

**APPENDIX H**

**HAPPY VALLEY SOUTH SEPTIC TANK  
REMOVAL DOCUMENTS**

## Appendix H – Happy Valley South Septic Tank Removal Documents

### Table of Contents

- H-1. MWH, 2009. Happy Valley South Underground Septic Tank Removal Plan, California Water Code Section 13304 Order (NPDES No. CA0001309, CI No. 6027, SCP No. 1111, Site ID No. 2040109). October 9.
- H-2. RWQCB, 2009. Approval of Plan to Remove Septic Tank Near Former Building 1399 Submitted in Response to a California Water Code Section 13304 Order – The Boeing Company, Santa Susana Field Laboratory (SSFL), Canoga Park, CA (NPDES No. CA0001309, CI No. 6027, SCP No. 1111, Site ID No. 2040109). October 28.
- H-3. County of Ventura, Division of Building and Safety, 2009. Plumbing Permit No. P09-000510, Permit to Remove Septic Tank. October 9.
- H-4. Septic Tank Waste Certifications – In Progress
- H-5. Happy Valley South Septic Tank Removal Activities Summary
- Table H-1. Happy Valley South Septic Tank Removal Confirmation Soil Sample Results
- Figure H-1. Happy Valley South Septic Tank Removal Confirmation Soil Samples
- H-6: Happy Valley South Septic Tank Removal Photographs

The Boeing Company  
Santa Susana Field Laboratory  
5800 Woolsey Canyon Road  
Canoga Park, CA 91304-1148

Certified Mail

October 9, 2009  
In reply refer to SHEA-109204

Ms. Tracy Egoscue  
Regional Water Quality Control Board  
Los Angeles Region  
320 West 4th Street, Suite 200  
Los Angeles, CA 90013

Mr. James Pappas, Chief  
N. California Permitting and Corrective Action Branch  
California Environmental Protection Agency  
Dept of Toxic Substances Control  
8800 Cal Center Drive  
Sacramento Ca 95826-3200

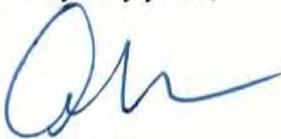
Subject: Happy Valley South Underground Septic Tank Removal Plan  
California Water Code Section 13304 Order (NPDES NO. CA0001309, CI NO.  
6027, SCP NO. 1111, SITE ID NO. 2040109)

Dear Ms. Egoscue and Mr. Pappas:

The Boeing Company (Boeing) provides the attached plan, prepared by MWH in response to the identification of a septic tank within Outfall 008 in the vicinity of ISRA Area HVS-3. This plan summarizes historical background information and characterization results of the contents of the tank, and presents the removal, management, and disposal plans of the tank and associated contents, and the soil confirmation sampling plan.

We understand the handling and disposal procedures of the tank and associated contents, and the soil in the vicinity of the tank are of interest to both the RWQCB and DTSC; if you have any questions or require anything further, please contact me at 818-466-8795. Boeing will consider this approach acceptable for project implementation if no further questions or requirements are indicated by the RWQCB or DTSC staff. Thank you for your attention to this information.

Very truly yours,



Art Lenox  
Environmental Remediation

LNB:bjc



Ms. Tracy Egoscue, RWQCB (SHEA-109204)  
Mr. James Pappas, DTSC  
October 9, 2009  
Page 2

Attachments:

MWH, 2009. Happy Valley South Underground Septic Tank Removal Plan, October 09, 2009. Including:

Figure 1: Location of Happy Valley South Underground Septic Tank Photographs,  
Septic Tank and Associated Piping (2009) Photographs, Leach Pit (1999 and 2009)  
Table 1: Happy Valley South Underground Septic Tank Liquid Sampling Results

cc: Ms. Cassandra Owens, RWQCB (with attachments)  
Mr. Peter Raftery, RWQCB (with attachments)  
Mr. Buck King, DTSC (with attachments)  
Mr. Jim O'Tousa, Ventura County (with attachments)  
Ms. Dixie Hambrick, MWH (without attachments)





**MWH**

*BUILDING A BETTER WORLD*

## **Hand Delivered**

October 9, 2009

Mr. Art Lenox  
Ms. Lori Blair  
The Boeing Company  
Santa Susana Field Laboratory  
5800 Woolsey Canyon Road  
Canoga Park, CA 91304

**Subject: Happy Valley South Underground Septic Tank Removal Plan, California Water Code Section 13304 Order (NPDES NO. CA0001309, CI NO. 6027, SCP NO. 1111, SITE ID NO. 2040109)**

Dear Mr. Lenox and Ms. Blair:

The purpose of this letter is to present the removal plan for the underground septic tank located within an Outfall 008 Interim Source Removal Action (ISRA) Area and within the boundaries of the Happy Valley South (HVS) Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) at the Santa Susana Field Laboratory (SSFL). ISRAs, including those at the HVS site, are being performed to address potential soil sources of constituents that exceeded National Pollutant Discharge Elimination System (NPDES) permit limits and benchmarks at Outfalls 008 and 009 pursuant to a California Water Code Section 13304 Cleanup and Abatement Order (CAO) issued by the Los Angeles Regional Water Quality Control Board (RWQCB) dated December 3, 2008. The ISRA project is an interim cleanup action under RWQCB oversight; final remedial requirements for the SSFL, including the Outfall 008 and 009 areas, will be addressed as part of RCRA Corrective Action project under oversight of the Department of Toxic Substances Control (DTSC). Removal of the septic tank is under oversight of the Ventura County Environmental Health Division and Department of Building and Safety.

This letter summarizes historical background information and characterization results of the contents of the tank, and presents the removal, management, and disposal plans of the tank and associated contents, and the soil confirmation sampling plan.

### **Background**

A steel manhole cover was identified in the southeastern portion of ISRA Area HVS-3 following vegetation clearance on August 19, 2009. The manhole was discovered flush-mounted in the ground in an area that had been covered with dense shrubs prior to vegetation clearance. The manhole is a 20-inch diameter steel clamping hatch cover to 2-inch long, 20-inch diameter steel access pipe leading to an underground septic tank. As described below, it is believed that the septic tank was installed south of Building 1399 in the late 1950s, and was connected to a former leach pit located approximately 135 feet southeast of the septic

tank. The locations of the septic tank, former leach pit, and Building 1399 are shown on Figure 1. Historical facility records reviewed for the RFI indicate the presence of the leach pit, but not the existence of the septic tank at this location (MWH, 2009a).

The septic tank is constructed of steel, cylindrical in shape, and approximately 6 feet in diameter and 6 feet deep. Its estimated capacity is approximately 1,300 gallons based on observations to date. It was installed vertically below grade into an excavation made predominantly into bedrock, and surrounded by sandy gravel. A 3-inch diameter vertical metal pipe has also been identified about 1 foot northwest of the hatch that connects to the septic tank, and may have been an inlet to the tank. This vertical pipeline is cut flush with ground surface. The hatch also had a grounding wire attached.

The septic tank hatch was opened and the tank interior was visually inspected on September 18, 2009. The tank seemed intact with no visible damage, and was filled with approximately 6 feet of clear liquid with no visible hydrocarbon sheen. A photo ionization detector did not detect volatile organic compounds within the tank. Samples were collected of the liquid contained in the tank for waste characterization purposes (results presented below).

Once the feature was confirmed as a septic tank and ambient screening performed, excavation of surficial soils in vicinity of the tank continued (ISRA Area HVS-3). Excavation activities carefully removed surficial soils around the vertical access pipe and the upper portion of the tank was exposed on September 25, 2009. During excavation activities, no vapors were detected with the PID and no staining observed. Bedrock was observed surrounding the cemented sandy gravel surrounding the metal tank. Two downward sloping, 3-inch diameter metal pipes connecting to the top of the eastern side of the tank were identified. One of the pipes continues east from the tank for approximately 6 feet before terminating. Near the terminus of this pipe fragments of terra cotta pipe were observed. The other pipe continues southeast from the tank for approximately 3 feet before connecting to a 4-inch diameter terra cotta pipe. Approximately 6 inches of the terra cotta pipe were exposed and the pipe appears to continue underground to the southeast. The tank and associated piping are shown on attached photographs.

The former location of the leach pit for Building 1399 is located approximately 150 feet to the southeast of the septic tank (Figure 1). This location was inspected on September 30, 2009, where a slight depression still exists, and terra cotta pipe was observed. Surface exposures of the terra cotta pipe were also observed between the leach pit and the septic tank. Photographs of the leach pit in 1999 and in 2009 are provided as attachments to this letter.

### **Historical Records Review**

Historical records reviewed for the RFI include building plans, drawings, and numerous historical reports and memos. The results of the historical review for the HVS RFI Site, identifying potential chemical use areas such as underground tanks and leach pits, are documented in the Group 1A RFI Report (MWH, 2009a). These records do not indicate the presence of a septic tank near Building 1399, although they do identify the location of the former leach pit. The location of the former leach pit is shown in conflicting locations in site reports, but based on recent field observations, has now been corrected to reflect its location as shown on Figure 1.

