

TABLES

Table 1-1
Summary of NPDES Permit Limit Exceedances - Outfalls 008 and 009
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Analyte	Sample Date	Result	Units	2009		Data Type
				Benchmark Limit	Units	
<i>Outfall 008, Happy Valley Drainage</i>						
Copper	18-Feb-05	15	mg/L	14.0	mg/L	Monitoring-only
Lead	20-Oct-04	9.8	mg/L	5.2	mg/L	Monitoring-only
Lead	27-Oct-04	9	mg/L	5.2	mg/L	Monitoring-only
Lead	28-Dec-04	6.4	mg/L	5.2	mg/L	Monitoring-only
Lead	18-Feb-05	13	mg/L	5.2	mg/L	Monitoring-only
Lead	18-Oct-05	120	mg/L	5.2	mg/L	Monitoring-only
Lead	1-Jan-06	20	mg/L	5.2	mg/L	Monitoring-only
Lead	15-Apr-06	18	mg/L	5.2	mg/L	Compliance
Lead	25-Jan-08	6.3	mg/L	5.2	mg/L	Benchmark
Dioxins / TCDD TEQ	18-Feb-05	4.46E-08	mg/L	2.80E-08	mg/L	Monitoring-only
Dioxins / TCDD TEQ	28-Feb-06	3.19E-07	mg/L	2.80E-08	mg/L	Monitoring-only
<i>Outfall 009, WS-13 Drainage</i>						
Cadmium	17-Oct-05	9.2	µg/L	4.0	µg/L	Monitoring-only
Copper	17-Oct-05	39	µg/L	14	µg/L	Monitoring-only
Copper	18-Feb-06	22	µg/L	14	µg/L	Monitoring-only
Copper	4-Apr-06	26	µg/L	14	µg/L	Compliance
Lead	28-Dec-04	11	µg/L	5.2	µg/L	Monitoring-only
Lead	18-Feb-05	10	µg/L	5.2	µg/L	Monitoring-only
Lead	17-Oct-05	260	µg/L	5.2	µg/L	Monitoring-only
Lead	18-Feb-06	33	µg/L	5.2	µg/L	Monitoring-only
Lead	4-Apr-06	64	µg/L	5.2	µg/L	Compliance
Lead	22-Sep-07	8.6	µg/L	5.2	µg/L	Compliance
Lead	3-Feb-08	6.0	µg/L	5.2	µg/L	Benchmark
Lead	15-Dec-08	19	µg/L	5.2	µg/L	Benchmark
Lead	6-Feb-09	7.5	µg/L	5.2	µg/L	Benchmark
Lead	13-Feb-09	20	µg/L	5.2	µg/L	Benchmark
Lead	7-Dec-09	5.7	µg/L	5.2	µg/L	Benchmark
Mercury	4-Jan-05	0.20	µg/L	0.13	µg/L	Monitoring-only
Mercury	17-Oct-05	0.21	µg/L	0.13	µg/L	Monitoring-only
Oil & Grease	11-Jan-05	16	mg/L	15	mg/L	Compliance
pH	17-Oct-05	8.80	pH units	6.5 - 8.5	pH units	Compliance
Dioxins / TCDD TEQ	4-Jan-05	1.72E-06	µg/L	2.80E-08	µg/L	Monitoring-only
Dioxins / TCDD TEQ	18-Feb-05	5.20E-08	µg/L	2.80E-08	µg/L	Monitoring-only
Dioxins / TCDD TEQ	17-Oct-05	9.10E-04	µg/L	2.80E-08	µg/L	Monitoring-only
Dioxins / TCDD TEQ	9-Nov-05	6.14E-07	µg/L	2.80E-08	µg/L	Monitoring-only
Dioxins / TCDD TEQ	18-Feb-06	1.56E-05	µg/L	2.80E-08	µg/L	Monitoring-only
Dioxins / TCDD TEQ	4-Apr-06	1.77E-05	µg/L	2.80E-08	µg/L	Compliance
Dioxins / TCDD TEQ	19-Feb-07	7.64E-07	µg/L	2.80E-08	µg/L	Compliance
Dioxins / TCDD TEQ	22-Sep-07	3.13E-06	µg/L	2.80E-08	µg/L	Compliance
Dioxins / TCDD TEQ	3-Feb-08	3.58E-07	µg/L	2.80E-08	µg/L	Benchmark
Dioxins / TCDD TEQ	26-Nov-08	3.99E-07	µg/L	2.80E-08	µg/L	Benchmark
Dioxins / TCDD TEQ	15-Dec-08	1.83E-06	µg/L	2.80E-08	µg/L	Benchmark
Dioxins / TCDD TEQ	6-Feb-09	9.55E-07	µg/L	2.80E-08	µg/L	Benchmark
Dioxins / TCDD TEQ	13-Feb-09	1.22E-05	µg/L	2.80E-08	µg/L	Benchmark
Dioxins / TCDD TEQ	14-Oct-09	1.60E-06	µg/L	2.80E-08	µg/L	Benchmark
Dioxins / TCDD TEQ	7-Dec-09	1.10E-07	µg/L	2.80E-08	µg/L	Benchmark

Notes:

NPDES Permit exceedances are sample results that are greater than the NPDES limit and were collected after the discharge limit was established and before limit was updated to a benchmark (performance based) limit for the outfalls (compliance data above).

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 World Health Organization's (1998 WHO's) 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. TCDD TEQ values do not include laboratory data not quantified (DNQ) as specified in the NPDES permit.

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

**Table 2-1
Outfall 009 ISRA PEA Chemical and Physical Characteristics
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Table 2-1

