

WASTE CHARACTERIZATION: IN-SITU SOIL LOCATED AT ISRA AREA II PLANNED EXCAVATION ELV-1D POND

Introduction

This report presents supporting detailed information for the July 28, 2009 in-situ characterization of prospective soil wastes from planned ISRA excavations in SSFL Area II.

Background

In-situ characterization of soil destined to be excavated from designated locations in SSFL Area II in accordance with the ISRA Workplan was performed. A step-by-step approach was followed to accomplish characterization of the soil prior to excavation. The first step was to review available information regarding historical area usage and existing analytical data from past soil sampling in the applicable SSFL Area II locations. The objective was to identify all substances that could have an impact on the determination of whether soil in each planned excavation footprint was hazardous or not.

The next step was to develop a random sampling plan for each of the planned excavation footprints to determine whether any of the identified substances are present at concentrations that require further investigation. An evaluation of the results of the initial random sampling was performed to determine whether the data was adequate for waste characterization based on the exhibited variance of any detected analytes and the relative difference between detected concentrations and regulatory thresholds. The soil was characterized non-hazardous when analyte concentrations among the samples exhibited a reasonably small variance and there was satisfactory margin between the mean of the samples and applicable regulatory thresholds. Otherwise, additional samples were collected and subjected to analysis or the soil was characterized as hazardous.

The review of historical information and existing analytical data relevant to planned excavation in the general ELV-1D area was based largely on the Group 2 RFI results. Evaluation of these data and other sources of relevant information suggested that soils here should be managed as two distinct areas, the former pond and the drainage.

For the ELV-1D POND, Volatile Organic Compounds (VOC), Regulated metals, and Semi-Volatile Organic Compounds (SVOC) were identified as potential impacts that should be addressed in the excavation footprint. A random sampling plan was developed for collection of eight (8) samples from the planned excavation footprint. The samples were analyzed for VOCs, CAM 17 metals, and SVOCs. Additionally, a 96-hour Acute Aquatic Toxicity LC50 (Fish Bioassay) was run on two samples. All samples were collected, contained, and handled according to field practice requirements in SW-846.

Results

Analytical results for the ELV-1D POND planned excavation area are presented in TestAmerica report ISG2199 issued on 8/13/09. The results exhibited elevated concentrations of Lead, with a maximum of 99 mg/kg. Lead concentrations of 87 mg/kg and 82 mg/kg were detected in other samples. All of these samples were subjected to California WET leachate tests. The California WET analyses resulted in respective Lead concentrations of 1.8 mg/L, 3.6 mg/L, and 1.8 mg/L for the three elevated Lead samples. These results did not exceed the California STLC hazardous waste limit for Lead of 5 mg/L.

Elevated Chromium was also detected. Two samples exhibited Chromium at 55 mg/kg and 51 mg/kg, respectively. Corresponding California WET results were 0.45 mg/L and 0.66 mg/L, well below the STLC threshold for hazardous waste of 5 mg/L. Other regulated metals were below applicable regulatory thresholds. SVOCs were detected, but all analytes were below 1 mg/kg individually and did not exceed 1.51 mg/kg collectively. Both samples that were tested passed the Fish Bioassay.

Only trace concentrations of VOCs were detected. Two samples exhibited TCE, one sample at 0.057 mg/kg and the other at 0.00096 mg/kg. Historical background information indicated that the pond area may have been exposed to spent TCE solvent in the past. For this reason, the soil was characterized as impacted by RCRA Listed waste.

Determination

According to analytical results and generator knowledge, the soil in the planned excavation footprint of SSFL Area II ELV-1D POND:

Is a RCRA F001/F002 Listed Waste (analytical results and generator knowledge)

Is Not ignitable (generator knowledge)

Is Not corrosive (generator knowledge)

Is Not reactive (generator knowledge)

Is Not toxic (analytical results)

Is Not Extremely or Acutely Hazardous Waste

Does Not exceed any RCRA or Title 22 thresholds

Is Not subject to the Prop. 65 listing

Is Not subject to Title 22 Appendix X list

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

The soil in ELV-1D POND is HAZARDOUS.