Building 1399 was constructed in the late 1950s. The area where Building 1399 was located was initially used for perchlorate curing operations (curing was a means by which perchlorate pellets or other shapes/forms were hardened). A curing oven, an aboveground fuel oil tank, and associated fuel piping and control equipment were located in the area of Building 1399, and in the late 1950s, were relocated to another area within the HVS RFI Site and Building 1399 was converted into a change house, and included shower and restroom facilities. Although not documented in site plans, the newly identified septic tank is believed associated with restroom/shower facilities within the converted Building 1399, and installed in the late 1950s. Building 1399 was demolished in the late 1990s based on review of historical aerial photographs.

In 1999, a domestic waste leach pit was identified southwest of former Building 1406 during an interim measure remediation project overseen by DTSC to investigate the Happy Valley site for suspect unexploded ordnance items. The location of the leach pit is shown on Figure 1 and photographs of the leach pit are attached. The leach pit was approximately 4 feet deep and 3 feet wide, and constructed of concrete walls with an earthen floor and a wooden cover. As shown in the leach pit photograph, a terra cotta pipe connects to the northern side of the leach pit, the general direction of the septic tank adjacent to Building 1399. Based on the presence and direction of the terra cotta pipe in the leach pit and the terra cotta pipe connecting to the 3-foot long metal pipe that connects to the eastern side of the septic tank, it is believed that waste liquids from the septic tank drained to the leach pit. The vertical pipe and the eastern trending metal pipe that connect to the septic tank are believed to be inlets to the septic tank, possibly from Building 1399 and Building 1390, respectively.

During implementation of the 1999/2000 interim measure, the leach pit was excavated to bedrock, combined and characterized with other excavated materials from Building 1372, and disposed as non-RCRA hazardous waste at Chemical Waste Management Kettleman Hills facility (UXB, 2002). Approximately 10 cubic yards of material were removed during the excavation of the waste leach pit, including soil and leach field gravels.

The following briefly describes the historical uses of the buildings near Building 1399 and the septic tank. The building locations are shown on Figure 1.

- Building 1267 – Storage Building and Electronics Workshop; used from early 1960s to 1993. Prior chemical use considered unlikely.
- Building 1390 – Recording and Control Center for propellant testing operations in the area; used from 1960 through early 1990s. Prior chemical use considered unlikely.
- Building 1406 – Propellant Grain Fabrication Laboratory and Machine Shop; used from the mid 1960s to early 1994. Perchlorate, energetics, metals, and fuels used, stored, and handled; specific types of fabrication not described.
- Building 1745 – Solid Propellant Test Pad; used 1960s to 1994. Small motors tested in vertical stand using high energy propellants, including perchlorate, RDX and HMX.

The above listed buildings and foundations have been removed. As described in the ISRA Work Plan (MWH, 2009b) and detailed in the Group 1A RFI Report (MWH, 2009a), interim remedial measures have been conducted within the HVS RFI Site. As noted above, the first was in 1999/2000 to address suspect ordnance items, and included removal of the Building

1399 leach pit. The second was in 2003/2004 to address perchlorate migration to surface water. During the latter action, the former Building 1406 and Building 1745 areas were excavated to bedrock, and backfilled using clean soils from a DTSC-approved backfill source.

### **Septic Tank Liquid Characterization Information**

Samples of liquid contained within the tank were collected and analyzed for the following:

- VOCs by USEPA Method 8260B,
- Semi-volatile organic compounds (SVOCs) by USEPA Method 8270C,
- Polychlorinated biphenyls (PCBs) by USEPA Method 8082,
- Metals by USEPA Method 6010/6020/7470A,
- Fluoride using USEPA Method 300.0,
- Cyanide using USEPA Method 9012A,
- pH using USEPA Method 9040,
- Perchlorate using USEPA Method 314.0,
- Energetics using USEPA Method 8330,
- Gamma-emitting radionuclides using USEPA Method 901.1 Modified,
- Tritium using USEPA Method 906.0, and
- Strontium 90 using USEPA Method 905.0 Modified.

Chemical detections included barium, cobalt, copper, lead, and thallium. Radionuclides were not detected in the sample. Chemical sampling results are summarized in Table 1. A complete tabulation of the data will be presented in the chemical waste certification being prepared by Boeing. Radiological results will be presented in the radiological waste certification being prepared by Boeing. Chemical and radiological waste characterization data and certifications will be available on the Boeing website ([http://www.boeing.com/aboutus/environment/santa\\_susana/isra.html](http://www.boeing.com/aboutus/environment/santa_susana/isra.html)).

### **Planned Removal Activities, Soil and Waste Management, and Confirmation Sampling**

As described above, once the underground feature was confirmed as a septic tank, removal of surficial soils surrounding the tank hatch was performed following procedures described in the Final ISRA Work Plan and addenda, under the oversight of the RWQCB. Confirmation sampling pursuant to that plan is also proceeding under RWQCB oversight.

Ventura County Environmental Health Division and Building and Safety Department will oversee removal of the septic tank. Boeing is in the process of applying to Ventura County for a permit to remove the septic tank; work will not proceed until this permit has been issued and a 10-day clear weather forecast maintained. It is expected that a Ventura County inspector will be onsite during removal activities. The following is a brief description of planned activities.

Boeing expects to remove the septic tank and associated piping leading from the tank. Water will be pumped from the tank and contained for offsite disposal. The tank will be removed from below grade, and any sludge present at the bottom of the tank removed, containerized,

and sampled for waste characterization prior to offsite disposal. The sampling suite for the removed sludge material will be the same as that described above for the liquid sample (using soil analytical methods), with a rapid laboratory turn-around time requested to allow review by overseeing agencies prior to disposal. Septic tank waste (contained liquid, sludge, and tank/piping materials) will be managed and disposed of according to waste characterization results. Disposal will be to the appropriate landfill as specified in the ISRA Soil Management Plan, or otherwise as required by Ventura County Environmental Health Division.

Following tank removal, the excavation will be inspected and logged by a Professional Geologist, noting soil type and thickness, bedrock, and if any odor, debris, or staining is present. If any portions of the removed tank are observed to be structurally compromised during or immediately after removal, confirmation samples will be collected from soil that was adjacent to structurally compromised tank areas when the tank was in the ground. If the tank is in good condition upon removal and soil is present, one confirmation soil sample will be collected from the floor of the excavation and two confirmation samples collected from opposing sidewalls of the excavation. Please note, initial observation suggests the tank was installed into a bedrock excavation. Additionally, one confirmation sample will be collected from soils beneath at the terminus of the 3-foot discharge pipeline leading away from the septic tank. Planned septic tank confirmation samples are shown on Figure 1.

Confirmation soil samples will be collected and analyzed for the following using DTSC-approved RFI protocols:

- Polynuclear aromatic hydrocarbons (PAHs) by USEPA Method 8270SIM,
- Metals by USEPA Method 6010/7000,
- pH using USEPA Method 9045,
- Perchlorate using USEPA Method 314.0, and,
- Energetics using USEPA Method 8330

Additional analyses may be requested if detected in the sludge sample analyzed from the tank. Additional excavation is not anticipated once the tank is removed unless heavily stained soils are present, or elevated ISRA Constituents of Concern are present in deeper soils. Further evaluation of confirmation sample results will be conducted in the RFI under DTSC oversight.

The excavation will be backfilled with soils from the local soil borrow source being used for the ISRA project once the soil borrow source is approved for use by the RWQCB and DTSC. The Ventura County Grading Department will be notified to inspect the final excavation and be present for backfilling. The excavation will be backfilled following procedures in the grading permit to achieve grades that will restore the pre-excavation drainage pattern.

All septic tank and septic tank confirmation sampling results will be reviewed and discussed with the RWQCB, DTSC, and Ventura County prior to tank excavation backfill activities. All ISRA confirmation sampling results will be reviewed with the RWQCB and DTSC prior to completion of ISRA backfill and regrading activities. Final remedial requirements for the SSFL, including the HVS site, will be addressed as part of RCRA Corrective Action project under oversight of DTSC.

**Closing**

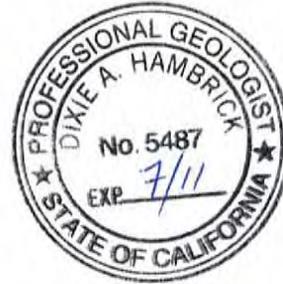
MWH understands this letter plan is being submitted under Boeing cover letter to the RWQCB and DTSC for review. The work described in this letter plan will not proceed until authorized by Boeing following agency review and acceptance of the proposed procedures.