Site Name	ISRA COCs Exceeding Soil Remediation Goals in Soil < 2 ft bgs ^a	Non-ISRA COCs Exceeding Screening Levels in Soil < 2 ft bgs ^{b,c}	ISRA COCs Exceeding Soil Remediation Goals in Soil 2-10 ft bgs ^a	Non-ISRA COCs Exceeding Screening Levels in Soil 2-10 ft bgs ^{b,c}	Surface Area, Range of Exceedance Depth, Average Exceedance Depth, and Volume Estimate ^d	Surface Conditions ^e	Other Physical Parameters of ISRA Area ^{f,g,h}
PEA-A1LF-1	Cadmium: 5.4x SRG (4) Copper: 1.6x SRG (1) Lead: 160x SRG (1) Mercury: 5.8x SRG (4)	Arsenic: 1.0x BG (1) Zinc: 8.0x BG (3) Aroclor 1254: 3.9x Eco RBSL (4)	Cadmium: 66x SRG (11) Copper: 2.9x SRG (4) Lead: 97x SRG (5) Mercury: 8.2x SRG (10)	Arsenic: 2.5x BG (7) Cobalt: 2.1x BG (2) Manganese: 2.1x BG (4) Nickel: 4.6x BG (1) Silver: 270x BG (3) Vanadium: 2.1x BG (2) Zinc: 440x BG (11) Aroclor 1254: 13x Eco RBSL (8) Aroclor 1260: 1.7x Eco RBSL (2)	Surface Area = 11,900 yd ² Depth Range = 0 - ~25 ft bgs Depth Average = 9.8 ft bgs Volume = 38,870 cy	Impermeable Cover = 15 % Vegetated Cover = 85 % Type of Vegetation = Bare Soil Surface Relief = Smooth	Soil Texture = Medium-Fine Slope Length = 120 feet Elevation Change = 54 feet % Slope = 45% Distance from Drainage = 0 feet Depth to Groundwater = > 10 feet
PEA-A1LF-2	Cadmium: 2.6x SRG (7) Dioxins: 3.5x SRG (4) Lead: 1.3x SRG (1) Mercury: 6.3x SRG (3)	Silver: 13x BG (11) Zinc: 1.1x BG (1) Total Aroclors: 4.1x Eco RBSL (8)	Cadmium: 2.8x SRG (6) Mercury: 3.7x SRG (1)	Silver: 2.7x BG (1) Zinc: 1.4x BG (3)	Surface Area = 914 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 610 cy	Impermeable Cover = 5 % Vegetated Cover = 95 % Type of Vegetation = Bushes Surface Roughness = Dissected	Soil Texture = Medium-Fine Slope Length = 270 feet Elevation Change = 25 feet % Slope = 9% Distance from Drainage = 0 feet Depth to Groundwater = > 10 feet
PEA-A2LF-2	Mercury: 1.9x SRG (2)	PAHs: 2.3x Res HH RBSL (6)	--	--	Surface Area = 2,711 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 1,810 cy	Impermeable Cover = 0 % Vegetated Cover = 100 % Type of Vegetation = Bushes Surface Roughness = Smooth	Soil Texture = Medium Slope Length = 250 feet Elevation Change = 81 feet % Slope = 32% Distance from Drainage = 191 feet Depth to Groundwater = > 10 feet
PEA-AP/STP-1A	Dioxins: 11x SRG (1)	--	--	--	Surface Area = 106 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 70 cy	Impermeable Cover = 0 % Vegetated Cover = 60 % Type of Vegetation = Bushes Surface Roughness = Smooth	Soil Texture = Medium-Fine Slope Length = 46 feet Elevation Change = 3 feet % Slope = 7% Distance from Drainage = 278 feet Depth to Groundwater = > 10 feet
PEA-AP/STP-1B	Cadmium: 4.9x SRG (4) Copper: 1.8x SRG (1) Lead: 88x SRG (3)	--	--	--	Surface Area = 2,293 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 1,530 cy	Impermeable Cover = 0 % Vegetated Cover = 100 % Type of Vegetation = Bushes Surface Roughness = Smooth	Soil Texture = Medium Slope Length = 115 feet Elevation Change = 14 feet % Slope = 12% Distance from Drainage = 0 feet Depth to Groundwater = > 10 feet

**Table 2-1
Outfall 009 ISRA PEA Chemical and Physical Characteristics
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Table 2-1

Site Name	ISRA COCs Exceeding Soil Remediation Goals in Soil < 2 ft bgs ^a	Non-ISRA COCs Exceeding Screening Levels in Soil < 2 ft bgs ^{b,c}	ISRA COCs Exceeding Soil Remediation Goals in Soil 2-10 ft bgs ^a	Non-ISRA COCs Exceeding Screening Levels in Soil 2-10 ft bgs ^{b,c}	Surface Area, Range of Exceedance Depth, Average Exceedance Depth, and Volume Estimate ^d	Surface Conditions ^e	Other Physical Parameters of ISRA Area ^{f,g,h}
PEA-AP/STP-1C	Cadmium: 1.3x SRG (2) Copper: 1.3x SRG (1) Dioxins: 79x SRG (43) Lead: 2.8x SRG (3) Mercury: 1.1x SRG (1)	--	--	--	Surface Area = 8,111 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 5,410 cy	Impermeable Cover = 6 % Vegetated Cover = 94 % Type of Vegetation = Bushes Surface Roughness = Smooth	Soil Texture = Medium Slope Length = 345 feet Elevation Change = 17 feet % Slope = 5% Distance from Drainage = 0 feet Depth to Groundwater = > 10 feet
PEA-AP/STP-1D	Dioxins: 17x SRG (2)	--	--	--	Surface Area = 483 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 320 cy	Impermeable Cover = 0 % Vegetated Cover = 100 % Type of Vegetation = Bushes Surface Roughness = Smooth	Soil Texture = Medium Slope Length = 80 feet Elevation Change = 6 feet % Slope = 8% Distance from Drainage = 116 feet Depth to Groundwater = > 10 feet
PEA-AP/STP-1E	Dioxins: 700x SRG (7)	--	--	--	Surface Area = 2,369 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 1,580 cy	Impermeable Cover = 4 % Vegetated Cover = 96 % Type of Vegetation = Bushes Surface Roughness = Smooth	Soil Texture = Medium Slope Length = 196 feet Elevation Change = 10 feet % Slope = 5% Distance from Drainage = 0 feet Depth to Groundwater = > 10 feet
PEA-AP/STP-1F	Dioxins: 4.5x SRG (2)	--	--	--	Surface Area = 1,160 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 770 cy	Impermeable Cover = 0 % Vegetated Cover = 100 % Type of Vegetation = Bushes Surface Roughness = Smooth	Soil Texture = Medium Slope Length = 90 feet Elevation Change = 28 feet % Slope = 31% Distance from Drainage = 56 feet Depth to Groundwater = > 10 feet
PEA-B1-1	Cadmium: 3.7x SRG (2) Dioxins: 270x SRG (12) Mercury: 830x SRG (8)	--	Dioxins: 7.9x SRG (1)	--	Surface Area = 3,323 yd ² Depth Range = 0 - 5 ft bgs Depth Average = 3 ft bgs Volume = 3,320 cy	Impermeable Cover = 5 % Vegetated Cover = 95 % Type of Vegetation = Bushes Surface Roughness = Hummocky	Soil Texture = Medium-Fine Slope Length = 540 feet Elevation Change = 94 feet % Slope = 17% Distance from Drainage = 230 feet Depth to Groundwater = > 10 feet
PEA-B1-2	Cadmium: 7.7x SRG (7) Copper: 2.4x SRG (7) Dioxins: 34x SRG (5) Lead: 14x SRG (9)	Selenium: 1.1x BG (1)	Cadmium: 1.1x SRG (1) Lead: 1.2x SRG (1)	--	Surface Area = 911 yd ² Depth Range = 0 - 5 ft bgs Depth Average = 5 ft bgs Volume = 1,520 cy	Impermeable Cover = 10 % Vegetated Cover = 90 % Type of Vegetation = Bushes Surface Roughness = Hummocky	Soil Texture = Medium-Fine Slope Length = 112 feet Elevation Change = 4 feet % Slope = 4% Distance from Drainage = 0 feet Depth to Groundwater = 5 feet