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

**ELV-1D (POND) WASTE CHARACTERIZATION RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY**

			Object Name:		ISWC0061	ISWC0062	ISWC0062	ISWC0063	ISWC0064	ISWC0065	ISWC0065
			Sample Name:		ISWC0061S001	ISWC0062S001	ISWC0062AS001	ISWC0063S001	ISWC0064S001	ISWC0065S001	ISWC0065AS001
			Collection Date:		7/28/2009	7/28/2009	8/28/2009	7/28/2009	7/28/2009	7/28/2009	8/28/2009
			Sample Depth (feet):		0.1 - 0.6	1.1 - 1.6	1.1 - 1.6	1.2 - 1.7	1.3 - 1.8	1.5 - 2.0	1.5 - 2.0
ANALYTE	UNITS	TTLIC	WET Leachate Testing Trigger ^a	TCLP Leachate Testing Trigger ^b	STLC	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
METALS								--			--
Antimony	mg/kg	500	150	--	--	<10	<10	--	<10	2.2 J	<10
Arsenic	mg/kg	500	50	100	--	3.6 B	4.9 B	--	3 B	8 B	2.7 B
Barium	mg/kg	10,000	1,000	2,000	--	54	59	--	61	87	77
Beryllium	mg/kg	75	7.5	--	--	0.39 J	0.33 J	--	0.48 J	0.47 J	0.32 J
Cadmium	mg/kg	100	10	20	--	1.1	1.9	--	0.22 J	4.5	2.0
Chromium	mg/kg	500	50	100	--	20	21	--	22	55	40
Chromium, WET	mg/L	--	--	--	5	--	--	--	--	1.8	--
Cobalt	mg/kg	8,000	800	--	--	4.5	3.7	--	4.4	5.1	3.4
Copper	mg/kg	2,500	250	--	--	12	16	--	8.3	85	13
Lead	mg/kg	1,000	50	100	--	18	24	--	5.6	99	21
Lead, WET	mg/L	--	--	--	5	--	--	--	--	0.45	--
Mercury	mg/kg	20	2	4	--	0.0092 J	0.15	--	<0.033	0.082	0.1
Molybdenum	mg/kg	3,500	3,500	--	--	0.71 J	0.79 J	--	<2	7.9	0.41 J
Nickel	mg/kg	2,000	200	--	--	11	11	--	11	24	12
Selenium	mg/kg	100	10	20	--	<2	<2	--	<2	<2	<2
Silver	mg/kg	500	50	100	--	<1	<1	--	<1	2.4	<1
Thallium	mg/kg	700	70	--	--	<10	<10	--	<10	<10	<10
Vanadium	mg/kg	2,400	240	--	--	26	29	--	30	33	27
Zinc	mg/kg	5,000	2,500	--	--	350	160	--	57	350	440
SVOCs											
1,2,4-Trichlorobenzene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33
1,2-Dichlorobenzene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33
1,2-Diphenylhydrazine/Azobenzene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33
1,3-Dichlorobenzene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33
1,4-Dichlorobenzene	µg/kg	--	--	150,000	--	<0.33	<0.66	--	<0.33	<0.66	<0.33
2,4,5-Trichlorophenol	µg/kg	--	--	8,000,000	--	<0.33	<0.66	--	<0.33	<0.66	<0.33
2,4,6-Trichlorophenol	µg/kg	--	--	40,000	--	<0.33	<0.66	--	<0.33	<0.66	<0.33
2,4-Dichlorophenol	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33
2,4-Dimethylphenol	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33
2,4-Dinitrophenol	µg/kg	--	--	--	--	<0.66	<1.3	--	<0.66	<1.3	<0.66
2,4-Dinitrotoluene	µg/kg	--	--	2,600	--	<0.33	<0.66	--	<0.33	<0.66	<0.33
2,6-Dinitrotoluene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33
2-Chloronaphthalene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33
2-Chlorophenol	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33

