

APPENDIX D

**SURFACE PATHWAY EVALUATION FIGURES
AND COST ESTIMATE SPREADSHEETS**

APPENDIX D – SURFACE PATHWAY COST ESTIMATES

GLOBAL ASSUMPTIONS

The following table presents the global assumptions that apply to surface pathway remedial alternative cost estimates. These assumptions are further divided into general assumptions followed by assumptions that are specific to certain remedial technologies. Other specific assumptions are listed as footnotes in each cost spreadsheet.

A. Global Assumptions - General	
1.	Costs are based on available RI data, assumed site conditions and design, and are intended for Feasibility Study purposes. Cost estimates are approximate but do include a comprehensive list of tasks from all phases starting with initial investigation to define areal extent of source area to design, permitting, implementation, and finally sampling for closure. Cost estimates are expected to meet +50%/-30% precision requirements of CERCLA RI/FS guidance (USEPA, 1988).
2.	Costs include Capital and Annual costs. Capital costs include Direct Capital and Indirect Capital costs.
3.	Present worth costs are estimated based on Capital and Annual costs and the duration of the remedial alternative using a discount rate of 5%.
4.	100-year operation of ICs and Engineering Controls (Capping, Subslab venting (SSV), HVAC modification) is equivalent to indefinite operation.
5.	Site investigation cost is based on an assumed sampling density in the range of 1 boring per 1,000 ft ² for a simple remediation system (capping) to 1 boring per 400 ft ² for more aggressive remedies requiring more delineation to optimize design (SVE, excavation). Cost assumes direct push drilling to 15 feet bgs and sampling for COCs at every 5 feet (3 samples per boring), including workplan and reporting.
6.	Indirect Capital cost details include project management (5% to 10% of direct capital cost), remedial design (6% to 20% of direct capital cost), construction management (6% to 15% of direct capital cost), and contingency (20% to 30% of total project cost). The percentages for professional/technical services costs are based on the USEPA/US Army Corps of Engineers document “A Guide to Developing and Documenting Cost Estimates During the Feasibility Study” (USEPA 2000b).
7.	Annual O&M costs are assumed to be the same for each year.
8.	Contingency includes scope and bid contingencies and percentages vary by technology from 20% (ICs, Cap, HVAC, SSV, SVE) to 30% (Excavation). An alternative with both SVE and Excavation used 25%.
9.	All intermediate and bottom line costs rounded to the nearest \$1,000 except for intermediate capital and O&M costs for ICs. Intermediate capital and O&M ICs costs were not rounded to maintain consistency with Table D3.1 - Institutional Controls Cost Summary. However, the estimated bottom line present worth costs for 100 year ICs were rounded.
10.	Site setup and equipment mobilization/demobilization unit costs were determined for a representative EAPC as a function of the impacted area for convenience and consistency. These unit costs range from \$0.75/sf to \$1.5/sf depending on the complexity of each alternative.
11.	Soil confirmation sampling and analysis unit cost are a function of the number of samples, sample

	collection method, and analytical methods, and may vary for different alternatives of the same EAPC (e.g., grab samples for excavation alternatives versus subsurface drilling and sampling for SVE alternatives).
B. General Assumptions for Each Technology	
ICs	
1.	ICs costs were developed as Capital and O&M costs for each layer. Cost per layer was estimated based on number of parcels in each layer. ICs capital and O&M costs are presented in Table D3-1.
2.	Summary of IC layers for each EAPC and each alternative is included in Table D3-2.
3.	Assume ICs operates for 100 years.
4.	Total IC capital and O&M cost for a specific parcel was the sum of costs of individual layers.
5.	Assume 20% contingency for cost estimate.
Cap	
1.	Assume Cap operates for 100 years.
2.	Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
3.	Slurry seal treatment cost was based on a unit cost of \$5 per square foot.
4.	Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
5.	Assume 20% contingency for cost estimate.
SSV	
1.	Cost for SSV installation was based on a unit cost of \$5 per square foot. (<i>Vapor Intrusion Pathway – A Practical Guide, Interstate Technology and Regulatory Council Guidance, ITRC January 2007</i>)
2.	SSV assumed for most EAPCs instead of HVAC mod except for EAPC 5.
3.	Assume SSV operates for 100 years.
4.	Assume piping laid in trenches inside building.
5.	In those alternatives with SVE(UB), the horizontal wells that are part of the SVE(UB) system can be converted to operate as an SSV system, if needed.
6.	Assume fan and carbon adsorbers serve as vapor extraction and control system.
7.	O&M cost includes periodic monitoring of vapor control system in accordance with SCAQMD permit.

8.	Assume 20% contingency for cost estimate.
HVAC mod	
1.	HVAC modification cost was based on a unit cost of \$5 per square foot. (<i>Vapor Intrusion Pathway – A Practical Guide, Interstate Technology and Regulatory Council Guidance, ITRC January 2007</i>)
2.	HVAC mod assumed for EAPC 5 but most other EAPCs assume SSV.
3.	Assume to operate for 100 years.
4.	HVAC modification includes modification of the existing ventilation fan, air registers, ducts and other equipment to ensure building pressurization.
5.	O&M cost includes maintenance of HVAC system and monitoring of building pressurization.
6.	Assume 20% contingency for cost estimate.
SVE	
1.	Cost estimates were based on assumed soil permeability and other site-specific conditions. No SVE pilot testing data is available for shallow soil.
2.	Assume SVE operation for 3 years to reach performance standards for the larger and more impacted EAPCs (16, 23, 5, 9, 6 and 11). Assume 2 year SVE operation for the less impacted EAPCs (28, 35, 15, 8, and 17) and 1.5 year SVE for EAPC 7.
3.	Assume 0.1-0.5 scfm/foot of vapor flow per foot of screen in 0-15 feet bgs soil zone based on the low permeability formation. Horizontal wells are assumed to be installed at a depth of 10 feet bgs using direction drilling, also assume 0.1-0.5 scfm per foot of screen. Based on RI data, site-wide shallow soils are low permeability silts with a permeability range of 100 to 300 millidarcy. The unit flow rates are rough order of magnitude estimates based on experience at other sites and from the article “A Practical Approach to the Design, Operation, and Monitoring of In-situ Soil Venting Systems”, by P.C. Johnson et al, Groundwater Monitoring and Remediation Journal, Spring 1990. (GWMR 1990)
4.	Assume vapor treatment with thermal oxidizer for BTEX VOC-impacted areas. Assume vapor treatment with thermal oxidizer and scrubber for high concentration of chlorinated VOC-impacted areas. Assume vapor treatment with VPGAC for low concentration of chlorinated VOC-impacted areas.
5.	SVE (UB) alternatives assume horizontal wells can be installed at these EAPCs. Also, for those EAPCs with SVE (UB), the cost estimate assumes that the SVE wells are converted to an SSV system and operates for 100 years.
6.	Vertical SVE (V-SVE) well installation cost \$5,000 was estimated based on a vendor quote. This cost includes drilling with hollow stem auger to a depth of 15 feet bgs and soil disposal as hazardous.
7.	Assume 20% contingency for cost estimate.

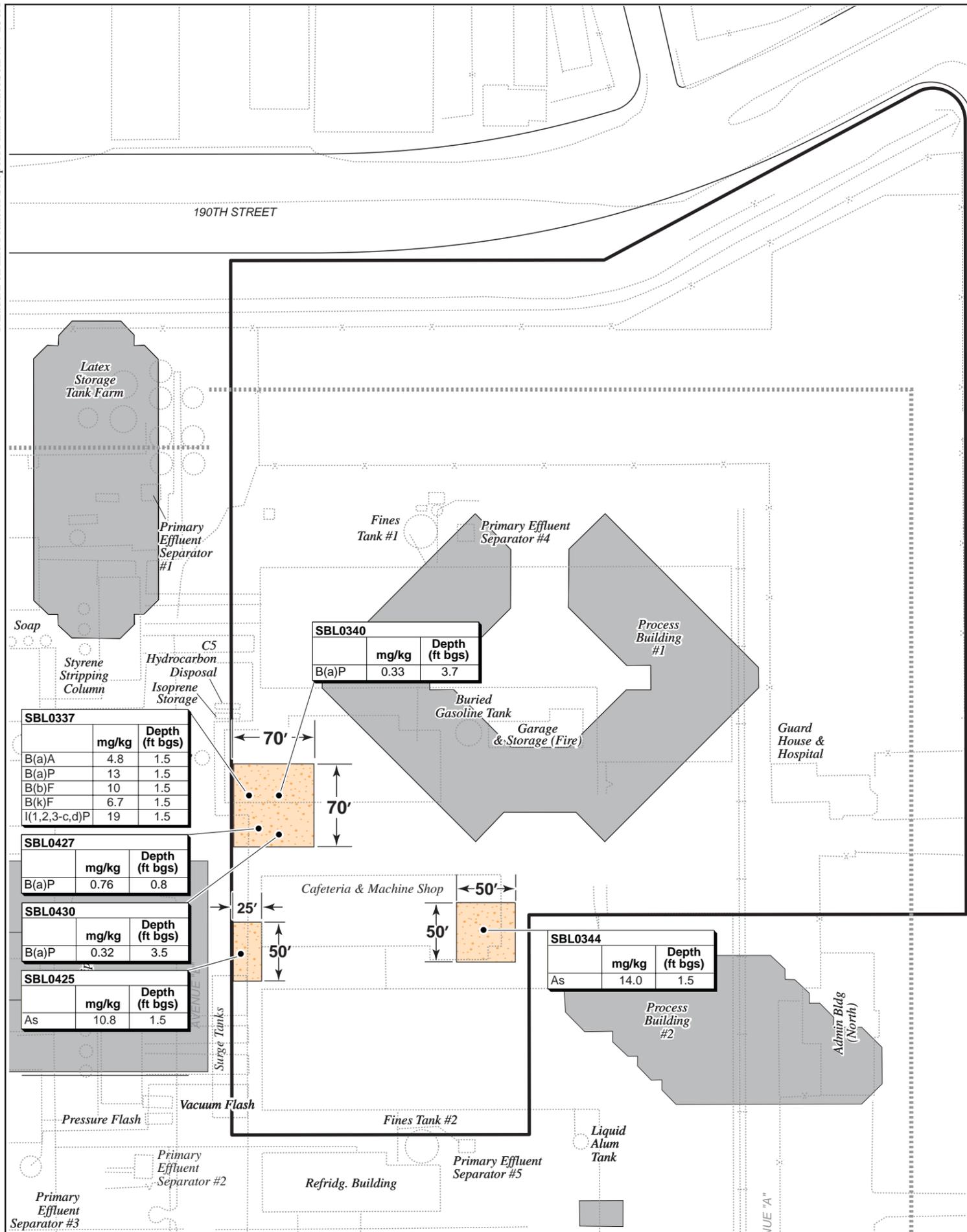
Excavation	
1.	Excavation assumes sidewall sloped at 1:1 and that areas would be available for stockpile and load-out on the property.
2.	Shoring design and installation was based on a unit cost of \$65 per square foot of cross sectional area for a soldier pile-type shoring.
3.	Excavation \leq 5 feet bgs adjacent to building footprint assumes slot-trenching. No shoring is needed.
4.	Excavation $>$ 5 feet bgs adjacent to building footprint assumes soldier pile shoring.
5.	Excavated soil is assumed to be sent to a permitted facility. RCRA-hazardous and non-RCRA hazardous soils are assumed to be sent to the Waste Management facility at Kettleman Hills, California. Non-hazardous soils sent to local landfill in Los Angeles area (e.g. Sunshine Canyon). TPH soils sent to thermal desorption facility, TPS at Adelanto, California.
6.	<p>Average soil disposal cost was developed based on proportion of RCRA-haz soils (\$160/ton) to non-RCRA-haz soils (\$90/ton) to non-haz soils (\$50/ton). Frequently used combinations are as follows:</p> <p>RCRA-haz : non-RCRA-haz : non-haz soils</p> <p>0 : 0 : 100 → soil disposal cost \$50/ton</p> <p>0 : 50 : 50 → soil disposal cost \$70/ton</p> <p>33 : 33 : 33 → soil disposal cost \$100/ton</p> <p>Highest disposal cost was used for VOC-impacted Group 4B EAPCs such as 16, 23, 5, 6, 11 and 15 where VOC NAPL is known to be present.</p>
7.	Backfill and compaction was based on a unit cost of \$35 per cubic yard.
8.	Asphalt pavement restoration (4-inch thick) was based on a unit cost of \$10 per square foot.
9.	Assume 30% contingency for cost estimate.

APPENDIX D-1

REPRESENTATIVE EAPCs

- **EAPC 2**
- **EAPC 7**
- **EAPC 16**
- **EAPC 23**
- **EAPC 5**
- **EAPC 32**
- **EAPC 9**

EAPC 2



Legend

- Parcel boundary
- Outlines of historical features with use/contents indicated
- Approximate location of former underground pipelines
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Soil boring location with contaminant concentration and depth of sample for locations where screening levels were exceeded

SBL0340		
	mg/kg	Depth (ft bgs)
B(a)P	0.32	3.5

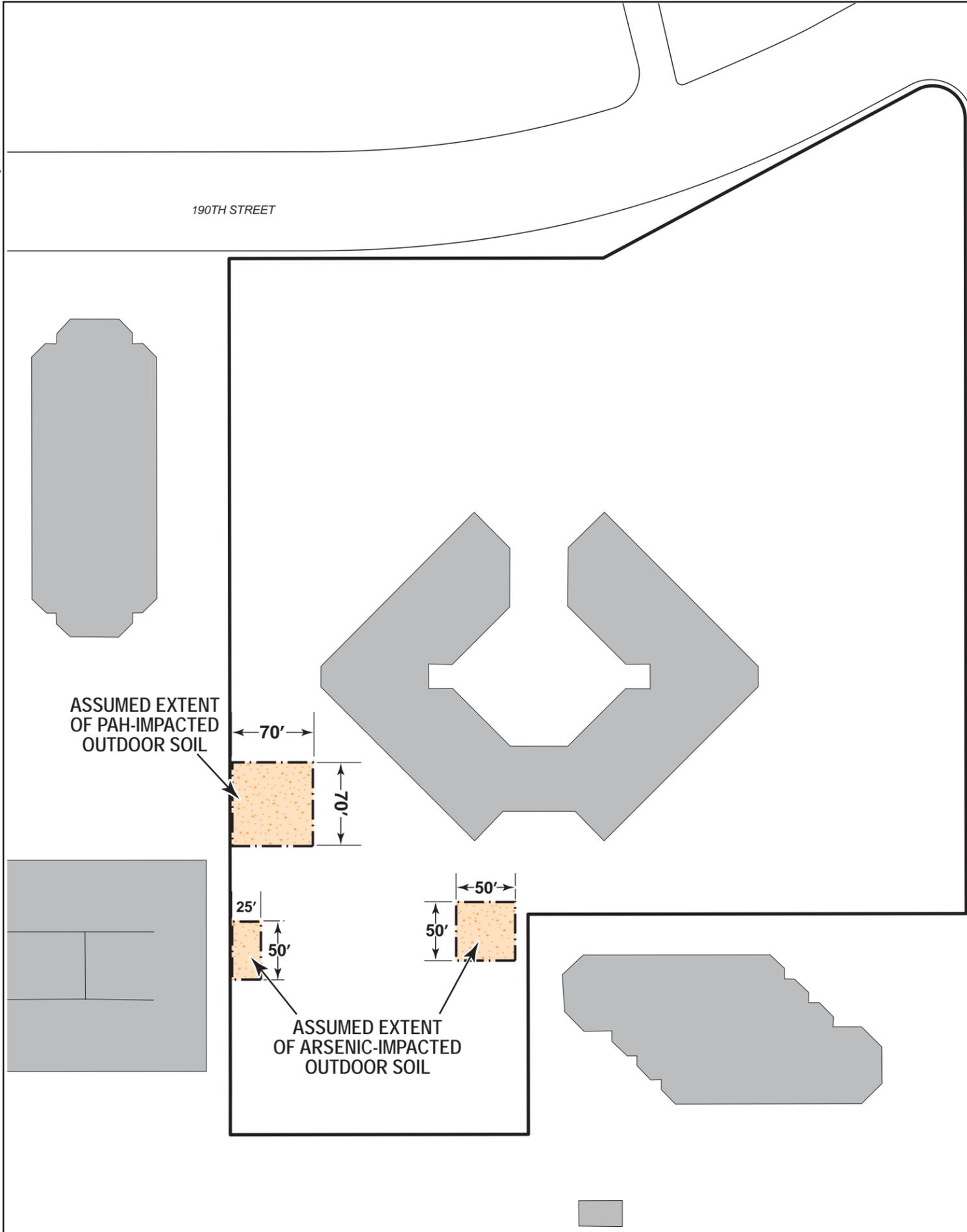
Acronyms

- B(a)A Benzo(a)Anthracene
- B(a)P Benzo(a)Pyrene
- B(b)F Benzo(b)Fluoranthene
- B(k)F Benzo(k)Fluoranthene
- I(1,2,3-c,d)P Indeno(1,2,3-c,d)Pyrene



FIGURE 6.2-1
ASSUMED EXTENT OF IMPACTED SHALLOW SOIL
 Parcel No. 7351-031-020
 EAPC 2
 Del Amo Soil + NAPL FS





Legend

- Parcel boundary
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Asphalt cap boundary (outdoor soil)

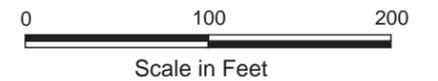
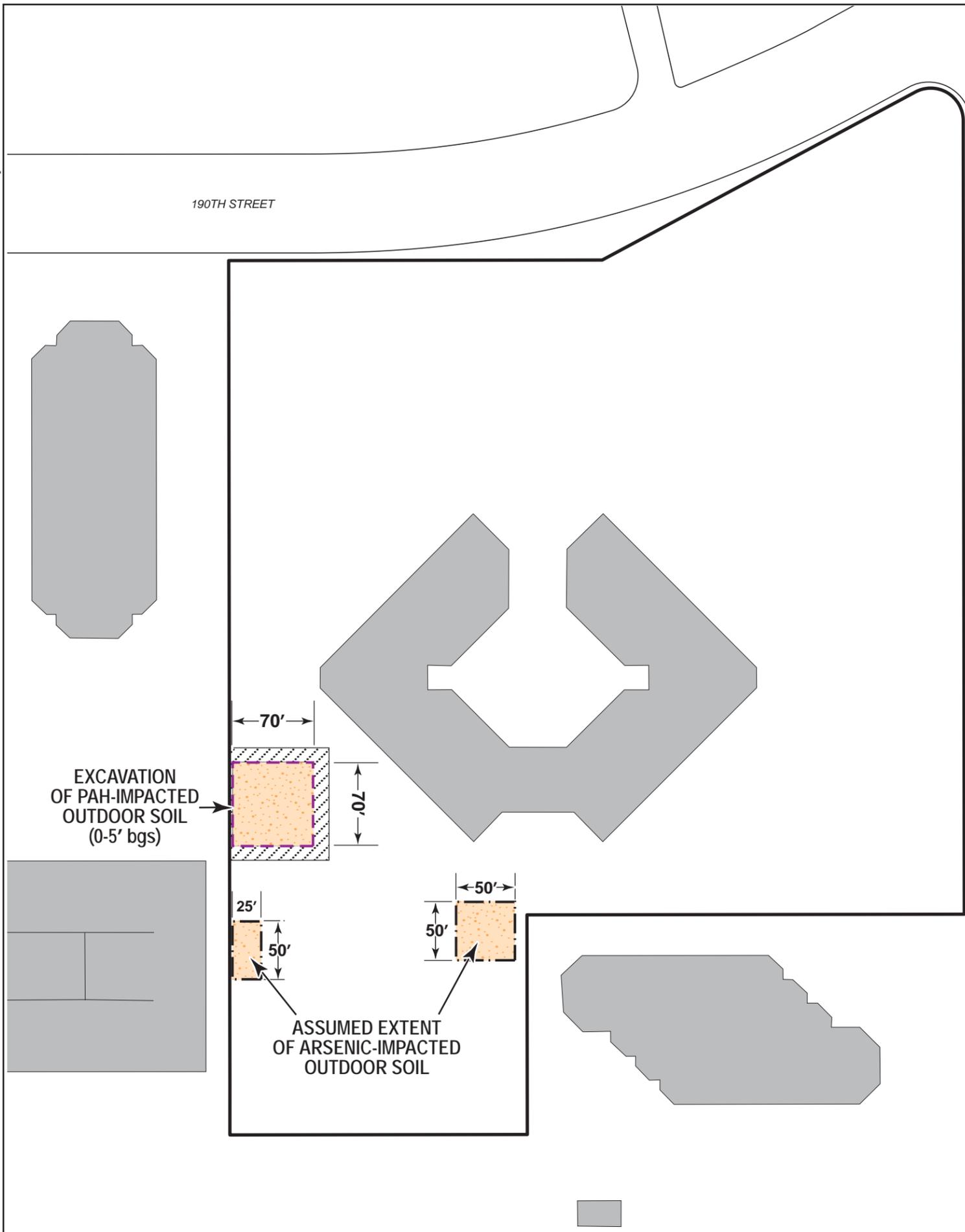


FIGURE 6.2-2

Alternative 3
CAPPING FOR OUTDOOR SOIL
Parcel 7351-031-020
EAPC 2
Del Amo Soil + NAPL FS





Legend

-  Parcel boundary
-  Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
-  Excavation boundary (outdoor soil)
-  Asphalt cap boundary (outdoor soil)
-  Sloped excavation side wall

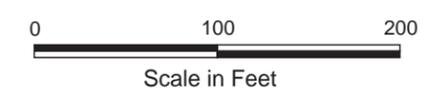
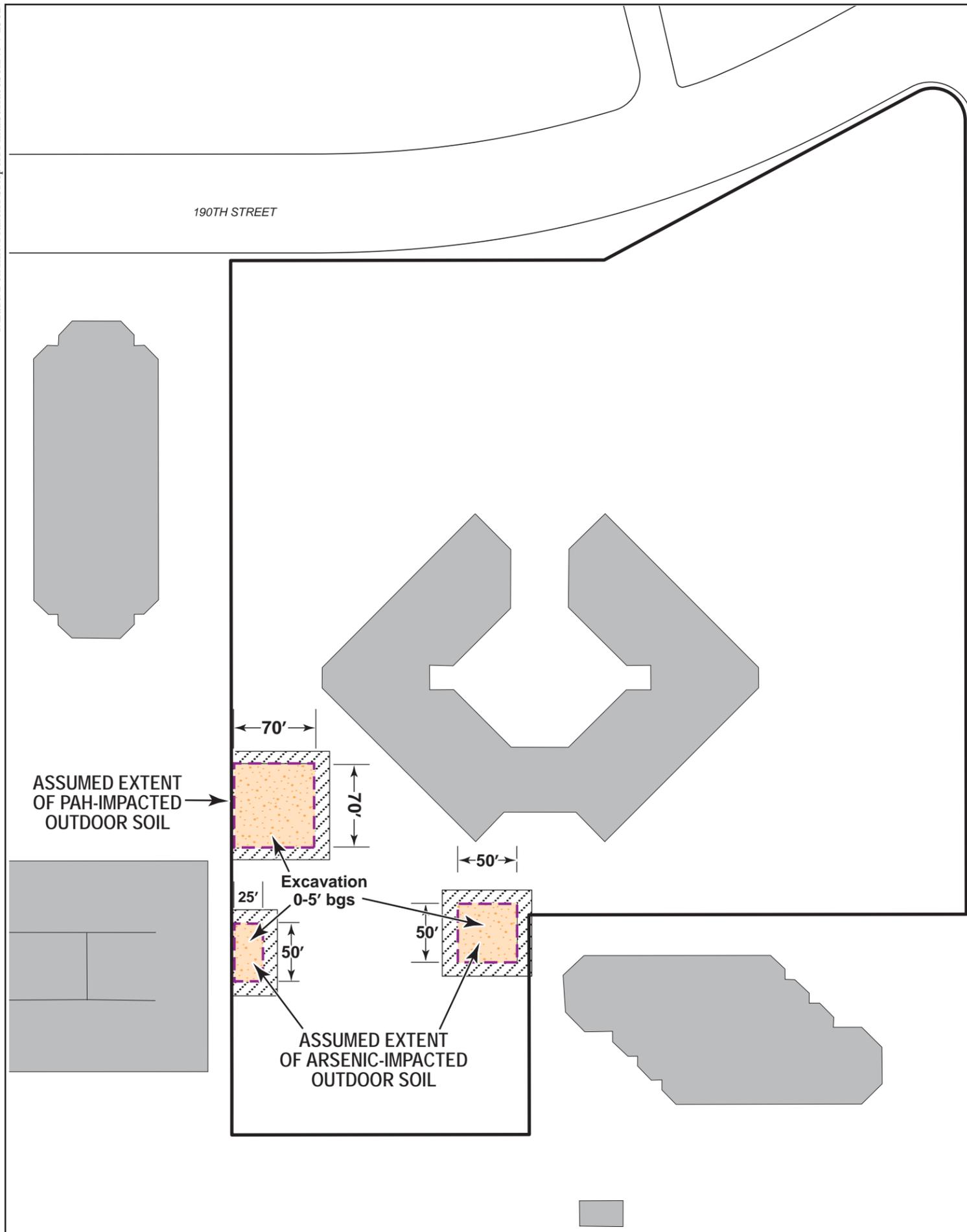


FIGURE 6.2-3

**Alternative 4
EXCAVATION FOR PAHs
& CAPPING FOR ARSENIC
Parcel-7351-031-020**

EAPC 2
Del Amo Soil + NAPL FS

URS



Legend

-  Parcel boundary
-  Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
-  Excavation boundary (outdoor soil)
-  Sloped excavation side wall



FIGURE 6.2-4

**Alternative 5
EXCAVATION FOR PAHs AND ARSENIC
IN OUTDOOR SOIL
Parcel-7351-031-020**

EAPC 2
Del Amo Soil + NAPL FS

URS

**TABLE D1.1-1
EAPC 2 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site**

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 24,110	\$ 24,110
Direct Capital Total					\$ 24,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 24,000	\$ 2,400
Indirect Capital Subtotal					\$ 2,400
Total Direct + Indirect Capital Cost					\$ 26,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,775	\$ 2,775
ICs Annual Operation and Maintenance Subtotal					\$ 2,775
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 55,000
Contingency (20% of total project cost)					\$ 16,000
Total Capital and ICs O&M Cost					\$ 98,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3 and 4A.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D1.1-2
EAPC 2 - REMEDIAL ALTERNATIVE 3
CAPPING (PAHs, As) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 24,000	\$ 24,000
3	Site preparation	8,650	sf	\$ 0.40	\$ 4,000
4	Site Setup, Equipment Mobilization	8,650	sf	\$ 0.75	\$ 7,000
5	Slurry Seal over Existing Asphalt Pavement	8,650	sf	\$ 5	\$ 44,000
6	Parcel Cleanup/Demobilization	1	ls	\$ 3,000	\$ 3,000
7	Remedial Action Monitoring	1	day	\$ 2,000	\$ 2,000
8	Remediation Documentation/Reporting	1	ls	\$ 10,000	\$ 10,000
9	Health and Safety, ODCs	1	ls	\$ 5,000	\$ 5,000
Direct Capital Total					\$ 134,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 134,000	\$ 21,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 134,000	\$ 11,000
3	Construction Management	10%	of	\$ 134,000	\$ 14,000
Indirect Capital Subtotal					\$ 46,000
Total Direct + Indirect Capital Cost					\$ 180,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	Cap Maintenance and Repair	1	year	\$ 15,000	\$ 15,000
Cap + ICs Annual Operation and Maintenance Subtotal					\$ 18,275
Present Worth of ICs + Cap (5%, 100 Years) O&M Costs					\$ 363,000
Contingency (20% of total project cost)					\$ 109,000
Total Capital and Cap + ICs O&M Cost					\$ 652,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. ICs include IC layers 1, 2, 3, 4A and 4B.

TABLE D1.1-3
EAPC 2 - REMEDIAL ALTERNATIVE 4
CAPPING (As) + EXCAVATION (PAHs) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 46,000	\$ 46,000
3	Site preparation/Geophysical Survey	8,650	sf	\$ 0.80	\$ 7,000
4	Site Setup, Equipment Mobilization/Demobilization	8,650	sf	\$ 1.25	\$ 11,000
5	Slurry Seal over Existing Asphalt Pavement (As area)	3,750	sf	\$ 5	\$ 19,000
6	Excavation and Stockpile (PAHs to <5 feet bgs)	907	yd3	\$ 12	\$ 11,000
7	Clean overburden excavation for slope stabilization	130	yd3	\$ 12	\$ 2,000
8	Truck Load-out	907	yd3	\$ 2	\$ 2,000
9	Backfill and Compaction	998	yd ³	\$ 35	\$ 35,000
10	Asphalt Pavement Restoration (PAHs area)	4,900	sf	\$ 10	\$ 49,000
11	Transportation and Off-Site Disposal	1,361	ton	\$ 70	\$ 96,000
12	Soil Confirmation Sampling and Analyses	18	samples	\$ 500	\$ 9,000
13	Air Monitoring/Sampling	5	days	\$ 2,500	\$ 13,000
14	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
15	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 390,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	15%	of	\$ 390,000	\$ 59,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 390,000	\$ 32,000
3	Construction Management	10%	of	\$ 390,000	\$ 39,000
Indirect Capital Total					\$ 130,000
Direct + Indirect Capital Total					\$ 520,000
Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	Cap Maintenance and Repair	1	year	\$ 6,000	\$ 6,000
Cap + ICs Annual Operation and Maintenance Subtotal					\$ 9,275
Present Worth of ICs + Cap (5%, 100 Years) O&M Costs					\$ 185,000
Contingency (25% of total project cost)					\$ 177,000
Total Capital and Cap + ICs O&M Cost					\$ 882,000

NOTES/ASSUMPTIONS

1. Site is already paved over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available
4. No shoring is needed.
5. Assume excavated soil is 50% Cal haz, 50% non haz sent to a permitted facility.
6. ICs include IC layers 1, 2, 3, 4A and 4B.

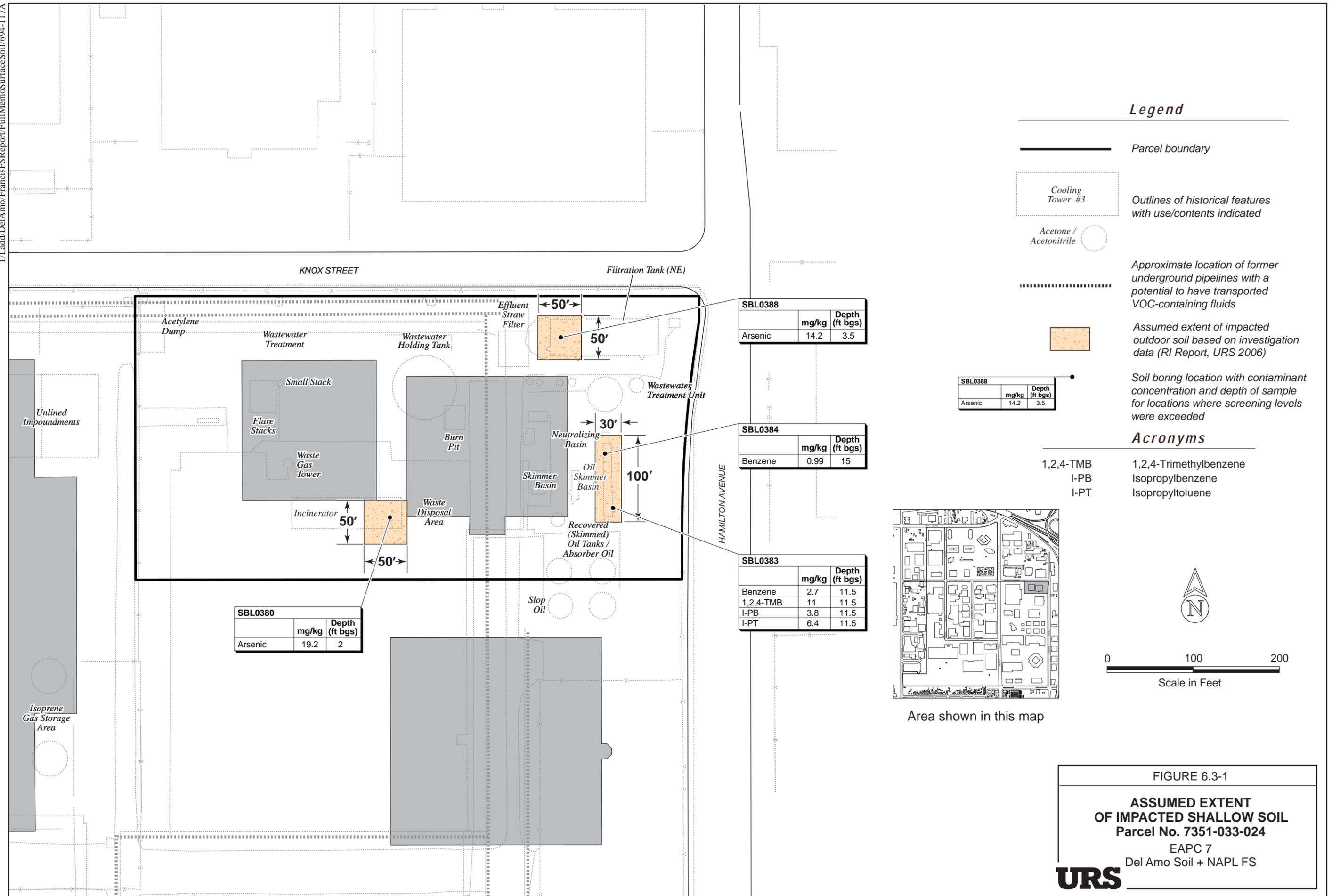
TABLE D1.1-4
EAPC 2 - REMEDIAL ALTERNATIVE 5
EXCAVATION (PAHs, As) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 5,110	\$ 5,110
2	Site Investigation/Delineation	1	ls	\$ 55,000	\$ 55,000
3	Site preparation/Geophysical Survey	8,650	sf	\$ 0.80	\$ 7,000
4	Site Setup, Equipment Mobilization/Demobilization	8,650	sf	\$ 1.25	\$ 11,000
5	Excavation and Stockpile (<5 feet bgs)	1,601	yd3	\$ 12	\$ 20,000
6	Clean overburden excavation for slope stabilization	292	yd3	\$ 12	\$ 4,000
7	Truck Load-out	1,601	yd3	\$ 2	\$ 4,000
8	Backfill and Compaction	1,761	yd ³	\$ 35	\$ 62,000
9	Asphalt Pavement Restoration	8,650	sf	\$ 10	\$ 87,000
10	Transportation and Off-Site Disposal	2,403	ton	\$ 70	\$ 169,000
11	Soil Confirmation Sampling and Analyses	35	samples	\$ 500	\$ 18,000
12	Air Monitoring/Sampling	8	days	\$ 2,500	\$ 20,000
13	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
14	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 517,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 517,000	\$ 78,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 517,000	\$ 42,000
3	Construction Management	10%	of	\$ 517,000	\$ 52,000
Indirect Capital Total					\$ 172,000
Direct + Indirect Capital Total					\$ 689,000
Item No.	ICs Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,175	\$ 2,175
ICs Annual Operation and Maintenance Subtotal					\$ 2,175
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 44,000
Contingency (30% of total project cost)					\$ 220,000
Total Capital and ICs O&M Costs					\$ 953,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available
2. No shoring is needed.
3. Assume excavated soil is 50% Cal haz, 50% non haz sent to a permitted facility.
4. ICs include IC layers 1 and 2.