**Table 2-1
Outfall 009 ISRA PEA Chemical and Physical Characteristics
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Table 2-1

Site Name	ISRA COCs Exceeding Soil Remediation Goals in Soil < 2 ft bgs ^a	Non-ISRA COCs Exceeding Screening Levels in Soil < 2 ft bgs ^{b,c}	ISRA COCs Exceeding Soil Remediation Goals in Soil 2-10 ft bgs ^a	Non-ISRA COCs Exceeding Screening Levels in Soil 2-10 ft bgs ^{b,c}	Surface Area, Range of Exceedance Depth, Average Exceedance Depth, and Volume Estimate ^d	Surface Conditions ^e	Other Physical Parameters of ISRA Area ^{f,g,h}
PEA-CTLI-1	Copper: 66x SRG (3) Dioxins: 31x SRG (3) Lead: 13x SRG (12)	Benzo(a)pyrene: 810x Res HH RBSL (15) Zinc: 6.9x BG (17)	--	--	Surface Area = 1,248 yd ² Depth Range = 0 - 5 ft bgs Depth Average = 3 ft bgs Volume = 1,250 cy	Impermeable Cover = 10 % Vegetated Cover = 90 % Type of Vegetation = Bushes Surface Roughness = Dissected	Soil Texture = Medium Slope Length = 180 feet Elevation Change = 50 feet % Slope = 28% Distance from Drainage = 0 feet Depth to Groundwater = > 10 feet
PEA-CTLI-2	Lead: 1.5x SRG (3)	--	--	--	Surface Area = 160 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 110 cy	Impermeable Cover = 10 % Vegetated Cover = 90 % Type of Vegetation = Bushes Surface Roughness = Hummocky	Soil Texture = Medium-Fine Slope Length = 46 feet Elevation Change = 14 feet % Slope = 30% Distance from Drainage = 51 feet Depth to Groundwater = > 10 feet
PEA-IEL-1	Mercury: 17x SRG (1)	--	--	--	Surface Area = 91 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 60 cy	Impermeable Cover = 0 % Vegetated Cover = 100 % Type of Vegetation = Grasses Surface Roughness = Smooth	Soil Texture = Medium-Fine Slope Length = 43 feet Elevation Change = 2 feet % Slope = 5% Distance from Drainage = 103 feet Depth to Groundwater = > 10 feet
PEA-IEL-2	Cadmium: 2.8x SRG (3) Lead: 4.1x SRG (3) Mercury: 50x SRG (5)	--	Mercury: 3.7x SRG (2)	--	Surface Area = 524 yd ² Depth Range = 0 - 5.5 ft bgs Depth Average = 5 ft bgs Volume = 870 cy	Impermeable Cover = 0 % Vegetated Cover = 100 % Type of Vegetation = Bare Soil Surface Roughness = Berms	Soil Texture = Medium-Fine Slope Length = 63 feet Elevation Change = 5 feet % Slope = 8% Distance from Drainage = 360 feet Depth to Groundwater = > 10 feet
PEA-IEL-3	Cadmium: 4.8x SRG (1) Copper: 10x SRG (1) Lead: 9.4x SRG (1) Mercury: 1.3x SRG (2)	Benzo(a)pyrene: 1.1x Res HH RBSL (1)	Mercury: 2.1x SRG (1)	--	Surface Area = 258 yd ² Depth Range = 0 - 5 ft bgs Depth Average = 3 ft bgs Volume = 260 cy	Impermeable Cover = 100 % Vegetated Cover = 0 % Type of Vegetation = N/A Surface Roughness = Smooth	Soil Texture = Medium-Fine Slope Length = 49 feet Elevation Change = 1 feet % Slope = 2% Distance from Drainage = 51 feet Depth to Groundwater = > 10 feet
PEA-IEL-4	Copper: 1.2x SRG (1)	--	--	--	Surface Area = 119 yd ² Depth Range = 0 - 1 ft bgs Depth Average = 1 ft bgs Volume = 40 cy	Impermeable Cover = 0 % Vegetated Cover = 100 % Type of Vegetation = Bare Soil Surface Roughness = Berms	Soil Texture = Medium-Fine Slope Length = 36 feet Elevation Change = 3 feet % Slope = 8% Distance from Drainage = 548 feet Depth to Groundwater = > 10 feet

**Table 2-1
Outfall 009 ISRA PEA Chemical and Physical Characteristics
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Table 2-1

Site Name	ISRA COCs Exceeding Soil Remediation Goals in Soil < 2 ft bgs ^a	Non-ISRA COCs Exceeding Screening Levels in Soil < 2 ft bgs ^{b,c}	ISRA COCs Exceeding Soil Remediation Goals in Soil 2-10 ft bgs ^a	Non-ISRA COCs Exceeding Screening Levels in Soil 2-10 ft bgs ^{b,c}	Surface Area, Range of Exceedance Depth, Average Exceedance Depth, and Volume Estimate ^d	Surface Conditions ^e	Other Physical Parameters of ISRA Area ^{f,g,h}
PEA-IEL-5	Lead: 1.2x SRG (1)	--	--	--	Surface Area = 44 yd ² Depth Range = 0 - 1 ft bgs Depth Average = 1 ft bgs Volume = 10 cy	Impermeable Cover = 0 % Vegetated Cover = 100 % Type of Vegetation = Bare Soil Surface Roughness = Berms	Soil Texture = Medium-Fine Slope Length = 20 feet Elevation Change = 0 feet % Slope = 0% Distance from Drainage = 637 feet Depth to Groundwater = > 10 feet
PEA-IEL-6	Mercury: 1.1x SRG (1)	--	--	--	Surface Area = 25 yd ² Depth Range = 0 - 1.5 ft bgs Depth Average = 1.5 ft bgs Volume = 10 cy	Impermeable Cover = 100 % Vegetated Cover = 0 % Type of Vegetation = N/A Surface Roughness = Smooth	Soil Texture = Medium-Fine Slope Length = 15 feet Elevation Change = 0 feet % Slope = 0% Distance from Drainage = 30 feet Depth to Groundwater = > 10 feet
PEA-LOX-1-A	Copper: 4.8x SRG (1)	--	--	--	Surface Area = 256 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 170 cy	Impermeable Cover = 0 % Vegetated Cover = 100 % Type of Vegetation = Bushes Surface Roughness = Smooth	Soil Texture = Medium Slope Length = 62 feet Elevation Change = 22 feet % Slope = 35% Distance from Drainage = 10 feet Depth to Groundwater = > 10 feet
PEA-LOX-1-B	Copper: 2.9x SRG (7) Dioxins: 390x SRG (32) Lead: 2.1x SRG (4)	TCE: 19x Res HH RBSL (2)	Dioxins: 6.0x SRG (8)	TCE: 64,000x Res HH RBSL (5)	Surface Area = 10,583 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 7,060 cy	Impermeable Cover = 0 % Vegetated Cover = 100 % Type of Vegetation = Bushes Surface Roughness = Smooth	Soil Texture = Medium Slope Length = 631 feet Elevation Change = 6 feet % Slope = 1% Distance from Drainage = 133 feet Depth to Groundwater = > 10 feet
PEA-LOX-1-C	Copper: 120x SRG (9)	--	--	--	Surface Area = 638 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 430 cy	Impermeable Cover = 10 % Vegetated Cover = 90 % Type of Vegetation = Bushes Surface Roughness = Smooth	Soil Texture = Medium Slope Length = 88 feet Elevation Change = 5 feet % Slope = 6% Distance from Drainage = 93 feet Depth to Groundwater = > 10 feet
PEA-LOX-1-D	Copper: 1.2x SRG (2)	--	--	TCE: 43x Res HH RBSL (2)	Surface Area = 823 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs Volume = 550 cy	Impermeable Cover = 0 % Vegetated Cover = 60 % Type of Vegetation = Bushes Surface Roughness = Smooth	Soil Texture = Medium-Fine Slope Length = 95 feet Elevation Change = 4 feet % Slope = 4% Distance from Drainage = 118 feet Depth to Groundwater = > 10 feet