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ANALYTE	UNITS	TTLIC	WET Leachate Testing Trigger ^a	TCLP Leachate Testing Trigger ^b	STLC	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	
2-Methylnaphthalene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
2-Methylphenol	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
2-Nitroaniline	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
2-Nitrophenol	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
3,3'-Dichlorobenzidine	µg/kg	--	--	--	--	<0.83	<1.7	--	<0.83	<1.7	<0.83	--
3-Nitroaniline	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
4,6-Dinitro-2-methylphenol	µg/kg	--	--	--	--	<0.42	<0.84	--	<0.42	<0.84	<0.42	--
4-Bromophenyl phenyl ether	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
4-Chloro-3-methylphenol	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
4-Chloroaniline	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
4-Chlorophenyl phenyl ether	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
4-Methylphenol	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
4-Nitroaniline	µg/kg	--	--	--	--	<0.83	<1.7	--	<0.83	<1.7	<0.83	--
4-Nitrophenol	µg/kg	--	--	--	--	<0.83	<1.7	--	<0.83	<1.7	<0.83	--
Acenaphthene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Acenaphthylene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Aniline	µg/kg	--	--	--	--	<0.42	<0.84	--	<0.42	<0.84	<0.42	--
Anthracene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Benzidine	µg/kg	--	--	--	--	<0.66	<1.3	--	<0.66	<1.3	<0.66	--
Benzo(a)anthracene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Benzo(a)pyrene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Benzo(b)fluoranthene	µg/kg	--	--	--	--	0.37	<0.66	--	<0.33	<0.66	<0.33	--
Benzo(g,h,i)perylene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Benzo(k)fluoranthene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Benzoic acid	µg/kg	--	--	--	--	<0.83	<1.7	--	<0.83	<1.7	<0.83	--
Benzyl alcohol	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Bis(2-chloroethoxy)methane	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Bis(2-chloroethyl)ether	µg/kg	--	--	--	--	<0.17	<0.34	--	<0.17	<0.34	<0.17	--
Bis(2-chloroisopropyl)ether	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Bis(2-ethylhexyl)phthalate	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Butyl benzyl phthalate	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Chrysene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Dibenz(a,h)anthracene	µg/kg	--	--	--	--	<0.42	<0.84	--	<0.42	<0.84	<0.42	--
Dibenzofuran	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Diethyl phthalate	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--

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ANALYTE	UNITS	TTLIC	WET Leachate Testing Trigger ^a	TCLP Leachate Testing Trigger ^b	STLC	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	
Dimethyl phthalate	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Di-n-butyl phthalate	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Di-n-octyl phthalate	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Fluoranthene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Fluorene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Hexachlorobenzene	µg/kg	--	--	2,600	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Hexachlorobutadiene	µg/kg	--	--	10,000	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Hexachlorocyclopentadiene	µg/kg	--	--	--	--	<0.83 C-2	<1.7	--	<0.83 C-2	<1.7	<0.83 C-2	--
Hexachloroethane	µg/kg	--	--	60,000	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Indeno(1,2,3-cd)pyrene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Isophorone	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Naphthalene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Nitrobenzene	µg/kg	--	--	40,000	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
N-Nitrosodimethylamine	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
N-Nitroso-di-n-propylamine	µg/kg	--	--	--	--	<0.25	<0.5	--	<0.25	<0.5	<0.25	--
N-Nitrosodiphenylamine	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Pentachlorophenol	µg/kg	17,000	17,000	2,000,000	--	<0.83	<1.7	--	<0.83	<1.7	<0.83	--
Phenanthrene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Phenol	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
Pyrene	µg/kg	--	--	--	--	<0.33	<0.66	--	<0.33	<0.66	<0.33	--
VOCs												
1,1,1,2-Tetrachloroethane	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025 I	--
1,1,1-Trichloroethane	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
1,1,2,2-Tetrachloroethane	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025 I	--
1,1,2-Trichloroethane	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
1,1-Dichloroethane	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
1,1-Dichloroethene	µg/kg	--	--	14,000	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025 I	--
1,1-Dichloropropene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
1,2,3-Trichlorobenzene	µg/kg	--	--	--	--	<0.0022	<0.0022 I	--	<0.0019	<0.0022	0.0033 I	--
1,2,3-Trichloropropane	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025 I	--
1,2,4-Trichlorobenzene	µg/kg	--	--	--	--	<0.0022	<0.0022 I	--	<0.0019	<0.0022	0.0019 J, I	--
1,2,4-Trimethylbenzene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
1,2-Dibromo-3-chloropropane	µg/kg	--	--	--	--	<0.011	<0.012	--	<0.0097	<0.011	<0.012 I	--
1,2-Dibromoethane (EDB)	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
1,2-Dichlorobenzene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--