EAPC 7



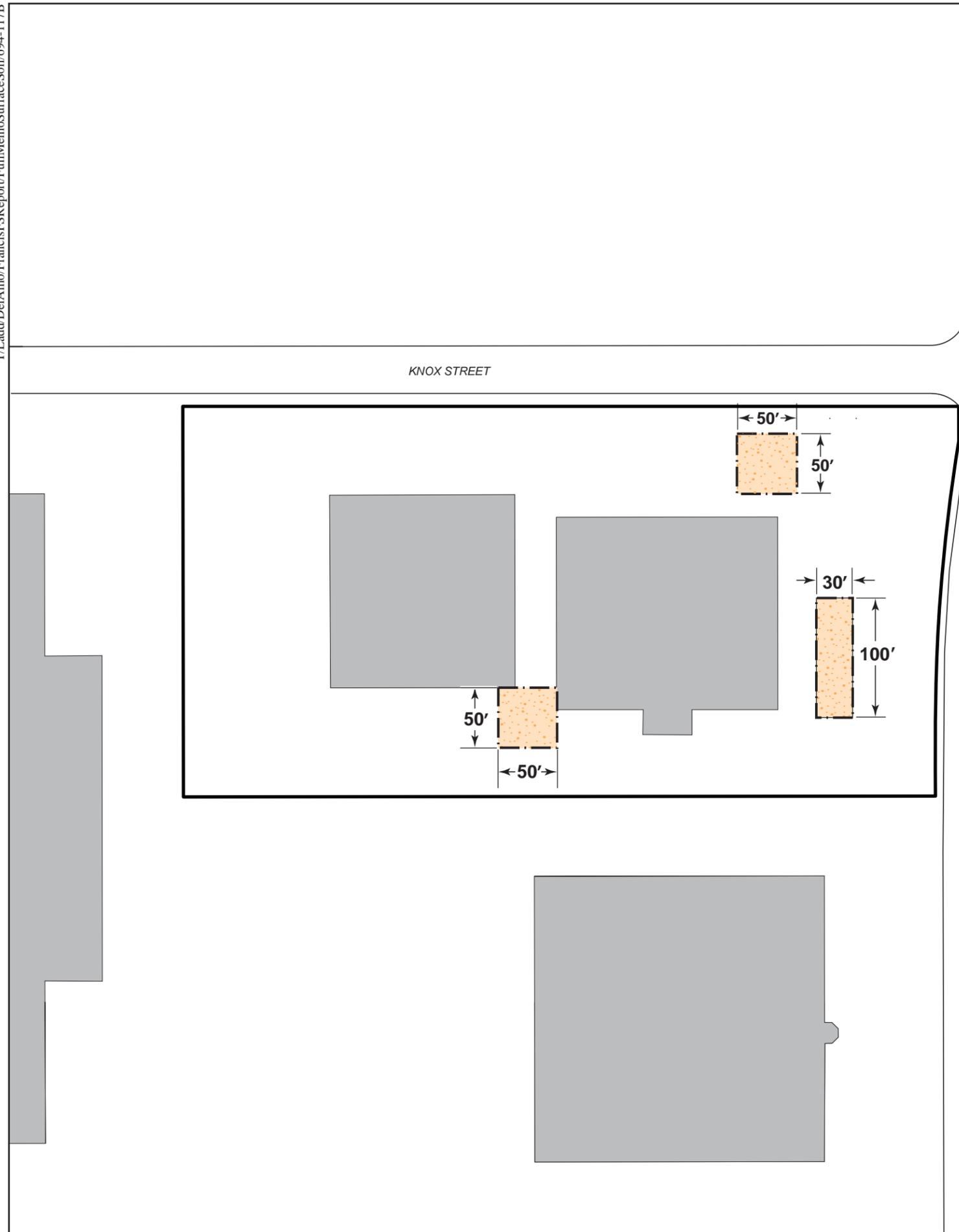
SBL0380		
	mg/kg	Depth (ft bgs)
Arsenic	19.2	2

SBL0388		
	mg/kg	Depth (ft bgs)
Arsenic	14.2	3.5

SBL0384		
	mg/kg	Depth (ft bgs)
Benzene	0.99	15

SBL0383		
	mg/kg	Depth (ft bgs)
Benzene	2.7	11.5
1,2,4-TMB	11	11.5
I-PB	3.8	11.5
I-PT	6.4	11.5

SBL0388		
	mg/kg	Depth (ft bgs)
Arsenic	14.2	3.5



Legend

- Parcel Boundary
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Asphalt cap boundary (outdoor soil)

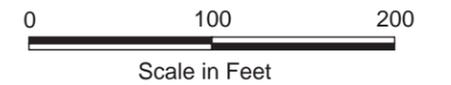
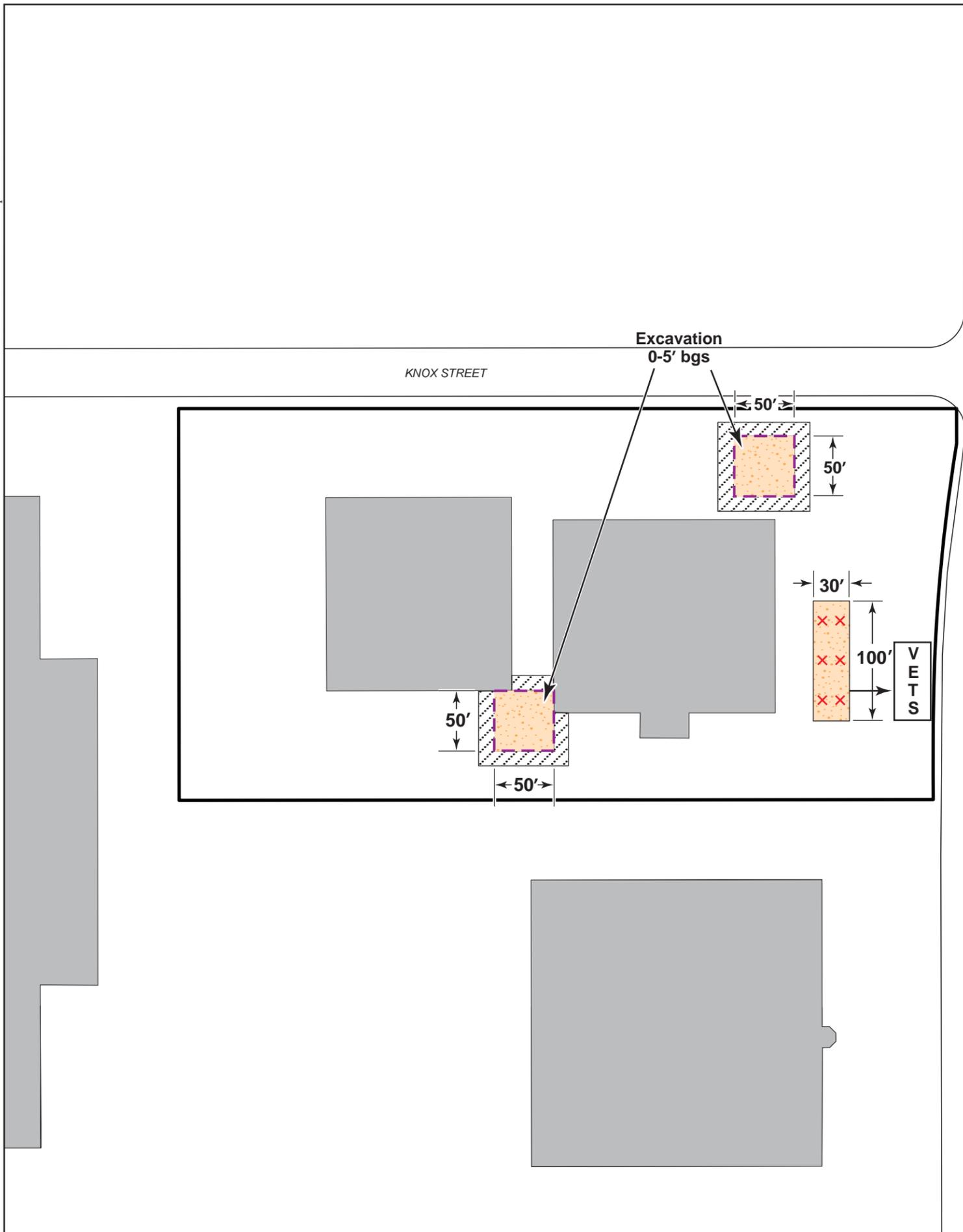


FIGURE 6.3-2
**Alternative 3
CAPPING FOR OUTDOOR SOIL**
Parcel No. 7351-033-024
EAPC 7
Del Amo Soil + NAPL FS





Legend

-  Parcel boundary
-  Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
-  Excavation boundary (outdoor soil)
-  Sloped excavation sidewall
-  Vertical SVE/BV wells (outdoor soil)
-  Vapor extraction treatment system

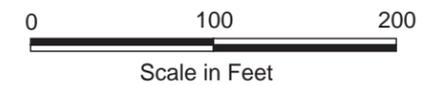
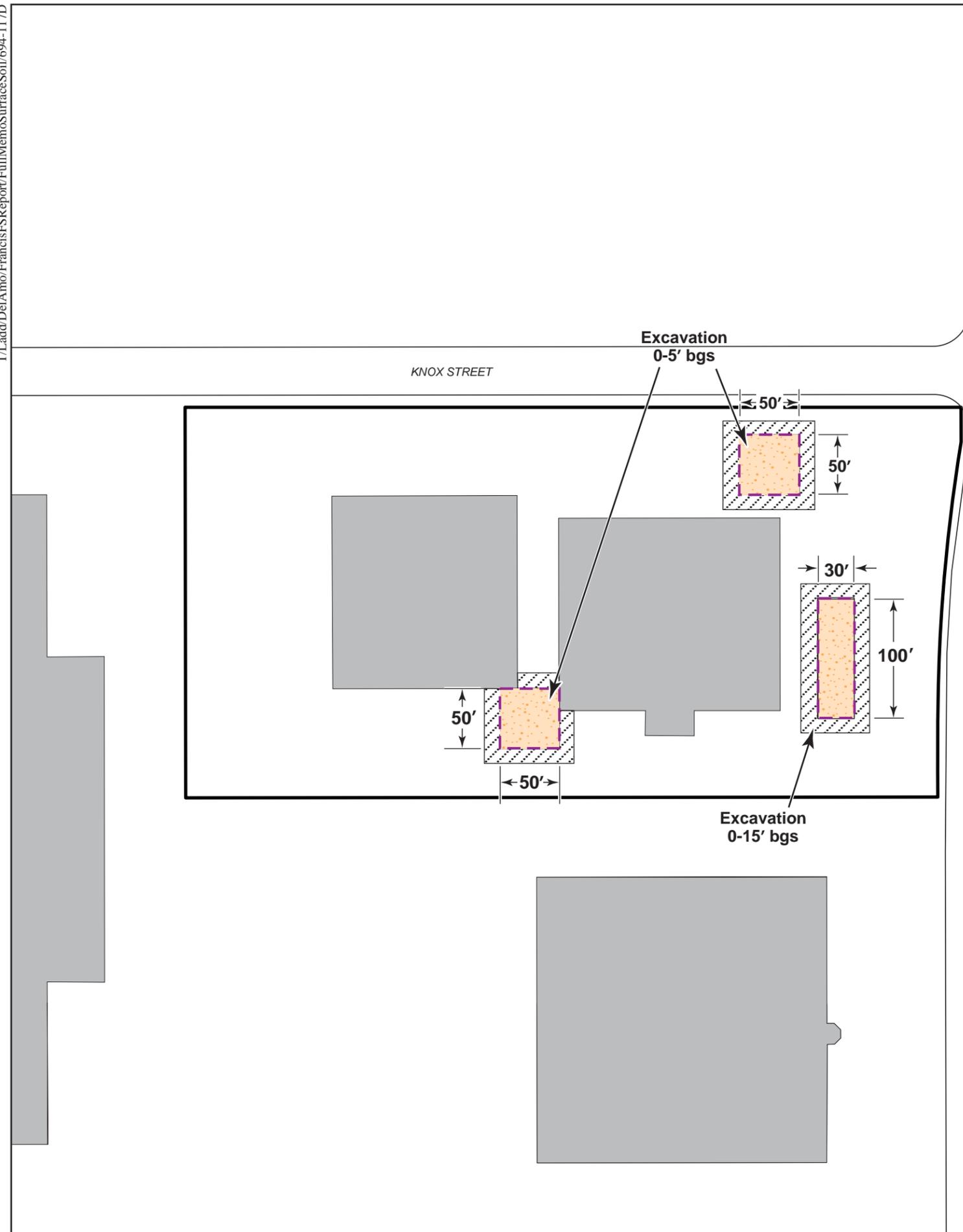


FIGURE 6.3-3
**Alternative 4
EXCAVATION FOR ARSENIC
& SVE/BV FOR VOCs
Parcel No. 7351-033-024**
EAPC 7
Del Amo Soil + NAPL FS





Legend

- Parcel boundary
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Excavation boundary (outdoor soil)
- Sloped excavation sidewall



FIGURE 6.3-4
Alternative 5
EXCAVATION FOR OUTDOOR SOIL
Parcel No. 7351-033-024
EAPC 7
Del Amo Soil + NAPL FS



**TABLE D1.2-1
EAPC 7 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site**

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 24,110	\$ 24,110
Direct Capital Total					\$ 24,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 24,000	\$ 2,400
Indirect Capital Subtotal					\$ 2,400
Total Direct + Indirect Capital Cost					\$ 26,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,775	\$ 2,775
ICs Annual Operation and Maintenance Subtotal					\$ 2,775
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 55,000
Contingency (20% of total project cost)					\$ 16,000
Total Capital and ICs O&M Cost					\$ 98,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3 and 4A.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D1.2-2
EAPC 7 - REMEDIAL ALTERNATIVE 3
CAPPING (As, VOCs) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 18,000	\$ 18,000
3	Site preparation	8,000	sf	\$ 0.40	\$ 4,000
4	Site Setup, Equipment Mobilization	8,000	sf	\$ 0.75	\$ 6,000
5	Slurry Seal over Existing Asphalt Pavement	8,000	sf	\$ 5	\$ 40,000
6	Parcel Cleanup/Demobilization	1	ls	\$ 3,000	\$ 3,000
7	Remedial Action Monitoring	1	day	\$ 2,000	\$ 2,000
8	Remediation Documentation/Reporting	1	ls	\$ 10,000	\$ 10,000
9	Health and Safety, ODCs	1	ls	\$ 5,000	\$ 5,000
Direct Capital Total					\$ 123,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 123,000	\$ 19,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 123,000	\$ 10,000
3	Construction Management	10%	of	\$ 123,000	\$ 13,000
Indirect Capital Subtotal					\$ 42,000
Total Direct + Indirect Capital Cost					\$ 165,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	Cap Maintenance and Repair	1	year	\$ 14,000	\$ 14,000
Cap + ICs Annual Operation and Maintenance Subtotal					\$ 17,275
Present Worth of ICs + Cap (5%, 100 Years) O&M Costs					\$ 343,000
Contingency (20% of total project cost)					\$ 102,000
Total Capital and Cap + ICs O&M Cost					\$ 610,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. ICs include IC layers 1, 2, 3, 4A and 4B.

TABLE D1.2-3
EAPC 7 - REMEDIAL ALTERNATIVE 4
EXCAVATION (As) + SVE/BV (VOCs)(OS) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 5,110	\$ 5,110
2	Site Investigation/Delineation	1	ls	\$ 40,000	\$ 40,000
3	Site preparation/Geophysical Survey	8,000	sf	\$ 0.80	\$ 7,000
4	Site Setup, Equipment Mobilization/Demobilization	8,000	sf	\$ 1.25	\$ 10,000
5	Excavation and Stockpile (<5 feet bgs)	926	yd3	\$ 12	\$ 12,000
6	Clean overburden excavation for slope stabilization	185	yd3	\$ 12	\$ 3,000
7	Truck Load-out	926	yd3	\$ 2	\$ 2,000
8	Backfill and Compaction	1,019	yd ³	\$ 35	\$ 36,000
9	Asphalt pavement restoration	5,000	sf	\$ 10	\$ 50,000
10	SVE Vertical Wells (V-SVE)	6	ea	\$ 5,000	\$ 30,000
11	Install Well Headworks/Vault	6	ea	\$ 1,500	\$ 9,000
12	Install Outdoor Vapor Monitoring Points	3	ea	\$ 2,000	\$ 6,000
13	Trenching, Piping, Backfill, Resurfacing	300	lf	\$ 30	\$ 9,000
14	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 30,000	\$ 30,000
15	Control and Instrumentation	1	ls	\$ 4,000	\$ 4,000
16	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 4,000	\$ 4,000
17	SVE System Installation and Startup	1	ea	\$ 30,000	\$ 30,000
18	SVE Emissions Treatment System (Thermal/Cat Ox), 100 cfm	1	ea	\$ 50,000	\$ 50,000
19	Transportation and Off-Site Disposal (As-impacted soil)	1,389	ton	\$ 50	\$ 70,000
20	Soil Confirmation Sampling and Analyses	35	samples	\$ 850	\$ 30,000
21	Air Monitoring/Sampling	10	days	\$ 2,500	\$ 25,000
22	Remediation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
23	Site Closure, decommissioning, well abandonment	1	ls	\$ 15,000	\$ 15,000
24	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 15,000	\$ 15,000
Direct Capital Total					\$ 512,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	12%	of	\$ 512,000	\$ 62,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 512,000	\$ 31,000
3	Construction Management	8%	of	\$ 512,000	\$ 41,000
Indirect Capital Total					\$ 134,000
Direct + Indirect Capital Total					\$ 646,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,175	\$ 2,175
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 2,000	\$ 24,000
3	Fuel	12	mths	\$ 3,000	\$ 36,000
4	Electricity	12	mths	\$ 1,300	\$ 16,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 500	\$ 6,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 2,000	\$ 24,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 2,000	\$ 24,000
8	Waste/Water Disposal	12	mths	\$ 500	\$ 6,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
ICs Annual Operation and Maintenance Subtotal					\$ 2,175
Present Worth of ICs Operation and Maintenance Costs (5%, 100 years)					\$ 44,000
SVE Annual Operation and Maintenance Subtotal					\$ 172,000
SVE Present Worth of Operation and Maintenance Costs (5%, 1.5 Years)					\$ 243,000
Contingency (25%) of total project cost					\$ 233,000
Total Capital and SVE + ICs O&M Cost					\$ 1,166,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. Assume excavated soil is 100% non haz sent to a permitted facility.
3. Benzene SVE (OS) system: Uses 6 V-SVE wells, 5-15 feet bgs screens.
4. Benzene SVE uses thermal oxidizer, 100 scfm, positive displacement (PD) blower.
5. Assume SVE operation for 1.5 years.
6. Assume 25% contingency.
7. ICs include IC layers 1 and 2.

TABLE D1.2-4
EAPC 7 - REMEDIAL ALTERNATIVE 5
EXCAVATION (As, VOCs) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

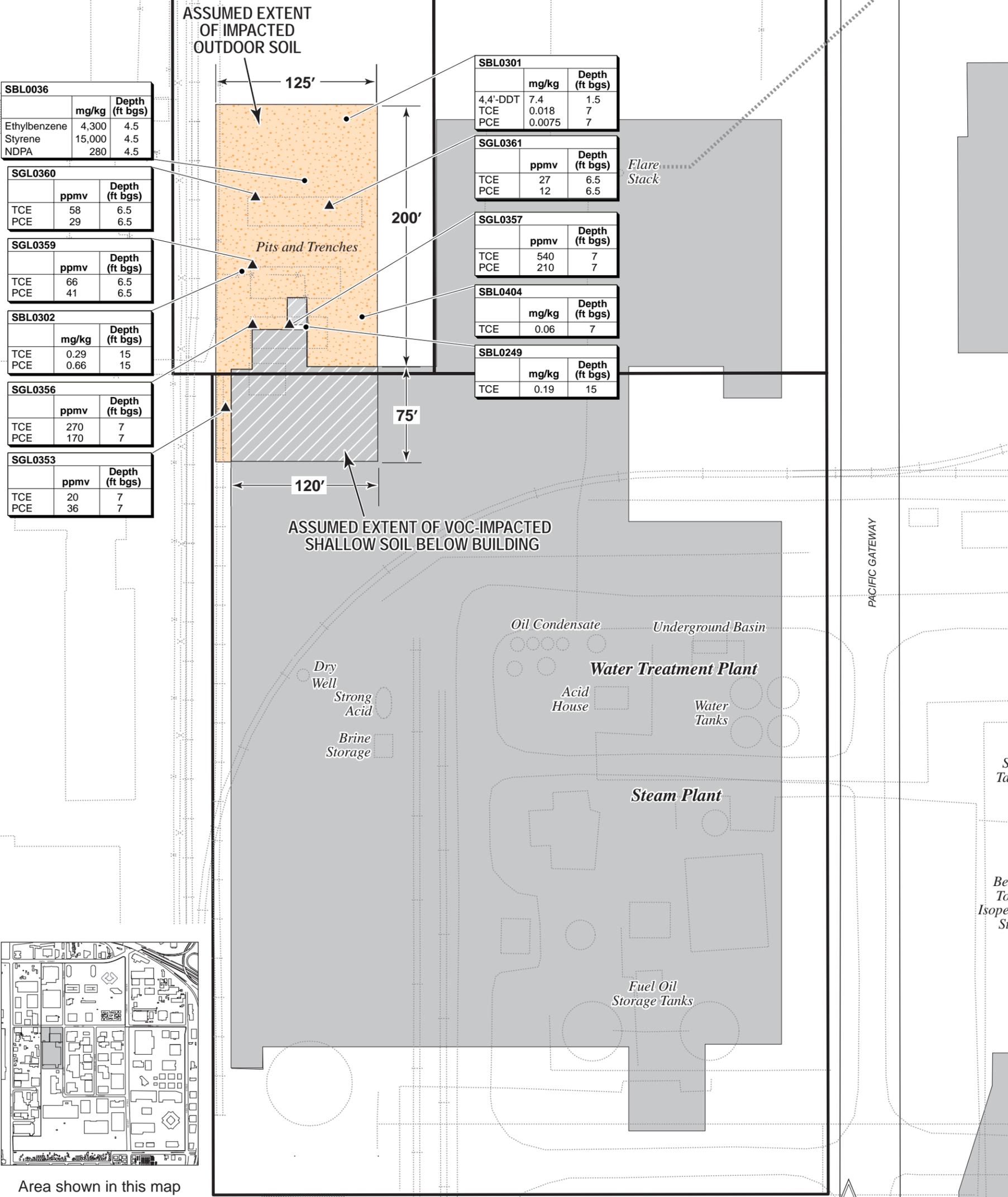
	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 5,110	\$ 5,110
2	Site Investigation/Delineation	1	ls	\$ 40,000	\$ 40,000
3	Site preparation/Geophysical Survey	8,000	sf	\$ 0.80	\$ 7,000
4	Site Setup, Equipment Mobilization/Demobilization	8,000	sf	\$ 1.25	\$ 10,000
5	Excavation and Stockpile (5 and 15 feet bgs)	2,593	yd3	\$ 12	\$ 32,000
6	Clean overburden excavation for slope stabilization	1,269	yd3	\$ 12	\$ 16,000
7	Truck Load-out	2,593	yd3	\$ 2	\$ 5,000
8	Backfill and Compaction	2,852	yd ³	\$ 35	\$ 100,000
9	Asphalt pavement restoration	8,000	sf	\$ 10	\$ 80,000
10	Transportation and Off-Site Disposal	3,890	ton	\$ 70	\$ 273,000
11	Soil Confirmation Sampling and Analyses	50	samples	\$ 250	\$ 13,000
12	Air Monitoring/Sampling	15	days	\$ 2,500	\$ 38,000
13	Excavation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
14	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 15,000	\$ 15,000
Direct Capital Total					\$ 654,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	12%	of	\$ 654,000	\$ 79,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 654,000	\$ 40,000
3	Construction Management	8%	of	\$ 654,000	\$ 53,000
Indirect Capital Total					\$ 172,000
Direct + Indirect Capital Total					\$ 826,000
Item No.	ICs Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,175	\$ 2,175
ICs Annual Operation and Maintenance Subtotal					\$ 2,175
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 44,000
Contingency (30% of total project cost)					\$ 261,000
Total Capital and ICs O&M Costs					\$ 1,131,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available
2. Excavation adjacent to building footprint assumes slot-trenching. No shoring is needed.
3. Assume excavated soil is 50% Cal haz, 50% non haz sent to a permitted facility.
4. Assume 30% contingency for excavation.
5. ICs include IC layers 1 and 2.

EAPC 16

KNOX STREET



Area shown in this map

Legend

Assumed extent of VOC-impacted shallow soil below building

Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)

NDPhA N-Nitrosodiphenylamine

Former locations of synthetic rubber plant facilities

Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids

Soil boring location with contaminant concentration and depth of sample for locations where screening levels were exceeded

Soil gas sampling point with contaminant concentration and depth of sample for locations where screening levels were exceeded

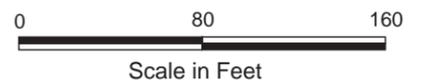
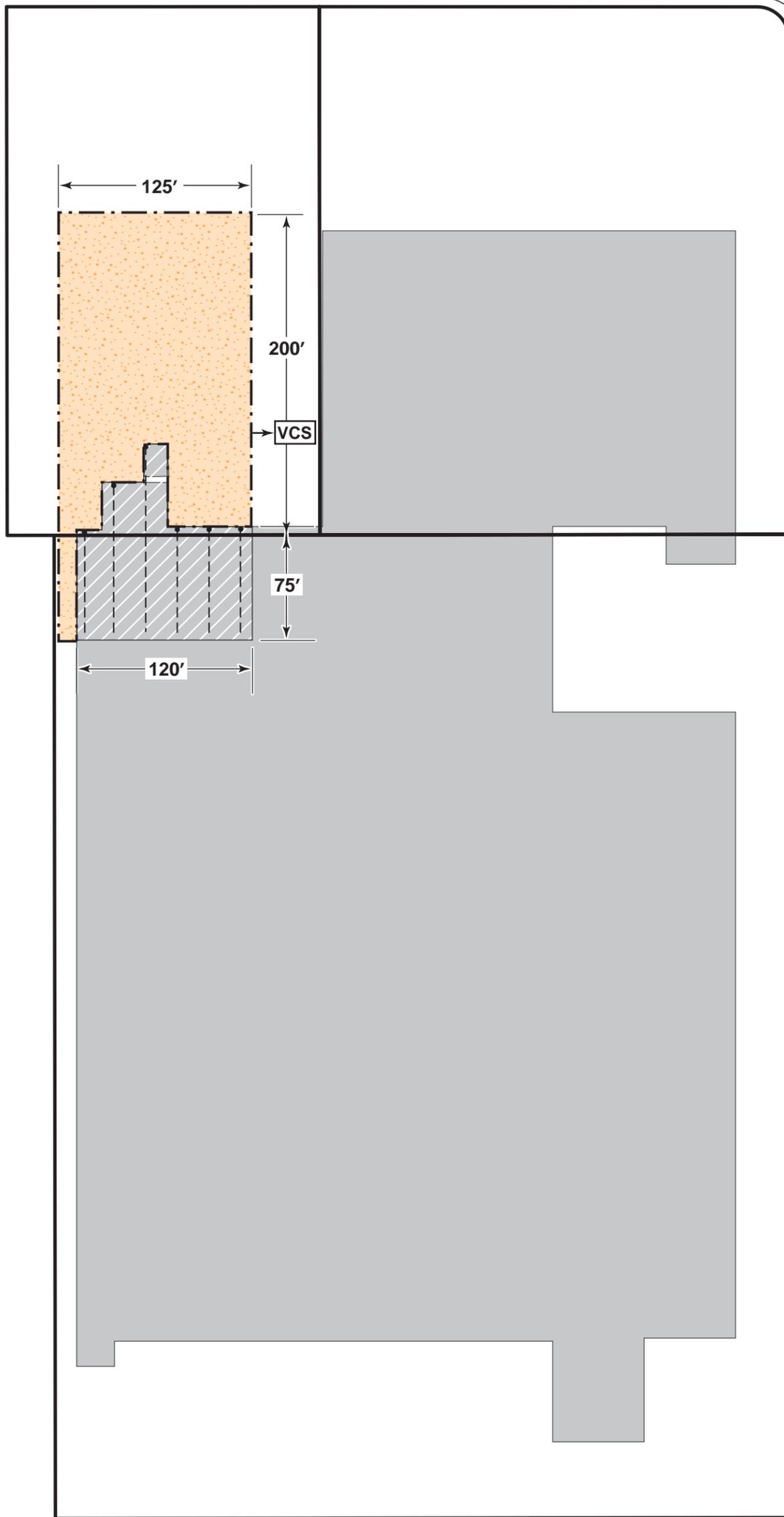


FIGURE 6.4-1

ASSUMED EXTENT OF IMPACTED SHALLOW SOIL
Parcel Nos. 7351-034-015,-050,-056
EAPC 16
Del Amo Soil + NAPL FS



KNOX STREET



PACIFIC GATEWAY

Legend

-  Assumed extent of impacted outdoor soil
-  Assumed extent of impacted shallow soil below building
-  Asphalt cap boundary (outdoor soil)
-  Perforated piping laid in trenches
-  Vapor collection system (for SSV)

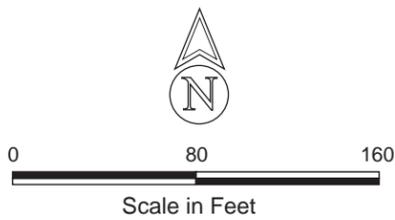


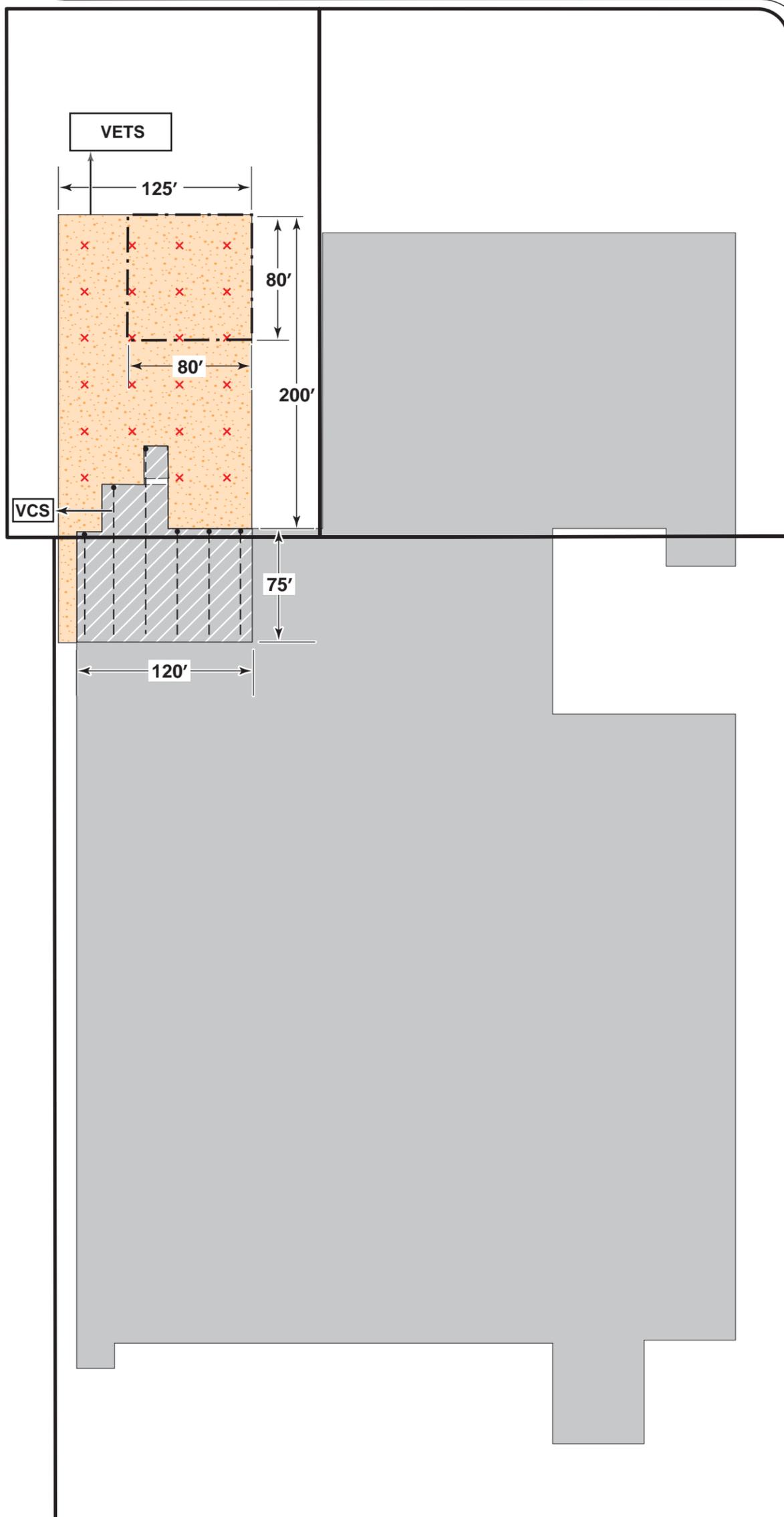
FIGURE 6.4-2

Alternative 3
CAPPING FOR OUTDOOR SOIL
+ HVAC MOD/SSV UNDER BUILDING
Parcel 7351-034-015,-050,-056

EAPC 16
 Del Amo Soil + NAPL FS

URS

KNOX STREET



PACIFIC GATEWAY

Legend

-  Assumed extent of impacted outdoor soil
-  Assumed extent of impacted shallow soil below building
-  Asphalt cap boundary (outdoor soil)
-  Vertical SVE wells (outdoor soil)
-  Perforated piping laid in trenches
-  Vapor extraction treatment system
-  Vapor collection system (for SSV)