**Table 2-1
Outfall 009 ISRA PEA Chemical and Physical Characteristics
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Table 2-1

Site Name	ISRA COCs Exceeding Soil Remediation Goals in Soil < 2 ft bgs ^a	Non-ISRA COCs Exceeding Screening Levels in Soil < 2 ft bgs ^{b,c}	ISRA COCs Exceeding Soil Remediation Goals in Soil 2-10 ft bgs ^a	Non-ISRA COCs Exceeding Screening Levels in Soil 2-10 ft bgs ^{b,c}	Surface Area, Range of Exceedance Depth, Average Exceedance Depth, and Volume Estimate ^d	Surface Conditions ^e	Other Physical Parameters of ISRA Area ^{f,g,h}
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General Notes:

1.6x SRG (3) - Within the ISRA PEA, the maximum detection of a specific analyte is approximately 1.6 times the stated screening level, in this case the SRG, and a total of 3 samples exceeded the SRG.

a - SRGs are established only for ISRA COCs and are based on 2005 background comparison concentrations (MWH, 2005). SRGs are consistent with or near 2005 background comparison concentrations for metals and within approximately 3 times 2005 background comparison concentrations for non-metals. COCs were given in the Final ISRA Work Plan (MWH, 2009): Dioxins (TCDD TEQ) = 3.0 pg/g Cadmium = 1 mg/kg Copper = 29 mg/kg Lead = 34 mg/kg Mercury = 0.09 mg/kg

b - Non-ISRA COCs are analytes that exceeded screening levels, including BG for non-ISRA metals, and the lower of the Eco or Res RBSL for other constituents.

c - The following non-ISRA COCs are RCRA risk drivers or contributors at the ISRA PEA indicated based on the Group 1A RFI Report (MWH, 2009a) and Group 2 RFI Report (CH2M HILL, 2008): A1LF-1: metals, Aroclor 1254, and Aroclor 1260 A1LF-2: silver, zinc, and total aroclors A2LF-2: PAHs (multiple PAHs, however, benzo(a)pyrene in particular) B1-2: selenium CTLI-1: benzo(a)pyrene and zinc IEL-3: benzo(a)pyrene LOX-1-B and LOX-1-D: VOCs (multiple VOCs, however, TCE in particular)

d - Surface area represents the area of the refined ISRA PEA shown on Figures 2-7 through 2-16. Depth range represents maximum range between which material containing ISRA COCs exceeding SRGs, material containing non-ISRA COCs exceeding screening levels, and/or debris exist within the ISRA PEA. Depth average represents the average maximum depth of material containing ISRA COCs exceeding SRGs, material containing non-ISRA COCs exceeding screening levels, and/or debris exist within the ISRA PEA. Volume estimate is calculated using the surface area and depth average.

e - Surface relief represents relief as it contributes to potential for erosion: berms (cross-slope relief obstructs surface water flow; ponding); smooth relief (surface water flows as low-velocity sheet flow); hummocky relief (pits and mounds, potential for rill formation during high rainfall); dissected (rills or gullies indicate active erosion).

f - Soil texture represents the typical soil texture within the ISRA PEA, described as coarse (gravels; poorly-graded coarse sands), medium (poorly-graded and well-graded fine and medium sands), medium-fine (fine-grained silty sands), or fine (silts; clays).

g - Slope length, elevation change, and percent slope refer to the steepest slope segment along the path of surface water flow to evaluate the maximum erosion potential within each ISRA PEA.

h - Distance from drainage represents the distance from the boundary of the ISRA PEA to the nearest focused surface water flow pathway, or to the nearest storm drain that discharges into the Northern Drainage (IEL PEAs).

Acronyms:

- BG - Background comparison concentration
- COC - constituent of concern
- cy - cubic yards
- DTSC - Department of Toxic Substances Control
- Eco RBSL - Ecological Risk-based Screening Level
- ft bgs - feet below ground surface
- PAHs - polycyclic aromatic hydrocarbons
- PEA - preliminary evaluation area
- RCRA - Resource Conservation and Recovery Act
- Res HH RBSL - Residential Human Health Risk-Based Screening Level
- RFI - RCRA Facility Investigation
- SRG - soil remediation goal
- TCDD TEQ - tetrachlorobenzo-p-dioxin toxic equivalent (normalized to 2,3,7,8-TCDD)
- TCE - trichloroethene
- VOC - volatile organic compound
- yd² - square yards

References:

- CH2M Hill, 2008. Draft RCRA Facility Investigation, Santa Susana Field Laboratory, Ventura County, California. November.
- MWH, 2005. Standardized Risk Assessment Methodology (SRAM) Work Plan, Revision 2. SSFL, Ventura County. September.
- MWH, 2009a. Group 1A - Northeastern Portion of Area I, RCRA Facility Investigation Report, Santa Susana Field Laboratory, Ventura County, California. February.
- MWH, 2009b. Final Interim Source Removal Action (ISRA) Work Plan, Santa Susana Field Laboratory, Ventura County, California. May.