Sincerely,

MWH



Dixie Hambrick, P.G. 5487  
Surficial Media Program Director



Alex Fischl, PMP  
ISRA Project Manager

**Attachments:**

Figure 1: Location of Happy Valley South Underground Septic Tank

Photographs, Septic Tank and Associated Piping (2009)

Photographs, Leach Pit (1999 and 2009)

Table 1: Happy Valley South Underground Septic Tank Liquid Sampling Results

**References:**

UXB International, Inc. (2002) Happy Valley Area of Concern (AOC) Subsurface Clearance, Geophysical Mapping, and Debris Removal Report. June.

MWH, 2009a. RCRA Facility Investigation, Group 1A RFI Report, Santa Susana Field Laboratory. February.

MWH, 2009b. Final Interim Source Removal Action (ISRA) Work Plan, Santa Susana Field Laboratory. May.

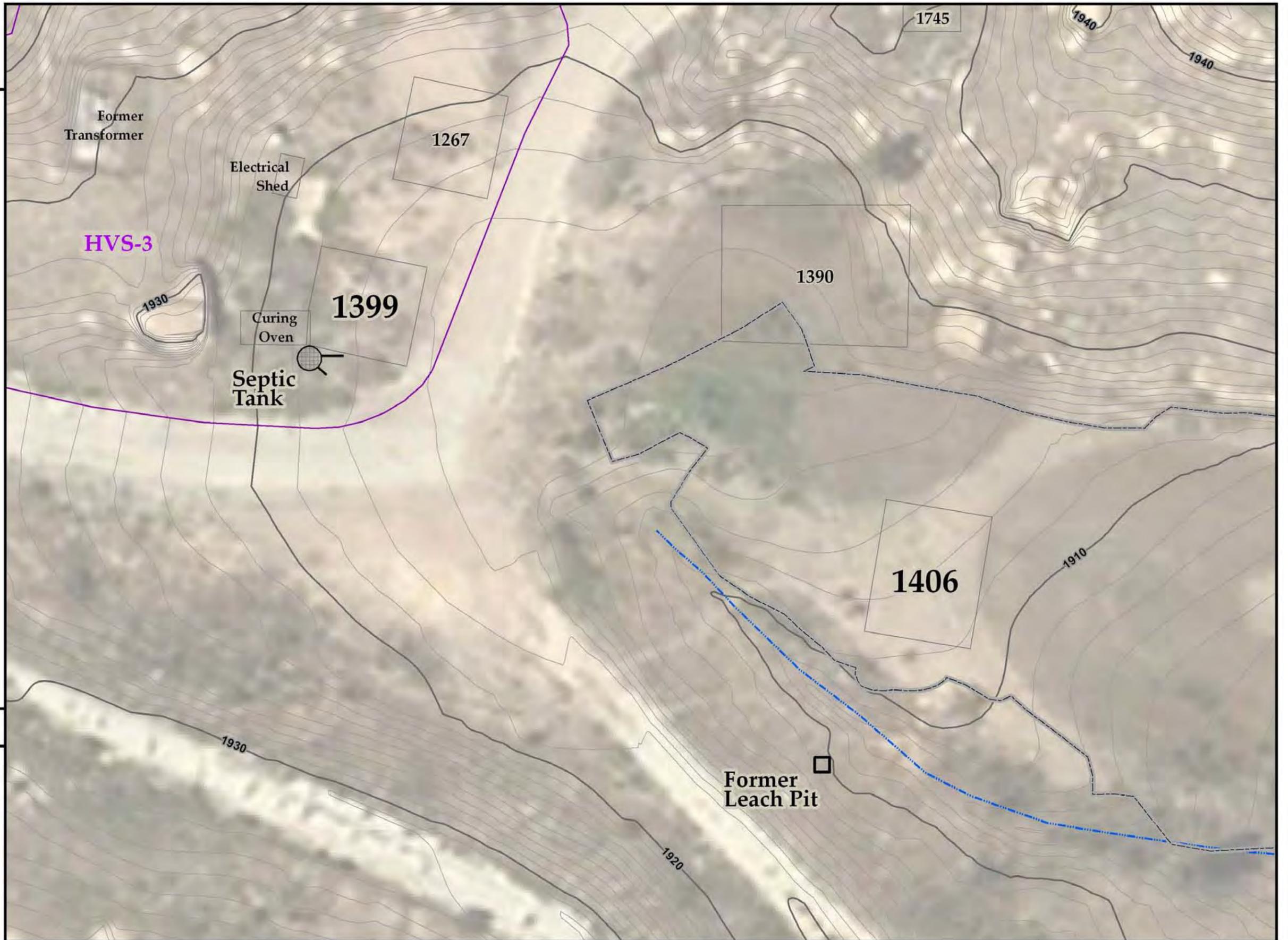
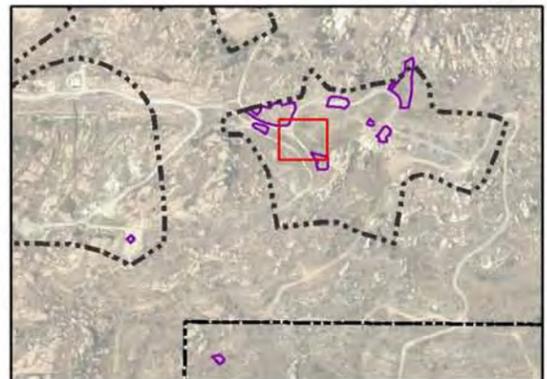
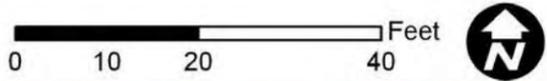
# Location of Happy Valley South Underground Septic Tank

## Base Map Legend

-  RFI Site Boundary
-  Removed Building or Structure
-  Planned ISRA
-  Surface Water Drainage
-  Elevation Contour
-  Septic Tank
-  Septic Tank Pipeline
-  Previously Excavated Area
-  Former Leach Pit

- Note:**
1. Aerial imagery from Google Earth, 2007.
  2. Topographic contours from Sage, July 2009.

Date: October 8, 2009



S A N T A S U S A N A F I E L D L A B O R A T O R Y



2009 Photograph of the Septic Tank and Associated Piping, Looking North



2009 Photograph of the Septic Tank and Associated Piping, Looking Northwest



2009 Photograph of the Septic Tank and Associated Piping, Looking Southeast Towards the Leach Pit



1999 Photograph of the Leach Pit, Looking North (UXB, 2002)



2009 Photograph of the Former Leach Pit, Looking North

**TABLE 1**

**HAPPY VALLEY SOUTH UNDERGROUND SEPTIC TANK LIQUID SAMPLE RESULTS  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY**

<b>ANALYTE</b>	<b>UNITS</b>	<b>RESULT</b>	<b>RESULT</b>	<b>RESULT</b>
<b>Object Name:</b>				
		<b>HZCW0001</b>	<b>HZCW0001</b>	<b>HZCW0001</b>
<b>Sample Name:</b>				
		HZCW0001S001	HZCW0001AS001	HZCW0001BS001
<b>Collection Date:</b>				
		9/18/2009	9/21/2009	9/29/2009
<b>Sample Type:</b>				
		Contained Water	Contained Water	Contained Water
<b>METALS</b>				
Antimony	ug/L	<3.0	--	--
Arsenic	ug/L	<1.6	--	--
Barium	ug/L	6.43	--	--
Beryllium	ug/L	<0.1	--	--
Cadmium	ug/L	<0.110	--	--
Chromium	ug/L	<2.0	--	--
Cobalt	ug/L	0.114 J	--	--
Copper	ug/L	0.911 J	--	--
Lead	ug/L	1.89 J	--	--
Mercury	ug/L	<0.066	--	--
Molybdenum	ug/L	<0.167	--	--
Nickel	ug/L	<0.500	--	--
Selenium	ug/L	<1.0	--	--
Silver	ug/L	<0.2	--	--
Thallium	ug/L	0.393 J	--	--
Vanadium	ug/L	<3.0	--	--
Zinc	ug/L	<3.0	--	--
<b>GENERAL CHEMISTRY</b>				
pH	SU	--	7.97 H	--
Perchlorate	ug/L	--	<4.0	--
Fluoride	mg/L	--	<0.10	--
Cyanide, Total	ug/L	--	--	<5.0
<b>RADIONUCLIDES</b>				
		R	--	--
<b>ENERGETICS</b>				
	ug/L	All ND (<1.30 to <1.95)	--	--
<b>PCB</b>				
	ug/L	All ND (<0.098)	--	--
<b>SVOC</b>				
	ug/L	All ND (<1.0 to <20)	--	--
<b>VOC</b>				
	ug/L	All ND (<1.0 to <10)	--	--

## TABLE 1

### HAPPY VALLEY SOUTH UNDERGROUND SEPTIC TANK LIQUID SAMPLE RESULTS THE BOEING COMPANY SANTA SUSANA FIELD LABORATORY

#### **NOTES**

"--" - not applicable, not analyzed

<0.10 - Analyte concentration is not detected above the detection limit

H - Analytical holding time was exceeded

J - Estimated Value

ug/L - micrograms per liter

mg/L - milligrams per liter

R - Radiological analysis includes gamma spectroscopy (Na-22, K-40, Mn-54, Co-60, Cs-134, Cs-137, Eu-152, Eu-154, Th-228, Th-232, U-235, U-238 and Am-241), strontium-90, and tritium. Boeing is preparing a document that presents the radiological results. Based on the results, the document will certify the liquid to be "radiologically" acceptable for shipment to Class 1, 2, and/or 3 disposal facilities. The analysis and data interpretation will comply with procedures approved by the California Department of Public Health.