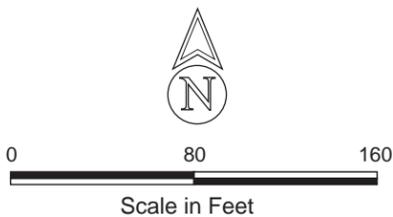


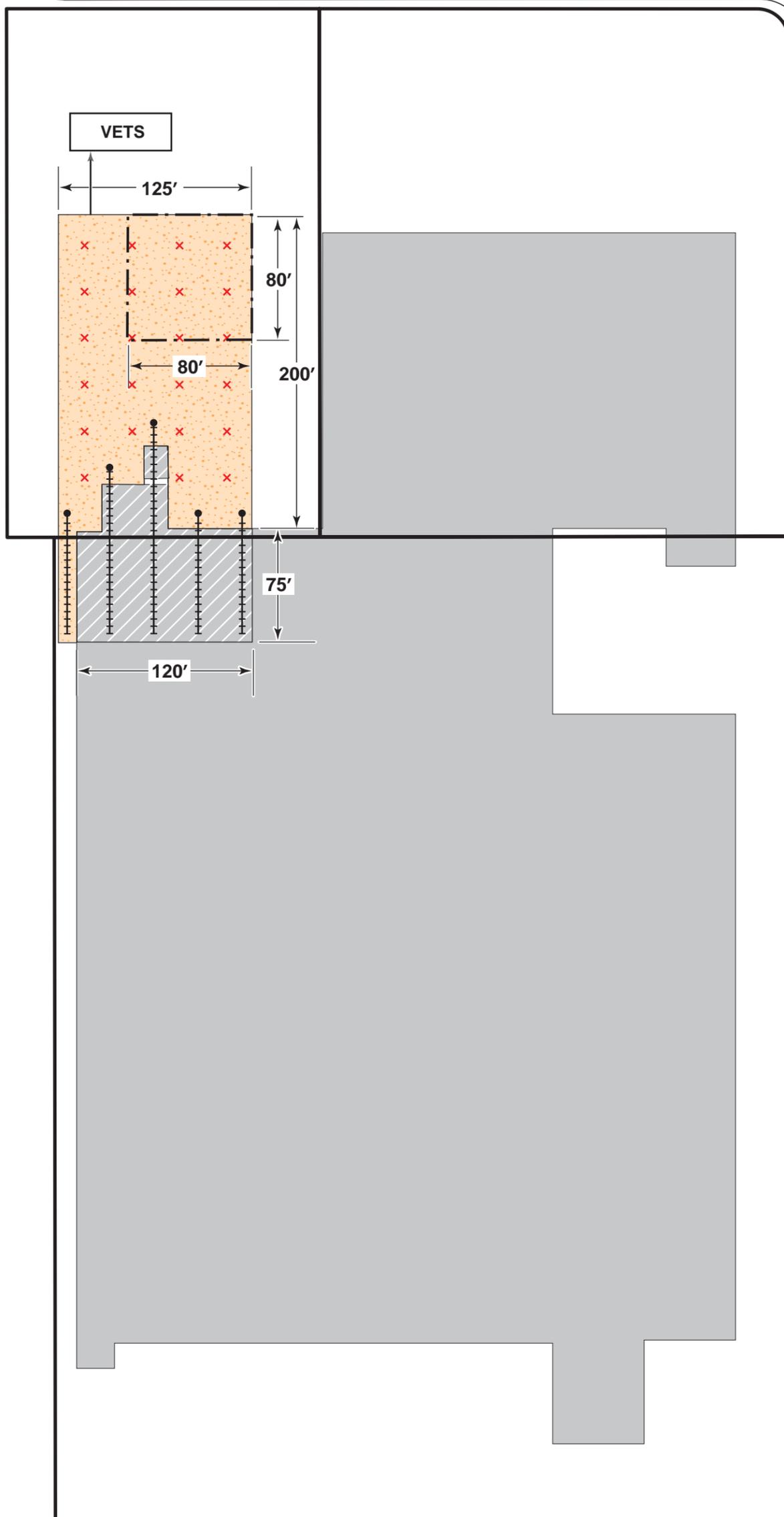
FIGURE 6.4-3

Alternative 4
CAPPING & SVE FOR OUTDOOR SOIL
+ HVAC MOD/SSV UNDER BUILDING
Parcel 7351-034-015,-050,-056

EAPC 16
 Del Amo Soil + NAPL FS



KNOX STREET



PACIFIC GATEWAY

Legend

-  Assumed extent of impacted outdoor soil
-  Assumed extent of impacted shallow soil below building
-  Asphalt cap boundary (outdoor soil)
-  Vertical SVE wells (outdoor soil)
-  Horizontal SVE wells (under building)
-  Vapor extraction treatment system

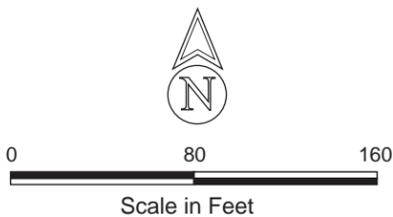
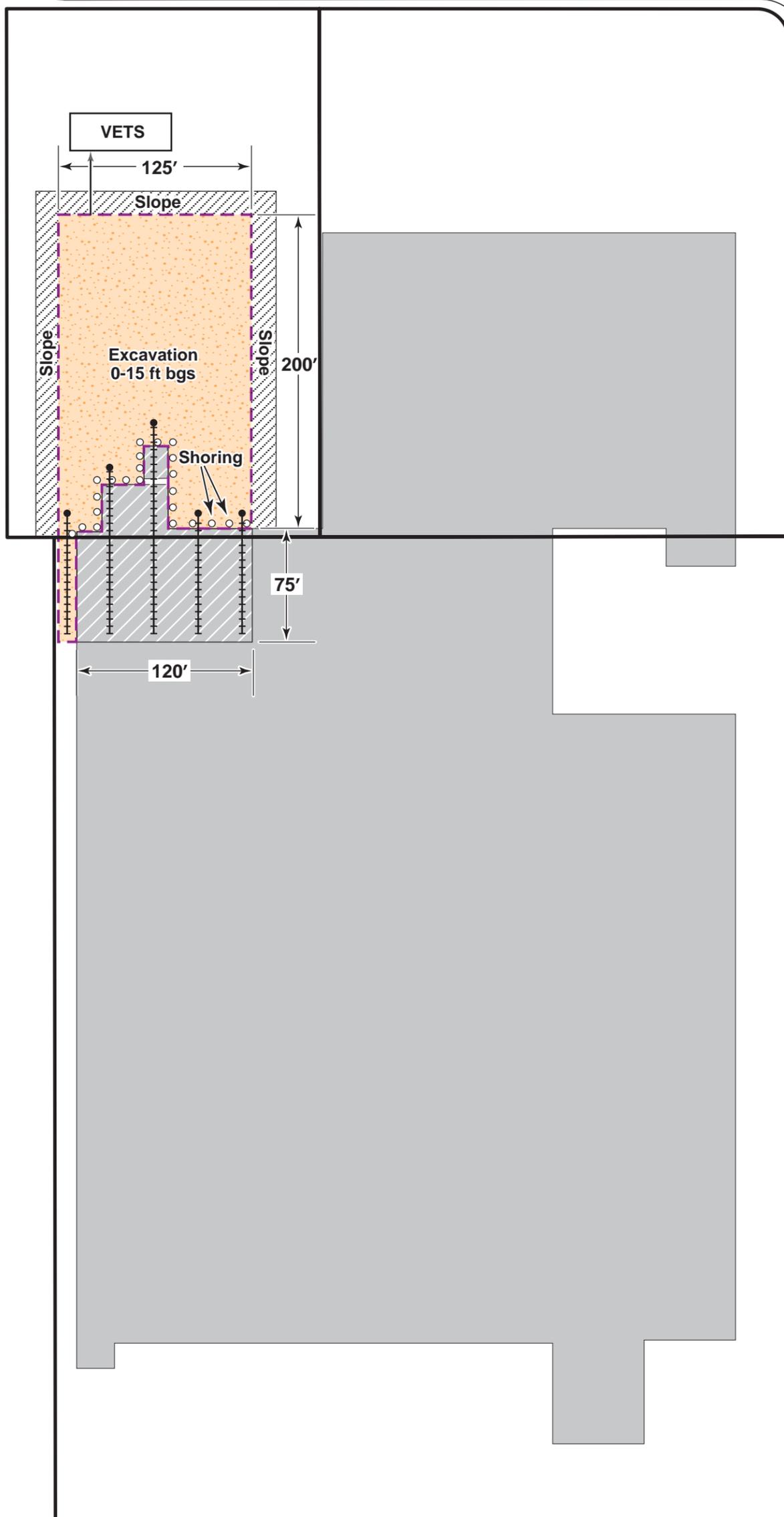


FIGURE 6.4-4
Alternative 5
CAPPING & SVE FOR OUTDOOR SOIL
+ SVE UNDER BUILDING
Parcel 7351-034-015,-050,-056
 EAPC 16
 Del Amo Soil + NAPL FS



KNOX STREET



PACIFIC GATEWAY

Legend

-  Assumed extent of impacted outdoor soil
-  Assumed extent of impacted shallow soil below building
-  Excavation boundary (outdoor soil)
-  Shoring (Sheet pile or soldier Pile)
-  Horizontal SVE wells (under building)
-  Vapor extraction treatment system
-  Sloped excavation side-wall

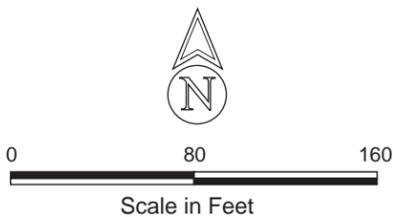


FIGURE 6.4-5
Alternative 6
EXCAVATION FOR OUTDOOR SOIL
AND SVE UNDER BUILDING
Parcel 7351-034-015,-050,-056
 EAPC 16
 Del Amo Soil + NAPL FS



TABLE D1.3-1
EAPC 16 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D1.3-2
EAPC 16 - REMEDIAL ALTERNATIVE 3
CAPPING (nonVOCs, VOCs) + HVAC MOD/SSV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 50,000	\$ 50,000
3	Site preparation	34,400	sf	\$ 0.40	\$ 14,000
4	Site Setup, Equipment Mobilization	34,400	sf	\$ 0.75	\$ 26,000
5	Slurry Seal over Existing Asphalt Pavement	23,600	sf	\$ 5	\$ 118,000
6	Subslab Venting System under building (installed)	10,800	sf	\$ 5	\$ 54,000
7	Install Vapor Monitoring Points inside building	27	ea	\$ 500	\$ 14,000
8	Parcel Cleanup/Demobilization	1	ls	\$ 10,000	\$ 10,000
9	Remedial Action Monitoring	12	day	\$ 2,000	\$ 24,000
10	Remediation Documentation/Reporting	1	ls	\$ 20,000	\$ 20,000
11	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 10,000	\$ 10,000
Direct Capital Total					\$ 384,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	12%	of	\$ 384,000	\$ 47,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 384,000	\$ 24,000
3	Construction Management	8%	of	\$ 384,000	\$ 31,000
Indirect Capital Subtotal					\$ 102,000
Total Direct + Indirect Capital Cost					\$ 486,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SSV periodic monitoring, operation, maintenance	1	year	\$ 12,000	\$ 12,000
3	Cap Maintenance and Repair	1	year	\$ 40,000	\$ 40,000
ICs, Cap, and SSV Annual Operation and Maintenance Subtotal					\$ 55,775
Present Worth of ICs + SSV + Cap (5%, 100 Years) O&M Costs					\$ 1,108,000
Contingency (20% of total project cost)					\$ 319,000
Total Capital and ICs, Cap, and SSV O&M Cost					\$ 1,913,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. SSV assumed for this alternative instead of HVAC Mod.
4. SSV assumes piping laid in trenches inside building.
5. SSV system includes fan and carbon adsorbers as vapor control system.
6. SSV O&M includes periodic monitoring of vapor control system.
7. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D1.3-3
EAPC 16 - REMEDIAL ALTERNATIVE 4
CAPPING (non-VOC) + SVE/BV (OS) + HVAC MOD/SSV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 100,000	\$ 100,000
3	Site preparation/Geophysical Survey	34,400	sf	\$ 0.80	\$ 28,000
4	Site Setup, Equipment Mobilization/Demobilization	34,400	sf	\$ 1.25	\$ 43,000
5	Slurry Seal over Existing Asphalt Pavement (non-VOCs)	6,400	sf	\$ 5	\$ 32,000
6	Install Subslab Venting System under building	10,800	sf	\$ 5	\$ 54,000
7	Install Vapor Monitoring Points inside building	27	ea	\$ 500	\$ 14,000
8	SVE Vertical Wells (V-SVE)	23	ea	\$ 5,000	\$ 115,000
9	Install Well Headworks/Vault	23	ea	\$ 1,500	\$ 34,000
10	Install Outdoor Vapor Monitoring Points	4	ea	\$ 2,000	\$ 8,000
11	Trenching, Piping, Backfill, Resurfacing	1,200	lf	\$ 30	\$ 36,000
12	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
13	Control and Instrumentation	1	ls	\$ 6,000	\$ 6,000
14	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 30,000	\$ 30,000
15	SVE System Installation and Startup	1	ea	\$ 50,000	\$ 50,000
16	SVE Emissions Treatment System (Thermal/Cat Ox), 250 cfm	1	ea	\$ 70,000	\$ 70,000
17	Scrubber for Thermal/Cat Ox Effluent	1	ea	\$ 75,000	\$ 75,000
18	Soil Confirmation Sampling and Analyses	28	samples	\$ 750	\$ 46,000
19	Air Monitoring/Sampling	12	days	\$ 2,500	\$ 30,000
20	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
21	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
22	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 940,000
Indirect Capital Costs					
1	Engineering, Design, and Permitting	12%	of	\$ 940,000	\$ 113,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 940,000	\$ 57,000
3	Construction Management	8%	of	\$ 940,000	\$ 76,000
Indirect Capital Total					\$ 246,000
Direct + Indirect Capital Total					\$ 1,186,000
Operation and Maintenance Costs					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
3	SVE periodic monitoring, operation, maintenance	12	mths	\$ 10,000	\$ 120,000
4	Fuel	12	mths	\$ 6,000	\$ 72,000
5	Electricity	12	mths	\$ 2,600	\$ 31,000
6	Maintenance (hardware, filters, monitoring equipment)	12	mths	\$ 2,000	\$ 24,000
7	Scrubber Chemicals (NaOH/caustic, antiscaling agents)	12	mths	\$ 2,000	\$ 24,000
8	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 5,000	\$ 60,000
9	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 8,000	\$ 96,000
10	Waste/Scrubber Water Disposal	12	mths	\$ 3,000	\$ 36,000
11	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
12	Cap Maintenance and Repair	1	year	\$ 11,000	\$ 11,000
SVE Annual Operation and Maintenance Subtotal					\$ 499,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 1,359,000
ICs, Cap, and SSV Annual Operation and Maintenance Subtotal					\$ 26,775
Present Worth of ICs + SSV + Cap (5%, 100 Years) O&M Costs					\$ 531,000
Contingency (20% of total project cost)					\$ 616,000
Total Capital and O&M Cost					\$ 3,691,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. Cl-VOC SVE (OS) system: Uses 23 V-SVE wells, 5-15 feet bgs screens.
4. Cl-VOC SVE uses thermal oxidizer and scrubber to treat HCl vapors. Cl-VOC influent concentration assumed about 500 ppmv, 250 scfm PD blower.
5. Assume SVE operation for 3 years.
6. SVE O&M cost is higher for this alternative due to the labor intensive nature of scrubber operations.
7. SSV assumed for this alternative instead of HVAC Mod.
8. SSV assumes piping laid in trenches inside building.
9. SSV system includes fan and carbon adsorbers as vapor control system.
10. SSV O&M includes periodic monitoring of vapor control system.
11. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

**TABLE D1.3-4
EAPC 16 - REMEDIAL ALTERNATIVE 5
CAPPING (non-VOC) + SVE/BV (OS) + SVE/BV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site**

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 124,000	\$ 124,000
3	Site preparation/Geophysical Survey	34,400	sf	\$ 0.80	\$ 28,000
4	Site Setup, Equipment Mobilization/Demobilization	34,400	sf	\$ 1.25	\$ 43,000
5	Slurry Seal over Existing Asphalt Pavement (non-VOCs)	6,400	sf	\$ 5	\$ 32,000
6	SVE Vertical Wells (V-SVE)	23	ea	\$ 5,000	\$ 115,000
7	SVE Horizontal Wells (H-SVE)	5	ea	\$ 25,000	\$ 125,000
8	Install Well Headworks/Vault	28	ea	\$ 1,500	\$ 42,000
9	Install Outdoor Vapor Monitoring Points	4	ea	\$ 2,000	\$ 8,000
10	Trenching, Piping, Backfill, Resurfacing	1,400	lf	\$ 30	\$ 42,000
11	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
12	Control and Instrumentation	1	ls	\$ 9,000	\$ 9,000
13	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 36,000	\$ 36,000
14	SVE System Installation and Startup	1	ea	\$ 75,000	\$ 75,000
15	SVE Emissions Treatment System (Thermal/Cat Ox) 750 cfm	1	ea	\$ 100,000	\$ 100,000
16	Scrubber for Thermal/Cat Ox Effluent	1	ea	\$ 100,000	\$ 100,000
17	Soil Confirmation Sampling and Analyses	66	samples	\$ 1,200	\$ 79,000
18	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 24,500	\$ 25,000
19	Air Monitoring/Sampling	18	days	\$ 2,500	\$ 45,000
20	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
21	Site Closure, decommissioning, well abandonment	1	ls	\$ 25,000	\$ 25,000
22	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 1,202,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	12%	of	\$ 1,202,000	\$ 145,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 1,202,000	\$ 73,000
3	Construction Management	8%	of	\$ 1,202,000	\$ 97,000
Indirect Capital Total					\$ 315,000
Direct + Indirect Capital Total					\$ 1,517,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 16,000	\$ 192,000
3	Fuel	12	mths	\$ 12,000	\$ 144,000
4	Electricity	12	mths	\$ 5,000	\$ 60,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 3,000	\$ 36,000
6	Scrubber Chemicals (NaOH/caustic, antiscaling agents)	12	mths	\$ 6,000	\$ 72,000
7	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 7,500	\$ 90,000
8	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 10,000	\$ 120,000
9	Waste/Scrubber Water Disposal	12	mths	\$ 6,000	\$ 72,000
10	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 4,000	\$ 48,000
11	Cap Maintenance and Repair	1	Year	\$ 11,000	\$ 11,000
12	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 834,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 2,272,000
ICs + SSV + Cap Annual O&M Subtotal					\$ 26,775
Present Worth of ICs + Cap + SSV (5%, 100 Years)					\$ 532,000
Contingency (20% of total project cost)					\$ 864,000
Total Capital and O&M Cost					\$ 5,185,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. CI-VOC SVE (OS+UB) system: Uses 23 V-SVE wells with 5-15 feet bgs screens and 5 H-SVE wells with average 100 feet screens installed @ 10 feet bgs.
4. Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
5. CI-VOC SVE uses thermal oxidizer and scrubber to treat HCl vapors. CI-VOC influent concentration assumed about 500 ppmv, 750 scfm PD blower.
6. Assume SVE operation for 3 years for both systems. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
7. SVE O&M cost is higher for this alternative due to the labor intensive nature of scrubber operations.
8. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

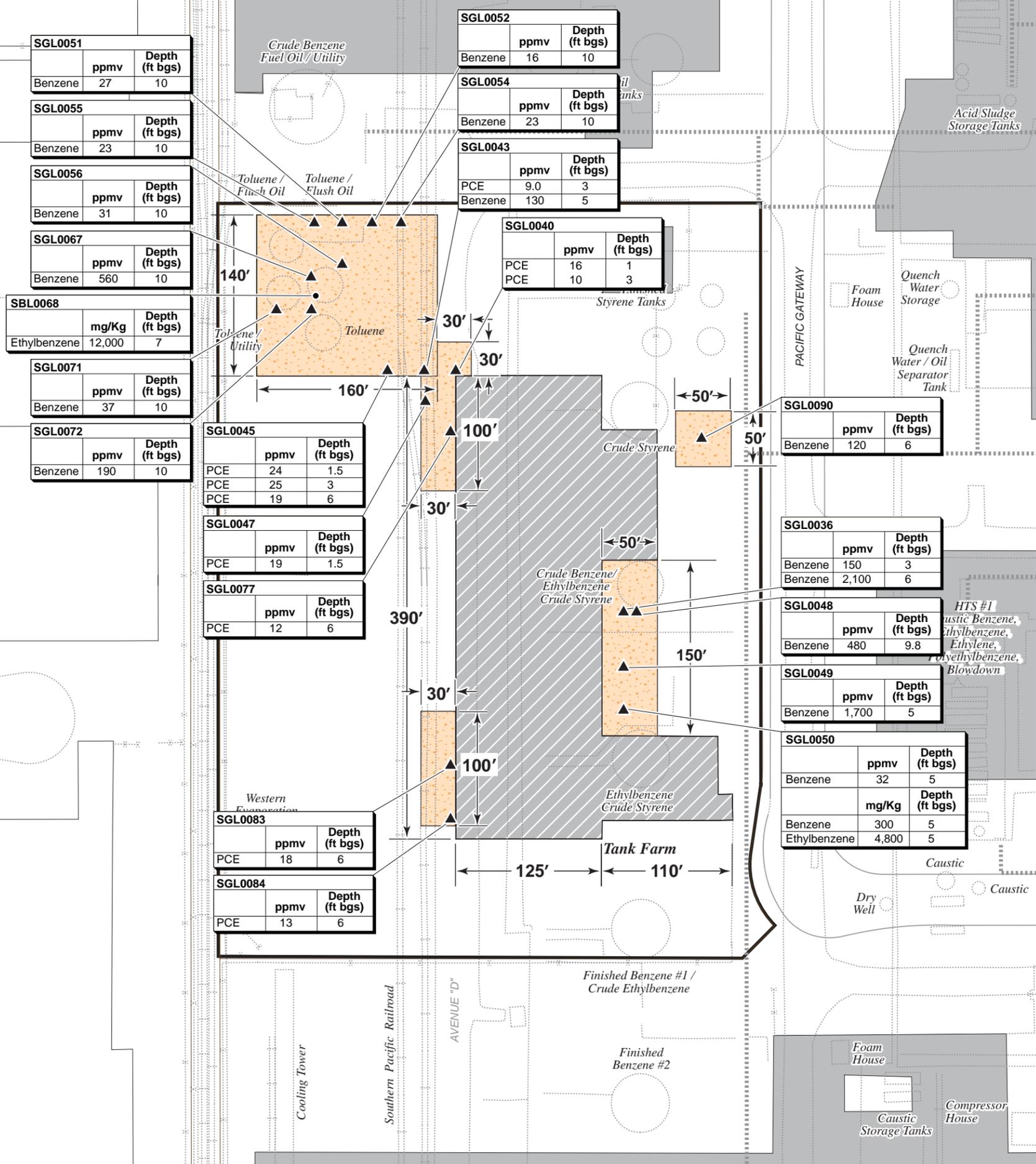
TABLE D1.3-5
EAPC 16 - REMEDIAL ALTERNATIVE 6
EXCAVATION (non-VOC, VOC) + SVE/BV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 169,000	\$ 169,000
3	Site preparation/Geophysical Survey	34,400	sf	\$ 0.80	\$ 28,000
4	Site Setup, Equipment Mobilization/Demobilization	34,400	sf	\$ 1.25	\$ 43,000
5	Shoring design and installation	3,600	sf	\$ 65	\$ 234,000
6	Excavation and Stockpile (< 15 feet bgs)	13,100	yd3	\$ 12	\$ 157,200
7	Clean overburden excavation for slope stabilization	2,188	yd3	\$ 12	\$ 26,250
8	Truck Load-out	13,100	yd3	\$ 2	\$ 26,200
9	Backfill and Compaction	14,410	yd ³	\$ 35	\$ 504,350
10	Asphalt pavement restoration	23,600	sf	\$ 10	\$ 236,000
11	SVE Horizontal Wells (H-SVE)	5	ea	\$ 25,000	\$ 125,000
12	Install Well Headworks/Vault	5	ea	\$ 1,500	\$ 7,500
13	Trenching, Piping, Backfill, Resurfacing	300	lf	\$ 30	\$ 9,000
14	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
15	Control and Instrumentation	1	ls	\$ 6,000	\$ 6,000
16	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 6,000	\$ 6,000
17	SVE System Installation and Startup	1	ea	\$ 50,000	\$ 50,000
18	SVE Emissions Treatment System (Thermal/Cat Ox), 500 cfm	1	ea	\$ 80,000	\$ 80,000
19	Scrubber for Thermal/Cat Ox Effluent	1	ea	\$ 85,000	\$ 85,000
20	Transportation and Off-Site Disposal	19,000	ton	\$ 100	\$ 1,900,000
21	Soil Confirmation Sampling and Analyses	123	samples	\$ 500	\$ 81,600
22	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 24,500	\$ 25,000
23	Air Monitoring/Sampling	60	days	\$ 2,500	\$ 150,000
24	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
25	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
26	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 4,108,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	8%	of	\$ 4,108,000	\$ 329,000
2	Project Management, Agency Reporting and Coordination	5%	of	\$ 4,108,000	\$ 206,000
3	Construction Management	6%	of	\$ 4,108,000	\$ 247,000
Indirect Capital Total					\$ 782,000
Direct + Indirect Capital Total					\$ 4,890,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 12,000	\$ 144,000
3	Fuel	12	mths	\$ 9,000	\$ 108,000
4	Electricity	12	mths	\$ 3,800	\$ 45,600
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 1,000	\$ 12,000
6	Scrubber Chemicals (NaOH/caustic, antiscaling agents)	12	mths	\$ 4,000	\$ 48,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 5,000	\$ 60,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 5,000	\$ 60,000
8	Waste/Scrubber Water Disposal	12	mths	\$ 4,000	\$ 48,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
10	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 561,600
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 1,529,000
ICs + SSV Annual O&M Subtotal					\$ 15,275
Present Worth of ICs + SSV (5%, 100 Years)					\$ 304,000
Contingency (25% of total project cost)					\$ 1,681,000
Total Capital and O&M Cost					\$ 8,404,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. Assume 240 linear feet of soldier pile shoring is needed.
3. Assume excavated soil is 33% RCRA haz, 33% Cal haz, and 33% non haz sent to a permitted facility.
4. CI-VOC SVE (UB) system: Uses 5 H-SVE wells with average 100 feet screens installed @ 10 feet bgs.
5. Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
6. CI-VOC SVE uses thermal oxidizer and scrubber to treat HCl vapors. CI-VOC influent concentration assumed about 500 ppmv, 500 scfm PD blower.
7. Assume SVE operation for 3 years. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
8. SVE O&M cost is higher for this alternative due to the labor intensive nature of scrubber operations.
9. ICs include IC layers 1, 2, 3, 4A and 5.

EAPC 23



Legend

- Parcel boundary
- Outlines of historical features with use/contents indicated
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Assumed extent of VOC-impacted shallow soil below building
- Assumed extent of VOC-impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Soil gas sampling point with contaminant concentration and depth of sample for locations where screening levels were exceeded
- Soil boring location with contaminant concentration and depth of sample for locations where screening levels were exceeded

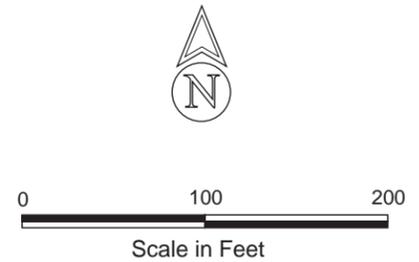
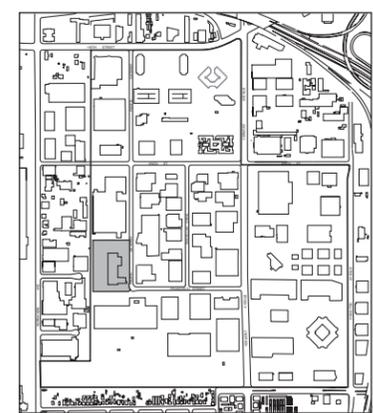
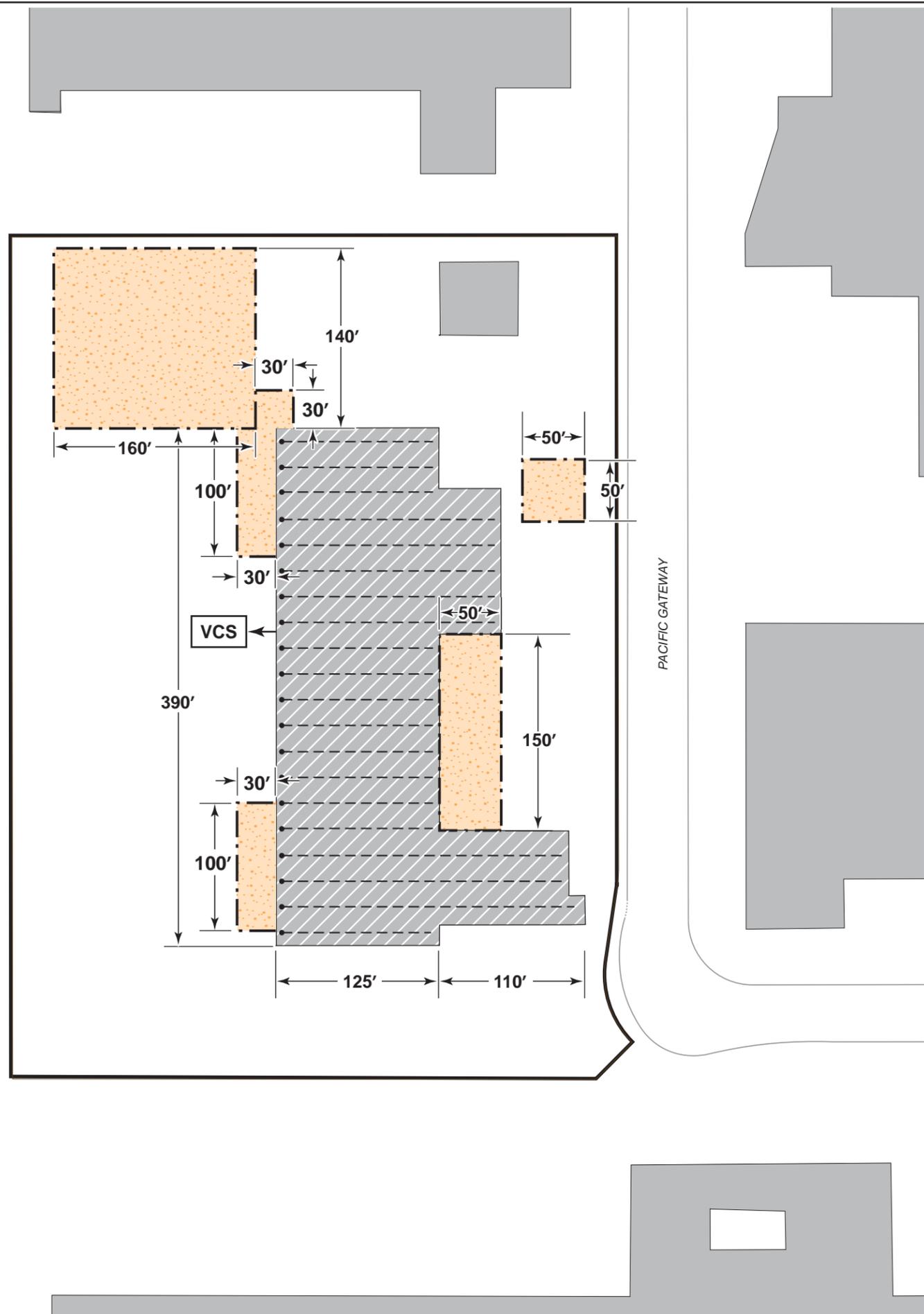


FIGURE 6.5-1
ASSUMED EXTENT OF IMPACTED SOIL
Parcel 7351- 034-057
 EAPC 23
 Del Amo Soil + NAPL FS





Legend

-  Parcel boundary
-  Assumed extent of VOC-impacted shallow soil below building
-  Assumed extent of VOC-impacted outdoor soil based on investigation data (RI Report, URS 2006)
-  Asphalt cap boundary (outdoor soil)
-  Perforated piping laid in trenches
-  Vapor collection system (for SSV)

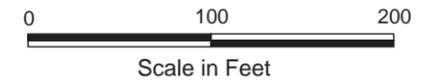
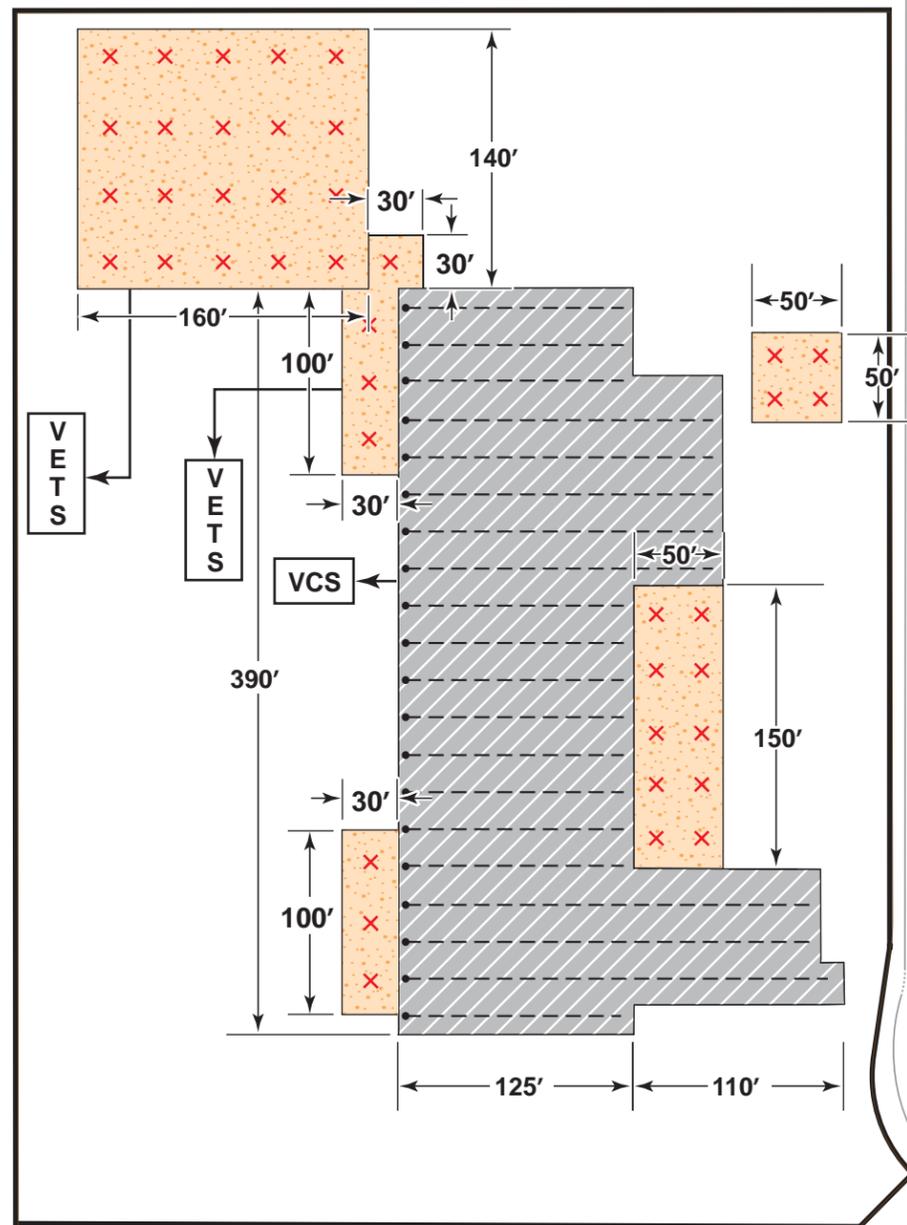


FIGURE 6.5-2
**Alternative 3
CAPPING FOR OUTDOOR SOIL
+ HVAC MOD/SSV UNDER BUILDING
Parcel 7351-034-057**
EAPC 23
Del Amo Soil + NAPL FS
URS



Legend

-  Parcel boundary
-  Assumed extent of indoor air VOC contamination based on investigation data (RI Report, URS 2006)
-  Assumed extent of VOC-impacted outdoor soil based on investigation data (RI Report, URS 2006)
-  Vertical SVE/BV wells (outdoor soil)
-  Perforated piping laid in trenches
-  VETS
Vapor extraction treatment system
-  VCS
Vapor collection system (for SSV)



FIGURE 6.5-3
Alternative 4
SVE/BV FOR OUTDOOR SOIL
+HVAC MOD/SSV UNDER BUILDING
 Parcel No. 7351-034-057
 EAPC 23
 Del Amo Soil + NAPL FS



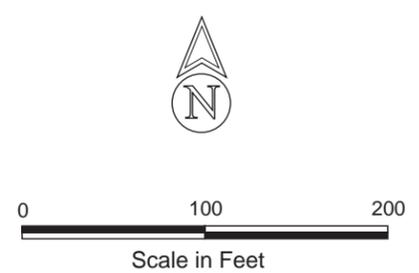


FIGURE 6.5-4
Alternative 5
SVE/BV FOR OUTDOOR SOIL
AND UNDER BUILDING
Parcel 7351-034-057
 EAPC 23
 Del Amo Soil + NAPL FS