**Table 2-2
Outfall 009 ISRA PEA Criteria Evaluation Matrix
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Table 2-2

Site Name	ISRA Area Identification Evaluation Criteria (Rate 0 to 5)							Total	Rank
	Concentration of ISRA COCs Compared to Soil Remediation Goals (SRGs) ^a 0 - <1.2x SRG 1 - ≥1.2x SRG and <2x SRG 3 - ≥2x SRG and <10x SRG 5 - ≥10x SRG	Concentration of non-ISRA COCs Compared to Screening Levels ^b 0 - <1.2x SL 1 - ≥1.2x SL and <2x SL 3 - ≥2x SL and <10x SL 5 - ≥10x SL	Volume of Contamination Present 1 - <200 cy 3 - ≥ 200 cy and <1,000 cy 5 - ≥ 1,000 cy	Minimum Depth of Exceedance 1 - ≥ 5 ft bgs 3 - ≥ 2 ft bgs and <5 ft bgs 5 - <2 ft bgs	Physical and Geochemical Parameters Contributing to Contaminant Transport (See Table 2-3) (Rate 0 to 7)	Proximity to Drainage ^c 1 - ≥ 200 feet 3 - ≥ 50 feet and <200 feet 5 - <50 feet	Impermeable Cover 0 - 100% Covered 1 - ≥75% and <100 % Covered 3 - ≥25% and <75 % Covered 5 - <25% Covered		
PEA-A1LF-1	5	3	5	5	4.1	5	5	32.1	2
PEA-A1LF-2	3	5	3	5	3.8	5	5	29.8	4
PEA-A2LF-2	1	3	5	5	3.5	3	5	25.5	9
PEA-AP/STP-1A	5	0	1	5	3.1	1	5	20.1	17
PEA-AP/STP-1B	5	0	5	5	2.9	5	5	27.9	7
PEA-AP/STP-1C	5	0	5	5	2.9	5	5	27.9	7
PEA-AP/STP-1D	5	0	3	5	2.7	3	5	23.7	12
PEA-AP/STP-1E	5	0	5	5	3.1	5	5	28.1	6
PEA-AP/STP-1F	3	0	3	5	3.3	3	5	22.3	13
PEA-B1-1	5	0	5	5	3.9	1	5	24.9	10
PEA-B1-2	5	0	5	5	3.5	5	5	28.5	5
PEA-CTLI-1	5	5	5	5	4.0	5	5	34.0	1
PEA-CTLI-2	1	0	1	5	3.7	3	5	18.7	20

**Table 2-2
Outfall 009 ISRA PEA Criteria Evaluation Matrix
(Page 2 of 3)**

Table 2-2

Site Name	ISRA Area Identification Evaluation Criteria (Rate 0 to 5)							Total	Rank
	Concentration of ISRA COCs Compared to Soil Remediation Goals (SRGs) ^a 0 - <1.2x SRG 1 - ≥1.2x SRG and <2x SRG 3 - ≥2x SRG and <10x SRG 5 - ≥10x SRG	Concentration of non-ISRA COCs Compared to Screening Levels ^b 0 - <1.2x SL 1 - ≥1.2x SL and <2x SL 3 - ≥2x SL and <10x SL 5 - ≥10x SL	Volume of Contamination Present 1 - <200 cy 3 - ≥ 200 cy and <1,000 cy 5 - ≥ 1,000 cy	Minimum Depth of Exceedance 1 - ≥ 5 ft bgs 3 - ≥ 2 ft bgs and <5 ft bgs 5 - <2 ft bgs	Physical and Geochemical Parameters Contributing to Contaminant Transport (See Table 2-3) (Rate 0 to 7)	Proximity to Drainage ^c 1 - ≥ 200 feet 3 - ≥ 50 feet and <200 feet 5 - <50 feet	Impermeable Cover 0 - 100% Covered 1 - ≥75% and <100 % Covered 3 - ≥25% and <75 % Covered 5 - <25% Covered		
PEA-IEL-1	5	0	1	5	2.1	3	5	21.1	16
PEA-IEL-2	5	0	3	5	2.8	1	5	21.8	15
PEA-IEL-3	5	0	3	5	2.9	3	0	18.9	19
PEA-IEL-4	0	0	1	5	2.8	1	5	14.8	21
PEA-IEL-5	0	0	1	5	2.4	1	5	14.4	22
PEA-IEL-6	0	0	1	5	2.7	5	0	13.7	23
PEA-LOX-1-A	3	0	1	5	3.1	5	5	22.1	14
PEA-LOX-1-B	5	5	5	5	2.7	3	5	30.7	3
PEA-LOX-1-C	5	0	3	5	2.9	3	5	23.9	11
PEA-LOX-1-D	1	0	3	5	3.1	3	5	20.1	17

**Table 2-2
Outfall 009 ISRA PEA Criteria Evaluation Matrix
(Page 3 of 3)**

Site Name	ISRA Area Identification Evaluation Criteria (Rate 0 to 5)							Total	Rank
	Concentration of ISRA COCs Compared to Soil Remediation Goals (SRGs) ^a	Concentration of non-ISRA COCs Compared to Screening Levels ^b	Volume of Contamination Present	Minimum Depth of Exceedance	Physical and Geochemical Parameters Contributing to Contaminant Transport (See Table 2-3) (Rate 0 to 7)	Proximity to Drainage ^c	Impermeable Cover		
	0 - <1.2x SRG 1 - ≥1.2x SRG and <2x SRG 3 - ≥2x SRG and <10x SRG 5 - ≥10x SRG	0 - <1.2x SL 1 - ≥1.2x SL and <2x SL 3 - ≥2x SL and <10x SL 5 - ≥10x SL	1 - <200 cy 3 - ≥ 200 cy and <1,000 cy 5 - ≥ 1,000 cy	1 - ≥ 5 ft bgs 3 - ≥ 2 ft bgs and <5 ft bgs 5 - <2 ft bgs		1 - ≥ 200 feet 3 - ≥ 50 feet and <200 feet 5 - <50 feet	0 - 100% Covered 1 - ≥75% and <100 % Covered 3 - ≥25% and <75 % Covered 5 - <25% Covered		

General Notes:

Sites are rated for each criterion based on the potential for contaminant contribution to surface water (Table 2-1 summarizes the conditions present within each PEA). Rating Scale is from 0 to 5 or 0 to 7, with 0 representing the lowest potential for contaminant contribution to surface water and either 5 or 7 representing the highest potential.

<1.2x SRG - Less than 1.2 times the stated screening level, in this case the soil remediation goal (SRG).

a - Concentration of ISRA COCs represents the maximum exceedance above SRG of any ISRA COC at each PEA. SRGs are established only for ISRA COCs and are based on 2005 background comparison concentrations (MWH, 2005). SRGs are consistent with or near 2005 background comparison concentrations for metals and within approximately 3 times 2005 background comparison concentrations for dioxins. The 2005 soil background data are being re-evaluated by DTSC and, as necessary, the SRGs may be revised. SRGs for ISRA COCs were given in the Final ISRA Work Plan (MWH, 2009): Dioxins (TCDD TEQ) = 3.0 pg/g Cadmium = 1 mg/kg Copper = 29 mg/kg Lead = 34 mg/kg Mercury = 0.09 mg/kg

b - Non-ISRA COCs are analytes that exceeded screening levels, including BG for non-ISRA metals, and the lower of the Eco or Res RBSL for other constituents.

c - Distance from drainage represents the distance from the boundary of the ISRA PEA to the nearest focused surface water flow pathway that is gully-sized or greater, or to the nearest storm drain that discharges into the Northern Drainage (IEL-1 through IEL-5).