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			Sample Depth (feet):		0.1 - 0.6	1.1 - 1.6	1.1 - 1.6	1.2 - 1.7	1.3 - 1.8	1.5 - 2.0	1.5 - 2.0	
ANALYTE	UNITS	TTLIC	WET Leachate Testing Trigger ^a	TCLP Leachate Testing Trigger ^b	STLC	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	
1,2-Dichloroethane	µg/kg	--	--	10,000	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
1,2-Dichloropropane	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
1,3,5-Trimethylbenzene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
1,3-Dichlorobenzene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
1,3-Dichloropropane	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
1,4-Dichlorobenzene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
2,2-Dichloropropane	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
2-Butanone (MEK)	µg/kg	--	--	4,000,000	--	<0.011	<0.011	--	<0.0097	<0.012	<0.012	--
2-Chlorotoluene	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025	--
2-Hexanone	µg/kg	--	--	--	--	<0.011	<0.012	--	<0.0097	<0.011	<0.012	--
4-Chlorotoluene	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025	--
4-Methyl-2-pentanone (MIBK)	µg/kg	--	--	--	--	<0.0056	<0.0062	--	<0.0049	<0.0055	<0.0062	--
Acetone	µg/kg	--	--	--	--	0.019	<0.012 C	--	<0.0097	<0.011 C	0.021	--
Benzene	µg/kg	--	--	10,000	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
Bromobenzene	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025	--
Bromochloromethane	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025	--
Bromodichloromethane	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
Bromoform	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025	--
Bromomethane	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025	--
Carbon Disulfide	µg/kg	--	--	--	--	<0.0056	<0.0062	--	<0.0049	<0.0055	<0.0062	--
Carbon tetrachloride	µg/kg	--	--	10,000	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025	--
Chlorobenzene	µg/kg	--	--	2,000,000	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
Chloroethane	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025	--
Chloroform	µg/kg	--	--	120,000	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
Chloromethane	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025	--
cis-1,2-Dichloroethene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
cis-1,3-Dichloropropene	µg/kg	--	--	--	--	<0.0011	<0.0012 L	--	<0.00097	<0.0011 L	<0.0012	--
Dibromochloromethane	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
Dibromomethane	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
Dichlorodifluoromethane	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025	--
Di-isopropyl Ether (DIPE)	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025	--
Ethyl tert-Butyl Ether (ETBE)	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025	--
Ethylbenzene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--
Hexachlorobutadiene	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025	--
Isopropylbenzene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012	--

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

ELV-1D (POND) WASTE CHARACTERIZATION RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

			Object Name:		ISWC0061	ISWC0062	ISWC0062	ISWC0063	ISWC0064	ISWC0065	ISWC0065	
			Sample Name:		ISWC0061S001	ISWC0062S001	ISWC0062AS001	ISWC0063S001	ISWC0064S001	ISWC0065S001	ISWC0065AS001	
			Collection Date:		7/28/2009	7/28/2009	8/28/2009	7/28/2009	7/28/2009	7/28/2009	8/28/2009	
			Sample Depth (feet):		0.1 - 0.6	1.1 - 1.6	1.1 - 1.6	1.2 - 1.7	1.3 - 1.8	1.5 - 2.0	1.5 - 2.0	
ANALYTE	UNITS	TTLIC	WET Leachate Testing Trigger ^a	TCLP Leachate Testing Trigger ^b	STLC	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	
m,p-Xylenes	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025 I	--
Methylene chloride	µg/kg	--	--	--	--	<0.011	<0.012	--	<0.0097	<0.011	<0.012 I	--
Methyl-tert-butyl Ether (MTBE)	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025 I	--
Naphthalene	µg/kg	--	--	--	--	<0.0022	<0.0022 I	--	<0.0019	<0.0022	0.0042 I	--
n-Butylbenzene	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	0.0012 I, J	--
n-Propylbenzene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
o-Xylene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
p-Isopropyltoluene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
sec-Butylbenzene	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025 I	--
Styrene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
tert-Amyl Methyl Ether (TAME)	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025 I	--
tert-Butanol (TBA)	µg/kg	--	--	--	--	<0.056	<0.062	--	<0.049	<0.055	<0.062	--
tert-Butylbenzene	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025 I	--
Tetrachloroethene	µg/kg	--	--	14,000	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
Toluene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
trans-1,2-Dichloroethene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
trans-1,3-Dichloropropene	µg/kg	--	--	--	--	<0.0011	<0.0012	--	<0.00097	<0.0011	<0.0012 I	--
Trichloroethene	µg/kg	2,040,000	2,040,000	10,000	--	<0.0011	<0.0012	--	<0.00097	<0.0011	0.00096 I, J	--
Trichlorofluoromethane	µg/kg	--	--	--	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025 I	--
Vinyl acetate	µg/kg	--	--	--	--	<0.0056	<0.0062	--	<0.0049	<0.0055	<0.0062 I	--
Vinyl chloride	µg/kg	--	--	4,000	--	<0.0022	<0.0025	--	<0.0019	<0.0022	<0.0025 I	--
Xylenes, Total	µg/kg	--	--	--	--	<0.0045	<0.005	--	<0.0039	<0.0044	<0.0049 I	--
RADIONUCLIDES	--	--	--	--	--	R	R	R-G	R	R	R	R