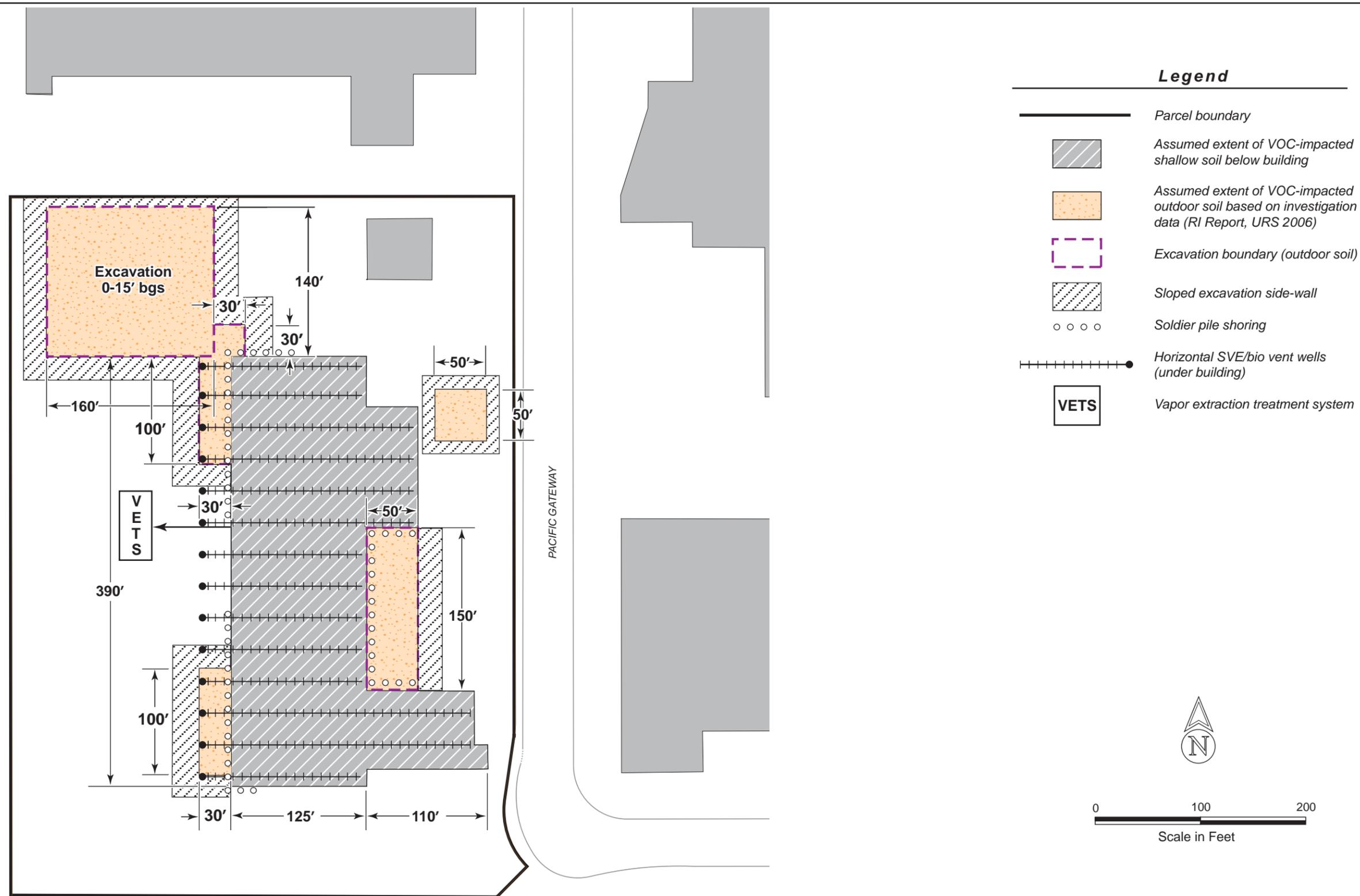


FIGURE 6.5-5
Alternative 6
EXCAVATION FOR OUTDOOR
SOIL AND SVE/BV UNDER BUILDING
Parcel 7351-034-057
 EAPC 23
 Del Amo Soil + NAPL FS

URS

TABLE D1.4-1
EAPC 23 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D1.4-2
EAPC 23 - REMEDIAL ALTERNATIVE 3
CAPPING (VOC) + HVAC MOD/SSV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 122,000	\$ 122,000
3	Site Preparation	101,550	sf	\$ 0.40	\$ 41,000
4	Site Setup, Equipment Mobilization	101,550	sf	\$ 0.75	\$ 77,000
5	Slurry Seal over Existing Asphalt Pavement	39,300	sf	\$ 5	\$ 197,000
6	Subslab Venting System under building (installed)	62,250	sf	\$ 5	\$ 312,000
7	Install Vapor Monitoring Points inside building	125	ea	\$ 500	\$ 63,000
8	Parcel Cleanup/Demobilization	1	ls	\$ 10,000	\$ 10,000
9	Remedial Action Monitoring	15	day	\$ 2,000	\$ 30,000
10	Remediation Documentation/Reporting	1	ls	\$ 20,000	\$ 20,000
11	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 10,000	\$ 10,000
Direct Capital Total					\$ 926,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	12%	of	\$ 926,000	\$ 112,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 926,000	\$ 56,000
3	Construction Management	8%	of	\$ 926,000	\$ 75,000
Indirect Capital Subtotal					\$ 243,000
Total Direct + Indirect Capital Cost					\$ 1,169,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SSV periodic monitoring, operation, maintenance, Reporting	1	year	\$ 12,000	\$ 12,000
3	Cap Maintenance and Repair	1	year	\$ 67,000	\$ 67,000
ICs, Cap, and SSV Annual Operation and Maintenance Subtotal					\$ 82,775
Present Worth of ICs + SSV + Cap (5%, 100 Years) O&M Costs					\$ 1,643,000
Contingency (20% of total project cost)					\$ 562,000
Total Capital and ICs, Cap, and SSV O&M Cost					\$ 3,374,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. SSV assumed for this alternative instead of HVAC Mod.
4. SSV assumes piping laid in trenches inside building.
5. SSV system includes fan and carbon adsorbers as vapor control system.
6. SSV O&M includes periodic monitoring of vapor control system.
7. Site investigation cost is based on an assumed sampling density.
8. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D1.4-3
EAPC 23 - REMEDIAL ALTERNATIVE 4
SVE/BV (OS) + HVAC MOD/SSV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 224,000	\$ 224,000
3	Site Preparation/Geophysical	101,550	sf	\$ 0.80	\$ 82,000
4	Site Setup, Equipment Mobilization/Demobilization	101,550	sf	\$ 1.25	\$ 127,000
5	SVE Vertical Wells (V-SVE)	41	ea	\$ 5,000	\$ 205,000
6	Install Well Headworks/Vault	41	ea	\$ 1,500	\$ 61,500
7	Install Outdoor Vapor Monitoring Points	18	ea	\$ 2,000	\$ 36,000
8	Trenching, Piping, Backfill, Resurfacing	2,100	lf	\$ 30	\$ 63,000
9	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
10	Control and Instrumentation	1	ea	\$ 9,000	\$ 9,000
11	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 40,000	\$ 40,000
12	SVE System Installation and Startup	1	ls	\$ 60,000	\$ 60,000
13	SVE Emissions Treatment System (Thermal/Cat Ox), Benzene VOCs 300 cfm	1	ea	\$ 75,000	\$ 75,000
14	SVE Emissions Treatment System, (GAC) Chlorinated VOCs 100 cfm	1	ea	\$ 25,000	\$ 25,000
15	Install Subslab Venting System under building	62,250	sf	\$ 5	\$ 311,250
16	Install Vapor Monitoring Points inside building	125	ea	\$ 500	\$ 63,000
17	Soil Confirmation Sampling and Analyses	72	samples	\$ 1,200	\$ 86,000
18	Air Monitoring/Sampling	25	days	\$ 2,500	\$ 63,000
19	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
20	Site Closure, decommissioning, well abandonment	1	ls	\$ 30,000	\$ 30,000
21	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 1,710,000
Indirect Capital Costs					
1	Engineering, Design, and Permitting	12%	of	\$ 1,710,000	\$ 206,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 1,710,000	\$ 103,000
3	Construction Management	8%	of	\$ 1,710,000	\$ 137,000
Indirect Capital Total					\$ 446,000
Direct + Indirect Capital Total					\$ 2,156,000
Operation and Maintenance Costs					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
3	SVE periodic monitoring, operation, maintenance	12	mths	\$ 8,000	\$ 96,000
4	Fuel (Benzene SVE)	12	mths	\$ 7,000	\$ 84,000
5	Electricity (Chlor and Benzene SVE)	12	mths	\$ 3,500	\$ 42,000
6	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 3,200	\$ 38,400
7	Carbon - Vapor Phase (chlor-SVE)	12	mths	\$ 8,000	\$ 96,000
8	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 8,000	\$ 96,000
9	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 8,000	\$ 96,000
10	Waste/Water Disposal	12	mths	\$ 4,800	\$ 57,600
11	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
SVE Annual Operation and Maintenance Subtotal					\$ 642,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 1,749,000
ICs and SSV Annual Operation and Maintenance Subtotal					\$ 15,775
Present Worth of ICs + SSV (5%, 100 Years) O&M Costs					\$ 314,000
Contingency (20% of total project cost)					\$ 844,000
Total Capital and O&M Cost					\$ 5,063,000

NOTES/ASSUMPTIONS

1. Benzene SVE (OS) system: Uses 34 V-SVE wells, 5-15 feet bgs screens
2. CI-VOC SVE (OS) system: Uses 7 V-SVE wells, 5-15 feet bgs screens
3. Benzene SVE uses thermal oxidizer, 300 scfm, positive displacement (PD) blower
4. CI-VOC SVE (OS) system: assume VPGAC (CI-VOC conc. < 25 ppmv) with two 2000 lb vessels, 100 scfm PD blower
5. Assume SVE operation for 3 years for both systems
6. SSV assumed for this alternative. No HVAC Mod option involved.
7. SSV assumes piping laid in trenches inside building
8. Assume 2 carbon changeout/month for VPGAC system with a total of 4000 lb/month at \$2/lb.
9. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D1.4-4
EAPC 23 - REMEDIAL ALTERNATIVE 5
SVE/BV (OS) + SVE/BV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 224,000	\$ 224,000
3	Site Preparation/Geophysical	101,550	sf	\$ 0.80	\$ 82,000
4	Site Setup, Equipment Mobilization/Demobilization	101,550	sf	\$ 1.25	\$ 127,000
5	SVE Vertical Wells (V-SVE)	41	ea	\$ 5,000	\$ 205,000
6	SVE Horizontal Wells (H-SVE)	14	ea	\$ 25,000	\$ 350,000
7	Install Well Headworks/Vault	55	ea	\$ 1,500	\$ 83,000
8	Install Outdoor Vapor Monitoring Points	18	ea	\$ 2,000	\$ 36,000
9	Trenching, Piping, Backfill, Resurfacing	2,800	lf	\$ 30	\$ 84,000
10	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
11	Control and Instrumentation	1	ls	\$ 15,000	\$ 15,000
12	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 50,000	\$ 50,000
13	SVE System Installation and Startup	2	ea	\$ 50,000	\$ 100,000
14	SVE EMISSIONS Treatment System (Thermal/Cat Ox), Benzene VOCs 2,000 scfm	1	ls	\$ 160,000	\$ 160,000
15	SVE Emissions Treatment System, (GAC) Chlorinated VOCs 100 cfm	1	ea	\$ 25,000	\$ 25,000
16	Soil Confirmation Sampling and Analyses	110	samples	\$ 1,200	\$ 132,000
17	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 124,750	\$ 125,000
18	Air Monitoring/Sampling	30	days	\$ 2,500	\$ 75,000
19	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
20	Site Closure, decommissioning, well abandonment	1	ls	\$ 25,000	\$ 25,000
21	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 2,037,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	8%	of	\$ 2,037,000	\$ 163,000
2	Project Management, Agency Reporting and Coordination	5%	of	\$ 2,037,000	\$ 102,000
3	Construction Management	6%	of	\$ 2,037,000	\$ 123,000
Indirect Capital Total					\$ 388,000
Direct + Indirect Capital Total					\$ 2,425,000
Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 16,400	\$ 197,000
3	Fuel (Benzene SVE)	12	mths	\$ 27,000	\$ 324,000
4	Electricity (Chlor and Benzene SVE)	12	mths	\$ 11,600	\$ 139,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 8,200	\$ 98,000
6	Carbon - Vapor Phase (chlor-SVE)	12	mths	\$ 8,000	\$ 96,000
7	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 12,000	\$ 144,000
8	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 16,000	\$ 192,000
9	Waste/Water Disposal	12	mths	\$ 6,000	\$ 72,000
10	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 4,000	\$ 48,000
11	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 1,310,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 3,568,000
ICs + SSV Annual O&M Subtotal					\$ 15,275
Present Worth of ICs + SSV (5%, 100 Years)					\$ 304,000
Contingency (20% of total project cost)					\$ 1,259,000
Total Capital and O&M Cost					\$ 7,556,000

NOTES/ASSUMPTIONS

1. Benzene SVE (OS+UB) system: Uses 34 V-SVE wells with 5-15 feet bgs screens, 14 H-SVE wells with average 150 feet screens installed @ 5-10 feet bgs.
2. Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
3. CI-VOC SVE (OS) system: Uses 7 V-SVE wells, 5-15 feet bgs screens.
4. Benzene SVE uses thermal oxidizer, 2,000 scfm, positive displacement (PD) blower.
5. CI-VOC SVE (OS) system: assume VPGAC (CI-VOC conc. < 25 ppmv) with two 2,000 lb vessels, 100 scfm PD blower.
6. Assume SVE operation for 3 years for both systems. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
7. ICs include IC layers 1, 2, 3, 4A and 5.

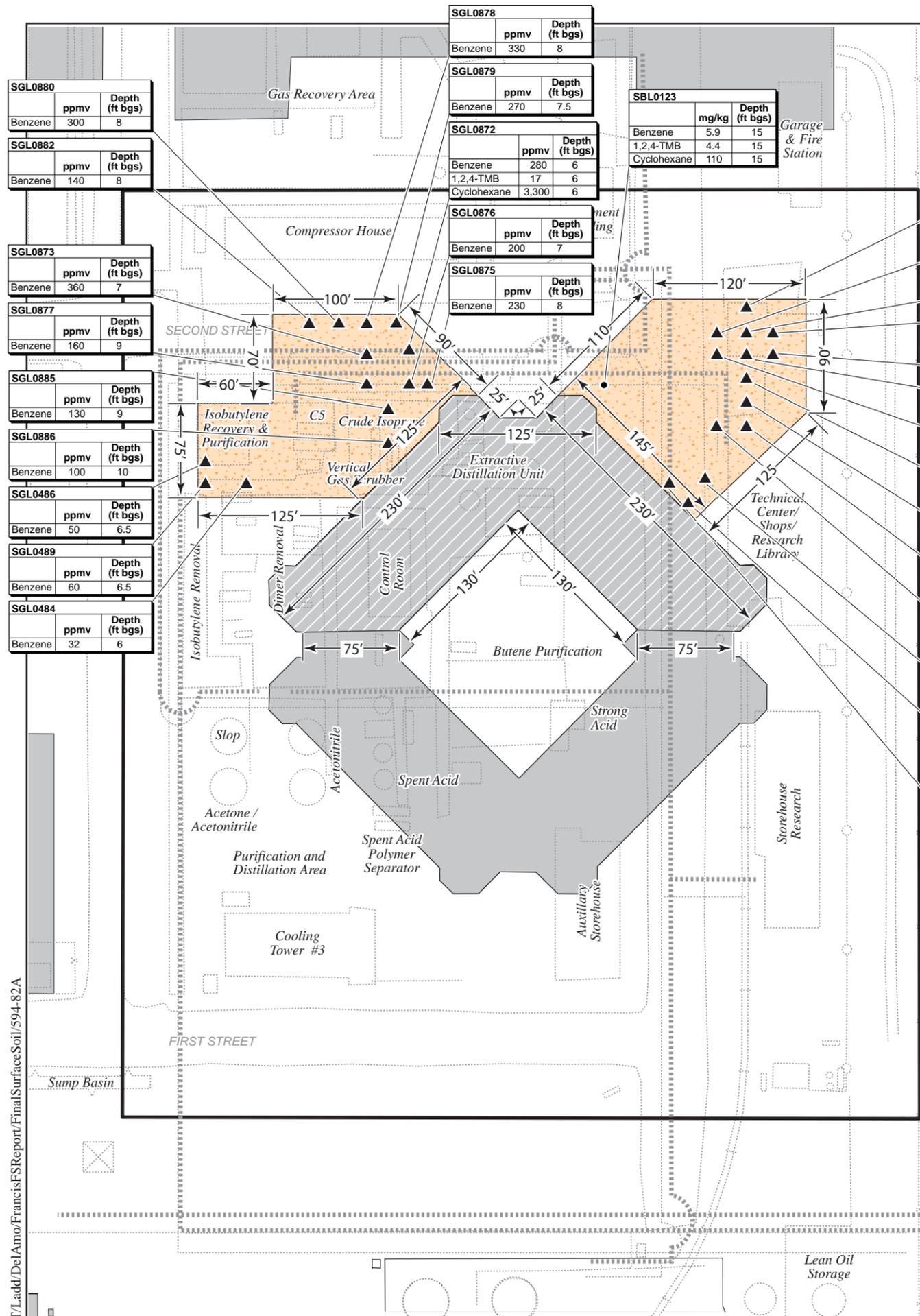
TABLE D1.4-5
EAPC 23 - REMEDIAL ALTERNATIVE 6
EXCAVATION (VOC) + SVE/BV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 325,000	\$ 325,000
3	Site Preparation/Geophysical	101,550	sf	\$ 0.80	\$ 82,000
4	Site Setup, Equipment Mobilization/Demobilization	101,550	sf	\$ 1.25	\$ 127,000
5	Shoring design and installation	9,450	sf	\$ 65	\$ 614,000
6	Excavation and Stockpile (< 15 feet bgs)	21,900	yd3	\$ 12	\$ 263,000
7	Clean overburden excavation for slope stabilization	5,800	yd3	\$ 12	\$ 70,000
8	Truck Load-out	21,900	yd3	\$ 2	\$ 44,000
9	Backfill and Compaction	24,090	yd ³	\$ 35	\$ 843,000
10	Asphalt pavement restoration	39,300	sf	\$ 10	\$ 393,000
11	SVE Horizontal Wells (H-SVE)	14	ea	\$ 25,000	\$ 350,000
12	Install Well Headworks/Vault	14	ea	\$ 1,500	\$ 21,000
13	Trenching, Piping, Backfill, Resurfacing	700	lf	\$ 30	\$ 21,000
14	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
15	Control and Instrumentation	1	ls	\$ 9,000	\$ 9,000
16	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	900	lf	\$ 10	\$ 9,000
17	SVE System Installation and Startup	1	ea	\$ 50,000	\$ 50,000
18	SVE Emissions Treatment System (Thermal/Cat Ox) 1,500 cfm	1	ea	\$ 130,000	\$ 130,000
19	Transportation and Off-Site Disposal	32,900	ton	\$ 100	\$ 3,290,000
20	Soil Confirmation Sampling and Analyses	281	samples	\$ 600	\$ 168,600
21	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 124,750	\$ 125,000
22	Air Monitoring/Sampling	95	days	\$ 2,500	\$ 237,500
23	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
24	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
25	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 7,331,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	8%	of	\$ 7,331,000	\$ 587,000
2	Project Management, Agency Reporting and Coordination	5%	of	\$ 7,331,000	\$ 367,000
3	Construction Management	6%	of	\$ 7,331,000	\$ 440,000
Indirect Capital Total					\$ 1,394,000
Direct + Indirect Capital Total					\$ 8,725,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 10,000	\$ 120,000
3	Fuel	12	mths	\$ 21,000	\$ 252,000
4	Electricity	12	mths	\$ 7,900	\$ 95,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 5,000	\$ 60,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 6,000	\$ 72,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 10,000	\$ 120,000
8	Waste/Water Disposal	12	mths	\$ 3,000	\$ 36,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
10	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 791,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 2,154,000
ICs + SSV Annual O&M Subtotal					\$ 15,275
Present Worth of ICs + SSV (5%, 100 Years)					\$ 304,000
Contingency (25% of total project cost)					\$ 2,796,000
Total Capital and O&M Cost					\$ 13,979,000

NOTES/ASSUMPTIONS

- Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
- Assume 630 linear feet of soldier pile shoring is needed.
- Assume excavated soil is 33% RCRA haz, 33% Cal haz, and 33% non haz sent to a permitted facility.
- Benzene SVE (UB) system: Uses 14 H-SVE wells with average 150 feet screens installed @ 5-10 feet bgs.
- Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
- Benzene SVE uses thermal oxidizer, 1,500 scfm, positive displacement (PD) blower.
- Assume SVE operation for 3 years. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
- ICs include IC layers 1, 2, 3, 4A and 5.

EAPC 5



SGL0878	ppmv	Depth (ft bgs)
Benzene	330	8

SGL0879	ppmv	Depth (ft bgs)
Benzene	270	7.5

SBL0123	mg/kg	Depth (ft bgs)
Benzene	5.9	15
1,2,4-TMB	4.4	15
Cyclohexane	110	15

SGL0872	ppmv	Depth (ft bgs)
Benzene	280	6
1,2,4-TMB	17	6
Cyclohexane	3,300	6

SGL0876	ppmv	Depth (ft bgs)
Benzene	200	7

SGL0875	ppmv	Depth (ft bgs)
Benzene	230	8

SGL0458	ppmv	Depth (ft bgs)
Benzene	74	5

SGL0440	ppmv	Depth (ft bgs)
Benzene	40	5.5

SGL0437	ppmv	Depth (ft bgs)
Benzene	180	5.5

SGL0435	ppmv	Depth (ft bgs)
Benzene	100	6

SGL0434	ppmv	Depth (ft bgs)
Benzene	230	6

SGL0436	ppmv	Depth (ft bgs)
Benzene	280	5.5

SGL0438	ppmv	Depth (ft bgs)
Benzene	290	5.5

SGL0442	ppmv	Depth (ft bgs)
Benzene	380	5.5

SGL0444	ppmv	Depth (ft bgs)
Benzene	340	9.5

SGL0445	ppmv	Depth (ft bgs)
Benzene	250	6.5

SGL0446	ppmv	Depth (ft bgs)
Benzene	340	6.5

SGL0455	ppmv	Depth (ft bgs)
Benzene	53	6

SGL0453	ppmv	Depth (ft bgs)
Benzene	90	6.5

SGL0454	ppmv	Depth (ft bgs)
Benzene	33	6.5

Legend

- Parcel boundary
- Outlines of historical features with use/contents indicated
- Acetone / Acetonitrile
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Assumed extent of VOC-impacted shallow soil below building
- Assumed extent of VOC-impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Soil boring location with contaminant concentration and depth of sample for locations where screening levels were exceeded
- Soil gas sampling point with contaminant concentration and depth of sample for locations where screening levels were exceeded

Acronym

1,2,4-TMB 1,2,4-Trimethylbenzene

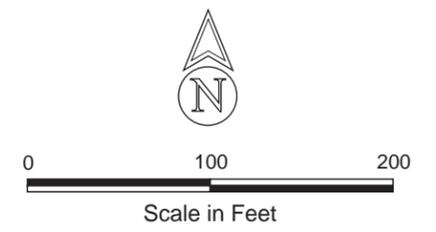
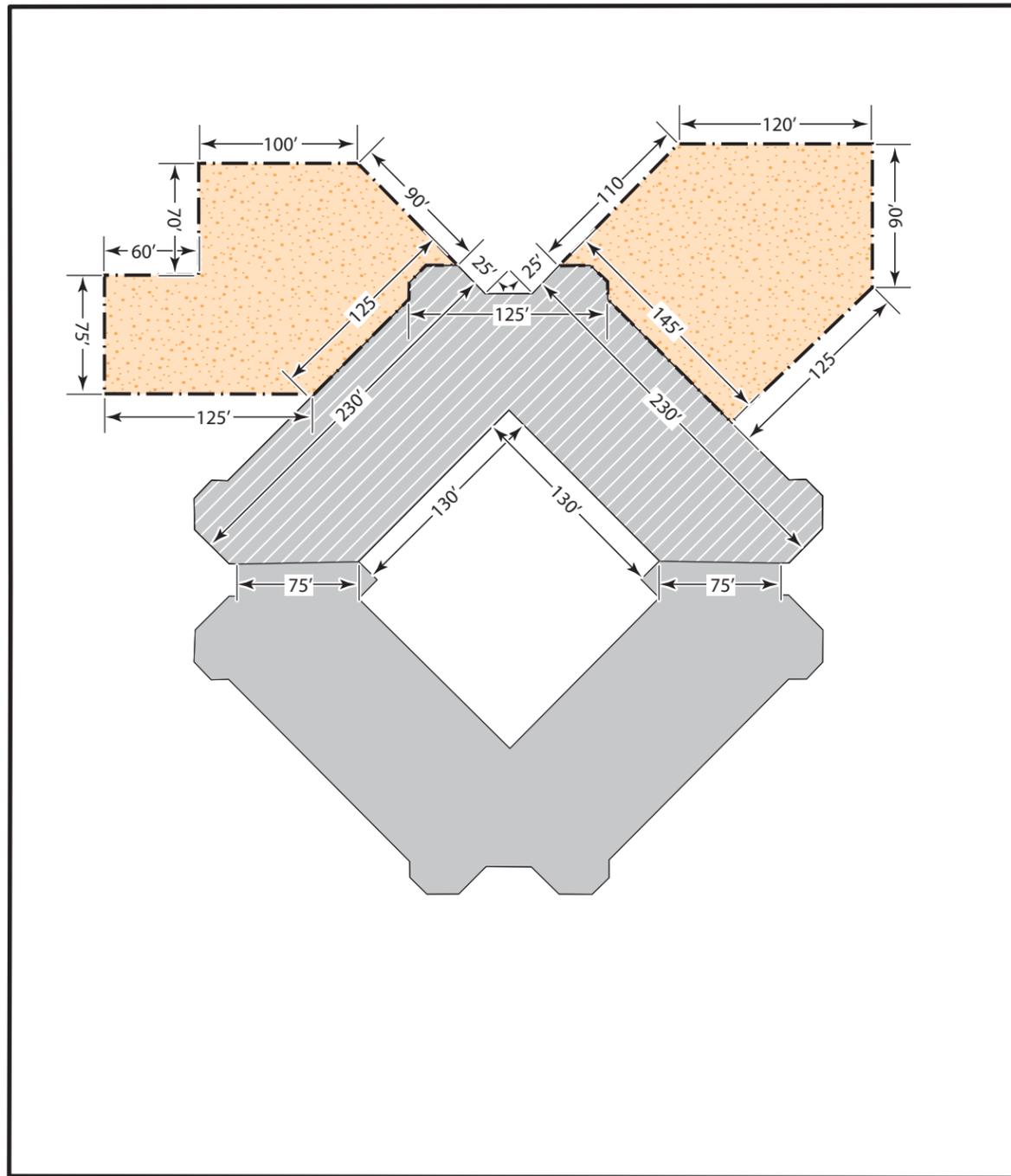


FIGURE 6.6-1
ASSUMED EXTENT OF IMPACTED SOIL
 Parcel No. 7351-033-017
 EAPC 5
 Del Amo Soil + NAPL FS





HAMILTON AVENUE

Legend

-  Parcel boundary
-  Assumed extent of VOC-impacted shallow soil below building
-  Assumed extent of VOC-impacted outdoor soil based on investigation data (RI Report, URS 2006)
-  Asphalt cap boundary (outdoor soil)

Note:
 HVAC modification is assumed for this remedial alternative rather than SSV. HVAC mod includes modification of the existing ventilation fan, air registers, ducts and other equipment to ensure building pressurization. Since this involves modification of existing HVAC equipment, this is not shown in the figure.

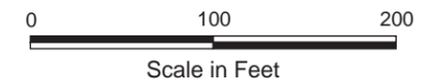
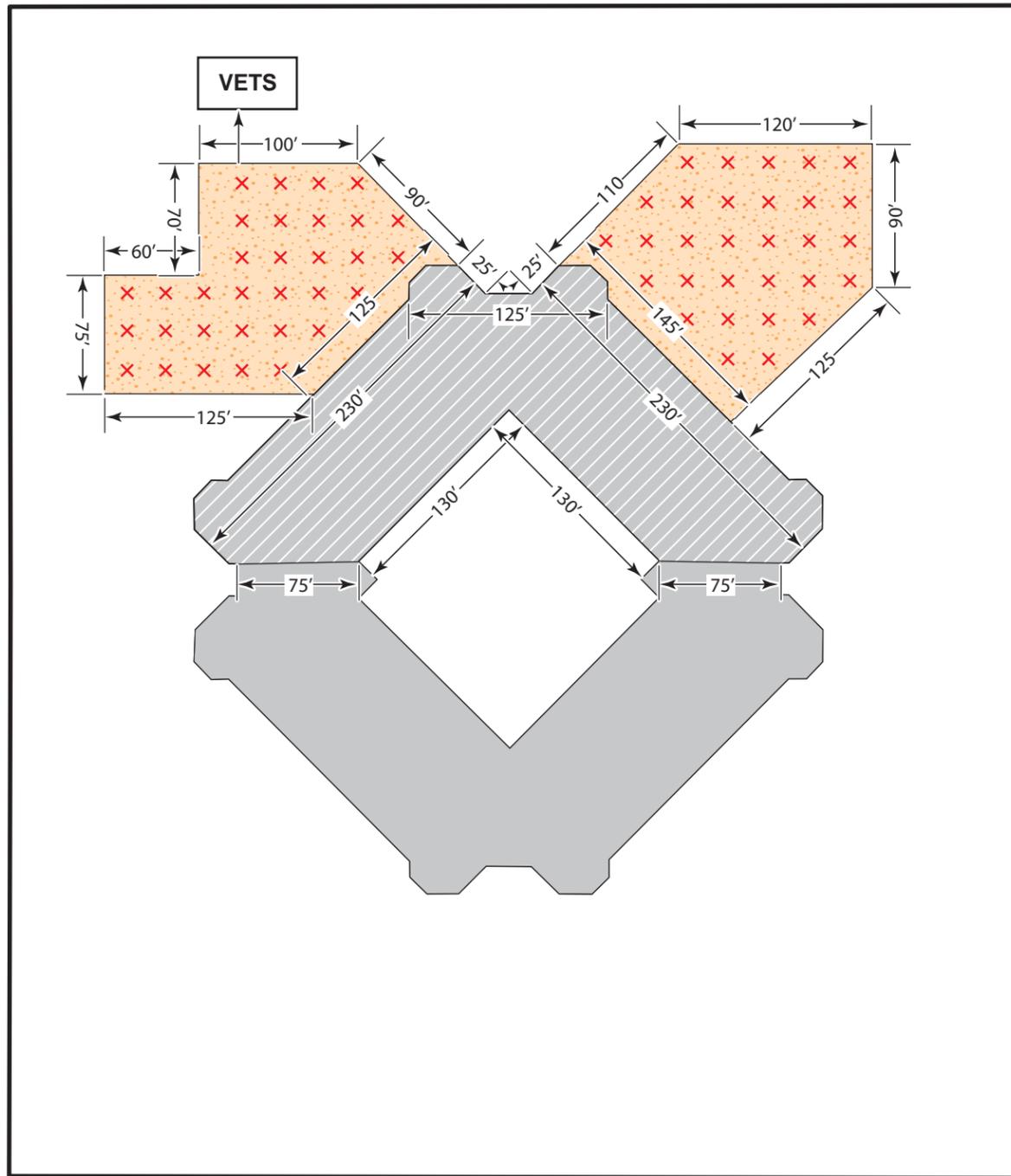


FIGURE 6.6-2
Alternative 3
CAPPING FOR OUTDOOR SOIL
+ HVAC MOD/SSV UNDER BUILDING
 Parcel No. 7351-033-017
 EAPC 5
 Del Amo Soil + NAPL FS





HAMILTON AVENUE

Legend

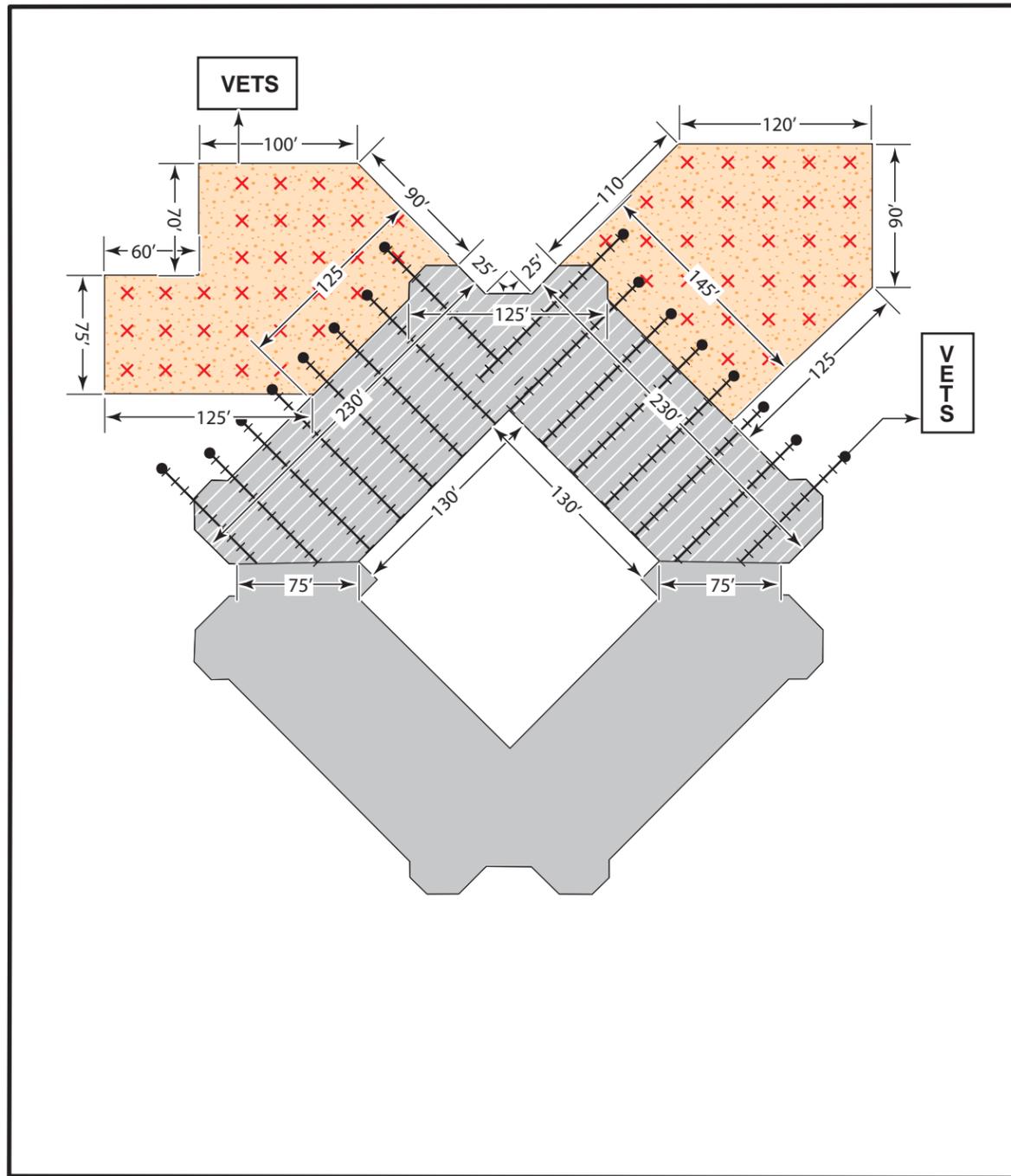
- Parcel boundary
- Assumed extent of VOC-impacted shallow soil below building
- Assumed extent of VOC-impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Vertical SVE/BV wells (outdoor soil)
- Vapor extraction treatment system

Note:
 HVAC modification is assumed for this remedial alternative rather than SSV. HVAC mod includes modification of the existing ventilation fan, air registers, ducts and other equipment to ensure building pressurization. Since this involves modification of existing HVAC equipment, this is not shown in the figure.