Acronyms:

- BG - Background comparison concentration
- COC - constituent of concern
- cy - cubic yards
- DTSC - Department of Toxic Substances Control
- Eco RBSL - Ecological Risk-based Screening Level
- ft bgs - feet below ground surface
- PEA - preliminary evaluation area
- Res HH RBSL - Residential Human Health Risk-Based Screening Level
- SL - Screening level, either BG, Eco RBSL, or Res RBSL.
- SRG - soil remediation goal
- TCDD TEQ - tetrachlorobenzo-p-dioxin toxic equivalent (normalized to 2,3,7,8-TCDD)

References:

- MWH, 2005. Standardized Risk Assessment Methodology (SRAM) Work Plan, Revision 2. SSFL, Ventura County. September.
- MWH, 2009. Final Interim Source Removal Action (ISRA) Work Plan, Santa Susana Field Laboratory, Ventura County, California. May.

**Table 2-3
Outfall 009 ISRA PEA Criteria Evaluation - Physical and Geochemical Parameters
(Page 1 of 2)**

Site Name	ISRA Area Identification Evaluation Criteria - Physical and Geochemical Parameters Contributing to Contaminant Transport (Rate 0 to 1)							Total (Input for Table 2-2)
	Soil Texture 0.2 – Coarse (gravels; poorly-graded coarse sands) 0.6 – Medium (poorly-graded and well-graded fine and medium sands) 0.8 - Medium-Fine (fine-grained silty sands) 1.0 – Fine (fine-grained silty sands; silts; clays)	Average % Slope 0 - <2% 0.2 - ≥2% and <5% 0.4 - ≥5% and <10% 0.6 - ≥10% and <20% 0.8 - ≥20% and <30% 1.0 - ≥30%	Average Length of Slope 0.2 - <75 feet 0.4 - ≥75 feet and <150 feet 0.6 - ≥150 feet and <500 feet 0.8 - ≥500 feet and <1,000 feet 1.0 - ≥1,000 feet	Type of Vegetation ^a 0 - N/A 0.2 - Grasses 0.6 - Bushes 1.0 - Bare Soil	Vegetated Cover 0 - 100% Covered 0.2 - ≥75% and <100% Covered 0.4 - ≥50% and <75% Covered 0.6 - ≥25% and <50% Covered 0.8 - ≥10% and <25% Covered 1.0 - <10% Covered	Surface Relief 0.2 - Berms 0.5 - Smooth 0.7 - Hummocky 1.0 - Dissected	Depth to Groundwater 0.2 - ≥10 feet 0.4 - ≥6 feet and <10 feet 0.6 - ≥3 feet and <6 feet 0.8 - ≥1 foot and <3 feet 1.0 - <1 foot	
PEA-A1LF-1	0.8	1.0	0.4	1.0	0.2	0.5	0.2	4.1
PEA-A1LF-2	0.8	0.4	0.6	0.6	0.2	1.0	0.2	3.8
PEA-A2LF-2	0.6	1.0	0.6	0.6	0.0	0.5	0.2	3.5
PEA-AP/STP-1A	0.8	0.4	0.2	0.6	0.4	0.5	0.2	3.1
PEA-AP/STP-1B	0.6	0.6	0.4	0.6	0.0	0.5	0.2	2.9
PEA-AP/STP-1C	0.6	0.2	0.6	0.6	0.2	0.5	0.2	2.9
PEA-AP/STP-1D	0.6	0.4	0.4	0.6	0.0	0.5	0.2	2.7
PEA-AP/STP-1E	0.6	0.4	0.6	0.6	0.2	0.5	0.2	3.1
PEA-AP/STP-1F	0.6	1.0	0.4	0.6	0.0	0.5	0.2	3.3
PEA-B1-1	0.8	0.6	0.8	0.6	0.2	0.7	0.2	3.9
PEA-B1-2	0.8	0.2	0.4	0.6	0.2	0.7	0.6	3.5
PEA-CTLI-1	0.6	0.8	0.6	0.6	0.2	1.0	0.2	4.0

**Table 2-3
Outfall 009 ISRA PEA Criteria Evaluation - Physical and Geochemical Parameters
(Page 2 of 2)**

Site Name	ISRA Area Identification Evaluation Criteria - Physical and Geochemical Parameters Contributing to Contaminant Transport (Rate 0 to 1)							Total (Input for Table 2-2)
	Soil Texture 0.2 – Coarse (gravels; poorly-graded coarse sands) 0.6 – Medium (poorly-graded and well-graded fine and medium sands) 0.8 - Medium-Fine (fine-grained silty sands) 1.0 – Fine (fine-grained silty sands; silts; clays)	Average % Slope 0 - <2% 0.2 - ≥2% and <5% 0.4 - ≥5% and <10% 0.6 - ≥10% and <20% 0.8 - ≥20% and <30% 1.0 - ≥30%	Average Length of Slope 0.2 - <75 feet 0.4 - ≥75 feet and <150 feet 0.6 - ≥150 feet and <500 feet 0.8 - ≥500 feet and <1,000 feet 1.0 - ≥1,000 feet	Type of Vegetation ^a 0 - N/A 0.2 - Grasses 0.6 - Bushes 1.0 - Bare Soil	Vegetated Cover 0 - 100% Covered 0.2 - ≥75% and <100% Covered 0.4 - ≥50% and <75% Covered 0.6 - ≥25% and <50% Covered 0.8 - ≥10% and <25% Covered 1.0 - <10% Covered	Surface Relief 0.2 - Berms 0.5 - Smooth 0.7 - Hummocky 1.0 - Dissected	Depth to Groundwater 0.2 - ≥10 feet 0.4 - ≥6 feet and <10 feet 0.6 - ≥3 feet and <6 feet 0.8 - ≥1 foot and <3 feet 1.0 - <1 foot	
PEA-CTLI-2	0.8	1.0	0.2	0.6	0.2	0.7	0.2	3.7
PEA-IEL-1	0.8	0.2	0.2	0.2	0.0	0.5	0.2	2.1
PEA-IEL-2	0.8	0.4	0.2	1.0	0.0	0.2	0.2	2.8
PEA-IEL-3	0.8	0.2	0.2	0.0	1.0	0.5	0.2	2.9
PEA-IEL-4	0.8	0.4	0.2	1.0	0.0	0.2	0.2	2.8
PEA-IEL-5	0.8	0.0	0.2	1.0	0.0	0.2	0.2	2.4
PEA-IEL-6	0.8	0.0	0.2	0.0	1.0	0.5	0.2	2.7
PEA-LOX-1-A	0.6	1.0	0.2	0.6	0.0	0.5	0.2	3.1
PEA-LOX-1-B	0.6	0.0	0.8	0.6	0.0	0.5	0.2	2.7
PEA-LOX-1-C	0.6	0.4	0.4	0.6	0.2	0.5	0.2	2.9
PEA-LOX-1-D	0.8	0.2	0.4	0.6	0.4	0.5	0.2	3.1

General Notes:

Sites are rated for each criteria based on the potential for contaminant contribution to surface water (Table 2-1 summarizes the conditions present within each PEA). Rating Scale is from 0 to 5 or 0 to 7, with 0 representing the lowest potential for contaminant contributor to surface water and either 5 or 7 representing the highest potential. Total for each row is input for Table 2-2.

a - Type of vegetation includes "N/A" for sites with 100% impermeable cover, as listed in Table 2-1.