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

**ELV-1D (POND) WASTE CHARACTERIZATION RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY**

			Object Name:			ISWC0066	ISWC0066	ISWC0067	ISWC0068
			Sample Name:			ISWC0066S001	ISWC0066AS001	ISWC0067S001	ISWC0068S001
			Collection Date:			7/28/2009	8/28/2009	7/28/2009	7/28/2009
			Sample Depth (feet):			0.4 - 0.9	0.4 - 0.9	0.0 - 0.5	0.3 - 0.7
ANALYTE	UNITS	TTLIC	WET Leachate Testing Trigger ^a	TCLP Leachate Testing Trigger ^b	STLC	RESULT	RESULT	RESULT	RESULT
METALS									
Antimony	mg/kg	500	150	--	--	1.4 J	--	5.6 J	<10
Arsenic	mg/kg	500	50	100	--	4 B	--	3.1 B	3.9 B
Barium	mg/kg	10,000	1,000	2,000	--	96	--	110	59
Beryllium	mg/kg	75	7.5	--	--	0.57	--	0.52	0.58
Cadmium	mg/kg	100	10	20	--	5.1	--	4.7	1.1
Chromium	mg/kg	500	50	100	--	51	--	44	24
Chromium, WET	mg/L	--	--	--	5	3.6	--	--	--
Cobalt	mg/kg	8,000	800	--	--	4.9	--	5.4	4.6
Copper	mg/kg	2,500	250	--	--	48	--	30	15
Lead	mg/kg	1,000	50	100	--	82	--	87	8.2
Lead, WET	mg/L	--	--	--	5	0.66	--	1.8	--
Mercury	mg/kg	20	2	4	--	0.14	--	0.02 J	0.01 J
Molybdenum	mg/kg	3,500	3,500	--	--	2.6	--	2.7	<2
Nickel	mg/kg	2,000	200	--	--	25	--	22	14
Selenium	mg/kg	100	10	20	--	<2	--	1.6 J	<2
Silver	mg/kg	500	50	100	--	1.9	--	0.82 J	0.82 J
Thallium	mg/kg	700	70	--	--	<10	--	<10	<10
Vanadium	mg/kg	2,400	240	--	--	29	--	27	32
Zinc	mg/kg	5,000	2,500	--	--	980	--	950	120
SVOCs									
1,2,4-Trichlorobenzene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
1,2-Dichlorobenzene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
1,2-Diphenylhydrazine/Azobenzene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
1,3-Dichlorobenzene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
1,4-Dichlorobenzene	µg/kg	--	--	150,000	--	<0.5	--	<0.33	<0.33
2,4,5-Trichlorophenol	µg/kg	--	--	8,000,000	--	<0.5	--	<0.33	<0.33
2,4,6-Trichlorophenol	µg/kg	--	--	40,000	--	<0.5	--	<0.33	<0.33
2,4-Dichlorophenol	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
2,4-Dimethylphenol	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
2,4-Dinitrophenol	µg/kg	--	--	--	--	<0.99	--	<0.66	<0.66
2,4-Dinitrotoluene	µg/kg	--	--	2,600	--	<0.5	--	<0.33	<0.33
2,6-Dinitrotoluene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
2-Chloronaphthalene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
2-Chlorophenol	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

ELV-1D (POND) WASTE CHARACTERIZATION RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