FIGURE 6.6-3
Alternative 4
SVE/BV FOR OUTDOOR SOIL
+ HVAC MOD/SSV UNDER BUILDING
 Parcel No. 7351-033-017
 EAPC 5
 Del Amo Soil + NAPL FS





HAMILTON AVENUE

Legend

- Parcel boundary
-  Assumed extent of VOC-impacted shallow soil below building
-  Assumed extent of VOC-impacted outdoor soil based on investigation data (RI Report, URS 2006)
-  Vertical SVE/BV wells (outdoor soil)
- Horizontal SVE/BV wells (under building)
-  Vapor extraction treatment system

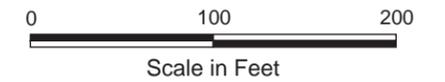
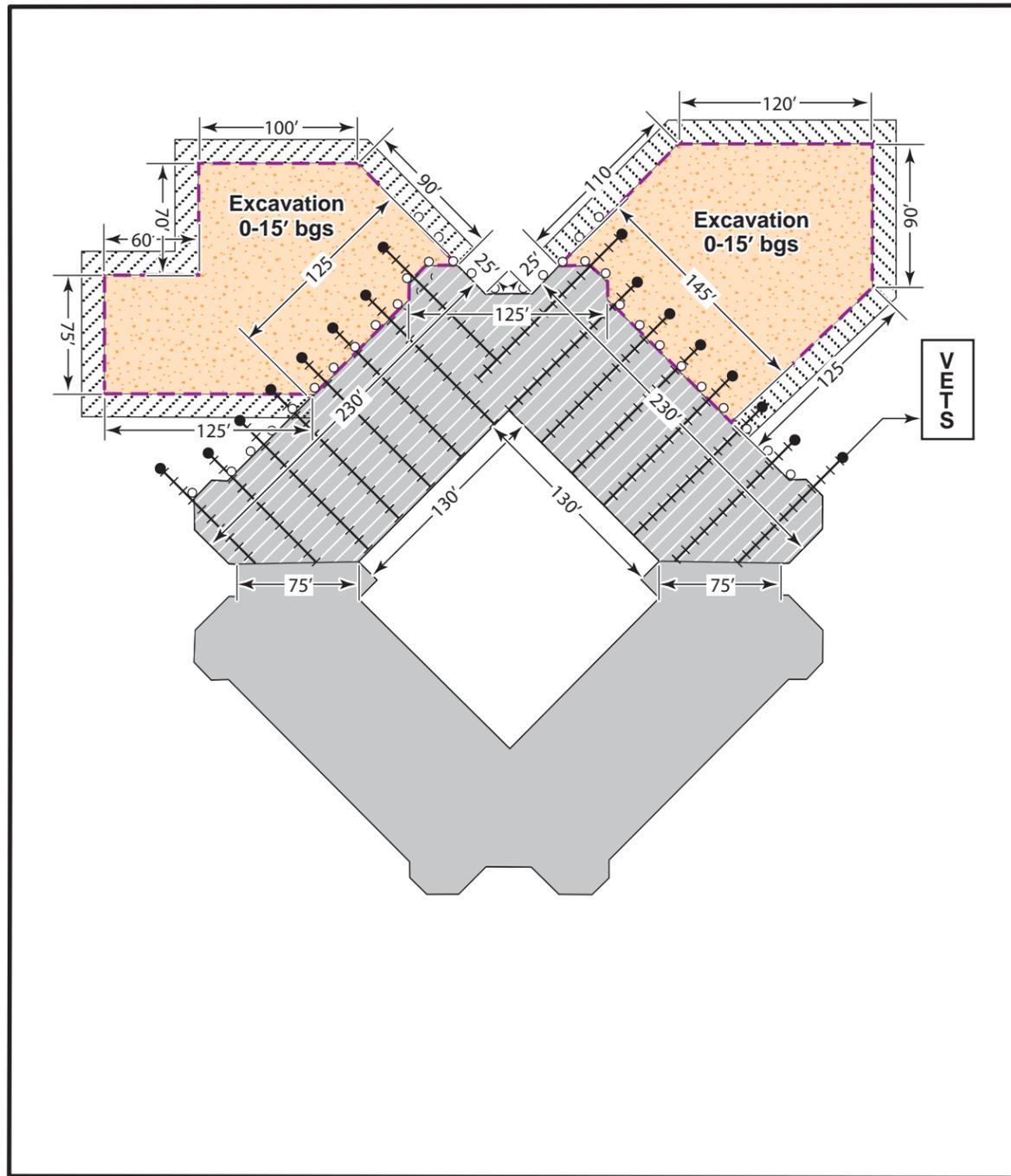


FIGURE 6.6-4
Alternative 5
SVE/BV FOR OUTDOOR SOIL
& UNDER BUILDING
 Parcel No. 7351-033-017
 EAPC 5
 Del Amo Soil + NAPL FS





HAMILTON AVENUE

Legend

- Parcel boundary
- Assumed extent of VOC-impacted shallow soil below building
- Assumed extent of VOC-impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Excavation boundary (outdoor soil)
- Sloped excavation sidewall
- Shoring (sheet pile or soldier pile)
- Horizontal SVE/BV wells (under building)
- Vapor extraction treatment system

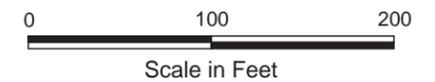


FIGURE 6.6-5
Alternative 6
EXCAVATION FOR OUTDOOR SOIL
+SVE/BV UNDER BUILDING
Parcel No. 7351-033-017
 EAPC 5
 Del Amo Soil + NAPL FS



**TABLE D1.5-1
EAPC 5 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site**

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D1.5-2
EAPC 5 - REMEDIAL ALTERNATIVE 3
CAPPING (VOCs) + HVAC MOD/SSV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 106,845	\$ 107,000
3	Site preparation	86,845	sf	\$ 0.40	\$ 35,000
4	Site Setup, Equipment Mobilization	86,845	sf	\$ 0.75	\$ 66,000
5	Slurry Seal over Existing Asphalt Pavement	44,045	sf	\$ 5	\$ 221,000
6	HVAC Mod System under building (installed)	42,800	sf	\$ 5	\$ 214,000
7	Install Vapor Monitoring Points inside building	86	ea	\$ 500	\$ 43,000
8	Parcel Cleanup/Demobilization	1	ls	\$ 10,000	\$ 10,000
9	Remedial Action Monitoring	12	day	\$ 2,000	\$ 24,000
10	Remediation Documentation/Reporting	1	ls	\$ 20,000	\$ 20,000
11	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 10,000	\$ 10,000
Direct Capital Total					\$ 794,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	12%	of	\$ 794,000	\$ 96,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 794,000	\$ 48,000
3	Construction Management	8%	of	\$ 794,000	\$ 64,000
Indirect Capital Subtotal					\$ 208,000
Total Direct + Indirect Capital Cost					\$ 1,002,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	HVAC periodic monitoring, operation, maintenance	1	year	\$ 12,000	\$ 12,000
3	Cap Maintenance and Repair	1	year	\$ 75,000	\$ 75,000
ICs, Cap, and HVAC Annual Operation and Maintenance Subtotal					\$ 90,775
Present Worth of ICs + Cap + HVAC (5%, 100 Years) O&M Costs					\$ 1,802,000
Contingency (20% of total project cost)					\$ 561,000
Total Capital and O&M Cost					\$ 3,365,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. HVAC Mod assumed for this alternative instead of SSV.
4. HVAC Mod involves modification of HVAC system to enable building pressurization.
5. HVAC O&M includes maintenance of HVAC system and monitoring of building pressurization.
6. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D1.5-3
EAPC 5 - REMEDIAL ALTERNATIVE 4
SVE/BV (OS) + HVAC MOD/SSV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 193,690	\$ 194,000
3	Site preparation/Geophysical Survey	86,845	sf	\$ 0.8	\$ 70,000
4	Site Setup, Equipment Mobilization/Demobilization	86,845	sf	\$ 1.25	\$ 109,000
5	SVE Vertical Wells (V-SVE)	62	ea	\$ 5,000	\$ 310,000
6	Install Well Headworks/Vault	62	ea	\$ 1,500	\$ 93,000
7	Install Outdoor Vapor Monitoring Points	8	ea	\$ 2,000	\$ 16,000
8	Trenching, Piping, Backfill, Resurfacing	6,200	lf	\$ 30	\$ 186,000
9	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
10	Control and Instrumentation	1	ls	\$ 10,000	\$ 10,000
11	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 80,000	\$ 80,000
12	SVE System Installation and Startup	1	ea	\$ 50,000	\$ 50,000
13	SVE Emissions Treatment System (Thermal/Cat Ox) 500 cfm	1	ea	\$ 80,000	\$ 80,000
14	Install HVAC Modification in building	42,800	sf	\$ 5	\$ 214,000
15	Install Vapor Monitoring Points inside building	86	ea	\$ 500	\$ 43,000
16	Soil Confirmation Sampling and Analyses	50	samples	\$ 1,000	\$ 50,000
17	Air Monitoring/Sampling	20	days	\$ 2,500	\$ 50,000
18	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
19	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
20	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 1,724,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	8%	of	\$ 1,724,000	\$ 138,000
2	Project Management, Agency Reporting and Coordination	5%	of	\$ 1,724,000	\$ 87,000
3	Construction Management	6%	of	\$ 1,724,000	\$ 104,000
Indirect Capital Total					\$ 329,000
Direct + Indirect Capital Total					\$ 2,053,000
Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	HVAC periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
3	SVE periodic monitoring, operation, maintenance	12	mths	\$ 8,000	\$ 96,000
4	Fuel	12	mths	\$ 9,000	\$ 108,000
5	Electricity	12	mths	\$ 3,200	\$ 39,000
6	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 3,600	\$ 43,000
7	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 6,000	\$ 72,000
8	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 8,000	\$ 96,000
9	Waste/Water Disposal	12	mths	\$ 2,000	\$ 24,000
10	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
SVE Annual Operation and Maintenance Subtotal					\$ 514,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 1,400,000
ICs and HVAC Annual Operation and Maintenance Subtotal					\$ 15,775
Present Worth of ICs + HVAC (5%, 100 Years) O&M Costs					\$ 314,000
Contingency (20% of total project cost)					\$ 753,000
Total Capital and O&M Cost					\$ 4,520,000

NOTES/ASSUMPTIONS

1. Benzene SVE (OS) system: Uses 62 V-SVE wells, 5-15 feet bgs screens.
2. Benzene SVE uses thermal oxidizer, 500 scfm, positive displacement (PD) blower.
3. Assume SVE operation for 3 years.
4. HVAC Mod assumed for this alternative instead of SSV.
5. HVAC Mod involves modification of HVAC system to enable building pressurization.
6. HVAC O&M includes maintenance of HVAC system and monitoring of building pressurization.
7. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D1.5-4
EAPC 5 - REMEDIAL ALTERNATIVE 5
SVE/BV (OS) + SVE/BV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 193,690	\$ 194,000
3	Site preparation/Geophysical Survey	86,845	sf	\$ 0.8	\$ 70,000
4	Site Setup, Equipment Mobilization/Demobilization	86,845	sf	\$ 1.25	\$ 109,000
5	SVE Vertical Wells (V-SVE)	62	ea	\$ 5,000	\$ 310,000
6	SVE Horizontal Wells (H-SVE)	16	ea	\$ 25,000	\$ 400,000
7	Install Well Headworks/Vault	78	ea	\$ 1,500	\$ 117,000
8	Install Outdoor Vapor Monitoring Points	8	ea	\$ 2,000	\$ 16,000
9	Trenching, Piping, Backfill, Resurfacing	7,800	lf	\$ 30	\$ 234,000
10	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
11	Control and Instrumentation	1	ls	\$ 11,000	\$ 11,000
12	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 50,000	\$ 50,000
13	SVE System Installation and Startup	1	ea	\$ 75,000	\$ 75,000
14	SVE Emissions Treatment System (Thermal/Cat Ox) 1,500 cfm	1	ea	\$ 130,000	\$ 130,000
15	Soil Confirmation Sampling and Analyses	99	samples	\$ 1,000	\$ 99,000
16	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 85,800	\$ 86,000
17	Air Monitoring/Sampling	50	days	\$ 2,500	\$ 125,000
18	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
19	Site Closure, decommissioning, well abandonment	1	ls	\$ 30,000	\$ 30,000
20	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 2,195,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	8%	of	\$ 2,195,000	\$ 176,000
2	Project Management, Agency Reporting and Coordination	5%	of	\$ 2,195,000	\$ 110,000
3	Construction Management	6%	of	\$ 2,195,000	\$ 132,000
Indirect Capital Total					\$ 418,000
Direct + Indirect Capital Total					\$ 2,613,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 12,000	\$ 144,000
3	Fuel	12	mths	\$ 21,000	\$ 252,000
4	Electricity	12	mths	\$ 7,900	\$ 95,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 7,000	\$ 84,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 10,000	\$ 120,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 12,000	\$ 144,000
8	Waste/Water Disposal	12	mths	\$ 4,000	\$ 48,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 4,000	\$ 48,000
10	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 935,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 2,547,000
ICs + SSV Annual O&M Subtotal					\$ 15,275
Present Worth of ICs + SSV (5%, 100 Years)					\$ 304,000
Contingency (20% of total project cost)					\$ 1,093,000
Total Capital and O&M Cost					\$ 6,557,000

NOTES/ASSUMPTIONS

1. Benzene SVE (OS+UB) system: Uses 62 V-SVE wells with 5-15 feet bgs screens and 16 H-SVE wells with average 100 feet screens installed @ 10 feet bgs.
2. Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
3. Benzene SVE uses thermal oxidizer, 1,500 scfm, positive displacement (PD) blower.
4. Assume SVE operation for 3 years. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
5. Site investigation cost is based on an assumed sampling density.
6. ICs include IC layers 1, 2, 3, 4A and 5.

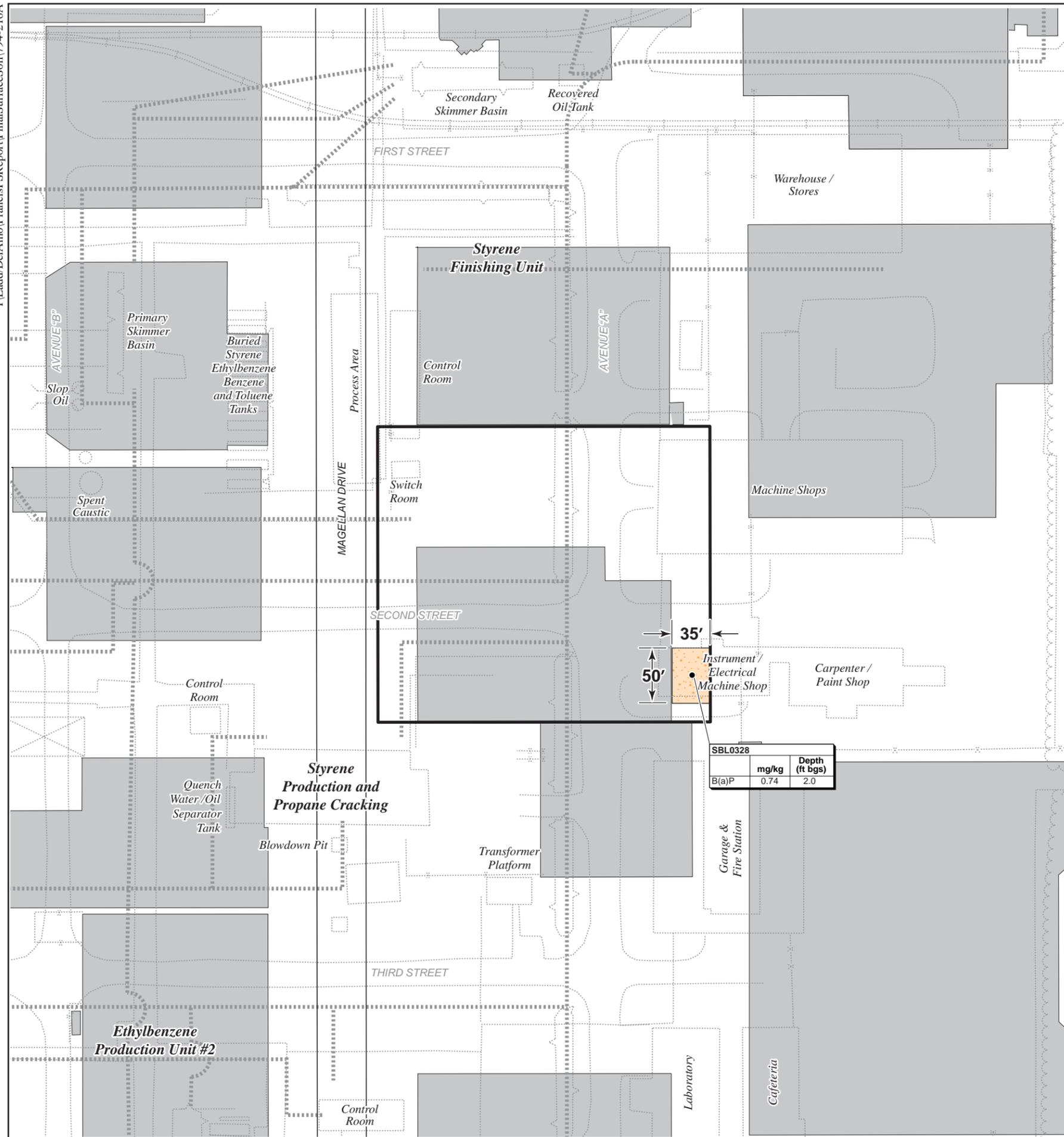
TABLE D1.5-5
EAPC 5 - REMEDIAL ALTERNATIVE 6
EXCAVATION (VOCs) + SVE/BV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 275,000	\$ 275,000
3	Site preparation/Geophysical Survey	86,845	sf	\$ 0.8	\$ 70,000
4	Site Setup, Equipment Mobilization/Demobilization	86,845	sf	\$ 1.25	\$ 109,000
5	Shoring design and installation	8,250	sf	\$ 65	\$ 536,000
6	Excavation and Stockpile (< 15 feet bgs)	24,500	yd3	\$ 12	\$ 294,000
7	Clean overburden excavation for slope stabilization	6,000	yd3	\$ 12	\$ 72,000
8	Truck Load-out	24,500	yd3	\$ 2	\$ 49,000
9	Backfill and Compaction	26,950	yd ³	\$ 35	\$ 943,000
10	Asphalt pavement restoration	44,045	sf	\$ 10	\$ 441,000
11	SVE Horizontal Wells (H-SVE)	16	ea	\$ 25,000	\$ 400,000
12	Install Well Headworks/Vault	16	ea	\$ 1,500	\$ 24,000
13	Trenching, Piping, Backfill, Resurfacing	600	lf	\$ 30	\$ 18,000
14	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
15	Control and Instrumentation	1	ls	\$ 10,000	\$ 10,000
16	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 40,000	\$ 40,000
17	SVE System Installation and Startup	1	ea	\$ 50,000	\$ 50,000
18	SVE Emissions Treatment System (Thermal/Cat Ox) 1,000 cfm	1	ea	\$ 120,000	\$ 120,000
19	Transportation and Off-Site Disposal	36,750	ton	\$ 100	\$ 3,675,000
20	Soil Confirmation Sampling and Analyses	307	samples	\$ 300	\$ 93,000
21	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 85,800	\$ 86,000
22	Air Monitoring/Sampling	107	days	\$ 2,500	\$ 268,000
23	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
24	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
25	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 7,732,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	8%	of	\$ 7,732,000	\$ 619,000
2	Project Management, Agency Reporting and Coordination	5%	of	\$ 7,732,000	\$ 387,000
3	Construction Management	6%	of	\$ 7,732,000	\$ 464,000
Indirect Capital Total					\$ 1,470,000
Direct + Indirect Capital Total					\$ 9,202,000
Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 10,000	\$ 120,000
3	Fuel	12	mths	\$ 15,000	\$ 180,000
4	Electricity	12	mths	\$ 5,500	\$ 66,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 3,600	\$ 43,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 6,000	\$ 72,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 10,000	\$ 120,000
8	Waste/Water Disposal	12	mths	\$ 3,000	\$ 36,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
10	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 673,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 1,833,000
ICs + SSV Annual O&M Subtotal					\$ 15,275
Present Worth of ICs + SSV (5%, 100 Years)					\$ 304,000
Contingency (25% of total project cost)					\$ 2,835,000
Total Capital and O&M Cost					\$ 14,174,000

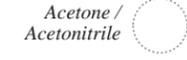
NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. Assume 550 linear feet of soldier pile shoring is needed with shoring cross-section area of 8250 square feet.
3. Assume excavated soil is 33% RCRA haz, 33% Cal haz, and 33% non haz sent to a permitted facility.
4. Benzene SVE (UB) system: Uses 16 H-SVE wells with average 100 feet screens installed @ 10 feet bgs.
5. Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
6. Benzene SVE uses thermal oxidizer, 1,000 scfm, positive displacement (PD) blower.
7. Assume SVE operation for 3 years. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
8. ICs include IC layers 1, 2, 3, 4A and 5.

EAPC 32



Legend

-  Parcel boundary
-  Cooling Tower #3
-  Acetone / Acetonitrile
-  Outlines of historical features with use/contents indicated
-  Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
-  Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
-  Soil boring location with contaminant concentration and depth of sample for locations where sampling levels were exceeded

SBL0328	mg/kg	Depth (ft bgs)
B(a)P	0.74	2.0

Acronym

B(a)P Benzo(a)Pyrene



Area shown in this map

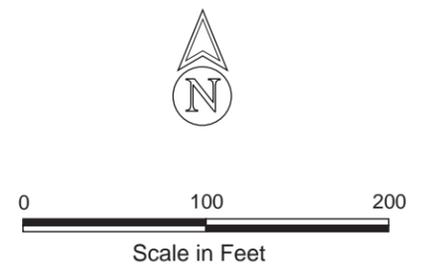


FIGURE 6.7-1
ASSUMED EXTENT OF IMPACTED SOIL
 Parcel No. 7351-034-076
 EAPC 32
 Del Amo Soil + NAPL FS





Legend

- Parcel boundary
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Asphalt cap boundary (outdoor soil)

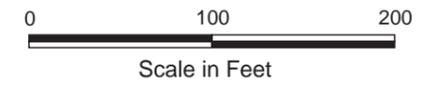
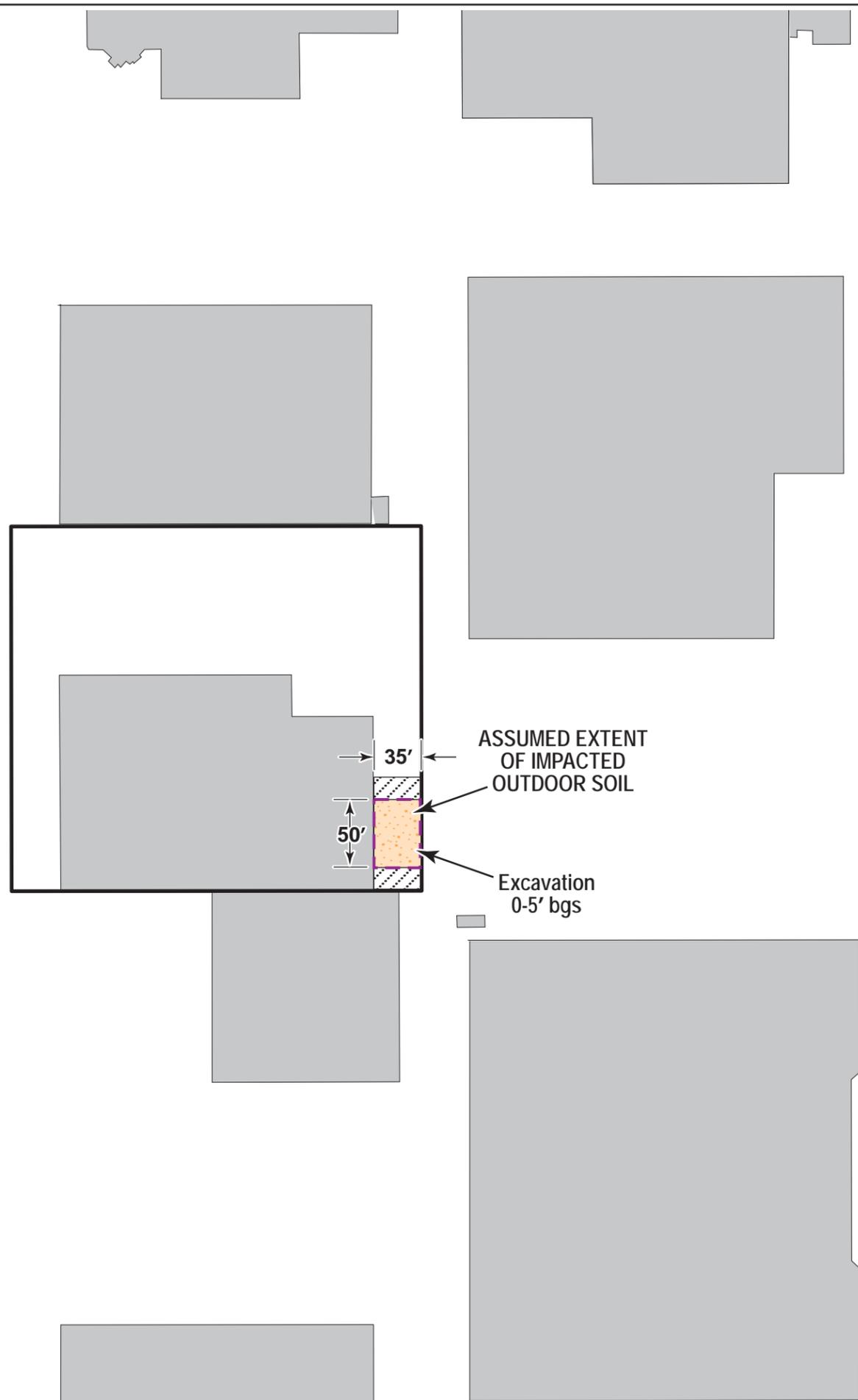


FIGURE 6.7-2
Alternative 3
CAPPING FOR OUTDOOR SOIL
Parcel No. 7351-034-076
EAPC 32
Del Amo Soil + NAPL FS



MAGELLAN DRIVE



Legend

- Parcel boundary
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Excavation boundary (outdoor soil)
- Sloped excavation sidewall

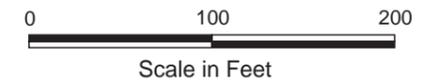


FIGURE 6.7-3

Alternative 4
EXCAVATION FOR OUTDOOR SOIL
Parcel No. 7351-034-076
EAPC 32
Del Amo Soil + NAPL FS



TABLE D1.6-1
EAPC 32 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D1.6-2
EAPC 32 - REMEDIAL ALTERNATIVE 3
CAPPING (B(a)P) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 12,000	\$ 12,000
3	Site preparation	1,750	sf	\$ 0.40	\$ 1,000
4	Equipment Mobilization	1,750	sf	\$ 0.75	\$ 2,000
5	Slurry Seal over Existing Asphalt Pavement	1,750	sf	\$ 5	\$ 9,000
6	Parcel Cleanup/Demobilization	1	ls	\$ 3,000	\$ 3,000
7	Remedial Action Monitoring	1	day	\$ 2,000	\$ 2,000
8	Remediation Documentation/Reporting	1	ls	\$ 10,000	\$ 10,000
9	Health and Safety, ODCs	1	ls	\$ 5,000	\$ 5,000
Direct Capital Total					\$ 88,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 88,000	\$ 13,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 88,000	\$ 7,000
3	Construction Management	10%	of	\$ 88,000	\$ 9,000
Indirect Capital Subtotal					\$ 29,000
Total Direct + Indirect Capital Cost					\$ 117,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	Cap Maintenance and Repair	1	year	\$ 3,000	\$ 3,000
Cap + ICs Annual Operation and Maintenance Subtotal					\$ 6,775
Present Worth of ICs + Cap (5%, 100 Years) O&M Costs					\$ 135,000
Contingency (20% of total project cost)					\$ 50,000
Total Capital and Cap + ICs O&M Cost					\$ 302,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

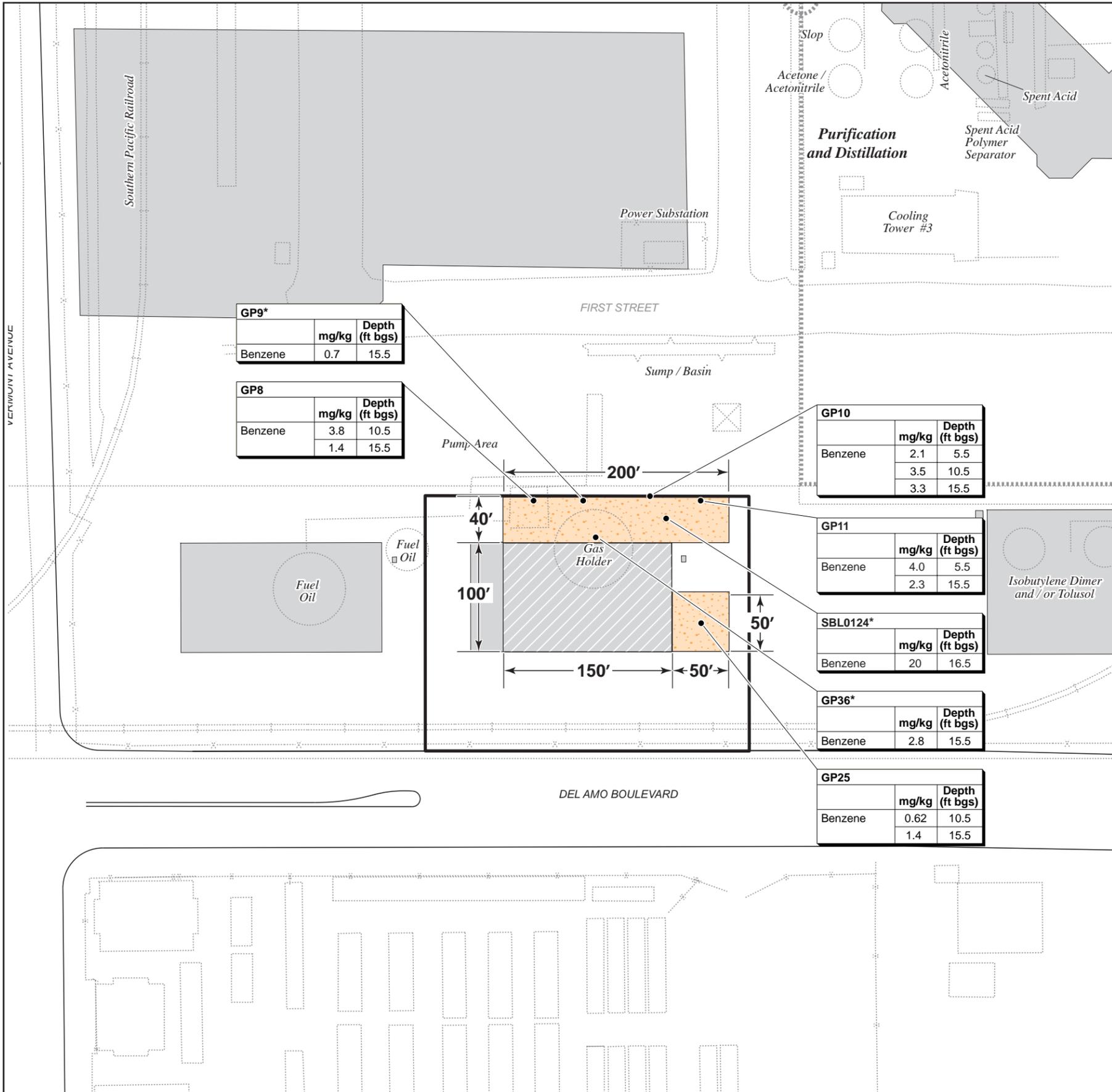
TABLE D1.6-3
EAPC 32 - REMEDIAL ALTERNATIVE 4
EXCAVATION (B(a)P) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 15,110	\$ 15,110
2	Site Investigation/Delineation	1	ls	\$ 19,000	\$ 19,000
3	Site preparation/Geophysical Survey	1,750	sf	\$ 0.80	\$ 2,000
4	Equipment Mobilization	1,750	sf	\$ 1.25	\$ 3,000
5	Excavation and Stockpile (<5 feet bgs)	324	yd3	\$ 12	\$ 4,000
6	Clean overburden excavation for slope stabilization	56	yd3	\$ 12	\$ 1,000
7	Truck Load-out	324	yd3	\$ 2	\$ 1,000
8	Backfill and Compaction	356	yd ³	\$ 35	\$ 13,000
9	Asphalt pavement restoration	1,750	sf	\$ 10	\$ 18,000
10	Transportation and Off-Site Disposal	486	ton	\$ 50	\$ 24,000
11	Soil Confirmation Sampling and Analyses	20	samples	\$ 250	\$ 5,000
12	Air Monitoring/Sampling	2	days	\$ 2,500	\$ 5,000
13	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
14	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 20,000	\$ 20,000
Direct Capital Total					\$ 160,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	15%	of	\$ 160,000	\$ 24,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 160,000	\$ 13,000
3	Construction Management	10%	of	\$ 160,000	\$ 16,000
Indirect Capital Total					\$ 53,000
Direct + Indirect Capital Total					\$ 213,000
ICs Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,675	\$ 2,675
ICs Annual Operation and Maintenance Subtotal					\$ 2,675
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 54,000
Contingency (30% of total project cost)					\$ 80,000
Total Capital Cost					\$ 347,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available
2. No shoring is needed.
3. Assume excavated soil is 100% non haz sent to a permitted facility.
4. ICs include IC layers 1, 2 and 5.