**Table 2-4
Outfall 009 ISRA Area Remedial Action Summary
(Page 1 of 4)**

Site Name	ISRA COCs Exceeding Soil Remediation Goals ^a	Non-ISRA COCs Exceeding Screening Levels ^{b,c}	Surface Area, Range of Exceedance Depth, Average Exceedance Depth, and <i>Ex Situ</i> Volume Estimate ^d	Remedial Action	Soil Remediation Goals
A1LF-1	Cadmium Copper Lead Mercury	Arsenic	Surface Area = 11,900 yd ² Depth Range = 0 - ~25 ft bgs Depth Average = 9.8 ft bgs (3.3 yards) Volume = 50,530 cy	In development	Cadmium = 1 mg/kg Copper = 29 mg/kg Lead = 34 mg/kg Mercury = 0.09 mg/kg
A1LF-2	Cadmium Dioxins Lead Mercury	Silver Zinc Total Aroclors	Surface Area = 914 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 790 cy	In development	Cadmium = 1 mg/kg Dioxins = 3 pg/g Lead = 34 mg/kg Mercury = 0.09 mg/kg
A2LF-2	Mercury	PAHs	Surface Area = 2,711 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 2,350 cy	Excavation	Mercury = 0.09 mg/kg
AP/STP-1A	Dioxins	--	Surface Area = 106 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 90 cy	Excavation	Dioxins = 3 pg/g
AP/STP-1B	Cadmium Copper Lead	--	Surface Area = 2,293 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 1,990 cy	Excavation	Cadmium = 1 mg/kg Copper = 29 mg/kg Lead = 34 mg/kg
AP/STP-1C	Cadmium Copper Dioxins Lead Mercury	--	Surface Area = 8,111 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 7,030 cy	Excavation	Cadmium = 1 mg/kg Copper = 29 mg/kg Dioxins = 3 pg/g Lead = 34 mg/kg Mercury = 0.09 mg/kg
AP/STP-1D	Dioxins	--	Surface Area = 483 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 420 cy	Excavation	Dioxins = 3 pg/g
AP/STP-1E	Dioxins	--	Surface Area = 2,369 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 2,050 cy	Excavation	Dioxins = 3 pg/g

**Table 2-4
Outfall 009 ISRA Area Remedial Action Summary
(Page 2 of 4)**

Site Name	ISRA COCs Exceeding Soil Remediation Goals ^a	Non-ISRA COCs Exceeding Screening Levels ^{b,c}	Surface Area, Range of Exceedance Depth, Average Exceedance Depth, and <i>Ex Situ</i> Volume Estimate ^d	Remedial Action	Soil Remediation Goals
AP/STP-1F	Dioxins	--	Surface Area = 1,160 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 1,000 cy	Excavation	Dioxins = 3 pg/g
B1-1	Cadmium Dioxins Mercury	--	Surface Area = 3,323 yd ² Depth Range = 0 - 5 ft bgs Depth Average = 3 ft bgs (1.0 yards) Volume = 4,320 cy	Excavation	Cadmium = 1 mg/kg Dioxins = 3 pg/g Mercury = 0.09 mg/kg
B1-2	Cadmium Copper Dioxins Lead	Selenium	Surface Area = 911 yd ² Depth Range = 0 - 5 ft bgs Depth Average = 5 ft bgs (1.7 yards) Volume = 1,980 cy	Excavation	Cadmium = 1 mg/kg Copper = 29 mg/kg Dioxins = 3 pg/g Lead = 34 mg/kg
CTLI-1	Copper Dioxins Lead	Benzo(a)pyrene Zinc	Surface Area = 1,248 yd ² Depth Range = 0 - 5 ft bgs Depth Average = 3 ft bgs (1.0 yards) Volume = 1,630 cy	Excavation	Copper = 29 mg/kg Dioxins = 3 pg/g Lead = 34 mg/kg
CTLI-2	Lead	--	Surface Area = 160 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 140 cy	No Action	Lead = 34 mg/kg
IEL-1	Mercury	--	Surface Area = 91 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 80 cy	Excavation	Mercury = 0.09 mg/kg
IEL-2	Cadmium Lead Mercury	--	Surface Area = 524 yd ² Depth Range = 0 - 5.5 ft bgs Depth Average = 5 ft bgs (1.7 yards) Volume = 1,130 cy	Excavation	Cadmium = 1 mg/kg Lead = 34 mg/kg Mercury = 0.09 mg/kg
IEL-3	Cadmium Copper Lead Mercury	Benzo(a)pyrene	Surface Area = 258 yd ² Depth Range = 0 - 5 ft bgs Depth Average = 3 ft bgs (1.0 yards) Volume = 340 cy	Excavation (Post-Demolition)	Cadmium = 1 mg/kg Copper = 29 mg/kg Lead = 34 mg/kg Mercury = 0.09 mg/kg

**Table 2-4
Outfall 009 ISRA Area Remedial Action Summary
(Page 3 of 4)**

Site Name	ISRA COCs Exceeding Soil Remediation Goals ^a	Non-ISRA COCs Exceeding Screening Levels ^{b,c}	Surface Area, Range of Exceedance Depth, Average Exceedance Depth, and <i>Ex Situ</i> Volume Estimate ^d	Remedial Action	Soil Remediation Goals
IEL-4	Copper	--	Surface Area = 119 yd ² Depth Range = 0 - 1 ft bgs Depth Average = 1 ft bgs (0.3 yards) Volume = 50 cy	No Action	Copper = 29 mg/kg
IEL-5	Lead	--	Surface Area = 44 yd ² Depth Range = 0 - 1 ft bgs Depth Average = 1 ft bgs (0.3 yards) Volume = 10 cy	No Action	Lead = 34 mg/kg
IEL-6	Mercury	--	Surface Area = 25 yd ² Depth Range = 0 - 1.5 ft bgs Depth Average = 1.5 ft bgs (0.5 yards) Volume = 10 cy	No Action	Mercury = 0.09 mg/kg
LOX-1-A	Copper	--	Surface Area = 256 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 220 cy	Excavation	Copper = 29 mg/kg
LOX-1-B	Copper Dioxins Lead	TCE	Surface Area = 10,583 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 9,180 cy	Excavation	Copper = 29 mg/kg Dioxins = 3 pg/g Lead = 34 mg/kg
LOX-1-C	Copper	--	Surface Area = 638 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 560 cy	Excavation	Copper = 29 mg/kg
LOX-1-D	Copper	--	Surface Area = 823 yd ² Depth Range = 0 - 2 ft bgs Depth Average = 2 ft bgs (0.7 yards) Volume = 720 cy	Excavation	Copper = 29 mg/kg