SU - Standard units



# California Regional Water Quality Control Board

## Los Angeles Region



Linda S. Adams  
Agency Secretary

320 W. 4th Street, Suite 200, Los Angeles, California 90013  
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

Arnold Schwarzenegger  
Governor

October 28, 2009

Mr. Thomas D. Gallacher Director, SSFL – Environment, Health & Safety  
The Boeing Company  
Santa Susana Field Laboratory  
5800 Woolsey Canyon Road  
Canoga Park, CA 91304-1148

**APPROVAL OF PLAN TO REMOVE SEPTIC TANK NEAR FORMER BUILDING 1399  
SUBMITTED IN RESPONSE TO A CALIFORNIA WATER CODE SECTION 13304 ORDER –  
THE BOEING COMPANY, SANTA SUSANA FIELD LABORATORY, CANOGA PARK, CA  
(NPDES NO. CA0001309, CI NO. 6027, SCP NO. 1111, SITE ID NO. 2040109)**

Dear Mr. Gallacher:

Los Angeles Regional Water Quality Control Board (Regional Board) staff have reviewed the October 9, 2009, letter with the subject *Happy Valley South Underground Septic Tank Removal Plan, California Water Code Section 13304 Order (NPDES No. CA0001309, CI No. 6027, SCP No. 1111, Site ID No. 2040109) (Plan)* submitted in response to a California Water Code Section 13304 Order dated December 3, 2008. The Plan, prepared for you by MWH Americas, Inc., was received by the Regional Board on October 12, 2009.

The vertically oriented, cylindrical, steel septic tank is approximately 6 feet in diameter and approximately 6 feet deep. The capacity is approximately 1,300 gallons. The tank is believed to have served showers and rest rooms associated with a changing house at former Building 1399, and a recording and control center at former Building 1390. Discharge from the tank is believed to have flowed to a leach pit approximately 135 feet to the southeast of the tank. The leach pit was sampled and removed in a previous remedial action overseen by the Department of Toxic Substances Control.

In the plan, it is proposed that three soil samples will be collected. One sample will be from beneath the tank and two will be from opposite sides of the excavation walls. Planned soil sample analyses are:

- Polynuclear aromatic hydrocarbons (PAHs)
- Metals
- pH
- Perchlorate

Additional soil analytes will be added to correspond to any contaminants detected in the tank bottom sludge, if sludge is present. The sludge will be sampled and the analytical results evaluated prior to tank removal. In addition to the analytes noted above, the sludge will also be analyzed for:

- Volatile organic compounds (VOCs)
- Semi-volatile organic compounds (SVOCs)
- Polychlorinated biphenyls (PCBs)
- Fluoride and Cyanide
- Energetics

**California Environmental Protection Agency**



Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

Mr. Thomas D. Gallacher  
The Boeing Company

- 2 -

October 28, 2009

- Tritium, strontium 90, and gamma emitting radionuclides,

Tank removal will be permitted and overseen by the Ventura County Environmental Health Division, and the Building and Safety Department, in coordination with the Regional Board and the DTSC.

The Plan is approved with the conditions that dioxin analysis is added to the analytical suite and that bedrock from beneath the tank is sampled and analyzed if soil is not present beneath the tank.

**Please telephone Mr. Peter Raftery at (213) 576-6724 or email him at [praftery@waterboards.ca.gov](mailto:praftery@waterboards.ca.gov) if you have any questions.**

Sincerely,



Tracy J. Egoscue  
Executive Officer

cc list next page

cc: Honorable Alex Padilla, Senator 20th District  
Honorable Fran Pavley, Senator, 23rd District  
Honorable Tony Strickland, Senator 19th District  
Assemblymember Bob Blumenfield, Assemblymember 40th District Assembly  
Assemblymember Pedro Nava, Assemblymember 35th District  
Assemblymember Audra Strickland, Assemblymember 37th District  
Mr. Jarrod Degonia, c/o Assemblymember Cameron Smyth  
Ms. Rondi Guthrie, c/o Assemblywoman Audra Strickland  
Ms. Samantha Stevens, c/o Assemblymember Bob Blumenfield  
Mr. Aron Miller, c/o Senator Fran Pavley  
Ms. Linda Parks, Ventura County Board of Supervisors  
Mr. Damon Wing, c/o Ms. Linda Parks, Ventura County Board of Supervisors  
Mr. Gerard Abrams, Department of Toxic Substances Control, Sacramento  
Mr. David Beckman, National Resources Defense Council  
Ms. Lori Blair, Boeing  
Mr. William Bowling  
Mr. Michael Bubman, c/o Bell Creek Homeowners Association  
Ms. Jeannie Chari  
Mr. Paul Costa, Boeing  
Mr. Craig Cooper, Environmental Protection Agency, Region 9  
Mr. Daniel Cooper, Lawyers for Clean Water  
Mr. David Cooper, Environmental Protection Agency, Region 9  
Ms. Elizabeth Crawford  
Ms. Nicole Doner, Ventura County Planning Division

cc list continues on next page

***California Environmental Protection Agency***



Recycled Paper

*Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.*

cc list continued

Ms. Ginn Doose  
Mr. Allen Elliott, National Aeronautics and Space Administration  
Mr. John Farrow, M. R. Wolfe & Associates, P.C.  
Ms. Merrilee Fellows, National Aeronautics and Space Administration  
Mr. Tom Ford, Santa Monica Bay Keeper  
Dr. Mark Gold, Heal the Bay  
Mr. A. J. Greenstein  
Mr. Matt Hagemann, Soil/Water/Air Protection Enterprise  
Ms. Carol Henderson, Office Manager, Bell Canyon Homeowners Association  
Mr. Dan Hirsch, Committee to Bridge the Gap  
Ms. Heather L. Hoecherl Esq., Director of Science and Policy, Heal the Bay  
Mr. Philip Isorena, State Water Resources Control Board, Division of Water Quality  
Ms. Kirsten James, MESM, Staff Scientist, Heal the Bay  
Ms. Stephanie Jennings, United States Department of Energy  
Ms. Barbara Johnson, Susana Knolls Homeowners, Inc.  
Dr. Michael Josselyn, WRA, Inc.  
Mr. Thomas Johnson, ETEC Project Manager, United States Department of Energy  
Ms. Teresa Jordan  
Mr. Thomas Kelly, Environmental Protection Agency, Region 9, (WTR-5)  
Dr. Jae Kim, Tetra Tech  
Mr. Buck King Department of Toxic Substances Control, Sacramento  
Ms. Bonnie Klea  
Mr. Wayne Lee  
Mr. Michael Levy, State Water Resources Control Board, Office of Chief Counsel  
Mr. Michael Lopez, U.S. Department of Energy, Oakland  
Mr. John Luker  
Ms. Carissa Marsh, The Simi Valley Acorn  
Ms. Marie Mason  
Mr. Daniel Maccabee, Brandeis-Bardin Institute  
Mr. Nicole Moutoux, Environmental Protection Agency, Region 9  
Mr. Jerry Murphy, c/o Bell Creek Homeowners Association  
Mr. Jim Pappas, Department of Toxic Substances Control, Sacramento  
Mr. William Paznokas, Department Of Fish and Game, Region 5  
Mr. Sheldon Plotkin, Southern California Federation of Scientists'  
Ms. Bunny Raskin  
Mr. Norm Riley, Department of Toxic, Substances Control, Sacramento  
Ms. Chris Rowe  
Ms. Sharon Rubalcava, Weston, Benshoof, Rochefort, Rubalcava, MacCuish, LLP  
Ms. Darlene Ruiz, Hunter Ruiz Research, Consulting and Advocacy  
Mr. Adam Salkin  
Mr. Mathew Sanders, Paul, Hastings, Janofsky & Walker LLP  
Ms. Lorraine Scott