EAPC 9



GP9*		
	mg/kg	Depth (ft bgs)
Benzene	0.7	15.5

GP8		
	mg/kg	Depth (ft bgs)
Benzene	3.8	10.5
	1.4	15.5

GP10		
	mg/kg	Depth (ft bgs)
Benzene	2.1	5.5
	3.5	10.5
	3.3	15.5

GP11		
	mg/kg	Depth (ft bgs)
Benzene	4.0	5.5
	2.3	15.5

SBL0124*		
	mg/kg	Depth (ft bgs)
Benzene	20	16.5

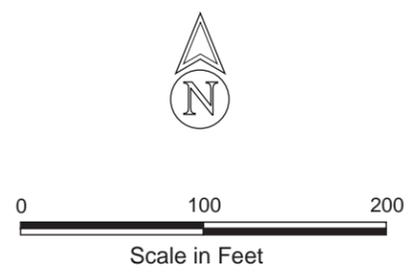
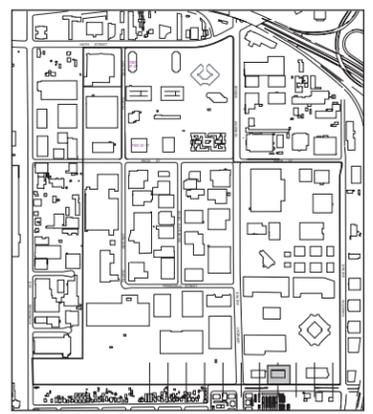
GP36*		
	mg/kg	Depth (ft bgs)
Benzene	2.8	15.5

GP25		
	mg/kg	Depth (ft bgs)
Benzene	0.62	10.5
	1.4	15.5

Legend

- Parcel boundary
- Cooling Tower #3
- Acetone / Acetonitrile
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Assumed extent of VOC-impacted shallow soil below building
- Soil boring location with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded
- *
- VOC detected at depth >15 feet bgs only

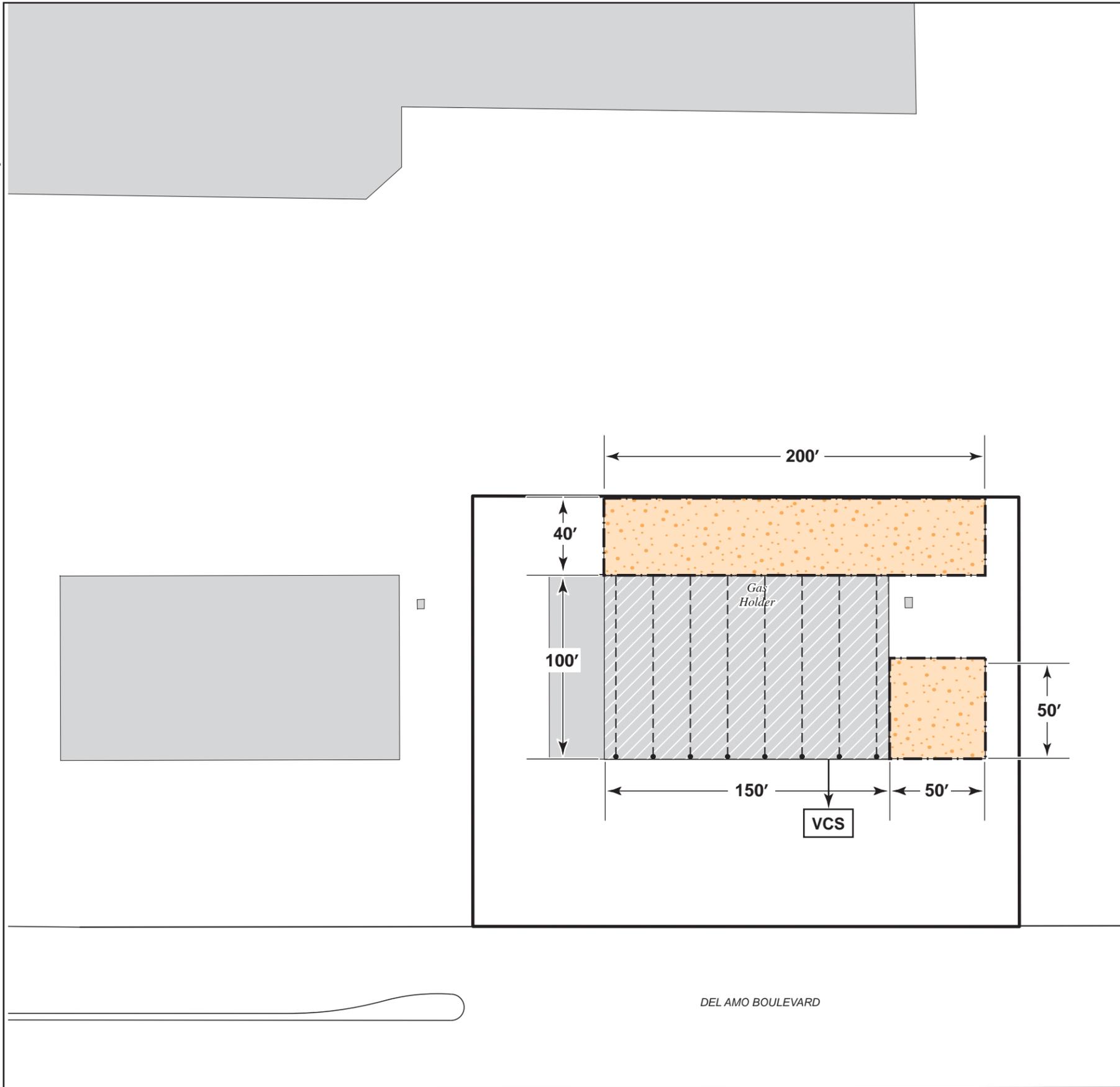
GP36*		
	mg/kg	Depth (ft bgs)
Benzene	2.8	15



Area shown in this map

FIGURE 6.8-1
ASSUMED EXTENT OF IMPACTED SOIL
Parcel No. 7351-033-027
 EAPC 9
 Del Amo Soil + NAPL FS





Legend

- Parcel boundary
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Assumed extent of VOC-impacted shallow soil below building
- Asphalt cap boundary (outdoor soil)
- Perforated piping laid in trenches
- VCS Vapor collection system (for SSV)

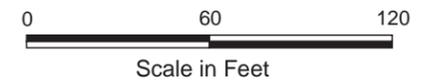
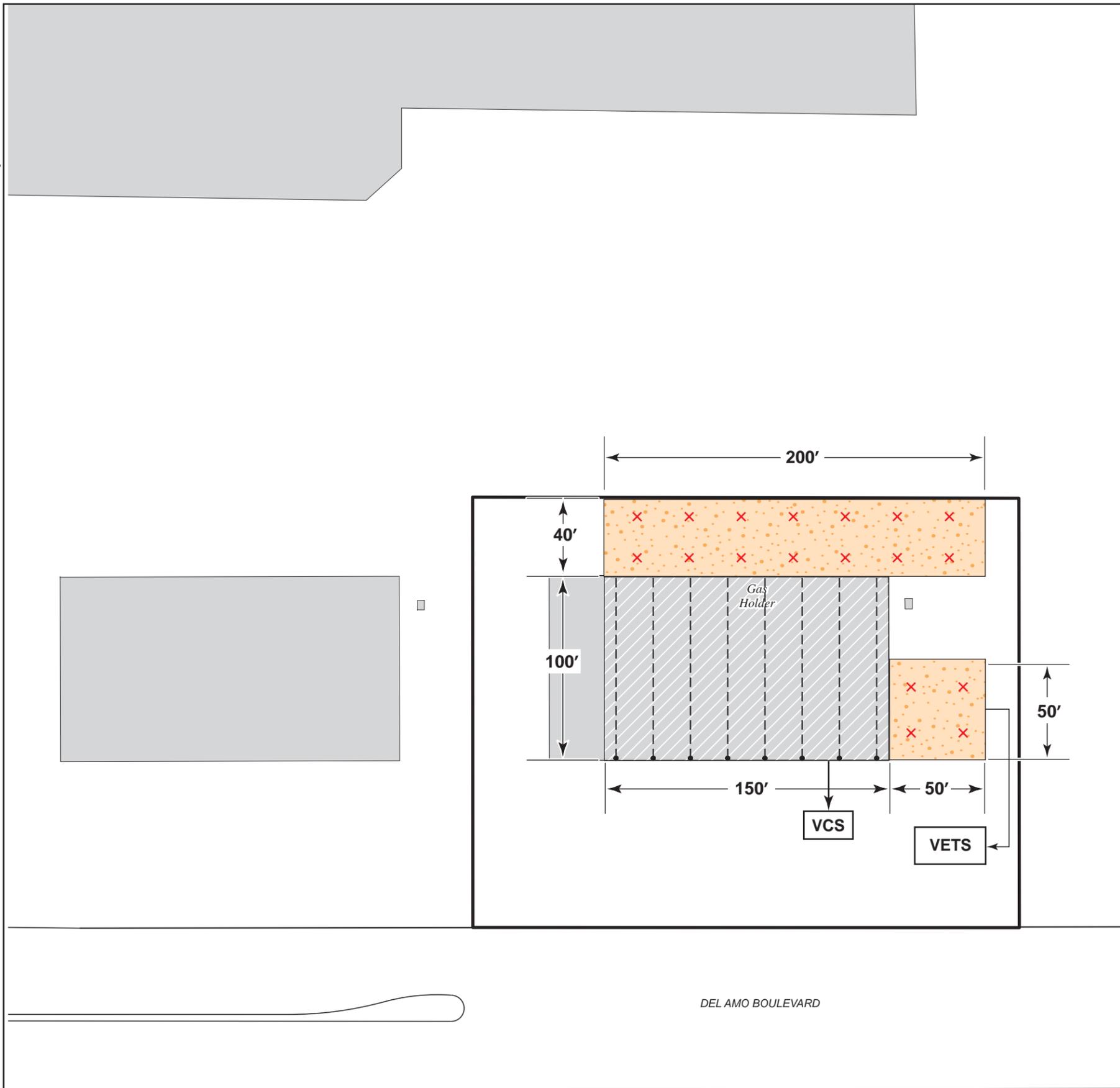


FIGURE 6.8-2

Alternative 3
CAPPING FOR OUTDOOR SOIL
+ HVAC MOD/SSV UNDER BUILDING
Parcel No. 7351-033-027

EAPC 9
Del Amo Soil + NAPL FS





Legend

- Parcel boundary
- Assumed extent of VOC-impacted shallow soil below building
- Assumed extent of VOC-impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Vertical SVE/BV wells (outdoor soil)
- Vapor extraction treatment system
- Perforated piping laid in trenches
- Vapor collection system (for SSV)

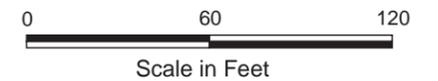
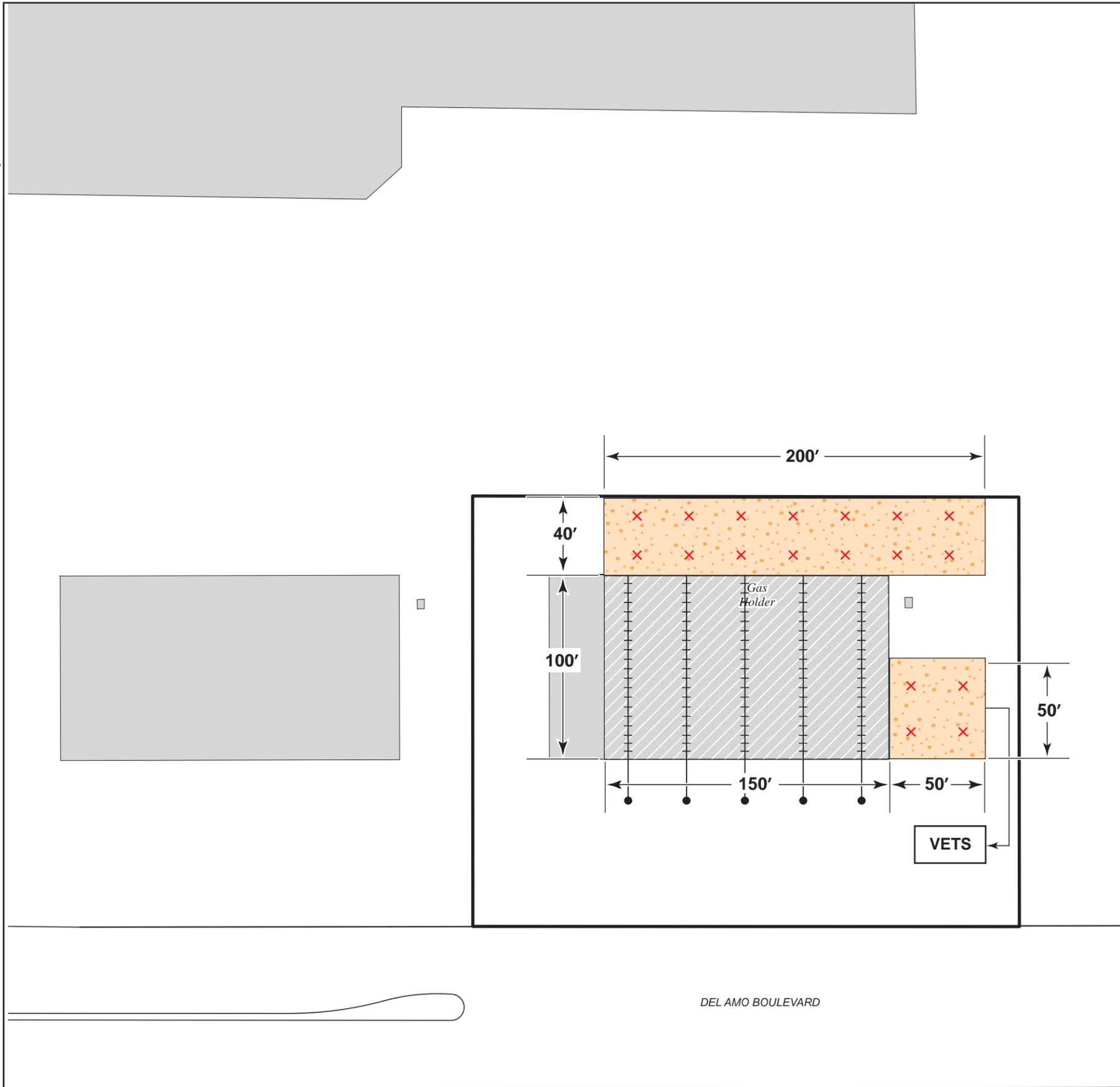


FIGURE 6.8-3
Alternative 4
SVE/BV FOR OUTDOOR SOIL
+ HVAC MOD/SSV UNDER BUILDING
 Parcel No. 7351-033-027
 EAPC 9
 Del Amo Soil + NAPL FS





Legend

- Parcel boundary
- Assumed extent of VOC-impacted shallow soil below building
- Assumed extent of VOC-impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Vertical SVE/BV wells (outdoor soil)
- Horizontal SVE/BV wells (under building)
- VETS Vapor extraction treatment system

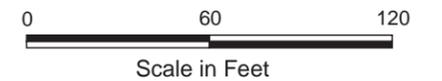
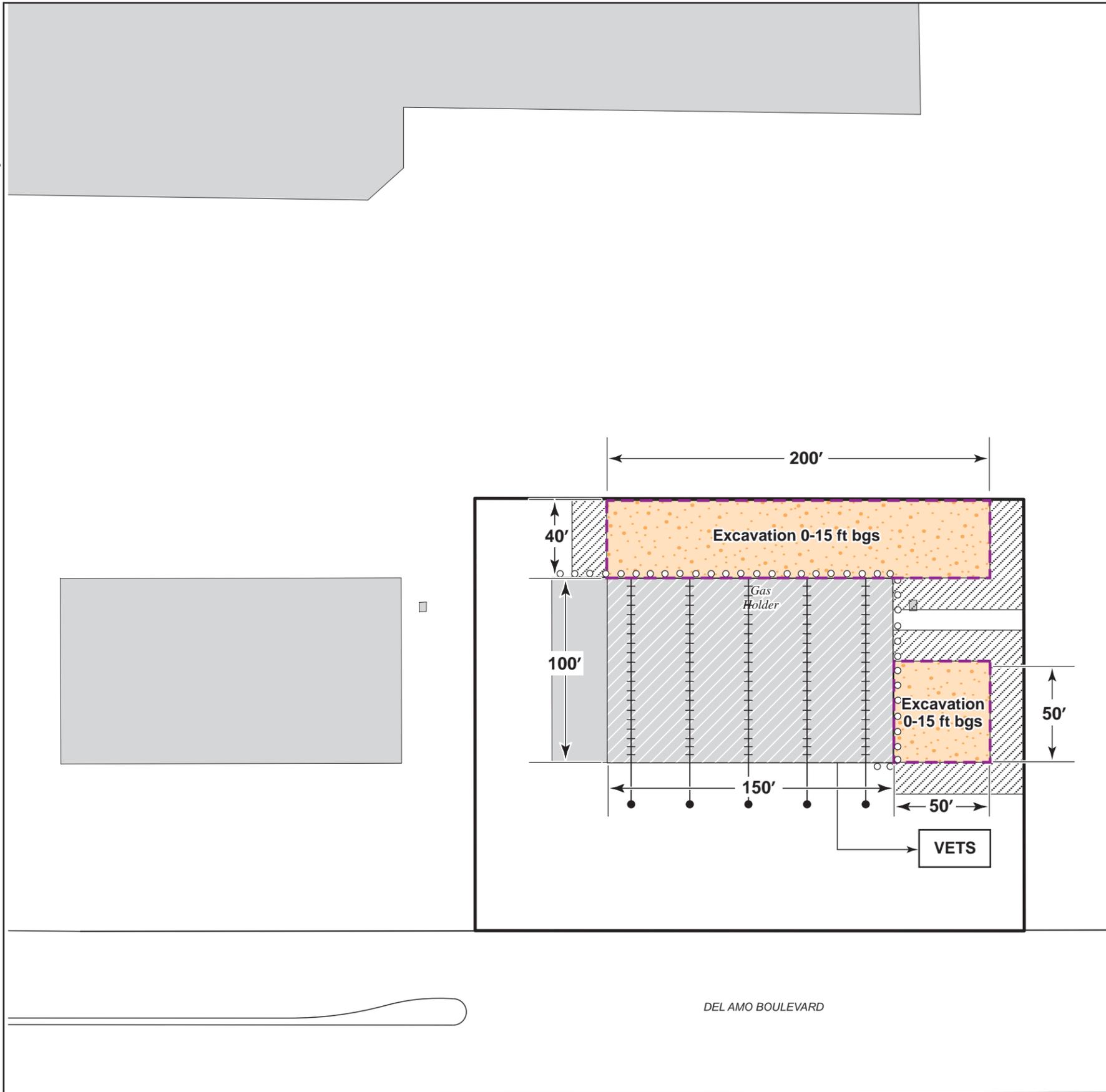


FIGURE 6.8-4
**Alternative 5
SVE/BV FOR OUTDOOR SOIL
AND UNDER BUILDING**
Parcel No. 7351-033-027
EAPC 9
Del Amo Soil + NAPL FS



Legend

- Parcel boundary
- Assumed extent of VOC-impacted shallow soil below building
- Assumed extent of VOC-impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Excavation boundary (outdoor soil)
- Shoring (Sheet pile or soldier Pile)
- Horizontal SVE/BV wells (under building)
- Vapor extraction treatment system
- Sloped excavation side-wall



FIGURE 6.8-5
Alternative 6
EXCAVATION FOR OUTDOOR SOIL
+ SVE/BV UNDER BUILDING
 Parcel No. 7351-033-027
 EAPC 9
 Del Amo Soil + NAPL FS



TABLE D1.7-1
EAPC 9 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D1.7-2
EAPC 9 - REMEDIAL ALTERNATIVE 3
CAPPING (Benzene) + HVAC MOD/SSV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 45,500	\$ 46,000
3	Site preparation	25,500	sf	\$ 0.40	\$ 11,000
4	Site Setup, Equipment Mobilization	25,500	sf	\$ 0.75	\$ 20,000
5	Slurry Seal over Existing Asphalt Pavement	10,500	sf	\$ 5	\$ 52,500
6	SSV under building (installed)	15,000	sf	\$ 5	\$ 75,000
7	Install Vapor Monitoring Points inside building	30	ea	\$ 500	\$ 15,000
8	Parcel Cleanup/Demobilization	1	ls	\$ 10,000	\$ 10,000
9	Remedial Action Monitoring	12	day	\$ 2,000	\$ 24,000
10	Remediation Documentation/Reporting	1	ls	\$ 20,000	\$ 20,000
11	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 10,000	\$ 10,000
Direct Capital Total					\$ 328,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 328,000	\$ 50,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 328,000	\$ 27,000
3	Construction Management	10%	of	\$ 328,000	\$ 33,000
Indirect Capital Subtotal					\$ 110,000
Total Direct + Indirect Capital Cost					\$ 438,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SSV periodic monitoring, operation, maintenance	1	year	\$ 12,000	\$ 12,000
3	Cap Maintenance and Repair	1	year	\$ 18,000	\$ 18,000
ICs, Cap, and SSV Annual Operation and Maintenance Subtotal					\$ 33,775
Present Worth of ICs + Cap + SSV (5%, 100 Years) O&M Costs					\$ 671,000
Contingency (20% of total project cost)					\$ 222,000
Total Capital and O&M Cost					\$ 1,331,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. SSV assumed for this alternative instead of HVAC Mod.
4. SSV assumes piping laid in trenches inside building.
5. SSV system includes fan and carbon adsorbers as vapor control system.
6. SSV O&M includes periodic monitoring of vapor control system.
7. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D1.7-3
EAPC 9 - REMEDIAL ALTERNATIVE 4
SVE/BV (OS) + HVAC MOD/SSV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 71,000	\$ 71,000
3	Site preparation/Geophysical Survey	25,500	sf	\$ 0.80	\$ 21,000
4	Site Setup, Equipment Mobilization/Demobilization	25,500	sf	\$ 1.25	\$ 32,000
5	SVE Vertical Wells (V-SVE)	18	ea	\$ 5,000	\$ 90,000
6	Install Well Headworks/Vault	18	ea	\$ 1,500	\$ 27,000
7	Install Outdoor Vapor Monitoring Points	8	ea	\$ 2,000	\$ 16,000
8	Trenching, Piping, Backfill, Resurfacing	1,800	lf	\$ 30	\$ 54,000
9	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
10	Control and Instrumentation	1	ls	\$ 6,000	\$ 6,000
11	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 25,000	\$ 25,000
12	SVE System Installation and Startup	1	ea	\$ 50,000	\$ 50,000
13	SVE Emissions Treatment System (Thermal/Cat Ox) 200 cfm	1	ea	\$ 70,000	\$ 70,000
14	Install SSV under building	15,000	sf	\$ 5	\$ 75,000
15	Install Vapor Monitoring Points inside building	30	ea	\$ 500	\$ 15,000
16	Soil Confirmation Sampling and Analyses	28	samples	\$ 1,000	\$ 28,000
17	Air Monitoring/Sampling	15	days	\$ 2,500	\$ 38,000
18	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
19	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
20	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 787,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	12%	of	\$ 787,000	\$ 95,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 787,000	\$ 48,000
3	Construction Management	8%	of	\$ 787,000	\$ 63,000
Indirect Capital Total					\$ 206,000
Direct + Indirect Capital Total					\$ 993,000
Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
3	SVE periodic monitoring, operation, maintenance	12	mths	\$ 5,000	\$ 60,000
4	Fuel	12	mths	\$ 6,000	\$ 72,000
5	Electricity	12	mths	\$ 1,700	\$ 20,000
6	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 2,500	\$ 30,000
7	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 5,000	\$ 60,000
8	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 6,000	\$ 72,000
9	Waste/Water Disposal	12	mths	\$ 2,000	\$ 24,000
10	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
SVE Annual Operation and Maintenance Subtotal					\$ 374,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 1,018,000
ICs and SSV Annual Operation and Maintenance Subtotal					\$ 15,775
Present Worth of ICs + SSV (5%, 100 Years) O&M Costs					\$ 314,000
Contingency (20% of total project cost)					\$ 465,000
Total Capital and O&M Cost					\$ 2,790,000

NOTES/ASSUMPTIONS

1. Benzene SVE (OS) system: Uses 18 V-SVE wells, 5-15 feet bgs screens.
2. Benzene SVE uses thermal oxidizer, 200 scfm, positive displacement (PD) blower.
3. Assume SVE operation for 3 years.
4. SSV assumed for this alternative instead of HVAC Mod.
5. SSV assumes piping laid in trenches inside building.
6. SSV system includes fan and carbon adsorbers as vapor control system.
7. SSV O&M includes periodic monitoring of vapor control system.
8. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D1.7-4
EAPC 9 - REMEDIAL ALTERNATIVE 5
SVE/BV (OS) + SVE/BV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 97,000	\$ 97,000
3	Site preparation/Geophysical Survey	25,500	sf	\$ 0.80	\$ 21,000
4	Site Setup, Equipment Mobilization/Demobilization	25,500	sf	\$ 1.25	\$ 32,000
5	SVE Vertical Wells (V-SVE)	18	ea	\$ 5,000	\$ 90,000
6	SVE Horizontal Wells (H-SVE)	5	ea	\$ 25,000	\$ 125,000
7	Install Well Headworks/Vault	23	ea	\$ 1,500	\$ 35,000
8	Install Outdoor Vapor Monitoring Points	4	ea	\$ 2,000	\$ 8,000
9	Trenching, Piping, Backfill, Resurfacing	3,500	lf	\$ 30	\$ 105,000
10	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
11	Control and Instrumentation	1	ls	\$ 7,000	\$ 7,000
12	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 30,000	\$ 30,000
13	SVE System Installation and Startup	1	ea	\$ 50,000	\$ 50,000
14	SVE Emissions Treatment System (Thermal/Cat Ox) 500 cfm	1	ea	\$ 80,000	\$ 80,000
15	Soil Confirmation Sampling and Analyses	55	samples	\$ 1,000	\$ 55,000
16	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 30,000	\$ 30,000
17	Air Monitoring/Sampling	20	days	\$ 2,500	\$ 50,000
18	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
19	Site Closure, decommissioning, well abandonment	1	ls	\$ 30,000	\$ 30,000
20	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 984,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	12%	of	\$ 984,000	\$ 119,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 984,000	\$ 60,000
3	Construction Management	8%	of	\$ 984,000	\$ 79,000
Indirect Capital Total					\$ 258,000
Direct + Indirect Capital Total					\$ 1,242,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 8,000	\$ 96,000
3	Fuel	12	mths	\$ 9,000	\$ 108,000
4	Electricity	12	mths	\$ 3,200	\$ 38,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 5,000	\$ 60,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 8,000	\$ 96,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 8,000	\$ 96,000
8	Waste/Water Disposal	12	mths	\$ 3,000	\$ 36,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 4,000	\$ 48,000
10	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 578,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 1,575,000
ICs + SSV Annual O&M Subtotal					\$ 15,275
Present Worth of ICs + SSV (5%, 100 Years)					\$ 304,000
Contingency (20% of total project cost)					\$ 624,000
Total Capital and O&M Cost					\$ 3,745,000

NOTES/ASSUMPTIONS

1. Benzene SVE (OS+UB) system: Uses 18 V-SVE wells with 5-15 feet bgs screens and 5 H-SVE wells with average 100 feet screens installed @ 10 feet bgs.
2. Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
3. Benzene SVE uses thermal oxidizer, 500 scfm, positive displacement (PD) blower.
4. Assume SVE operation for 3 years. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
5. ICs include IC layers 1, 2, 3, 4A and 5.

TABLE D1.7-5
EAPC 9 - REMEDIAL ALTERNATIVE 6
EXCAVATION (Benzene) + SVE/BV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 97,000	\$ 97,000
3	Site preparation/Geophysical Survey	25,500	sf	\$ 0.80	\$ 21,000
4	Site Setup, Equipment Mobilization/Demobilization	25,500	sf	\$ 1.25	\$ 32,000
5	Shoring design and installation	3,750	sf	\$ 65	\$ 244,000
6	Excavation and Stockpile (< 15 feet bgs)	5,800	yd3	\$ 12	\$ 70,000
7	Clean overburden excavation for slope stabilization	1,500	yd3	\$ 12	\$ 18,000
8	Truck Load-out	5,800	yd3	\$ 2	\$ 11,000
9	Backfill and Compaction	6,380	yd ³	\$ 35	\$ 224,000
10	Asphalt pavement restoration	10,500	sf	\$ 10	\$ 105,000
11	SVE Horizontal Wells (H-SVE)	5	ea	\$ 25,000	\$ 125,000
12	Install Well Headworks/Vault	5	ea	\$ 1,500	\$ 7,000
13	Trenching, Piping, Backfill, Resurfacing	400	lf	\$ 30	\$ 12,000
14	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
15	Control and Instrumentation	1	ls	\$ 5,000	\$ 5,000
16	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 4,000	\$ 4,000
17	SVE System Installation and Startup	1	ea	\$ 50,000	\$ 50,000
18	SVE Emissions Treatment System (Thermal/Cat Ox) 400 cfm	1	ea	\$ 77,000	\$ 77,000
19	Transportation and Off-Site Disposal	8,700	ton	\$ 70	\$ 609,000
20	Soil Confirmation Sampling and Analyses	73	samples	\$ 500	\$ 37,000
21	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 30,000	\$ 30,000
21	Air Monitoring/Sampling	30	days	\$ 2,500	\$ 75,000
22	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
23	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
24	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 2,012,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	12%	of	\$ 2,012,000	\$ 242,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 2,012,000	\$ 121,000
3	Construction Management	8%	of	\$ 2,012,000	\$ 161,000
Indirect Capital Total					\$ 524,000
Direct + Indirect Capital Total					\$ 2,536,000
Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 5,000	\$ 60,000
3	Fuel	12	mths	\$ 8,000	\$ 96,000
4	Electricity	12	mths	\$ 2,700	\$ 32,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 1,200	\$ 15,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 4,000	\$ 48,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 6,000	\$ 72,000
8	Waste/Water Disposal	12	mths	\$ 2,500	\$ 30,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
10	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 389,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 1,060,000
ICs + SSV Annual O&M Subtotal					\$ 15,275
Present Worth of ICs + SSV (5%, 100 Years)					\$ 304,000
Contingency (25% of total project cost)					\$ 975,000
Total Capital and O&M Cost					\$ 4,875,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. Assume 250 linear feet of soldier pile shoring is needed.
3. Assume excavated soil is 50% Cal haz, 50% non haz sent to a permitted facility.
4. Benzene SVE (UB) system: Uses 5 H-SVE wells with average 100 feet screens installed @ 10 feet bgs.
5. Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
6. Benzene SVE uses thermal oxidizer, 400 scfm, positive displacement (PD) blower.
7. Assume SVE operation for 3 years. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
8. ICs include IC layers 1, 2, 3, 4A and 5.

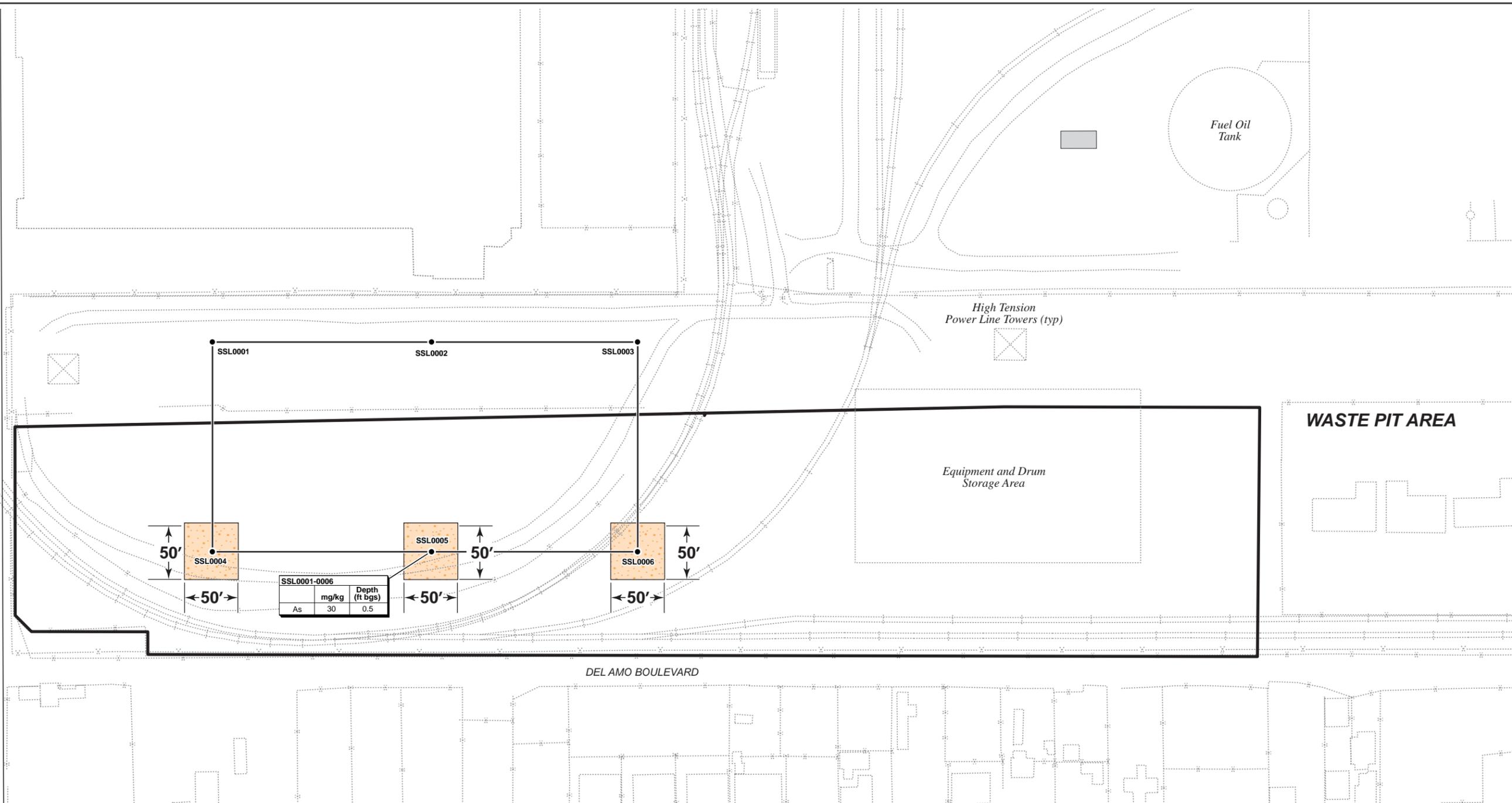
APPENDIX D-2

NON-REPRESENTATIVE EAPCs

GROUP 4A EAPCs

- **EAPC 29**
- **EAPC 34**
- **EAPC 28**
- **EAPC 35**
- **EAPC 10**
- **EAPC 14**

EAPC 29



Legend

-  Parcel boundary
 -  Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
 -  Outlines of historical features with use/contents indicated
 -  Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
 -  Composite shallow soil sampling locations with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded
 -  Cooling Tower #3
 -  Acetone / Acetonitrile
- | SSL0001-0006 | | |
|--------------|-------|----------------|
| | mg/kg | Depth (ft bgs) |
| As | 30 | 0.5 |



Area shown in this map



FIGURE 8.3-1

ASSUMED EXTENT OF IMPACTED SOIL
Parcel No. 7351-034-070
 EAPC 29
 Del Amo Soil + NAPL FS



TABLE D2.1-1
EAPC 29 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D2.1-2
EAPC 29 - REMEDIAL ALTERNATIVE 3
CAPPING (As) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 18,000	\$ 18,000
3	Site preparation	7,500	sf	\$ 0.40	\$ 3,000
4	Site Setup, Equipment Mobilization	7,500	sf	\$ 0.75	\$ 6,000
5	Slurry Seal over Existing Asphalt Pavement	7,500	sf	\$ 5	\$ 38,000
6	Parcel Cleanup/Demobilization	1	ls	\$ 3,000	\$ 3,000
7	Remedial Action Monitoring	1	day	\$ 2,000	\$ 2,000
8	Remediation Documentation/Reporting	1	ls	\$ 10,000	\$ 10,000
9	Health and Safety, ODCs	1	ls	\$ 5,000	\$ 5,000
Direct Capital Total					\$ 129,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 129,000	\$ 20,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 129,000	\$ 10,000
3	Construction Management	10%	of	\$ 129,000	\$ 13,000
Indirect Capital Subtotal					\$ 43,000
Total Direct + Indirect Capital Cost					\$ 172,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	Cap Maintenance and Repair	1	year	\$ 13,000	\$ 13,000
Cap + ICs Annual Operation and Maintenance Subtotal					\$ 16,775
Present Worth of ICs + Cap (5%, 100 Years) O&M Costs					\$ 333,000
Contingency (20% of total project cost)					\$ 101,000
Total Capital and Cap + ICs O&M Cost					\$ 606,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

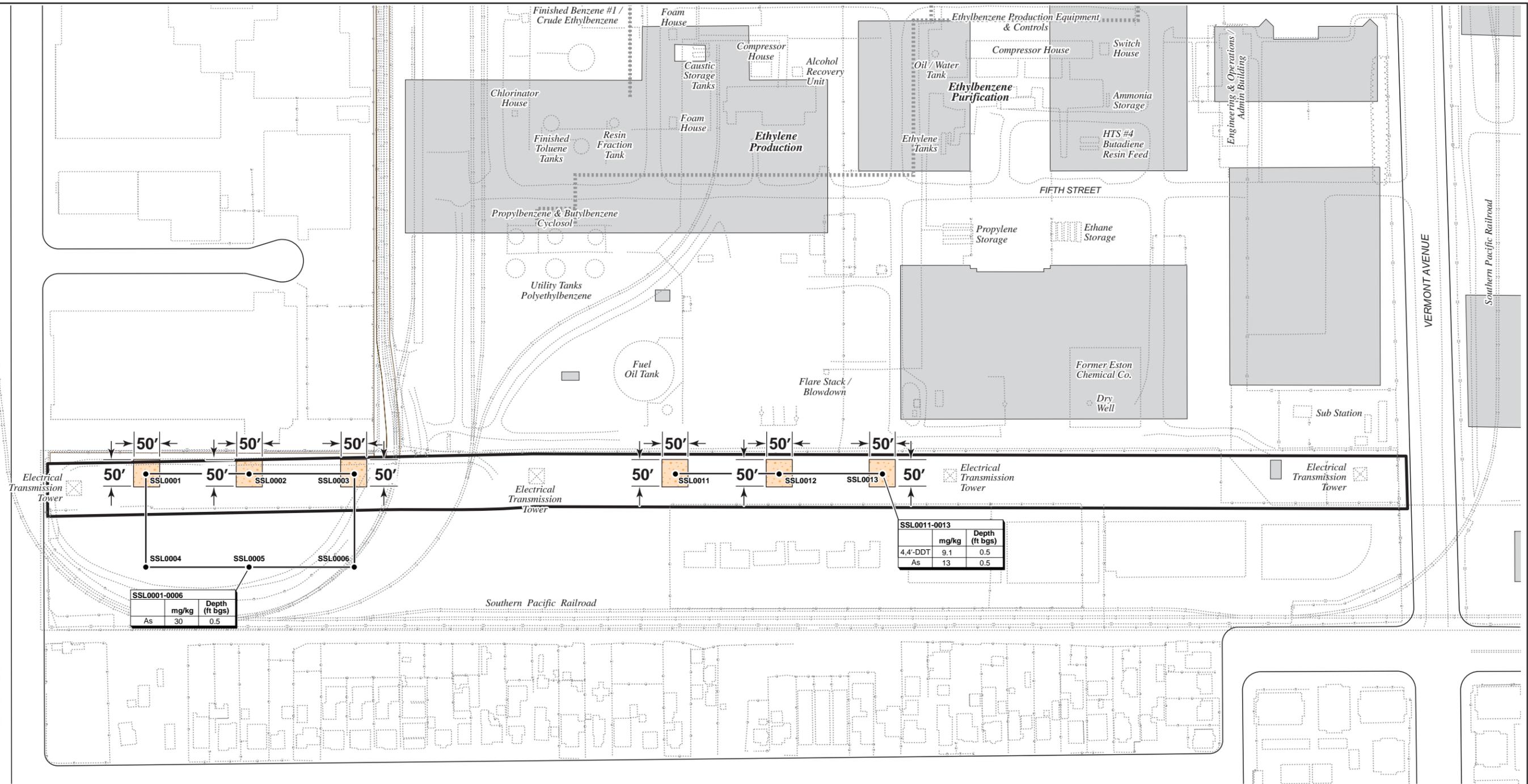
TABLE D2.1-3
EAPC 29 - REMEDIAL ALTERNATIVE 4
EXCAVATION (As) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 15,110	\$ 15,110
2	Site Investigation/Delineation	1	ls	\$ 25,000	\$ 25,000
3	Site preparation/Geophysical Survey	7,500	sf	\$ 0.80	\$ 6,000
4	Equipment Mobilization	7,500	sf	\$ 1.25	\$ 10,000
5	Excavation and Stockpile (<5 feet bgs)	1,389	yd3	\$ 12	\$ 17,000
6	Clean overburden excavation for slope stabilization	278	yd3	\$ 12	\$ 4,000
7	Truck Load-out	1,389	yd3	\$ 2	\$ 3,000
8	Backfill and Compaction	1,528	yd ³	\$ 35	\$ 54,000
9	Asphalt pavement restoration	7,500	sf	\$ 10	\$ 75,000
10	Transportation and Off-Site Disposal	2,084	ton	\$ 50	\$ 104,000
11	Soil Confirmation Sampling and Analyses	30	samples	\$ 250	\$ 8,000
12	Air Monitoring/Sampling	8	days	\$ 2,500	\$ 20,000
13	Remediation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
14	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 20,000	\$ 20,000
Direct Capital Total					\$ 381,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	15%	of	\$ 381,000	\$ 58,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 381,000	\$ 31,000
3	Construction Management	10%	of	\$ 381,000	\$ 39,000
Indirect Capital Total					\$ 128,000
Direct + Indirect Capital Total					\$ 509,000
ICs Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,675	\$ 2,675
ICs Annual Operation and Maintenance Subtotal					\$ 2,675
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 54,000
Contingency (30% of total project cost)					\$ 169,000
Total Capital Cost					\$ 732,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. No shoring is needed.
3. Assume excavated soil is 100% non haz sent to a permitted facility.
4. ICs include IC layers 1, 2 and 5.