						Object Name:	ISWC0066	ISWC0066	ISWC0067	ISWC0068
						Sample Name:	ISWC0066S001	ISWC0066AS001	ISWC0067S001	ISWC0068S001
						Collection Date:	7/28/2009	8/28/2009	7/28/2009	7/28/2009
						Sample Depth (feet):	0.4 - 0.9	0.4 - 0.9	0.0 - 0.5	0.3 - 0.7
ANALYTE	UNITS	TTLIC	WET Leachate Testing Trigger ^a	TCLP Leachate Testing Trigger ^b	STLC	RESULT	RESULT	RESULT	RESULT	
2-Methylnaphthalene	µg/kg	--	--	--	--	0.12 J	--	0.13 J	<0.33	
2-Methylphenol	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
2-Nitroaniline	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
2-Nitrophenol	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
3,3'-Dichlorobenzidine	µg/kg	--	--	--	--	<1.2	--	<0.83	<0.83	
3-Nitroaniline	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
4,6-Dinitro-2-methylphenol	µg/kg	--	--	--	--	<0.63	--	<0.42	<0.42	
4-Bromophenyl phenyl ether	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
4-Chloro-3-methylphenol	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
4-Chloroaniline	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
4-Chlorophenyl phenyl ether	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
4-Methylphenol	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
4-Nitroaniline	µg/kg	--	--	--	--	<1.2	--	<0.83	<0.83	
4-Nitrophenol	µg/kg	--	--	--	--	<1.2	--	<0.83	<0.83	
Acenaphthene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
Acenaphthylene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
Aniline	µg/kg	--	--	--	--	<0.63	--	<0.42	<0.42	
Anthracene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
Benzidine	µg/kg	--	--	--	--	<0.99	--	<0.66	<0.66	
Benzo(a)anthracene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
Benzo(a)pyrene	µg/kg	--	--	--	--	0.11 J	--	<0.33	<0.33	
Benzo(b)fluoranthene	µg/kg	--	--	--	--	<0.5	--	0.41	<0.33	
Benzo(g,h,i)perylene	µg/kg	--	--	--	--	0.16 J	--	0.19 J	0.11 J	
Benzo(k)fluoranthene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
Benzoic acid	µg/kg	--	--	--	--	0.46 J	--	0.35 J	<0.83	
Benzyl alcohol	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
Bis(2-chloroethoxy)methane	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
Bis(2-chloroethyl)ether	µg/kg	--	--	--	--	<0.26	--	<0.17	<0.17	
Bis(2-chloroisopropyl)ether	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
Bis(2-ethylhexyl)phthalate	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
Butyl benzyl phthalate	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
Chrysene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
Dibenz(a,h)anthracene	µg/kg	--	--	--	--	<0.63	--	<0.42	<0.42	
Dibenzofuran	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	
Diethyl phthalate	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33	

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

**ELV-1D (POND) WASTE CHARACTERIZATION RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY**

			Object Name:			ISWC0066	ISWC0066	ISWC0067	ISWC0068
			Sample Name:			ISWC0066S001	ISWC0066AS001	ISWC0067S001	ISWC0068S001
			Collection Date:			7/28/2009	8/28/2009	7/28/2009	7/28/2009
			Sample Depth (feet):			0.4 - 0.9	0.4 - 0.9	0.0 - 0.5	0.3 - 0.7
ANALYTE	UNITS	TTLIC	WET Leachate Testing Trigger ^a	TCLP Leachate Testing Trigger ^b	STLC	RESULT	RESULT	RESULT	RESULT
Dimethyl phthalate	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
Di-n-butyl phthalate	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
Di-n-octyl phthalate	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
Fluoranthene	µg/kg	--	--	--	--	0.12 J	--	0.1 J	<0.33
Fluorene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
Hexachlorobenzene	µg/kg	--	--	2,600	--	<0.5	--	<0.33	<0.33
Hexachlorobutadiene	µg/kg	--	--	10,000	--	<0.5	--	<0.33	<0.33
Hexachlorocyclopentadiene	µg/kg	--	--	--	--	<1.2	--	<0.83	<0.83
Hexachloroethane	µg/kg	--	--	60,000	--	<0.5	--	<0.33	<0.33
Indeno(1,2,3-cd)pyrene	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
Isophorone	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
Naphthalene	µg/kg	--	--	--	--	<0.5	--	0.1 J	<0.33
Nitrobenzene	µg/kg	--	--	40,000	--	<0.5	--	<0.33	<0.33
N-Nitrosodimethylamine	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
N-Nitroso-di-n-propylamine	µg/kg	--	--	--	--	<0.38	--	<0.25	<0.25
N-Nitrosodiphenylamine	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
Pentachlorophenol	µg/kg	17,000	17,000	2,000,000	--	<1.2	--	<0.83	<0.83
Phenanthrene	µg/kg	--	--	--	--	0.12 J	--	0.1 J	<0.33
Phenol	µg/kg	--	--	--	--	<0.5	--	<0.33	<0.33
Pyrene	µg/kg	--	--	--	--	0.22 J	--	0.13 J	<0.33
VOCs									
1,1,1,2-Tetrachloroethane	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024
1,1,1-Trichloroethane	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012
1,1,2,2-Tetrachloroethane	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024
1,1,2-Trichloroethane	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012
1,1-Dichloroethane	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012
1,1-Dichloroethene	µg/kg	--	--	14,000	--	<0.0023 l	--	<0.0022 l	<0.0024
1,1-Dichloropropene	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012
1,2,3-Trichlorobenzene	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024
1,2,3-Trichloropropane	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024
1,2,4-Trichlorobenzene	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024
1,2,4-Trimethylbenzene	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012
1,2-Dibromo-3-chloropropane	µg/kg	--	--	--	--	<0.012 l	--	<0.011 l	<0.012
1,2-Dibromoethane (EDB)	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012
1,2-Dichlorobenzene	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