cc list continues on next page

***California Environmental Protection Agency***



cc list continued

Mr. Joseph Smith, Department of Toxic Substances Control, Office of Legal Counsel  
Sacramento  
Dr. Michael Stenstrom, SSFL Stormwater Expert Panel  
Ms. Rebecca Tadesse, Branch Chief of Materials Decommissioning, U.S. Nuclear Regulatory  
Commission  
Ms. Stephanie Trotter, State Water Resources Control Board  
Mr. Rick Verguitz, Water & Environmental Resources Section, Ventura County Watershed  
Protection District  
Mr. Mati Waiya, Wishtoyo Foundation  
Mr. Jack M. Wallace  
Ms. Christina Walsh  
Ms. Marge Weems  
Ms. Darla Weiss, Ventura County Watershed Protection District  
Ms. Mary Wiesbrock  
Dr. Daniel Wiseman, West Hills Neighborhood Council-Santa Monica Mountains Area  
Committee  
Mr. Anthony Zepeda  
Mr. Cybil Zeppieri  
Mr. Lori Zinkan  
Ms. Elizabeth Zlotnik  
California Coastal Commission, South Coast District  
California State University, Northridge  
City Manager, City of Simi Valley  
City of Los Angeles, Bureau of Engineering, Wastewater Systems Engineering Division  
Department of Health Services, Public Water Supply Branch  
Department of Interior, U.S. Fish and Wildlife Service  
Environmental Protection Agency, Region 9, Office of Radiation Programs  
Environmental Protection Agency, Region 9, Permits Branch (WTR-5)  
Friends of the Los Angeles River  
Los Angeles and San Gabriel Rivers Watershed Council  
Los Angeles County, Department of Health Services  
Los Angeles County, Department of Public Works, Environmental Programs Division  
Masry & Vititoe Law Offices  
NOAA, National Marine Fisheries Service  
Simi Valley Library  
The Boeing Company Santa Susana Field Laboratory  
U.S. Army Corps of Engineers  
ULARA Watermaster  
Ventura County Air Pollution Control District  
Ventura County Environmental Health Division  
Ventura County Public Works  
Water Replenishment District of Southern California



# COUNTY OF VENTURA

## DIVISION OF BUILDING & SAFETY

Ventura Office Inspection Line (805) 654-2791  
East County Office Inspection Line (805) 582-8063

### PLUMBING PERMIT NO: P09-000510

Issuing Office: ECO      Issued by: WYATTM      Zoning Clearance No.: 0  
Date Applied: 09/22/2009      Date Issued: 10/09/2009

#### SITE INFORMATION:

Project Address: 5800 WOOLSEY CANYON RD VECO      APN: 6850050090      Lot No.: 0      Tract No.:  
Locality: buro flats

Owner: BOEING NORTH AMERICAN INC      P O BOX 3707 M-S 1F-09      SEATTLE WA      98124  
Phone No.:

Contractor: OWNER BUILDER  
Phone No.:      State Lic. No.: XOXOXOXO

Designer:  
Phone No.:      State Lic. No.:

Permit Fees: \$130.90  
Fee Permit?  
Description: remove existing septic tank from removed structure 1399

#### PLUMBING INFORMATION

##### Private Sewer System?

Low gas outlets:	0	Med/High Pressure gas:	0	Medical gas sys:	0
Medical Vacuum:	0	EQ Shut-off:	0	Combo waste:	0
Fuel/oil pipe:	0	Fixtures:	0	Rain Piping:	0
Sewer Line:	0	Chem waste:	0	Aband Septic	1
Backwater Valve:	0	Rep/alt Water piping:	0	Water Treat:	0
Rep/alt DWV:	0	Vac/Backflow:	0	Res. Sprinkler:	0
Circ Pump:	0	Water Heaters:	0	Interceptor:	0
Water System:	0	Grease Traps:	0	Res Greywatr:	0
Comm Sprinkler:	0	Nonres Greywater sys:	0	Sample well:	0
Solar Wtr Htr:	0	Solar Htg:	0	Com Pool/Spa:	0
Res Pool/Spa	0	Reconnect Gas service:		Misc Equip:	0

SEE REVERSE FOR LEGAL DECLARATIONS

# county of ventura

DIVISION OF BUILDING & SAFETY  
 Jim MacDonald  
 Building Official

PERMIT NO P09-510 JOB ADDRESS 5800 WOODSEY CYN DATE 10-09-09  
 JOB DESCRIPTION Remove SEPTIC TANK B/1599 HAPPY VILLEY  
 OWNER Boeing CONTRACTOR \_\_\_\_\_

INSPECTION	DATE INSP.
BUILDING	
ZONING/SETBACKS	
FOUNDATION	
SLAB	
FLOOR FRAME/SHEATH	
FLOOR INSULATION	
ROOF FRAME/SHEATH	
SHEAR	
PRE WRAP	
FRAME	
INSULATION	
SHOWER LATH.	
INTERIOR LATH/DRY WALL	
EXTERIOR LATH/SIDING	

INSPECTION	DATE INSP.
PLUMBING	
SOILS	
WATER SERVICE	
UNDERGROUND GAS LINE	
ROUGH PLUMBING	
BLDG. SEWER	
INTERIOR GAS TEST	
SHOWER PAN/TEST	

INSPECTION	DATE INSP.
MECHANICAL	
UNDER FLOOR	
ROUGH MECH.	

INSPECTION	DATE INSP.
ELECTRICAL	
TEMP. POWER	
U G CONDUIT	
UFER	
ROUGH ELECT.	

INSPECTION	DATE INSP.
FINALS	
BUILDING	
PLUMBING	11-11-09
MECHANICAL	
ELECTRICAL	
DISABLED ACCESS	

INSPECTION	DATE INSP.
FIRE DEPT.	
ROUGH SPRINKLERS	
FINAL SPRINKLERS	

INSPECTION	DATE INSP.
POOL / SPA	
LOCATION	
EXCAVATION	
STEEL / BONDING	
RECIR PIPE	
LITE CONDUIT	

DO NOT GUNITE  
 UNTIL ABOVE IS SIGNED

DECK DRAINS	
CONDUIT	
GAS LINE	
GAS TEST	
ANTISIPHON	
DECK BONDING	
GUNITE REPORT	

DO NOT POUR DECK  
 UNTIL ABOVE IS SIGNED

HEATER / VENT	
ELECTRICAL	
MOTOR BOLT / BONDING	
FENCE / GATE	

DO NOT FILL POOL  
 UNTIL ABOVE IS SIGNED

SURFACE DRAIN	
G.F.C.I. TEST	
POOL COVER	
DECK CULKING	
FINAL POOL	

INSPECTION	DATE INSP.
MASONRY WALLS	
LOCATION	
FOUNDATION	
LIST #1	
LIFT #2	
LIFT #3	
WALL DRAIN	
WATERPROOFING	
FINAL WALL	

INSPECTION	DATE INSP.
OCCUPANCY	
PERMIT AREA	

### CALL FOR INSPECTION

Inspection requests must be received prior to 6:00 a.m. on date inspection is requested.

East County Office (805) 582-8063

### NOTES

SEPTIC TANK Removed  
11-11-09

## WASTE CHARACTERIZATION: HAPPY VALLEY SOUTH SEPTIC TANK

### **Introduction**

This report presents supporting detailed information relating to the nature of wastes generated during the removal of a steel septic tank referred to as the Happy Valley South Septic Tank.

### **Background**

The tank was located in Happy Valley. It is believed that the tank served showers and rest rooms associated with a changing house at former Building 1399, as well as a recording and control center at former Building 1390. Discharge from the tank is believed to have flowed to a leach pit approximately 135 feet to the southeast of the tank, which was removed with DTSC oversight during an interim measure action completed in 2000.

The septic tank is approximately 5 feet in diameter and approximately 8 feet deep, with a capacity of approximately 1,300 gallons. Two downward sloping, 3-inch diameter metal pipes connecting to the top of the eastern side of the tank were present. One of the pipes continued east from the tank for approximately 6 feet before terminating. The other pipe continued southeast from the tank for approximately 3 feet. Plans were developed to characterize the contents of the tank and to remove them, the tank itself, and the associated piping. At the time waste characterization was performed in September 2009, approximately 1,028 gallons of visually clear water were contained in the tank. There was no evidence of sheen or suspended particulates in the water.

Plans called for sampling the tank contents, with soil samples collected following removal of the tank and piping. A sample of water was collected from the tank and submitted to State certified laboratories for analysis. Tests performed included CAM 17 Metals, Fluoride, Cyanide, Perchlorate, Polychlorinated Biphenyls (PCB), Semi-Volatile Compounds (SVOC), Volatile Compounds (VOC), Energetics, pH, and a 96-Hour Acute Aquatic Toxicity LC50 hazardous waste fish bioassay. Once the tank and piping were removed, a total of four soil samples were collected, two from beneath the former tank location and one each from under the two pipe locations. These samples were analyzed for Metals, Dioxins, PCBs, Perchlorate, SVOCs, and Energetics.

### **Results**

Analytical results for the water contained in the septic tank are presented in GEL Laboratories reports 237576, issued on 9/25/09, and 237648, issued on 9/30/09. The Aquatic Toxicity results are reported in TestAmerica report ISI1757. According to the laboratory analysis results, only trace concentrations of some regulated metals were detected, with nothing above 0.00643 mg/L (Barium). No energetic compounds were detected, no PCBs were detected, no SVOCs were detected, and no VOCs were detected. The Aquatic Toxicity test recorded 100% survival and the pH was only slightly above the neutral range at 7.97. Although detected, Perchlorate was below the Reporting Limit of 0.004 mg/L. Neither Fluoride nor Cyanide was detected.