EAPC 34



Legend

- Parcel boundary
 - Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
 - Outlines of historical features with use/contents indicated
 - Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
 - Composite shallow soil sampling locations with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded
- | SSL0001-0006 | | |
|--------------|-------|----------------|
| | mg/kg | Depth (ft bgs) |
| As | 30 | 0.5 |



Area shown in this map



Scale in Feet

FIGURE 8.3-2

ASSUMED EXTENT OF IMPACTED SOIL
Parcel No. 7351-034-901

EAPC 34
Del Amo Soil + NAPL FS



TABLE D2.2-1
EAPC 34 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D2.2-2
EAPC 34 - REMEDIAL ALTERNATIVE 3
CAPPING (As) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 25,000	\$ 25,000
3	Site preparation	15,000	sf	\$ 0.40	\$ 6,000
4	Site Setup, Equipment Mobilization	15,000	sf	\$ 0.75	\$ 12,000
5	Slurry Seal over Existing Asphalt Pavement	15,000	sf	\$ 5	\$ 75,000
6	Parcel Cleanup/Demobilization	1	ls	\$ 3,000	\$ 3,000
7	Remedial Action Monitoring	1	day	\$ 2,000	\$ 2,000
8	Remediation Documentation/Reporting	1	ls	\$ 10,000	\$ 10,000
9	Health and Safety, ODCs	1	ls	\$ 5,000	\$ 5,000
Direct Capital Total					\$ 182,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 182,000	\$ 27,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 182,000	\$ 15,000
3	Construction Management	10%	of	\$ 182,000	\$ 18,000
Indirect Capital Subtotal					\$ 60,000
Total Direct + Indirect Capital Cost					\$ 242,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	Cap Maintenance and Repair	1	year	\$ 26,000	\$ 26,000
Cap + ICs Annual Operation and Maintenance Subtotal					\$ 29,775
Present Worth of ICs + Cap (5%, 100 Years) O&M Costs					\$ 591,000
Contingency (20% of total project cost)					\$ 167,000
Total Capital and Cap + ICs O&M Cost					\$ 1,000,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

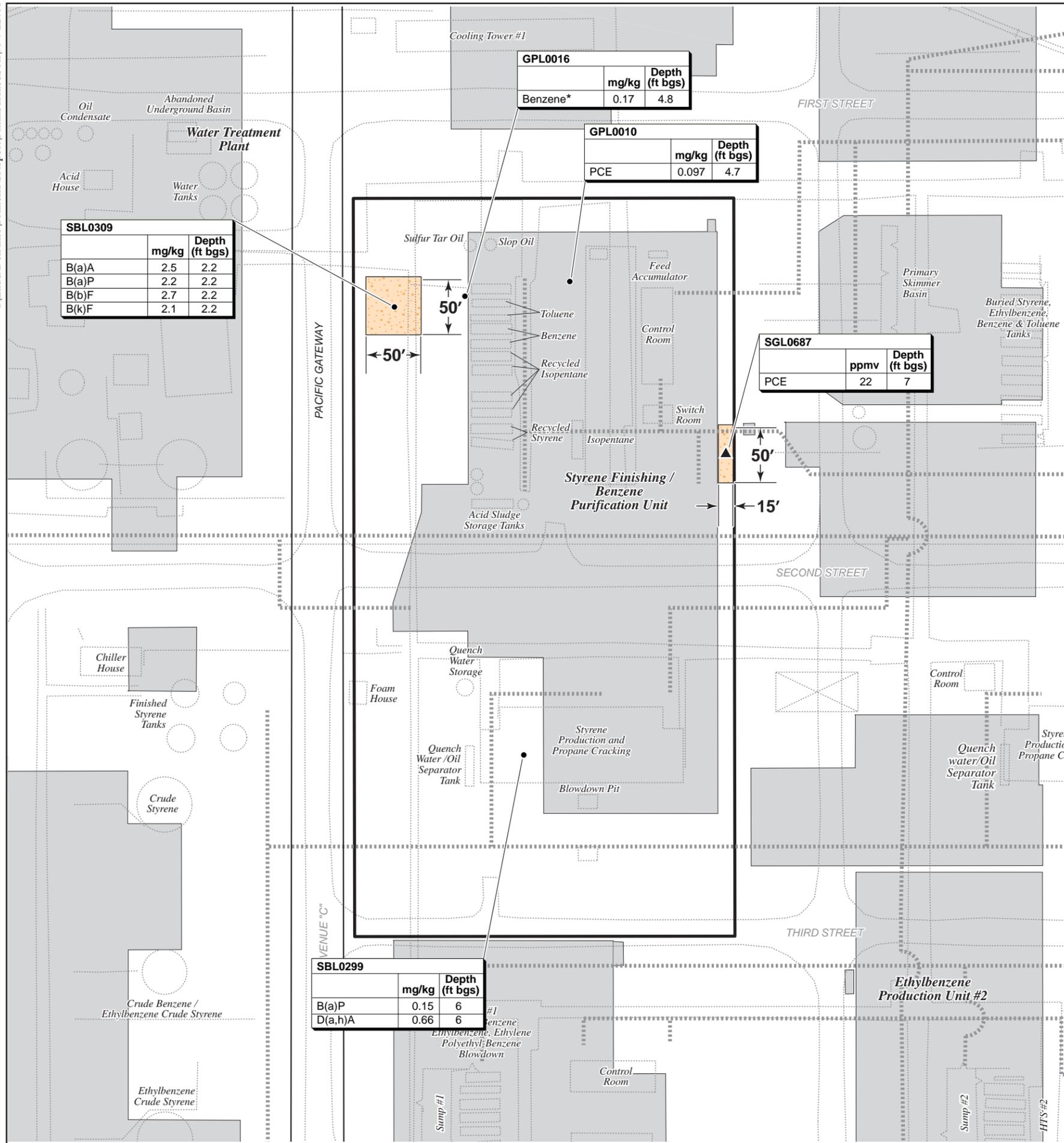
TABLE D2.2-3
EAPC 34 - REMEDIAL ALTERNATIVE 4
EXCAVATION (As) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 15,110	\$ 15,110
2	Site Investigation/Delineation	1	ls	\$ 45,000	\$ 45,000
3	Site preparation/Geophysical Survey	15,000	sf	\$ 0.80	\$ 12,000
4	Equipment Mobilization	15,000	sf	\$ 1.25	\$ 19,000
5	Excavation and Stockpile (<5 feet bgs)	2,778	yd3	\$ 12	\$ 34,000
6	Clean overburden excavation for slope stabilization	556	yd3	\$ 12	\$ 7,000
7	Truck Load-out	2,778	yd3	\$ 2	\$ 6,000
8	Backfill and Compaction	3,056	yd ³	\$ 35	\$ 107,000
9	Asphalt pavement restoration	15,000	sf	\$ 10	\$ 150,000
10	Transportation and Off-Site Disposal	4,167	ton	\$ 50	\$ 208,000
11	Soil Confirmation Sampling and Analyses	60	samples	\$ 250	\$ 15,000
12	Air Monitoring/Sampling	16	days	\$ 2,500	\$ 40,000
13	Remediation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
14	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 20,000	\$ 20,000
Direct Capital Total					\$ 698,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	12%	of	\$ 698,000	\$ 84,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 698,000	\$ 42,000
3	Construction Management	8%	of	\$ 698,000	\$ 56,000
Indirect Capital Total					\$ 182,000
Direct + Indirect Capital Total					\$ 880,000
ICs Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,675	\$ 2,675
ICs Annual Operation and Maintenance Subtotal					\$ 2,675
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 54,000
Contingency (30% of total project cost)					\$ 280,000
Total Capital Cost					\$ 1,214,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. No shoring is needed.
3. Assume excavated soil is 100% non haz sent to a permitted facility.
4. ICs include IC layers 1, 2 and 5.

EAPC 28



Legend

- Parcel boundary
- Outlines of historical features with use/contents indicated
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Soil boring location with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded
- Soil gas sampling point with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded
- Chemical detected but does not exceed the criteria

SBL0309		
	mg/kg	Depth (ft bgs)
B(a)P	2.2	2.2

SGL0687		
	ppmv	Depth (ft bgs)
PCE	22	7

Acronyms

- B(a)A Benzo(a) Anthracene
- B(a)P Benzo(a) Pyrene
- B(b)F Benzo(b) Fluoranthene
- B(k)F Benzo (k) Fluoranthene
- D(a,h)A Dibenzo(a,h) Anthracene



Area shown in this map

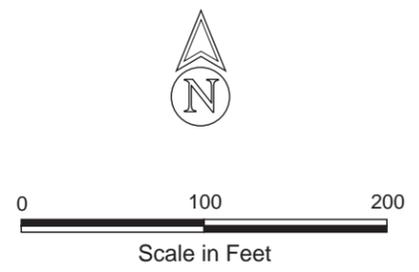


FIGURE 8.3-3
ASSUMED EXTENT OF IMPACTED SOIL
Parcel No. 7351-034-069
 EAPC 28
 Del Amo Soil + NAPL FS



**TABLE D2.3-1
EAPC 28 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site**

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D2.3-2
EAPC 28 - REMEDIAL ALTERNATIVE 3
CAPPING (B(a)P, PCE) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 14,000	\$ 14,000
3	Site preparation	3,250	sf	\$ 0.40	\$ 2,000
4	Site Setup, Equipment Mobilization/Demobilization	3,250	sf	\$ 0.75	\$ 3,000
5	Slurry Seal over Existing Asphalt Pavement	3,250	sf	\$ 5	\$ 17,000
6	Parcel Cleanup/Demobilization	1	ls	\$ 3,000	\$ 3,000
7	Remedial Action Monitoring	1	day	\$ 2,000	\$ 2,000
8	Remediation Documentation/Reporting	1	ls	\$ 10,000	\$ 10,000
9	Health and Safety, ODCs	1	ls	\$ 5,000	\$ 5,000
Direct Capital Total					\$ 100,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 100,000	\$ 15,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 100,000	\$ 8,000
3	Construction Management	10%	of	\$ 100,000	\$ 10,000
Indirect Capital Subtotal					\$ 33,000
Total Direct + Indirect Capital Cost					\$ 133,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	Cap Maintenance and Repair	1	year	\$ 6,000	\$ 6,000
Cap + ICs Annual Operation and Maintenance Subtotal					\$ 9,775
Present Worth of ICs (5%, 100 Years) + Cap (5%, 100 Years) O&M Costs					\$ 195,000
Contingency (20% of total project cost)					\$ 66,000
Total Capital and Cap + ICs O&M Cost					\$ 394,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D2.3-3
EAPC 28 - REMEDIAL ALTERNATIVE 4
EXCAVATION (B(a)P) + SVE (PCE) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 15,110	\$ 15,110
2	Site Investigation/Delineation	1	ls	\$ 23,000	\$ 23,000
3	Site preparation/Geophysical Survey	3,250	sf	\$ 0.80	\$ 3,000
4	Site Setup, Equipment Mobilization/Demobilization	3,250	sf	\$ 1.25	\$ 5,000
5	Excavation and Stockpile (<5 feet bgs)	465	yd3	\$ 12	\$ 6,000
6	Clean overburden excavation for slope stabilization	116	yd3	\$ 12	\$ 1,000
7	Truck Load-out	465	yd3	\$ 2	\$ 1,000
8	Backfill and Compaction	512	yd ³	\$ 35	\$ 18,000
9	Asphalt pavement restoration	3,250	sf	\$ 10	\$ 32,000
10	SVE Vertical Wells (V-SVE)	2	ea	\$ 5,000	\$ 10,000
11	Install Well Headworks/Vault	2	ea	\$ 1,500	\$ 3,000
12	Install Outdoor Vapor Monitoring Points	2	ea	\$ 2,000	\$ 4,000
13	Trenching, Piping, Backfill, Resurfacing	100	lf	\$ 30	\$ 3,000
14	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 25,000	\$ 25,000
15	Control and Instrumentation	1	ls	\$ 2,000	\$ 2,000
16	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 2,000	\$ 2,000
17	SVE System Installation and Startup	1	ea	\$ 30,000	\$ 30,000
18	SVE Emissions Treatment System, 2 carbon vessels, (GAC) Chlorinated VOCs 100 cfm	1	ea	\$ 25,000	\$ 25,000
19	Transportation and Off-Site Disposal	698	ton	\$ 50	\$ 35,000
20	Soil Confirmation Sampling and Analyses	25	samples	\$ 800	\$ 20,000
21	Air Monitoring/Sampling	5	days	\$ 2,500	\$ 13,000
22	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
23	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
24	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 351,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	15%	of	\$ 351,000	\$ 53,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 351,000	\$ 29,000
3	Construction Management	10%	of	\$ 351,000	\$ 36,000
Indirect Capital Total					\$ 118,000
Direct + Indirect Capital Total					\$ 469,000
Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,675	\$ 2,675
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 2,000	\$ 24,000
3	Electricity	12	mths	\$ 1,300	\$ 15,000
4	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 500	\$ 6,000
5	Carbon - Vapor Phase (chlor-VOCs)	12	mths	\$ 4,000	\$ 48,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 2,000	\$ 24,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 2,000	\$ 24,000
8	Waste/Water Disposal	12	mths	\$ 500	\$ 6,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
ICs Annual Operation and Maintenance Subtotal					\$ 2,675
Present Worth of Infinite ICs Operation and Maintenance Costs (5%, 100 years)					\$ 54,000
SVE Annual Operation and Maintenance Subtotal					\$ 183,000
SVE Present Worth of Operation and Maintenance Costs (5%, 2 Years)					\$ 341,000
Contingency (25%) of total project cost					\$ 216,000
Total Capital and O&M Cost					\$ 1,080,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. No shoring is needed.
3. Assume excavated soil is 100% non haz sent to a permitted facility.
4. Cl-VOC SVE (OS) system: Uses 2 V-SVE wells, 5-15 feet bgs screens.
5. Cl-VOC SVE (OS) system: assume VPGAC (Cl-VOC conc. < 22 ppmv) with two 2000 lb vessels, 100 scfm PD blower
6. Assume SVE operation for 2 years.
7. ICs include IC layers 1, 2 and 5.

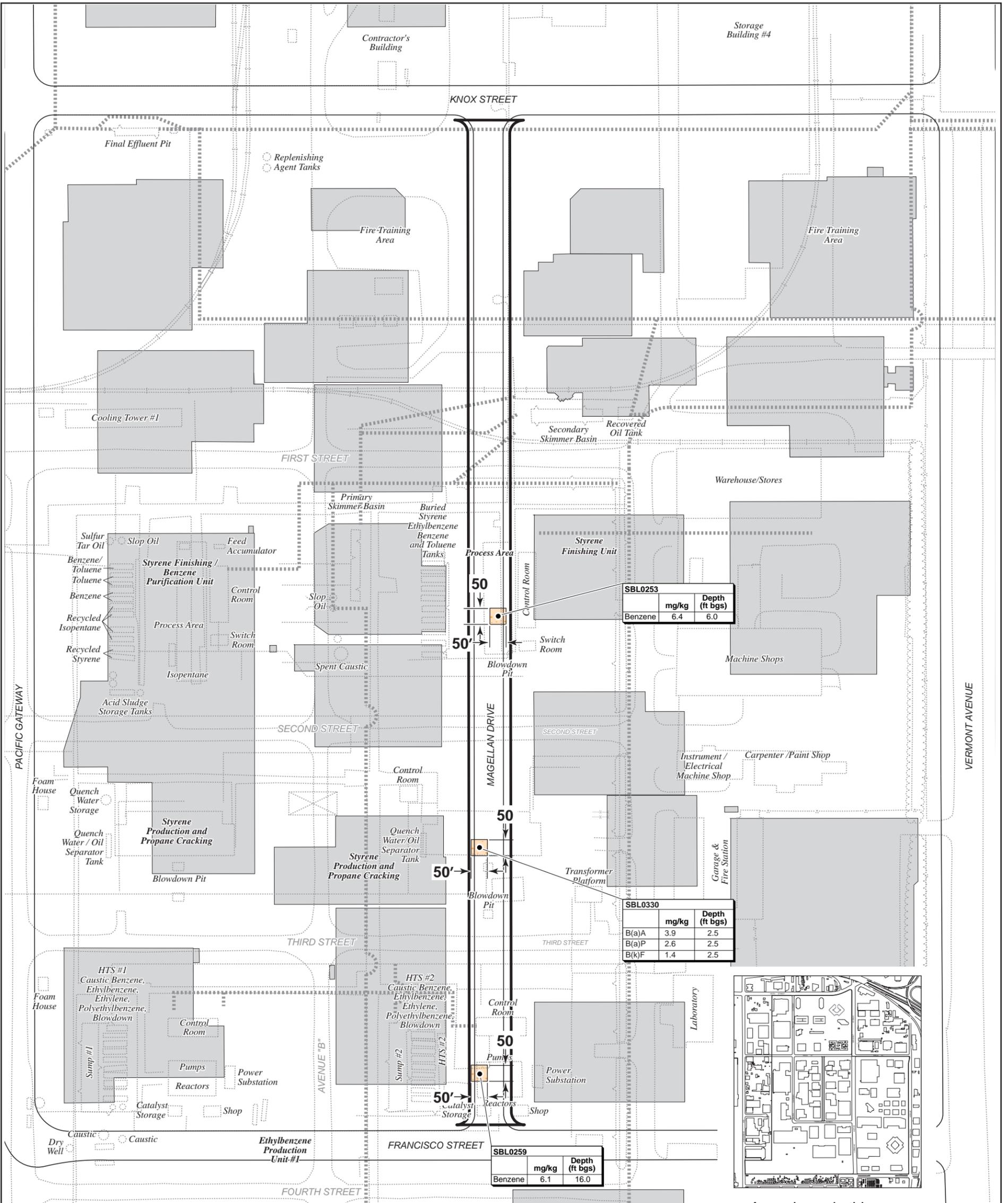
TABLE D2.3-4
EAPC 28 - REMEDIAL ALTERNATIVE 5
EXCAVATION (B(a)P, PCE) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 15,110	\$ 15,110
2	Site Investigation/Delineation	1	ls	\$ 23,000	\$ 23,000
3	Site preparation/Geophysical Survey	3,250	sf	\$ 0.80	\$ 3,000
4	Site Setup, Equipment Mobilization/Demobilization	3,250	sf	\$ 1.25	\$ 5,000
5	Excavation and Stockpile	880	yd ³	\$ 12	\$ 11,000
6	Clean overburden excavation for slope stabilization	218	yd ³	\$ 12	\$ 3,000
7	Shoring design and installation	750	sf	\$ 65	\$ 74,000
8	Truck Load-out	880	yd ³	\$ 2	\$ 2,000
9	Backfill and Compaction	968	yd ³	\$ 35	\$ 34,000
10	Asphalt pavement restoration	3,250	sf	\$ 10	\$ 32,000
11	Transportation and Off-Site Disposal	1,320	ton	\$ 70	\$ 92,000
12	Soil Confirmation Sampling and Analyses	35	samples	\$ 250	\$ 9,000
13	Air Monitoring/Sampling	3	days	\$ 2,500	\$ 7,000
14	Excavation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
15	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 20,000	\$ 20,000
Direct Capital Total					\$ 350,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	15%	of	\$ 350,000	\$ 53,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 350,000	\$ 28,000
3	Construction Management	10%	of	\$ 350,000	\$ 35,000
Indirect Capital Total					\$ 116,000
Direct + Indirect Capital Total					\$ 466,000
ICs Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,675	\$ 2,675
ICs Annual Operation and Maintenance Subtotal					\$ 2,675
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 54,000
Contingency (30% of total project cost)					\$ 156,000
Total Capital and ICs O&M Costs					\$ 676,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. Assume 50 linear feet of soldier pile shoring is needed.
3. Assume excavated soil is 50% Cal haz, 50% non haz sent to a permitted facility.
4. Assume 30% contingency for excavation.
5. ICs include IC layers 1, 2 and 5.

EAPC 35



Legend

- Parcel boundary
- Outlines of historical features with use/contents indicated
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Soil boring location with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded

Acronyms

- B(a)A Benzo(a) Anthracene
- B(a)P Benzo(a) Pyrene
- B(k)F Benzo(k) Fluoranthene

Area shown in this map

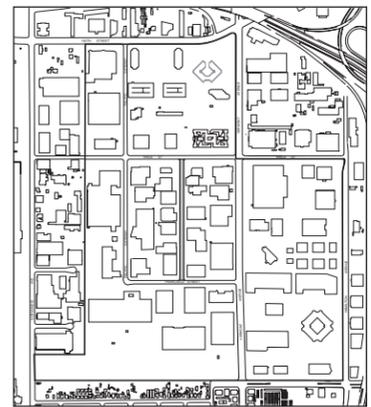


FIGURE 8.3-4

ASSUMED EXTENT OF IMPACTED SOIL
Magellan Drive
 EAPC 35
 Del Amo Soil + NAPL FS



TABLE D2.4-1
EAPC 35 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D2.4-2
EAPC 35 - REMEDIAL ALTERNATIVE 3
CAPPING (PAHs, Benzene) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 18,000	\$ 18,000
3	Site preparation	7,500	sf	\$ 0.40	\$ 3,000
4	Site Setup, Equipment Mobilization	7,500	sf	\$ 0.75	\$ 6,000
5	Slurry Seal over Existing Asphalt Pavement	7,500	sf	\$ 5	\$ 38,000
6	Parcel Cleanup/Demobilization	1	ls	\$ 3,000	\$ 3,000
7	Remedial Action Monitoring	1	day	\$ 2,000	\$ 2,000
8	Remediation Documentation/Reporting	1	ls	\$ 10,000	\$ 10,000
9	Health and Safety, ODCs	1	ls	\$ 5,000	\$ 5,000
Direct Capital Total					\$ 130,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 130,000	\$ 20,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 130,000	\$ 11,000
3	Construction Management	10%	of	\$ 130,000	\$ 13,000
Indirect Capital Subtotal					\$ 44,000
Total Direct + Indirect Capital Cost					\$ 174,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	Cap Maintenance and Repair	1	year	\$ 13,000	\$ 13,000
Cap + ICs Annual Operation and Maintenance Subtotal					\$ 16,775
Present Worth of ICs + Cap (5%, 100 Years) O&M Costs					\$ 333,000
Contingency (20% of total project cost)					\$ 102,000
Total Capital and Cap + ICs O&M Cost					\$ 609,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D2.4-3
EAPC 35 - REMEDIAL ALTERNATIVE 4
EXCAVATION (PAHs) + SVE/BV (Benzene)(OS) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 15,110	\$ 15,110
2	Site Investigation/Delineation	1	ls	\$ 39,000	\$ 39,000
3	Site preparation/Geophysical Survey	7,500	sf	\$ 0.80	\$ 6,000
4	Site Setup, Equipment Mobilization/Demobilization	7,500	sf	\$ 1.25	\$ 10,000
5	Excavation and Stockpile (<5 feet bgs)	463	yd3	\$ 12	\$ 6,000
6	Clean overburden excavation for slope stabilization	93	yd3	\$ 12	\$ 2,000
7	Truck Load-out	463	yd3	\$ 2	\$ 1,000
8	Backfill and Compaction	509	yd ³	\$ 35	\$ 18,000
9	Asphalt pavement restoration	7,500	sf	\$ 10	\$ 75,000
10	SVE Vertical Wells (V-SVE)	8	ea	\$ 5,000	\$ 40,000
11	Install Well Headworks/Vault	8	ea	\$ 1,500	\$ 12,000
12	Install Outdoor Vapor Monitoring Points	4	ea	\$ 2,000	\$ 8,000
13	Trenching, Piping, Backfill, Resurfacing	400	lf	\$ 30	\$ 12,000
14	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 30,000	\$ 30,000
15	Control and Instrumentation	1	ls	\$ 4,000	\$ 4,000
16	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 4,000	\$ 4,000
17	SVE System Installation and Startup	1	ea	\$ 30,000	\$ 30,000
18	SVE Emissions Treatment System (Thermal/Cat Ox), 100 cfm	1	ea	\$ 50,000	\$ 50,000
19	Transportation and Off-Site Disposal	695	ton	\$ 50	\$ 35,000
20	Soil Confirmation Sampling and Analyses	54	samples	\$ 850	\$ 46,000
21	Air Monitoring/Sampling	10	days	\$ 2,500	\$ 25,000
22	Remediation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
23	Site Closure, decommissioning, well abandonment	1	ls	\$ 15,000	\$ 15,000
24	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 15,000	\$ 15,000
Direct Capital Total					\$ 518,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	12%	of	\$ 518,000	\$ 63,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 518,000	\$ 32,000
3	Construction Management	8%	of	\$ 518,000	\$ 42,000
Indirect Capital Total					\$ 137,000
Direct + Indirect Capital Total					\$ 655,000
Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,675	\$ 2,675
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 2,000	\$ 24,000
3	Fuel	12	mths	\$ 3,000	\$ 36,000
4	Electricity	12	mths	\$ 1,300	\$ 16,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 500	\$ 6,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 2,000	\$ 24,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 2,000	\$ 24,000
8	Waste/Water Disposal	12	mths	\$ 500	\$ 6,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
ICs Annual Operation and Maintenance Subtotal					\$ 2,675
Present Worth of ICs Operation and Maintenance Costs (5%, 100 years)					\$ 54,000
SVE Annual Operation and Maintenance Subtotal					\$ 172,000
SVE Present Worth of Operation and Maintenance Costs (5%, 2 Years)					\$ 320,000
Contingency (25%) of total project cost					\$ 257,000
Total Capital and SVE + ICs O&M Cost					\$ 1,286,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. Assume excavated soil is 100% non haz sent to a permitted facility.
3. Benzene SVE (OS) system: Uses 8 V-SVE wells, 5-15 feet bgs screens
4. Benzene SVE uses thermal oxidizer, 100 scfm, positive displacement (PD) blower
5. Assume SVE operation for 2 years
6. Assume 25% contingency.
7. ICs include IC layers 1, 2 and 5.

TABLE D2.4-4
EAPC 35 - REMEDIAL ALTERNATIVE 5
EXCAVATION (PAHs, Benzene) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

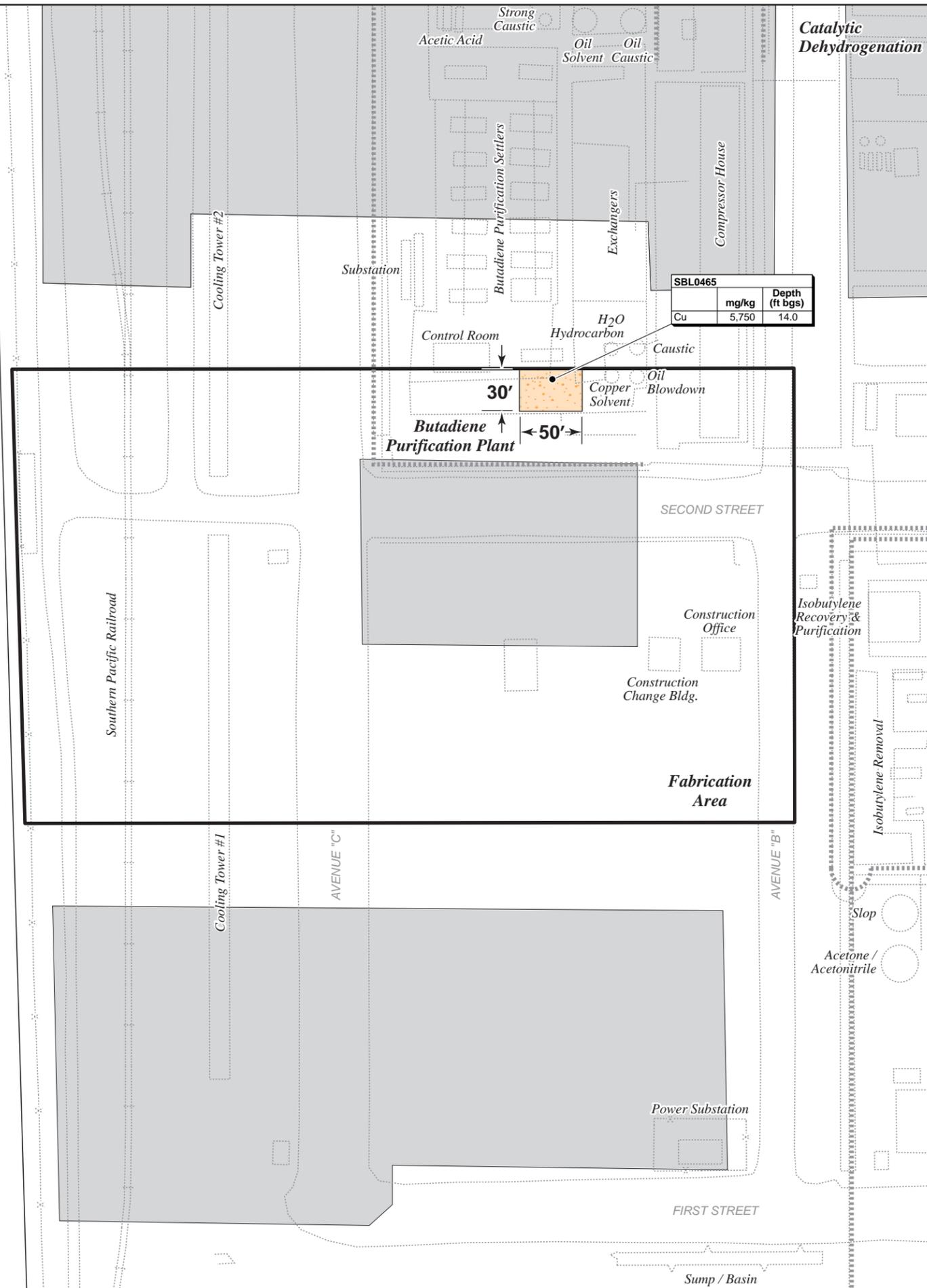
	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 15,110	\$ 15,110
2	Site Investigation/Delineation	1	ls	\$ 39,000	\$ 39,000
3	Site preparation/Geophysical Survey	7,500	sf	\$ 0.80	\$ 6,000
4	Site Setup, Equipment Mobilization/Demobilization	7,500	sf	\$ 1.25	\$ 10,000
5	Excavation and Stockpile (5 and 15 feet bgs)	3,241	yd3	\$ 12	\$ 39,000
6	Clean overburden excavation for slope stabilization	1,759	yd3	\$ 12	\$ 22,000
7	Truck Load-out	3,241	yd3	\$ 2	\$ 6,000
8	Backfill and Compaction	3,565	yd ³	\$ 35	\$ 125,000
9	Asphalt pavement restoration	7,500	sf	\$ 10	\$ 75,000
10	Transportation and Off-Site Disposal	4,862	ton	\$ 70	\$ 341,000
11	Soil Confirmation Sampling and Analyses	48	samples	\$ 250	\$ 12,000
12	Air Monitoring/Sampling	20	days	\$ 2,500	\$ 50,000
13	Excavation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
14	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 15,000	\$ 15,000
Direct Capital Total					\$ 775,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	12%	of	\$ 775,000	\$ 93,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 775,000	\$ 47,000
3	Construction Management	8%	of	\$ 775,000	\$ 62,000
Indirect Capital Total					\$ 202,000
Direct + Indirect Capital Total					\$ 977,000
ICs Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,675	\$ 2,675
ICs Annual Operation and Maintenance Subtotal					\$ 2,675
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 54,000
Contingency (30% of total project cost)					\$ 309,000
Total Capital and ICs O&M Costs					\$ 1,340,000

NOTES/ASSUMPTIONS

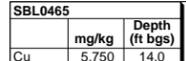
1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. Excavation adjacent to building footprint assumes slot-trenching. No shoring is needed.
3. Assume excavated soil is 50% Cal haz, 50% non haz sent to a permitted facility.
4. Assume 30% contingency for excavation.
5. ICs include IC layers 1, 2 and 5.