**Table 2-4
Outfall 009 ISRA Area Remedial Action Summary
(Page 4 of 4)**

Site Name	ISRA COCs Exceeding Soil Remediation Goals ^a	Non-ISRA COCs Exceeding Screening Levels ^{b,c}	Surface Area, Range of Exceedance Depth, Average Exceedance Depth, and <i>Ex Situ</i> Volume Estimate ^d	Remedial Action	Soil Remediation Goals
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General Notes:

a - SRGs are established only for ISRA COCs and are based on 2005 background comparison concentrations (MWH, 2005). SRGs are consistent with or near 2005 background comparison concentrations for metals and within approximately 3 times 2005 background comparison concentrations for dioxins. The 2005 soil background data are being re-evaluated by DTSC and, as necessary, the SRGs may be revised. SRGs for ISRA COCs were given in the Final ISRA Work Plan (MWH, 2009): Dioxins (TCDD TEQ) = 3.0 pg/g Cadmium = 1 mg/kg Copper = 29 mg/kg Lead = 34 mg/kg Mercury = 0.09 mg/kg

b - Non-ISRA COCs are analytes that exceeded screening levels, including BG for non-ISRA metals, and the lower of the Eco or Res RBSL for other constituents.

c - The following non-ISRA COCs are RCRA risk drivers or contributors at the ISRA PEA indicated based on the Group 1A RFI Report (MWH, 2009) and Group 2 RFI Report (CH2M HILL, 2008): A1LF-1: metals, Aroclor 1254, and Aroclor 1260 A1LF-2: sliver, zinc, and total aroclors A2LF-2: PAHs (multiple PAHs, however, benzo(a)pyrene in particular) B1-2: selenium CTL1-1: benzo(a)pyrene and zinc IEL-3: benzo(a)pyrene LOX-1-B and LOX-1-D: VOCs (multiple VOCs, however, TCE in particular)

d - Surface area represents the area of the refined ISRA PEA shown on Figures 2-7 through 2-16. Depth range represents maximum range between which material containing ISRA COCs exceeding SRGs, material containing non-ISRA COCs exceeding screening levels, and/or debris exist within the ISRA PEA. Depth average represents the average maximum depth of material containing ISRA COCs exceeding SRGs, material containing non-ISRA COCs exceeding screening levels, and/or debris exist within the ISRA PEA. Volume estimate is calculated using the surface area and depth average.

Acronyms:

- BG - Background comparison concentration
- COC - constituent of concern
- cy - cubic yards
- DTSC - Department of Toxic Substances Control
- Eco RBSL - Ecological Risk-based Screening Level
- ft bgs - feet below ground surface
- mg/kg - milligrams per kilogram
- PAHs - polycyclic aromatic hydrocarbons
- PEA - preliminary evaluation area
- pg/g - picograms per gram
- RCRA - Resource Conservation and Recovery Act
- Res HH RBSL - Residential Human Health Risk-Based Screening Level
- RFI - RCRA Facility Investigation
- SRG - soil remediation goal
- TCDD TEQ - tetrachlorobenzo-p-dioxin toxic equivalent (normalized to 2,3,7,8-TCDD)
- TCE - trichloroethene
- VOC - volatile organic compound
- yd² - square yards

References:

- CH2M Hill, 2008. Draft RCRA Facility Investigation, Santa Susana Field Laboratory, Ventura County, California. November.
- MWH, 2005. Standardized Risk Assessment Methodology (SRAM) Work Plan, Revision 2. SSFL, Ventura County. September.
- MWH, 2009a. Group 1A - Northeastern Portion of Area I, RCRA Facility Investigation Report, Santa Susana Field Laboratory, Ventura County, California. February.
- MWH, 2009b. Final Interim Source Removal Action (ISRA) Work Plan, Santa Susana Field Laboratory, Ventura County, California. May.

Table 3-1
Confirmation Soil Sample Analytical Reporting Limits
 (Page 1 of 1)

Parameter	Laboratory Method	Reporting Limit^a	Units
<i>Metals</i>			
Cadmium	EPA 6020	0.2	mg/kg
Copper	EPA 6020	0.2	mg/kg
Lead	EPA 6020	0.4	mg/kg
Mercury	EPA 7471A	0.01	mg/kg
<i>Dioxins</i>			
2,3,7,8-TCDD	EPA 1613	1	pg/g
1,2,3,7,8-PeCDD	EPA 1613	5	pg/g
1,2,3,4,7,8-HxCDD	EPA 1613	5	pg/g
1,2,3,6,7,8-HxCDD	EPA 1613	5	pg/g
1,2,3,7,8,9-HxCDD	EPA 1613	5	pg/g
1,2,3,4,6,7,8-HpCDD	EPA 1613	5	pg/g
OCDD	EPA 1613	10	pg/g
2,3,7,8-TCDF	EPA 1613	1	pg/g
1,2,3,7,8-PeCDF	EPA 1613	5	pg/g
2,3,4,7,8-PeCDF	EPA 1613	5	pg/g
1,2,3,4,7,8-HxCDF	EPA 1613	5	pg/g
1,2,3,6,7,8-HxCDF	EPA 1613	5	pg/g
2,3,4,6,7,8-HxCDF	EPA 1613	5	pg/g
1,2,3,7,8,9-HxCDF	EPA 1613	5	pg/g
1,2,3,4,6,7,8-HpCDF	EPA 1613	5	pg/g
1,2,3,4,7,8,9-HpCDF	EPA 1613	5	pg/g
OCDF	EPA 1613	10	pg/g
Total TCDD	EPA 1613	1	pg/g
Total TCDF	EPA 1613	1	pg/g
Total PeCDD	EPA 1613	5	pg/g
Total PeCDF	EPA 1613	5	pg/g
Total HxCDD	EPA 1613	5	pg/g
Total HxCDF	EPA 1613	5	pg/g
Total HpCDD	EPA 1613	5	pg/g
Total HpCDF	EPA 1613	5	pg/g

General Notes:

Parameters listed include the ISRA Area COCs for Outfall 009 presented in this work plan. a - MECx (2009). Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL), RCRA Facility Investigation, Surficial Media Operable Unit, Revision 4. March.

EPA - Environmental Protection Agency

mg/kg - milligrams per kilogram

pg/g - picograms per gram