Soil sampling results are found in GEL report 240083, issued 11/16/09. No detected SVOCs exceeded a concentration of 0.42 mg/kg (Pyrene). No Energetics were reported above detection levels. Very low concentrations of regulated metals were detected. With respect to regulatory hazardous waste thresholds, Chromium was the most significant with a concentration that did not exceed 12.6 mg/kg in any of the samples. This is well below the California threshold of 50

ppm and the RCRA threshold of 100 ppm requiring additional leachate testing to determine whether a waste is hazardous or not. All other detected regulated metals exhibited a greater interval between observed concentrations and applicable regulatory thresholds. No Dioxin congener concentrations exceeded 1.30 pg/g (TCDD TEQ), and no PCBs (as Aroclors) were observed above detection levels. At the present time, Perchlorate is not directly regulated with regard to hazardous waste determinations. However, no Perchlorates were present in the samples above detection levels.

### **Determination**

According to analytical results and generator knowledge, the water in the Happy Valley South Septic Tank is:

Not a Listed Waste (generator knowledge and analytical results)

Not ignitable (generator knowledge)

Not corrosive (analytical results)

Not reactive (generator knowledge and analytical results)

Not toxic (generator knowledge and analytical results)

Not Extremely or Acutely Hazardous Waste

Not above any RCRA or Title 22 thresholds

Not subject to the Prop. 65 listing if it is applied to 22 CCR 66261.24(a)(7)

Not subject to the Title 22 Appendix X list

Not known by experience or testing to pose a hazard to human health or environment because of its carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment.

**The water in the Happy Valley South Septic Tank is NON-HAZARDOUS.**

Based on the non-hazardous nature of the water contained in the Happy Valley South and the non-hazardous soil conditions surrounding it, no hazardous waste issues are associated with disposal of the steel tank itself.

## APPENDIX H

### Happy Valley South Septic Tank Removal Activities Summary

During Phase I Interim Source Removal Action (ISRA) activities, an underground septic tank was discovered within an Outfall 008 ISRA Area, and within the boundaries of the Happy Valley South Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Site at the Santa Susana Field Laboratory (SSFL). A plan for removal of the septic tank was prepared and submitted to the Los Angeles Regional Water Quality Control Board (RWQCB) and the California Department of Toxic Substances Control (DTSC) on October 9, 2009 (MWH, 2009), and approved by RWQCB in a letter dated October 28, 2009 (RWQCB, 2009). The removal plan described historical background information and current conditions of the septic tank. The removal plan also presented a plan for removing the septic tank, confirmation soil sampling and analysis, and septic tank excavation backfill. A septic tank removal permit application was submitted to Ventura County on September 22, 2009, and the septic tank removal permit was received from Ventura County on October 9, 2009 (Ventura County, 2009). Documents related to the septic tank removal are provided in Appendix A.

Approximately 6 feet of water was present in the septic tank at the time of its discovery. A sample of the contained water was collected and analyzed for waste characterization purposes. Analytical results for a sample of the water were presented in the septic tank removal plan (MWH, 2009). The lab report for the water sample is provided in Appendix G, and a waste certification for the water is provided in Appendix B. On October 21, 2009, the water was vacuumed from the septic tank using a vacuum truck and the inside of the septic tank was pressure washed. All the water in the septic tank and the water accumulated during pressure washing activities was contained and transported to Southwest Processors for offsite disposal the same day.

The septic tank removal occurred on October 29, 2009. Jim O'Tousa (Ventura County), Paul Carpenter (DTSC), and Peter Raftery (RWQCB) were on site and oversaw the removal of the septic tank. The tank was uncovered and tilted to the side within the excavation using a Cat 322 excavator. The tank was then removed in one piece, inspected, and securely placed on a trailer. No sludge or material was observed inside the septic tank at the time of removal. A faint yellow stripe was observed on the sidewall of the septic tank. A metal detector was used to sift soil from around the septic tank excavation. The metal detector sensed gravel with elevated iron content, but no additional metal pipes near the septic tank excavation. The septic tank was stored at the Area I lower parking lot located near the SSFL front gate until it was transported offsite for recycling at SA Recycling in Sun Valley, California on November 17, 2009.

Following septic tank removal, the excavation was inspected and logged by a California State Professional Geologist. Trench logs are provided in Appendix D. No soil staining was observed in the septic tank excavation walls. Dust control, using a fire hose, was used throughout the excavation and septic tank removal to suppress airborne dust. During excavation activities no vapors were detected with the PID.

Four confirmation soil samples were collected on October 29, 2009 and submitted for analysis per the septic tank removal plan. One sample was collected at the location of the septic tank inlet pipe, one at the location of the septic tank outlet pipe, one from the southern excavation

## APPENDIX H

### Happy Valley South Septic Tank Removal Activities Summary

sidewall, and one from the excavation floor. A RWQCB split was collected of the floor sample and submitted to a separate laboratory for analysis. Additional sample volume of the primary floor sample was collected on November 2, 2009 and submitted to the primary laboratory. Boring logs for the confirmation soil samples are included in Appendix D, and lab reports for the confirmation soil samples are provided in Appendix G.

Results for septic tank removal confirmation samples are presented in Table H-1 and summarized below.

- Zinc was detected slightly above background in the sample collected at the location of the inlet pipe (HZET0729S001, 143 mg/kg, 1.3x background).
- Dioxins were detected slightly above background, but below the ISRA Soil Remediation Goal (SRG), in the sample collected at the location of the outlet pipe (HZET0728S001, 1.30 pg/g, 1.5x background, 0.4x SRG).
- Benzo(a)pyrene was detected above the residential risk-based screening level (RBSL) in the sample collected at the location of the inlet pipe (HZET0729S001, 247 µg/kg, 4.1x background), and in the sample collected from the southern excavation sidewall (HZET0731S001, 96.5 µg/kg, 1.6x background).
- Results for the floor confirmation sample (HZET0730S001 and HZET0730S001-RWQCB) were not detected above background or SRGs.

No further excavation was conducted at the location of the septic tank. The Ventura County Grading Department conducted a site visit to inspect all the final ISRA excavations, including the septic tank removal excavation, on November 23, 2009. The septic tank excavation was backfilled with soils and weathered bedrock from the septic tank excavation and the local HVS-2A soil borrow source during site restoration of the HVS-3 ISRA Area on November 30 through December 2, 2009.

### References

MWH, 2009. Happy Valley South Underground Septic Tank Removal Plan, California Water Code Section 13304 Order (NPDES No. CA0001309, CI No. 6027, SCP NO. 1111, Site ID NO. 2040109), Letter to RWQCB. October 9.

RWQCB, 2009. Approval of Plan to Remove Septic Tank Near Former Building 1399 Submitted in Response to a California Water Code Section 13304 Order – The Boeing Company, Santa Susana Field Laboratory, Canoga Park, CA (NPDES No. CA0001309, CI NO. 6027, SCP NO. 1111, Site ID NO. 2040109), Letter to Boeing. October 28.

Ventura County, 2009. Tank Removal Permit No. P09-000510. October 9.