**ELV-1D (POND) WASTE CHARACTERIZATION RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY**

						Object Name:	ISWC0066	ISWC0066	ISWC0067	ISWC0068
						Sample Name:	ISWC0066S001	ISWC0066AS001	ISWC0067S001	ISWC0068S001
						Collection Date:	7/28/2009	8/28/2009	7/28/2009	7/28/2009
						Sample Depth (feet):	0.4 - 0.9	0.4 - 0.9	0.0 - 0.5	0.3 - 0.7
ANALYTE	UNITS	TTLIC	WET Leachate Testing Trigger ^a	TCLP Leachate Testing Trigger ^b	STLC	RESULT	RESULT	RESULT	RESULT	
1,2-Dichloroethane	µg/kg	--	--	10,000	--	<0.0012 l	--	<0.0011 l	<0.0012	
1,2-Dichloropropane	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012	
1,3,5-Trimethylbenzene	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012	
1,3-Dichlorobenzene	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012	
1,3-Dichloropropane	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012	
1,4-Dichlorobenzene	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012	
2,2-Dichloropropane	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012	
2-Butanone (MEK)	µg/kg	--	--	4,000,000	--	<0.012 l	--	<0.011 l	<0.012	
2-Chlorotoluene	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024	
2-Hexanone	µg/kg	--	--	--	--	<0.012 l	--	<0.011 l	<0.012	
4-Chlorotoluene	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024	
4-Methyl-2-pentanone (MIBK)	µg/kg	--	--	--	--	<0.0058 l	--	<0.0055 l	<0.0059	
Acetone	µg/kg	--	--	--	--	0.016 l	--	0.029 l	<0.012	
Benzene	µg/kg	--	--	10,000	--	<0.0012 l	--	<0.0011 l	<0.0012	
Bromobenzene	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024	
Bromochloromethane	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024	
Bromodichloromethane	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012	
Bromoform	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024	
Bromomethane	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024	
Carbon Disulfide	µg/kg	--	--	--	--	<0.0058 l	--	<0.0055 l	<0.0059	
Carbon tetrachloride	µg/kg	--	--	10,000	--	<0.0023 l	--	<0.0022 l	<0.0024	
Chlorobenzene	µg/kg	--	--	2,000,000	--	<0.0012 l	--	<0.0011 l	<0.0012	
Chloroethane	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024	
Chloroform	µg/kg	--	--	120,000	--	<0.0012 l	--	<0.0011 l	<0.0012	
Chloromethane	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024	
cis-1,2-Dichloroethene	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012	
cis-1,3-Dichloropropene	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012	
Dibromochloromethane	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012	
Dibromomethane	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012	
Dichlorodifluoromethane	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024	
Di-isopropyl Ether (DIPE)	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024	
Ethyl tert-Butyl Ether (ETBE)	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024	
Ethylbenzene	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012	
Hexachlorobutadiene	µg/kg	--	--	--	--	<0.0023 l	--	<0.0022 l	<0.0024	
Isopropylbenzene	µg/kg	--	--	--	--	<0.0012 l	--	<0.0011 l	<0.0012	

