undergo slow natural breakdown. Other compounds identified in the soil include polycyclic aromatic hydrocarbons (PAHs) and organic acids (natural oils), which are suggestive of Natural Organic Material (NOM). These non-petroleum hydrocarbons can be soil or sediment organic matter (i.e., degradation products of plants and animals), or lipids that may be inadvertently included in the TPH measurement. The NOM fraction of TPH in the Area IV soil samples accounted for about 5 to 8% of the total TPH.

Why is this an issue? The NOM can interfere with analytical TPH signals and impact the accuracy of TPH analytical results, especially at lower concentrations. Concentrations may appear higher than that attributable to hydrocarbons from petroleum-based origins. Maintaining a high level of analytical accuracy is critical when determining if low levels of TPH are present as contamination.

How was this issue addressed? Attempts were made to remove compounds associated with NOM prior to TPH analysis through a common method known as silica gel fractionation. Use of the silica gel approach had mixed results, with some samples showing some degree of NOM removal and others showing an increase in TPH. The silica gel approach was found not to fully address the issue of interfering NOM, and may underestimate the contribution of NOM to future TPH measurements.

TPH chromatograms showing results with (top) and without (bottom) use of silica gel preparation for removal of NOM in sample 5D-612

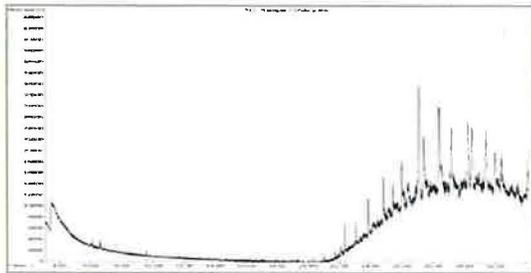


Figure B-1A: Sample 1 (5D-612) with no silica gel prep.

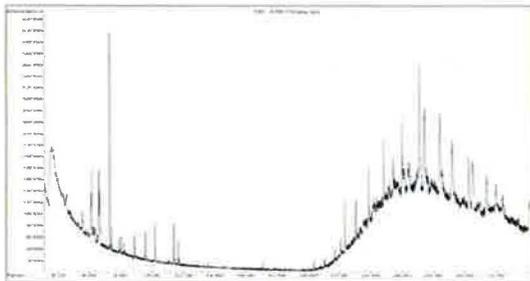


Figure B-1B: Sample 1 (5D-612) with silica gel prep.

Another identified issue: High variability in measured TPH concentrations between laboratories was observed, shown as relative standard deviation in the tables to the right, particularly at low concentrations. Variability may be attributed to localized presence of small rocks, varying fines, “tar balls”, etc. as well as inherent difficulties of measuring low TPH concentrations.

Conclusions: Accurately quantifying low levels of TPH during the study (100 to 300 mg/kg), was difficult. The ability to reliably distinguish where contamination exists at the Look-up table value (5 mg/kg) may not be possible due to the elevated variability of sample concentrations at these low levels.

Table 4.1. TPH results from Cal Poly Lab (GC/MS) compared to TPH results of EMAX commercial laboratory

Sample Number	Sample ID	TPH Concentration (mg/kg)						Difference between Cal Poly and EMAX (%)
		EMAX	Cal Poly Lab					
			Rep 1	Rep 2	Average	Std. Dev.	Rel. Std. Dev. (%)	
1	5D-612	ND	208	56	132	108	52	-x
2	5D-885	50	212	41	127	121	95	-154
3	01-BE-B	170	147	176	161	21	13	-5
4	02-LS-C	17	34	87	60	37	62	-256
5	1S-B-A	190	219	316	268	69	26	-41

Table 4.2. Effect of silica gel cleanup on measured TPH concentrations by EMAX and Cal Poly

Soil Sample	Soil Sample Location	TPH Concentration (mg/kg)			
		EMAX Results		Cal Poly Results	
		Before Silica	After Silica	Before Silica	After Silica
1	5D-612	-	-	208	209
2	5D-885	50	43	212	99
3	5B-01-BE-B	170	150	147	168
4	5B-02-LS-C	17	10	34	101
5	5B-1S-CB-A	190	180	219	262

Table 4.4. Estimated Contribution of NOM to Measured TPH of the Soil Samples With and Without Silica Gel Cleanup.

Soil Sample	Without Silica Cleanup		With Silica Cleanup	
	Concentration NOM (mg/kg)	Percent of TPH	Concentration NOM (mg/kg)	Percent of TPH
1	9.3	4.03	9.0	4.02
2	16.8	6.89	9.0	7.14
3	9.1	4.95	6.6	3.45
4	4.0	7.94	0.0	0
5	7.4	2.93	0.0	0

DTSC Contact

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