**TABLE H-1  
HAPPY VALLEY SOUTH SEPTIC TANK REMOVAL**

**CONFIRMATION SOIL SAMPLE RESULTS  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY**

			<b>Object Name:</b>		<b>HZET0728</b>	<b>HZET0729</b>	<b>HZET0730</b>	<b>HZET0730</b>	<b>HZET0730</b>	<b>HZET0731</b>
			<b>Sample Name:</b>		HZET0728S001	HZET0729S001	HZET0730AS001	HZET0730S001	HZET0730S001-RWQCB	HZET0731S001
			<b>Collection Date:</b>		10/29/2009	10/29/2009	11/2/2009	10/29/2009	10/29/2009	10/29/2009
			<b>Sample Depth (feet bgs):</b>		0.8 - 1.0	1.0 - 1.5	9.0 - 9.5	9.0 - 9.5	9.0 - 9.5	4.0 - 5.0
			<b>Status:</b>		In Place	In Place				
<b>ANALYTE</b>	<b>UNITS</b>	<b>BACKGROUND<sup>a</sup></b>	<b>Lowest Characterization RBSL<sup>b</sup></b>	<b>RBSL Type</b>	<b>RESULT</b>	<b>RESULT</b>	<b>RESULT</b>	<b>RESULT</b>	<b>RESULT</b>	<b>RESULT</b>
<b>METALS</b>										
Aluminum	mg/kg	20,000	--	ECO	9,210	7,820	--	8,330	--	7,410
Antimony	mg/kg	8.7	--	ECO	0.713 J	<0.328	--	<0.363	0.865	<0.335
Arsenic	mg/kg	15	--	RES	3.38	2.8	--	3.05	1.59	3.12
Barium	mg/kg	140	--	ECO	90	103	--	54.3	49.4	54.2
Beryllium	mg/kg	1.1	--	ECO	0.272 J	0.265 J	--	0.326 J	<0.500	0.323 J
Boron	mg/kg	9.7	--	ECO	1.71 J	1.95 J	--	<1.1	--	<1.01
Cadmium	mg/kg	1	--	ECO	0.282	0.719	--	0.119 J	0.797	0.15 J
Chromium	mg/kg	36.8	--	ECO	12.4 J	11.3 J	--	12.6 J	11.3	12.2 J
Cobalt	mg/kg	21	--	ECO	5.2	5.28	--	3.81	3.97	3.73
Copper	mg/kg	29	--	ECO	11.3 J	12.6 J	--	6.13 J	4.52	6.74 J
Lead	mg/kg	34	--	ECO	9.83 J	8.64 J	--	3.84 J	2.77	6.32 J
Mercury	mg/kg	0.09	--	ECO	0.0219 J	0.0119 J	--	<0.0041 J	<0.050	0.0248 J
Molybdenum	mg/kg	5.3	--	ECO	0.376	0.267	--	0.11 J	<0.500	0.219
Nickel	mg/kg	29	--	ECO	8.99 J	8.09 J	--	6.65 J	6.41	6.42 J
Selenium	mg/kg	0.655	--	ECO	<0.524	<0.496	--	<0.542	<0.500	<0.522
Silver	mg/kg	0.79	--	ECO	0.0568 J	0.0533 J	--	<0.0433	<0.500	<0.0417
Thallium	mg/kg	0.46	--	ECO	<0.296	<0.271	--	<0.217	<0.500	<0.23
Vanadium	mg/kg	62	--	ECO	23.5	25.4	--	21.4	21.7	20.8
Zinc	mg/kg	110	--	ECO	61.1	143	--	46	45.7	49.7
<b>DIOXINS</b>										
TCDD TEQ	pg/g	0.87	--	ECO	1.30	0.274	--	0.0598	0.0138	0.234
<b>PCBs</b>										
Aroclor 1016	mg/kg	--	1.6	ECO	--	--	<0.00358	--	<0.033	--
Aroclor 1221	mg/kg	--	1.6	ECO	--	--	<0.00358	--	<0.067	--
Aroclor 1232	mg/kg	--	0.078	ECO	--	--	<0.00358	--	<0.033	--
Aroclor 1242	mg/kg	--	0.079	ECO	--	--	<0.00358	--	<0.033	--
Aroclor 1248	mg/kg	--	0.011	ECO	--	--	<0.00358	--	<0.033	--
Aroclor 1254	mg/kg	--	0.078	ECO	--	--	<0.00358	--	<0.033	--
Aroclor 1260	mg/kg	--	0.078	ECO	--	--	<0.00358	--	<0.033	--
<b>Perchlorate</b>										
Perchlorate by 314.0	ug/L	--	6 <sup>c</sup>	--	<4	<40	--	<4	<30	<4
Perchlorate by 6850	ug/L	--	6 <sup>c</sup>	--	--	--	--	--	--	--

**TABLE H-1  
HAPPY VALLEY SOUTH SEPTIC TANK REMOVAL**

**CONFIRMATION SOIL SAMPLE RESULTS  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY**

			Object Name:		HZET0728	HZET0729	HZET0730	HZET0730	HZET0730	HZET0731
			Sample Name:		HZET0728S001	HZET0729S001	HZET0730AS001	HZET0730S001	HZET0730S001-RWQCB	HZET0731S001
			Collection Date:		10/29/2009	10/29/2009	11/2/2009	10/29/2009	10/29/2009	10/29/2009
			Sample Depth (feet bgs):		0.8 - 1.0	1.0 - 1.5	9.0 - 9.5	9.0 - 9.5	9.0 - 9.5	4.0 - 5.0
			Status:		In Place	In Place	In Place	In Place	In Place	In Place
ANALYTE	UNITS	BACKGROUND <sup>a</sup>	Lowest Characterization RBSL <sup>b</sup>	RBSL Type	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
<b>SVOCs</b>										
1-Methyl naphthalene	ug/kg	--	24,716	RES	<7.22	<6.73	--	<7.45	<50	<7.06
2-Methylnaphthalene	ug/kg	--	210,000	ECO	<7.22	<6.73	--	<7.45	<50	<7.06
Acenaphthene	ug/kg	--	2,456	ECO	<7.22	1.97 J	--	<7.45	<50	<7.06
Acenaphthylene	ug/kg	--	270,384	ECO	<7.22	<6.73	--	<7.45	<50	<7.06
Anthracene	ug/kg	--	2,384	ECO	3.95 J	32	--	2.49 J	<50	9.34 J
Benzo(a)anthracene	ug/kg	--	600	RES	68.4	335	--	18.4 J	<50	123
Benzo(a)pyrene	ug/kg	--	60	RES	50.4	247	--	12.3 J	<50	96.5
Benzo(b)fluoranthene	ug/kg	--	600	RES	62.1	340	--	15 J	<50	127
Benzo(ghi)perylene	ug/kg	--	6,411	ECO	20 J	80.3	--	3.92 J	<50	31.3
Benzo(k)fluoranthene	ug/kg	--	600	RES	30.8	129	--	<7.45	<50	48.2
Chrysene	ug/kg	--	2,359	ECO	69.3	351	--	16 J	<50	125
Dibenzo(a,h)anthracene	ug/kg	--	170	RES	<7.22	<6.73	--	<7.45	<50	<7.06
Fluoranthene	ug/kg	--	38,000	ECO	64.8	367	--	31.7	<50	144
Fluorene	ug/kg	--	1,646	ECO	<7.22	1.84 J	--	<7.45	<50	<7.06
Indeno(1,2,3-cd)pyrene	ug/kg	--	600	RES	20.1	91.8	--	4.26 J	<50	34.4
Naphthalene	ug/kg	--	210,000	ECO	<7.22	<6.73	--	<7.45	<50	<7.06
Phenanthrene	ug/kg	--	1,314	ECO	7.44 J	76.9	--	6.7 J	<50	19.3 J
Pyrene	ug/kg	--	18,000	ECO	79.2	421	--	32.6	<50	163
<b>ENERGETICS</b>										
1,3,5-Trinitrobenzene	ug/kg	--	--	--	--	--	--	--	<2.5	--
1,3-Dinitrobenzene	ug/kg	--	750	ECO	<150	<150	--	<150	<1.0	<150
2,4,6-Trinitrotoluene	ug/kg	--	--	--	<150	<150	--	<150	<1.0	<150
2,4-diamino-6-nitrotoluene	ug/kg	--	--	--	<2000	<2000	--	<2000	--	<2000
2,4-Dinitrotoluene	ug/kg	--	430	ECO	<150	<150	--	<150	<1.0	<150
2,6-diamino-4-nitrotoluene	ug/kg	--	--	--	<2000	<2000	--	<2000	--	<2000
2,6-Dinitrotoluene	ug/kg	--	1,710	ECO	<150	<150	--	<150	<1.0	<150
2-Amino-4,6-Dinitrotoluene	ug/kg	--	--	--	<150	<150	--	<150	<1.0	<150
3,4-Dinitrotoluene	ug/kg	--	--	--	<150	<150	--	<150	--	<150
3-Nitrotoluene	ug/kg	--	430	ECO	<150	<150	--	<150	<1.0	<150
4-Am-2,6-DNT	ug/kg	--	--	--	<150	<150	--	<150	<1.0	<150
4-Nitrotoluene	ug/kg	--	430	ECO	<150	<150	--	<150	<1.0	<150
HMX	ug/kg	--	64,066	ECO	<150	<150	--	<150	<1.0	<150
Nitrobenzene	ug/kg	--	1,965	ECO	<1000	<1000	--	<1000	<1.0	<1000
Nitroglycerin	ug/kg	--	--	--	<150	<150	--	<150	--	<150
PETN	ug/kg	--	--	--	<500	<500	--	<500	--	<500
RDX	ug/kg	--	6,900	RES	<150	<150	--	<150	<1.0	<150
sym-Trinitrobenzene	ug/kg	--	11,000	ECO	<150	<150	--	<150	--	<150
Tetryl	ug/kg	--	27,762	ECO	<150	<150	--	<150	<2.5	<150

**TABLE H-1  
HAPPY VALLEY SOUTH SEPTIC TANK REMOVAL  
CONFIRMATION SOIL SAMPLE RESULTS FOOTNOTES  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY**

**Notes:**

"--" - not analyzed / not applicable

<sup>a</sup> Soil background values from MWH (September 2005) Soil Background Report, Santa Susana Field Laboratory, Ventura County, California. Sample result might be biased high due to coelution of Aroclors 1254 and 1260. The data was reprocessed in a different way as the calibration (3 peaks were used in the confirmation column).