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

**ELV-1D (POND) WASTE CHARACTERIZATION RESULTS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY**

						Object Name:	ISWC0066	ISWC0066	ISWC0067	ISWC0068
						Sample Name:	ISWC0066S001	ISWC0066AS001	ISWC0067S001	ISWC0068S001
						Collection Date:	7/28/2009	8/28/2009	7/28/2009	7/28/2009
						Sample Depth (feet):	0.4 - 0.9	0.4 - 0.9	0.0 - 0.5	0.3 - 0.7
ANALYTE	UNITS	TTLIC	WET Leachate Testing Trigger ^a	TCLP Leachate Testing Trigger ^b	STLC	RESULT	RESULT	RESULT	RESULT	
m,p-Xylenes	µg/kg	--	--	--	--	<0.0023	--	<0.0022	<0.0024	
Methylene chloride	µg/kg	--	--	--	--	<0.012	--	<0.011	<0.012	
Methyl-tert-butyl Ether (MTBE)	µg/kg	--	--	--	--	<0.0023	--	<0.0022	<0.0024	
Naphthalene	µg/kg	--	--	--	--	<0.0023	--	<0.0022	<0.0024	
n-Butylbenzene	µg/kg	--	--	--	--	<0.0023	--	<0.0022	<0.0024	
n-Propylbenzene	µg/kg	--	--	--	--	<0.0012	--	<0.0011	<0.0012	
o-Xylene	µg/kg	--	--	--	--	<0.0012	--	<0.0011	<0.0012	
p-Isopropyltoluene	µg/kg	--	--	--	--	<0.0012	--	<0.0011	<0.0012	
sec-Butylbenzene	µg/kg	--	--	--	--	<0.0023	--	<0.0022	<0.0024	
Styrene	µg/kg	--	--	--	--	<0.0012	--	<0.0011	<0.0012	
tert-Amyl Methyl Ether (TAME)	µg/kg	--	--	--	--	<0.0023	--	<0.0022	<0.0024	
tert-Butanol (TBA)	µg/kg	--	--	--	--	<0.058	--	<0.055	<0.059	
tert-Butylbenzene	µg/kg	--	--	--	--	<0.0023	--	<0.0022	<0.0024	
Tetrachloroethene	µg/kg	--	--	14,000	--	<0.0012	--	<0.0011	<0.0012	
Toluene	µg/kg	--	--	--	--	<0.0012	--	<0.0011	<0.0012	
trans-1,2-Dichloroethene	µg/kg	--	--	--	--	<0.0012	--	<0.0011	<0.0012	
trans-1,3-Dichloropropene	µg/kg	--	--	--	--	<0.0012	--	<0.0011	<0.0012	
Trichloroethene	µg/kg	2,040,000	2,040,000	10,000	--	0.057	--	<0.0011	<0.0012	
Trichlorofluoromethane	µg/kg	--	--	--	--	<0.0023	--	<0.0022	<0.0024	
Vinyl acetate	µg/kg	--	--	--	--	<0.0058	--	<0.0055	<0.0059	
Vinyl chloride	µg/kg	--	--	4,000	--	<0.0023	--	<0.0022	<0.0024	
Xylenes, Total	µg/kg	--	--	--	--	<0.0046	--	<0.0044	<0.0047	
RADIONUCLIDES	--	--	--	--	--	R	R-G	R	R	

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

ELV WASTE CHARACTERIZATION SUMMARY NOTES THE BOEING COMPANY SANTA SUSANA FIELD LABORATORY

Notes:

--" - not analyzed / not applicable

¹ - WET Leachate Testing Trigger = STLC limit * 10

² - TCLP Leachate Testing Trigger = TCLP limit * 20

Grey highlighted cells indicate concentration meets or exceeds STLC.

A-01 - 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).

A-01a - 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 (4 peaks were used in the primary column).

A-01b - 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 (4 peaks were used in the primary and 3 peaks were used in the confirmation column).

A-01c - 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 (4 peaks were used in the primary column).

B - Analyte was detected in the associated Method Blank.

C - Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted

C-2 - Calibration Verification recovery was below the method control limit for this analyte, however the average % difference for all analytes met method criteria.

I - Internal Standard recovery was outside of method limits. Matrix interference was confirmed.

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.

L - Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above the acceptance limits. Analyte not detected, data not impacted.

M1 - The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).

INTERIM SOURCE REMOVAL ACTION (ISRA) - OUTFALL 009

**ELV WASTE CHARACTERIZATION SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY**

M2 - The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).

µg/kg - micrograms per kilogram

mg/kg - milligrams per kilogram

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 has prepared a document dated August 17, 2009 that provides the radiological results and statistical analysis of the Outfall 008 waste characterization samples. Based on the results, the document certifies the soil represented by these waste characterization samples to be "radiologically" acceptable for shipment to Class 1, 2, and/or 3 disposal facilities. The analysis and data interpretation complies with procedures approved by the California Department of Public Health.

R-1 - The relative percent difference (RPD) between the primary and confirmatory analysis exceeded 40%. Per method 8000B, the higher value was reported

R-G - Samples were recollected for gamma spectroscopy only (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)