<sup>b</sup> RBSL values provided to DTSC in March 2009, Interim Final Human Health and Ecological Risk-Based Screening Levels (RBSLs) for Use in RCRA Facility

bgs - below ground surface

<sup>c</sup> Screening level established based on npdes discharge limits and used for ssfl interim measures (ppb)

Dioxins/ TCDD TEQ - A sum of 17 dioxin / furan congener results adjusted for toxicity. The TEQ is calculated by multiplying the result of each congener by its respective 2005 World Health Organization (WHO) toxic equivalency factor (TEF), which is based on the relative potency of the congener to cause a toxic response relative to 2,3,7,8-TCDD. Non Detects are calculated as zero. TCDD TEQ values do not include laboratory data not quantified (DNQ) as specified in the NPDES permit.

ECO - Ecological RBSL

Grey highlighted calls indicate concentration exceeds soil background<sup>a</sup> or RBSL<sup>b</sup>

J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

mg/kg - milligrams per kilogram

pg/g - picograms per gram

RES - Residential RBSL

TCDD TEQ - tetrachlorobenzo-p-dioxin toxic equivalent (normalized to 2,3,7,8-TCDD)

ug/kg - micrograms per kilogram

ug/L - micrograms per liter

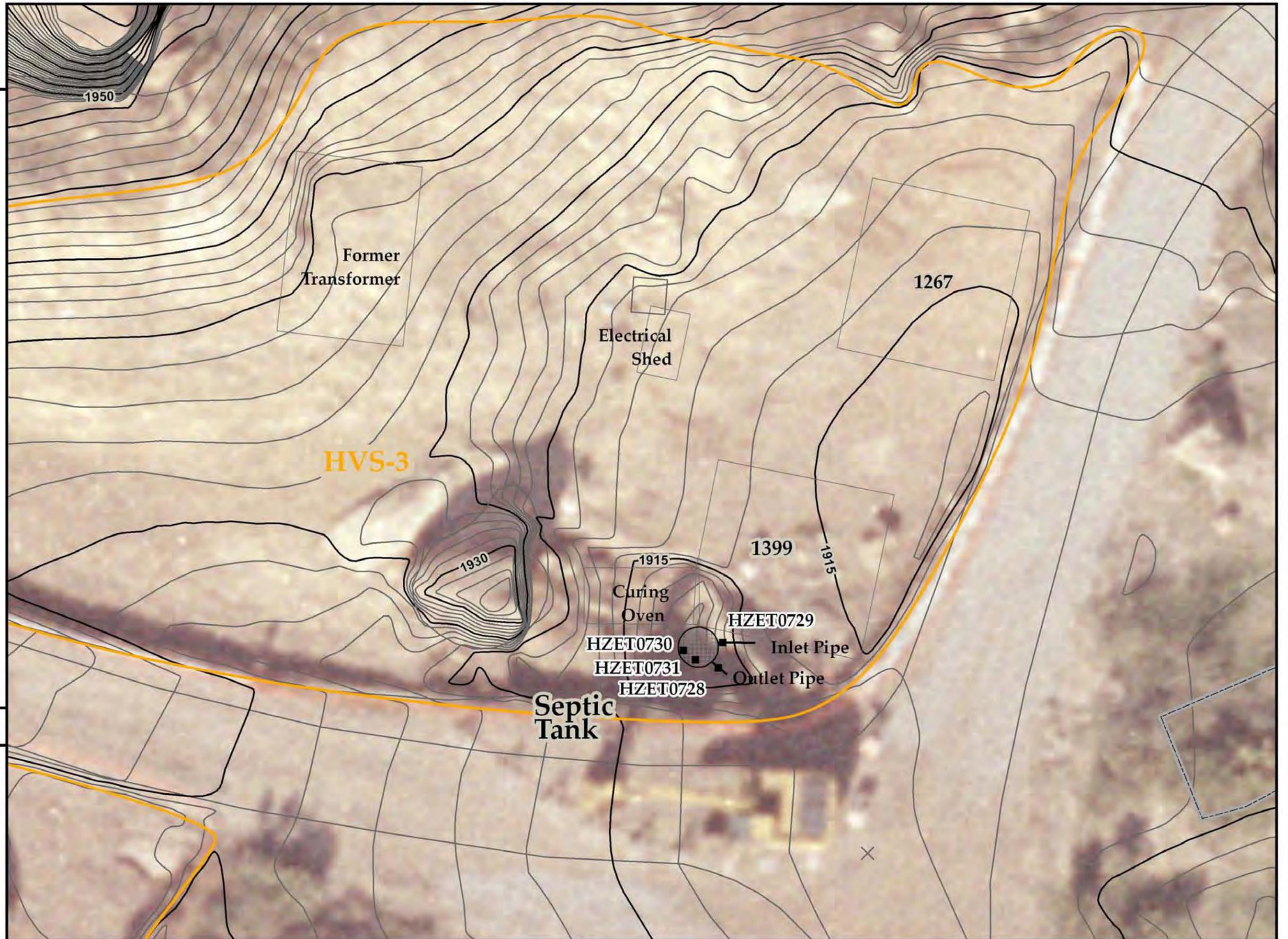
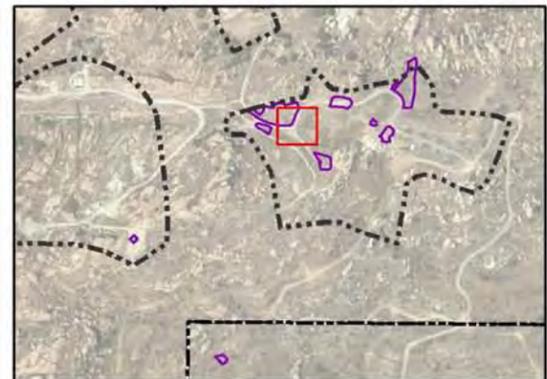
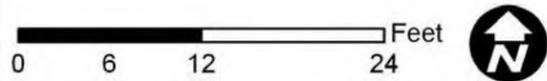
# Happy Valley South Septic Tank Removal Confirmation Soil Samples

## Base Map Legend

-  RFI Site Boundary
-  Removed Building or Structure
-  Actual Excavation Area
-  Surface Water Drainage
-  Elevation Contour
-  Septic Tank
-  Septic Tank Pipeline Segment
-  Previously Excavated Area
-  Septic Tank Removal Confirmation Sample

**Note:**  
 1. Aerial imagery from Sage, November 2009.  
 2. Topographic contours from Sage, November 2009.

Date: November 13, 2009



S A N T A S U S A N A F I E L D L A B O R A T O R Y



View looking east across septic tank removal area at ISRA Area HVS-3 , Happy Valley South, 10-29-2009.



View of septic tank after removal, Happy Valley South, 10-29-2009.

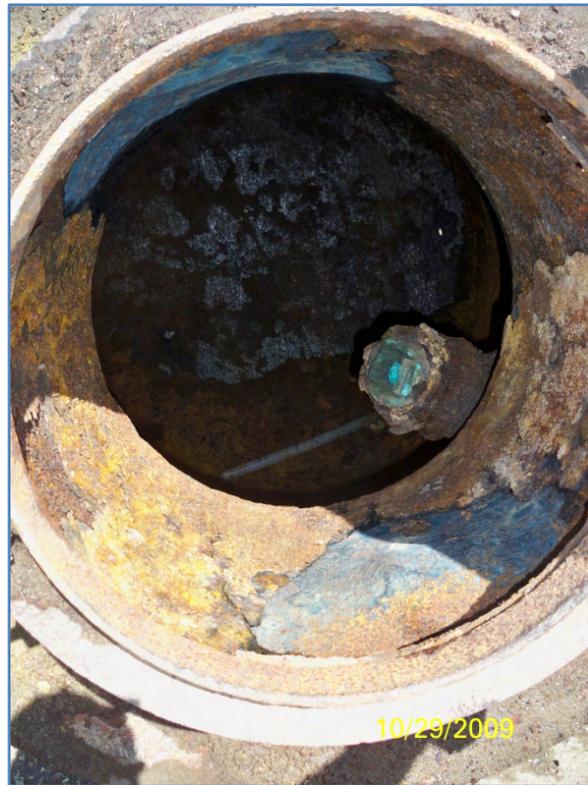




Close-up view of bottom of septic tank, Happy Valley South, 10-29-2009.



Close-up view of bottom of septic tank, Happy Valley South, 10-29-2009.



View looking down into the open hatch at top of septic tank, Happy Valley South, 10-29-2009.



View of removed septic tank, Happy Valley South, 10-29-2009.



View looking east across septic tank removal excavation at ISRA Area HVS-3, Happy Valley South, 10-29-2009.



View of septic tank being loaded onto a flatbed truck for transport offsite, Happy Valley South, 10-29-08.