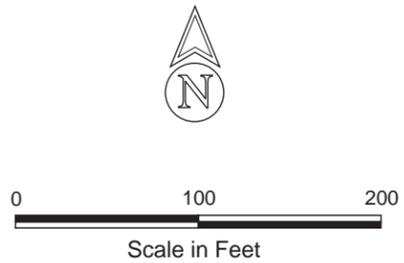
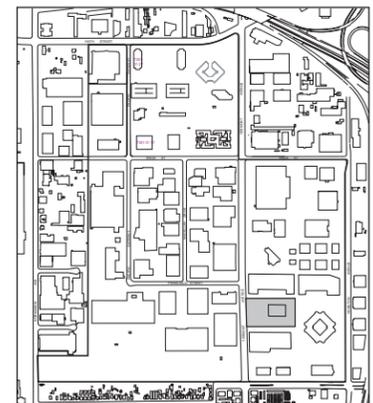
EAPC 10

S. VERMONT AVENUE



Legend

-  Parcel boundary
-  Outlines of historical features with use/contents indicated
-  Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
-  Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
-  Soil boring location with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded



Area shown in this map

FIGURE 8.3-14
ASSUMED EXTENT OF IMPACTED SOIL
 Parcel No. 7351-033-030
 EAPC 10
 Del Amo Soil + NAPL FS



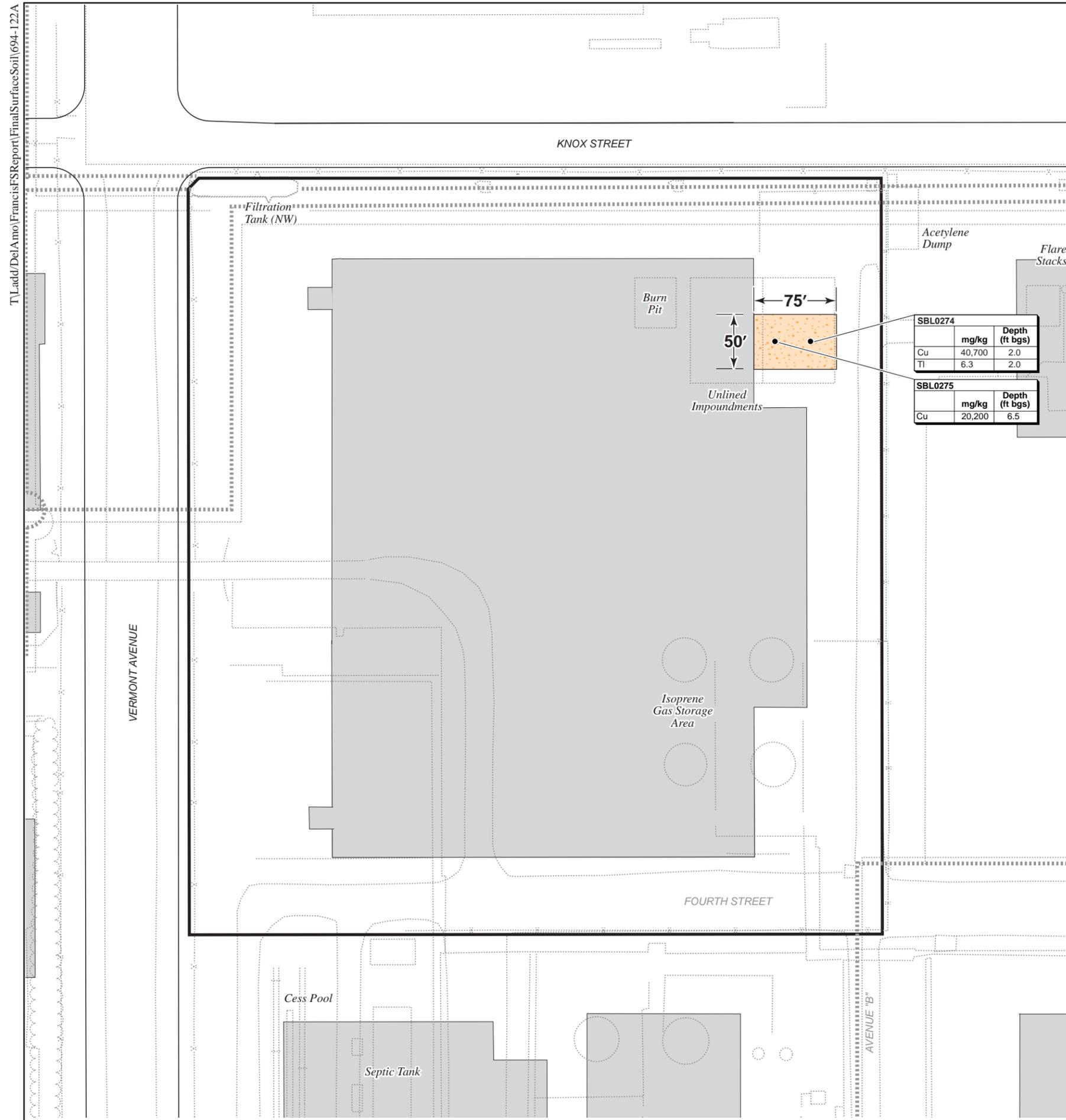
TABLE D2.5-1
EAPC 10 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 24,110	\$ 24,110
Direct Capital Total					\$ 24,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 24,000	\$ 2,400
Indirect Capital Subtotal					\$ 2,400
Total Direct + Indirect Capital Cost					\$ 26,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,775	\$ 2,775
ICs Annual Operation and Maintenance Subtotal					\$ 2,775
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 55,000
Contingency (20% of total project cost)					\$ 16,000
Total Capital and ICs O&M Cost					\$ 98,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3 and 4A.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

EAPC 14



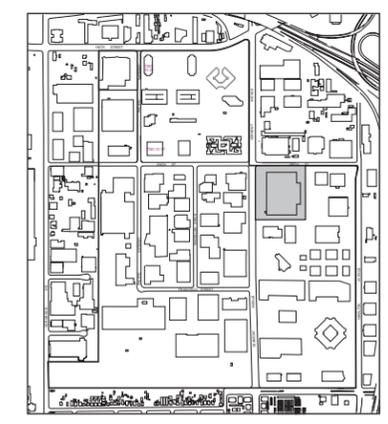
SBL0274		
	mg/kg	Depth (ft bgs)
Cu	40,700	2.0
Tl	6.3	2.0

SBL0275		
	mg/kg	Depth (ft bgs)
Cu	20,200	6.5

SBL0275		
	mg/kg	Depth (ft bgs)
Cu	20,200	6.5

Legend

- Parcel boundary
- Cooling Tower #3
- Acetone / Acetonitrile
- Outlines of historical features with use/contents indicated
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Soil boring location with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded



Area shown in this map

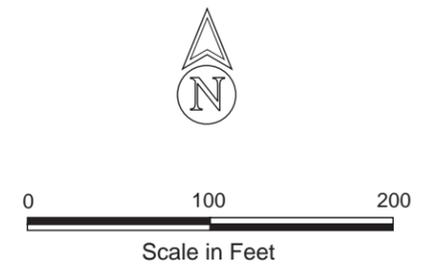


FIGURE 8.3-15
ASSUMED EXTENT OF IMPACTED SOIL
 Parcel No. 7351-033-009
 EAPC 14
 Del Amo Soil + NAPL FS



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TABLE D2.6-1
EAPC 14 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 24,110	\$ 24,110
Direct Capital Total					\$ 24,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 24,000	\$ 2,400
Indirect Capital Subtotal					\$ 2,400
Total Direct + Indirect Capital Cost					\$ 26,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,775	\$ 2,775
ICs Annual Operation and Maintenance Subtotal					\$ 2,775
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 55,000
Contingency (20% of total project cost)					\$ 16,000
Total Capital and ICs O&M Cost					\$ 98,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3 and 4A.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D2.6-2
EAPC 14 - REMEDIAL ALTERNATIVE 3
CAPPING (Cu) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 14,000	\$ 14,000
3	Site preparation	3,750	sf	\$ 0.40	\$ 2,000
4	Site Setup, Equipment Mobilization	3,750	sf	\$ 0.75	\$ 3,000
5	Slurry Seal over Existing Asphalt Pavement	3,750	sf	\$ 5	\$ 19,000
6	Parcel Cleanup/Demobilization	1	ls	\$ 3,000	\$ 3,000
7	Remedial Action Monitoring	1	day	\$ 2,000	\$ 2,000
8	Remediation Documentation/Reporting	1	ls	\$ 10,000	\$ 10,000
9	Health and Safety, ODCs	1	ls	\$ 5,000	\$ 5,000
Direct Capital Total					\$ 92,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	20%	of	\$ 92,000	\$ 18,400
2	Project Management, Agency Reporting and Coordination	10%	of	\$ 92,000	\$ 9,200
3	Construction Management	15%	of	\$ 92,000	\$ 13,800
Indirect Capital Subtotal					\$ 41,000
Total Direct + Indirect Capital Cost					\$ 133,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	Cap Maintenance and Repair	1	year	\$ 6,000	\$ 6,000
Cap + ICs Annual Operation and Maintenance Subtotal					\$ 9,275
Present Worth of ICs + Cap (5%, 100 Years) O&M Costs					\$ 184,089
Contingency (20% of total project cost)					\$ 63,000
Total Capital and Cap + ICs O&M Cost					\$ 381,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. ICs include IC layers 1, 2, 3, 4A and 4B.

TABLE D2.6-3
EAPC 14 - REMEDIAL ALTERNATIVE 4
EXCAVATION (Cu) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 5,110	\$ 5,110
2	Site Investigation/Delineation	1	ls	\$ 15,000	\$ 15,000
3	Site preparation/Geophysical Survey	3,750	sf	\$ 0.80	\$ 3,000
4	Equipment Mobilization	3,750	sf	\$ 1.25	\$ 5,000
5	Shoring design and installation	750	sf	\$ 65	\$ 49,000
6	Excavation and Stockpile (<15 feet bgs)	2,080	yd3	\$ 12	\$ 25,000
7	Clean overburden excavation for slope stabilization	833	yd3	\$ 12	\$ 10,000
8	Truck Load-out	2,080	yd3	\$ 2	\$ 5,000
9	Backfill and Compaction	2,288	yd ³	\$ 35	\$ 81,000
10	Asphalt pavement restoration	3,750	sf	\$ 10	\$ 38,000
11	Transportation and Off-Site Disposal	3,120	ton	\$ 50	\$ 156,000
12	Soil Confirmation Sampling and Analyses	27	samples	\$ 250	\$ 7,000
13	Air Monitoring/Sampling	12	days	\$ 2,500	\$ 30,000
14	Remediation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
15	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 20,000	\$ 20,000
Direct Capital Total					\$ 469,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 469,000	\$ 71,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 469,000	\$ 38,000
3	Construction Management	10%	of	\$ 469,000	\$ 47,000
Indirect Capital Total					\$ 156,000
Direct + Indirect Capital Total					\$ 625,000
Item No.	ICs Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,175	\$ 2,175
ICs Annual Operation and Maintenance Subtotal					\$ 2,175
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 44,000
Contingency (30% of total project cost)					\$ 201,000
Total Capital Cost					\$ 870,000

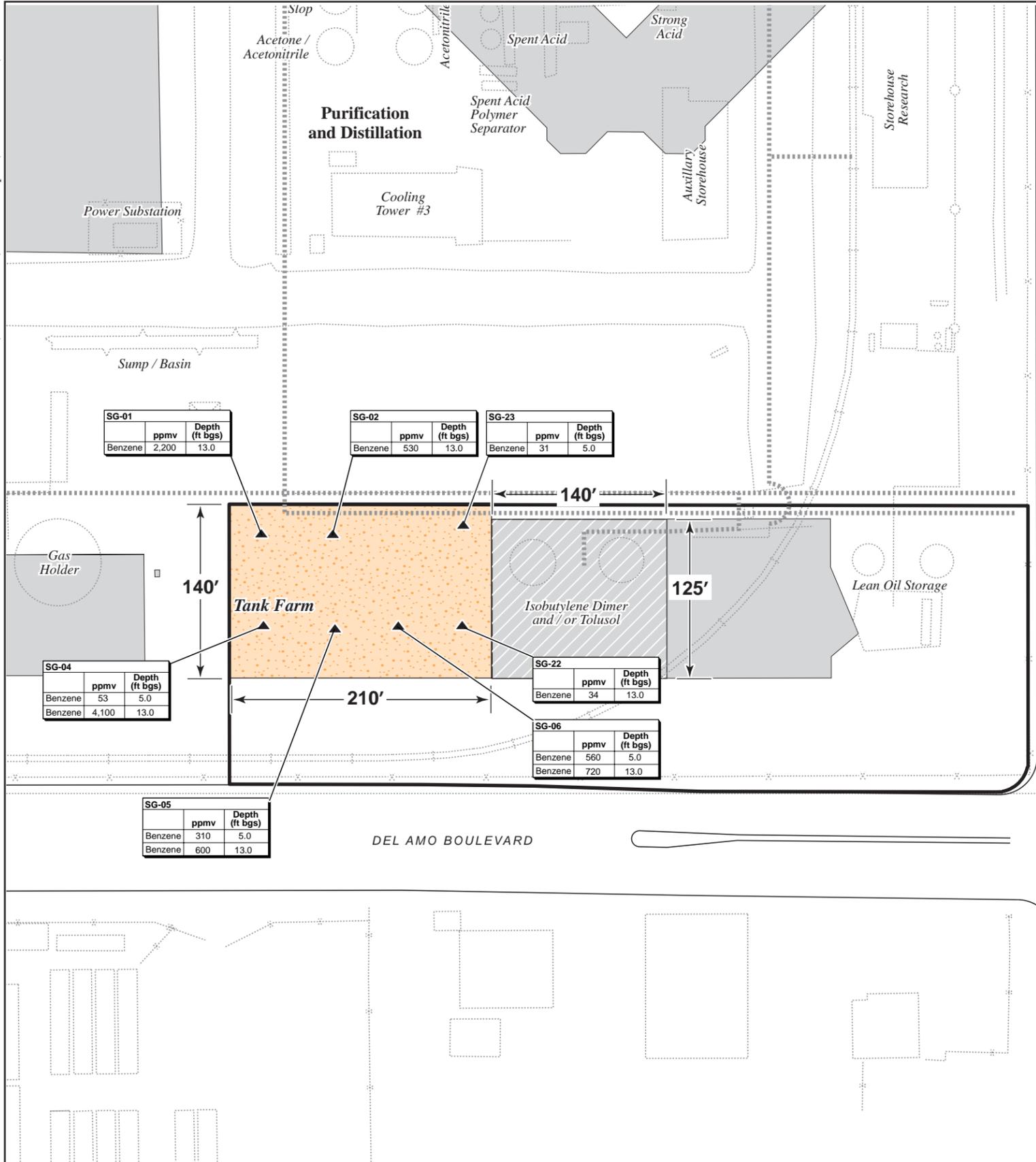
NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. Assume 50 linear feet of soldier pile shoring is needed.
3. Assume excavated soil is 100% non haz sent to a permitted facility.
4. ICs include IC layers 1 and 2.

GROUP 4B EAPCs

- **EAPC 6**
- **EAPC 11**
- **EAPC 15**

EAPC 6



Legend

- Parcel boundary
- Cooling Tower #3
- Acetone / Acetonitrile
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Assumed extent of VOC-impacted shallow soil below building
- Soil gas sampling point with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded



Area shown in this map

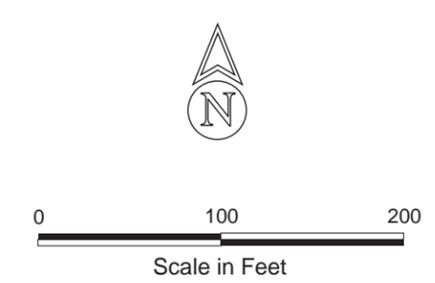


FIGURE 8.3-5
ASSUMED EXTENT OF IMPACTED SOIL
Parcel No. 7351-033-022
 EAPC 6
 Del Amo Soil + NAPL FS



**TABLE D2.7-1
EAPC 6 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site**

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D2.7-2
EAPC 6 - REMEDIAL ALTERNATIVE 3
CAPPING (Benzene) + HVAC MOD/SSV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 62,000	\$ 62,000
3	Site preparation	46,900	sf	\$ 0.40	\$ 19,000
4	Site Setup, Equipment Mobilization	46,900	sf	\$ 0.75	\$ 36,000
5	Slurry Seal over Existing Asphalt Pavement	29,400	sf	\$ 5	\$ 147,000
6	Subslab Venting System under building (installed)	17,500	sf	\$ 5	\$ 88,000
7	Install Vapor Monitoring Points inside building	35	ea	\$ 500	\$ 17,000
8	Parcel Cleanup/Demobilization	1	ls	\$ 10,000	\$ 10,000
9	Remedial Action Monitoring	8	day	\$ 2,000	\$ 16,000
10	Remediation Documentation/Reporting	1	ls	\$ 20,000	\$ 20,000
11	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 10,000	\$ 10,000
Direct Capital Total					\$ 469,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	12%	of	\$ 469,000	\$ 57,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 469,000	\$ 29,000
3	Construction Management	8%	of	\$ 469,000	\$ 38,000
Indirect Capital Subtotal					\$ 124,000
Total Direct + Indirect Capital Cost					\$ 593,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SSV periodic monitoring, operation, maintenance	1	year	\$ 12,000	\$ 12,000
3	Cap Maintenance and Repair	1	year	\$ 50,000	\$ 50,000
ICs, Cap, and SSV Annual Operation and Maintenance Subtotal					\$ 65,775
Present Worth of ICs + SSV + Cap (5%, 100 Years) O&M Costs					\$ 1,306,000
Contingency (20% of total project cost)					\$ 380,000
Total Capital and ICs, Cap, and SSV O&M Cost					\$ 2,279,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. SSV assumed for this alternative instead of HVAC Mod.
4. SSV assumes piping laid in trenches inside building.
5. SSV system includes fan and carbon adsorbers as vapor control system.
6. SSV O&M includes periodic monitoring of vapor control system.
7. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D2.7-3
EAPC 6 - REMEDIAL ALTERNATIVE 4
SVE/BV (OS) + HVAC MOD/SSV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 132,000	\$ 132,000
3	Site preparation/Geophysical Survey	46,900	sf	\$ 0.80	\$ 38,000
4	Site Setup, Equipment Mobilization/Demobilization	46,900	sf	\$ 1.25	\$ 59,000
5	SVE Vertical Wells (V-SVE)	35	ea	\$ 5,000	\$ 175,000
6	Install Well Headworks/Vault	35	ea	\$ 1,500	\$ 53,000
7	Install Outdoor Vapor Monitoring Points	10	ea	\$ 2,000	\$ 20,000
8	Trenching, Piping, Backfill, Resurfacing	3,500	lf	\$ 30	\$ 105,000
9	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
10	Control and Instrumentation	1	ls	\$ 7,000	\$ 7,000
11	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 40,000	\$ 40,000
12	SVE System Installation and Startup	1	ea	\$ 50,000	\$ 50,000
13	SVE Emissions Treatment System (Thermal/Cat Ox) 300 cfm	1	ea	\$ 75,000	\$ 75,000
14	Install Subslab Venting System under building	17,500	sf	\$ 5	\$ 87,000
15	Install Vapor Monitoring Points inside building	35	ea	\$ 500	\$ 18,000
16	Soil Confirmation Sampling and Analyses	40	samples	\$ 800	\$ 32,000
17	Air Monitoring/Sampling	20	days	\$ 2,500	\$ 50,000
18	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
19	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
20	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 1,110,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	12%	of	\$ 1,110,000	\$ 134,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 1,110,000	\$ 67,000
3	Construction Management	8%	of	\$ 1,110,000	\$ 89,000
Indirect Capital Total					\$ 290,000
Direct + Indirect Capital Total					\$ 1,400,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
3	SVE periodic monitoring, operation, maintenance	12	mths	\$ 5,000	\$ 60,000
4	Fuel	12	mths	\$ 7,000	\$ 84,000
5	Electricity	12	mths	\$ 2,200	\$ 26,000
6	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 2,000	\$ 24,000
7	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 5,000	\$ 60,000
8	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 6,000	\$ 72,000
9	Waste/Water Disposal	12	mths	\$ 3,000	\$ 36,000
10	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
SVE Annual Operation and Maintenance Subtotal					\$ 398,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 1,084,000
ICs and SSV Annual Operation and Maintenance Subtotal					\$ 15,775
Present Worth of ICs + SSV (5%, 100 Years) O&M Costs					\$ 314,000
Contingency (20% of total project cost)					\$ 560,000
Total Capital and O&M Cost					\$ 3,358,000

NOTES/ASSUMPTIONS

1. Benzene SVE (OS) system: Uses 35 V-SVE wells, 5-15 feet bgs screens.
2. Benzene SVE uses thermal oxidizer, 300 scfm, positive displacement (PD) blower.
3. Assume SVE operation for 3 years.
4. SSV assumed for this alternative instead of HVAC Mod.
5. SSV assumes piping laid in trenches inside building.
6. SSV system includes fan and carbon adsorbers as vapor control system.
7. SSV O&M includes periodic monitoring of vapor control system.
8. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D2.7-4
EAPC 6 - REMEDIAL ALTERNATIVE 5
SVE/BV (OS) + SVE/BV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 161,000	\$ 161,000
3	Site preparation/Geophysical Survey	46,900	sf	\$ 0.80	\$ 38,000
4	Site Setup, Equipment Mobilization/Demobilization	46,900	sf	\$ 1.25	\$ 59,000
5	SVE Vertical Wells (V-SVE)	35	ea	\$ 5,000	\$ 175,000
6	SVE Horizontal Wells (H-SVE)	5	ea	\$ 25,000	\$ 125,000
7	Install Well Headworks/Vault	40	ea	\$ 1,500	\$ 60,000
8	Install Outdoor Vapor Monitoring Points	12	ea	\$ 2,000	\$ 24,000
9	Trenching, Piping, Backfill, Resurfacing	2,800	lf	\$ 30	\$ 84,000
10	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
11	Control and Instrumentation	1	ls	\$ 9,000	\$ 9,000
12	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 30,000	\$ 30,000
13	SVE System Installation and Startup	1	ea	\$ 50,000	\$ 50,000
14	SVE Emissions Treatment System (Thermal/Cat Ox) 1000 cfm	1	ea	\$ 120,000	\$ 120,000
15	Soil Confirmation Sampling and Analyses	60	samples	\$ 800	\$ 48,000
16	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 35,000	\$ 35,000
17	Air Monitoring/Sampling	24	days	\$ 2,500	\$ 60,000
18	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
19	Site Closure, decommissioning, well abandonment	1	ls	\$ 25,000	\$ 25,000
20	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 1,242,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	12%	of	\$ 1,242,000	\$ 150,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 1,242,000	\$ 75,000
3	Construction Management	8%	of	\$ 1,242,000	\$ 100,000
Indirect Capital Total					\$ 325,000
Direct + Indirect Capital Total					\$ 1,567,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 10,000	\$ 120,000
3	Fuel	12	mths	\$ 15,000	\$ 180,000
4	Electricity	12	mths	\$ 5,500	\$ 66,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 3,000	\$ 36,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 7,500	\$ 90,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 10,000	\$ 120,000
8	Waste/Water Disposal	12	mths	\$ 4,500	\$ 54,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 4,000	\$ 48,000
10	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 726,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 1,978,000
ICs + SSV Annual O&M Subtotal					\$ 15,275
Present Worth of ICs + SSV (5%, 100 Years)					\$ 304,000
Contingency (20% of total project cost)					\$ 770,000
Total Capital and O&M Cost					\$ 4,619,000

NOTES/ASSUMPTIONS

1. Benzene SVE (OS+UB) system: Uses 35 V-SVE wells with 5-15 feet bgs screens and 5 H-SVE wells with average 125 feet screens installed @ 10 feet bgs.
2. Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
3. Benzene SVE uses thermal oxidizer, 1000 scfm, positive displacement (PD) blower.
4. Assume SVE operation for 3 years. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
5. Site investigation cost is based on an assumed sampling density.
6. ICs include IC layers 1, 2, 3, 4A and 5.

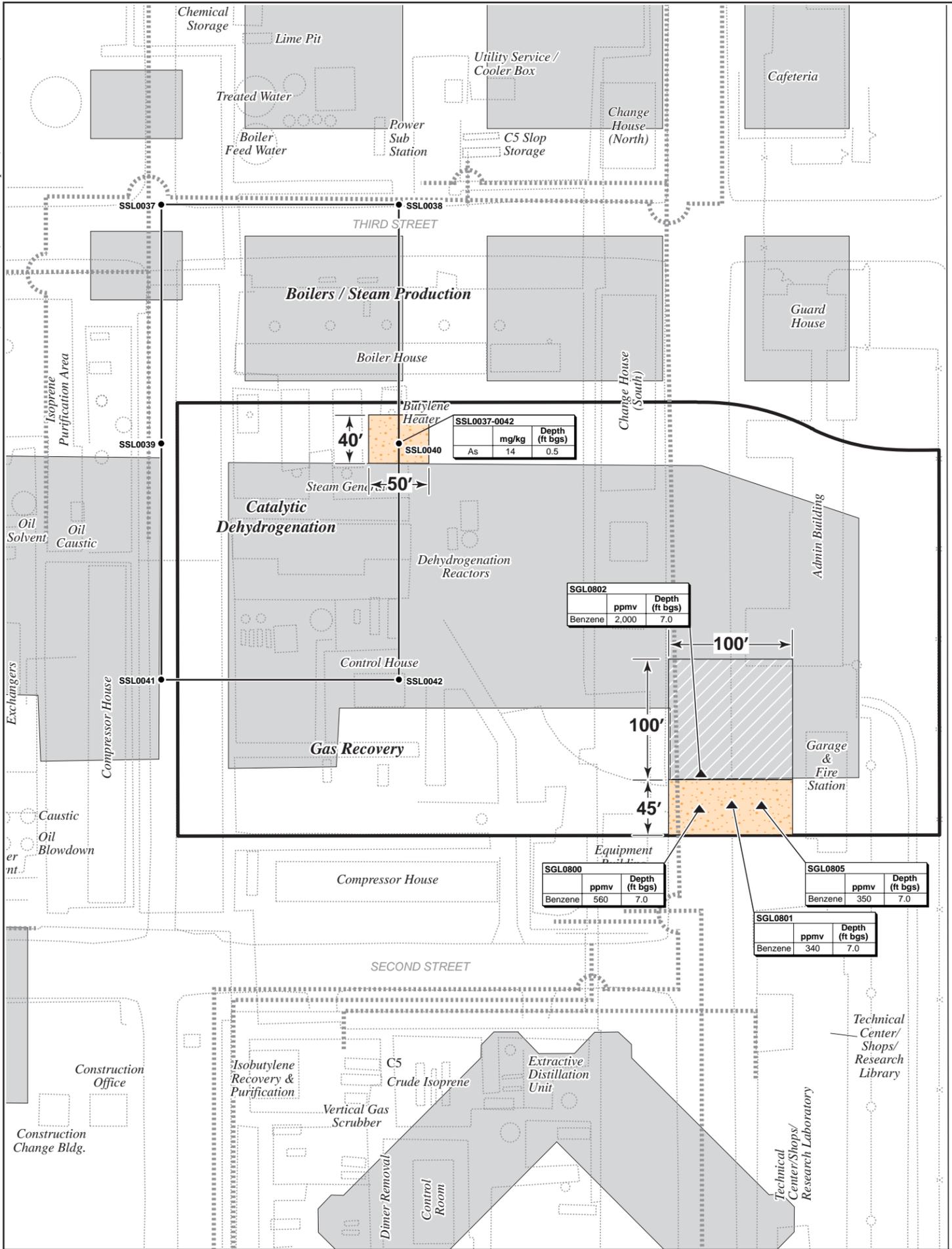
TABLE D2.7-5
EAPC 6 - REMEDIAL ALTERNATIVE 6
EXCAVATION (Benzene) AND SVE/BV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 161,000	\$ 161,000
3	Site preparation/Geophysical Survey	46,900	sf	\$ 0.80	\$ 38,000
4	Site Setup, Equipment Mobilization/Demobilization	46,900	sf	\$ 1.25	\$ 59,000
5	Shoring design and installation	2,250	sf	\$ 65	\$ 146,000
6	Excavation and Stockpile (< 15 feet bgs)	16,300	yd3	\$ 12	\$ 195,000
7	Clean overburden excavation for slope stabilization	900	yd3	\$ 12	\$ 11,000
8	Truck Load-out	16,300	yd3	\$ 2	\$ 33,000
9	Backfill and Compaction	17,930	yd ³	\$ 35	\$ 627,000
10	Asphalt pavement restoration	29,400	sf	\$ 10	\$ 294,000
11	SVE Horizontal Wells (H-SVE)	5	ea	\$ 25,000	\$ 125,000
12	Install Well Headworks/Vault	5	ea	\$ 1,500	\$ 8,000
13	Trenching, Piping, Backfill, Resurfacing	400	lf	\$ 30	\$ 12,000
14	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
15	Control and Instrumentation	1	ls	\$ 7,000	\$ 7,000
16	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 6,600	\$ 7,000
17	SVE System Installation and Startup	1	ea	\$ 50,000	\$ 50,000
18	SVE Emissions Treatment System (Thermal/Cat Ox) 750 cfm	1	ea	\$ 100,000	\$ 100,000
19	Transportation and Off-Site Disposal	24,450	ton	\$ 100	\$ 2,445,000
20	Soil Confirmation Sampling and Analyses	125	samples	\$ 350	\$ 44,000
21	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 35,000	\$ 35,000
22	Air Monitoring/Sampling	50	days	\$ 2,500	\$ 125,000
23	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
24	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
25	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 4,681,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	8%	of	\$ 4,681,000	\$ 375,000
2	Project Management, Agency Reporting and Coordination	5%	of	\$ 4,681,000	\$ 235,000
3	Construction Management	6%	of	\$ 4,681,000	\$ 281,000
Indirect Capital Total					\$ 891,000
Direct + Indirect Capital Total					\$ 5,572,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 6,000	\$ 72,000
3	Fuel	12	mths	\$ 12,000	\$ 144,000
4	Electricity	12	mths	\$ 4,300	\$ 51,600
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 2,000	\$ 24,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 4,000	\$ 48,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 8,000	\$ 96,000
8	Waste/Water Disposal	12	mths	\$ 2,000	\$ 24,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
10	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 507,600
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 1,382,000
ICs + SSV Annual O&M Subtotal					\$ 15,275
Present Worth of ICs + SSV (5%, 100 Years)					\$ 304,000
Contingency (25% of total project cost)					\$ 1,815,000
Total Capital and O&M Cost					\$ 9,073,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. Assume 150 linear feet of soldier pile shoring is needed.
3. Assume excavated soil is 33% RCRA haz, 33% Cal haz, and 33% non haz sent to a permitted facility.
4. Benzene SVE (UB) system: Uses 5 H-SVE wells with average 125 feet screens installed @ 10 feet bgs.
5. Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
6. Benzene SVE uses thermal oxidizer, 750 scfm, positive displacement (PD) blower.
7. Assume SVE operation for 3 years. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
8. ICs include IC layers 1, 2, 3, 4A and 5.

EAPC 11



Sample ID	mg/kg	Depth (ft bgs)
SSL0037-0042	14	0.5
SSL0040	14	0.5

Sample ID	ppmv	Depth (ft bgs)
SGL0802	2,000	7.0
Benzene	2,000	7.0

Sample ID	ppmv	Depth (ft bgs)
SGL0800	560	7.0
Benzene	560	7.0

Sample ID	ppmv	Depth (ft bgs)
SGL0801	340	7.0
Benzene	340	7.0

Sample ID	ppmv	Depth (ft bgs)
SGL0805	350	7.0
Benzene	350	7.0

Legend

- Parcel boundary
- Outlines of historical features with use/contents indicated
- Acetone / Acetonitrile
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Assumed extent of VOC-impacted shallow soil below building
- Composite shallow soil sampling locations with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded
- Soil gas sampling point with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded



Area shown in this map

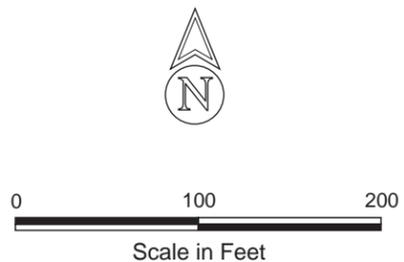


FIGURE 8.3-6
ASSUMED EXTENT OF IMPACTED SOIL
 Parcel No. 7351-033-034
 EAPC 11
 Del Amo Soil + NAPL FS
URS

TABLE D2.8-1
EAPC 11 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D2.8-2
EAPC 11 - REMEDIAL ALTERNATIVE 3
CAPPING (Benzene, As) + HVAC MOD/SSV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 48,000	\$ 48,000
3	Site preparation	16,500	sf	\$ 0.40	\$ 7,000
4	Site Setup, Equipment Mobilization	16,500	sf	\$ 0.75	\$ 13,000
5	Slurry Seal over Existing Asphalt Pavement	6,500	sf	\$ 5	\$ 33,000
6	Subslab Venting System under building (installed)	10,000	sf	\$ 5	\$ 50,000
7	Install Vapor Monitoring Points inside building	100	ea	\$ 500	\$ 50,000
8	Parcel Cleanup/Demobilization	1	ls	\$ 10,000	\$ 10,000
9	Remedial Action Monitoring	12	day	\$ 2,000	\$ 24,000
10	Remediation Documentation/Reporting	1	ls	\$ 20,000	\$ 20,000
11	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 10,000	\$ 10,000
Direct Capital Total					\$ 309,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 309,000	\$ 47,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 309,000	\$ 25,000
3	Construction Management	10%	of	\$ 309,000	\$ 31,000
Indirect Capital Subtotal					\$ 103,000
Total Direct + Indirect Capital Cost					\$ 412,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SSV periodic monitoring, operation, maintenance	1	year	\$ 12,000	\$ 12,000
3	Cap Maintenance and Repair	1	year	\$ 11,000	\$ 11,000
ICs, Cap, and SSV Annual Operation and Maintenance Subtotal					\$ 26,775
Present Worth of ICs + SSV + Cap (5%, 100 Years) O&M Costs					\$ 532,000
Contingency (20% of total project cost)					\$ 189,000
Total Capital and ICs, Cap, and SSV O&M Cost					\$ 1,133,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. SSV assumed for this alternative instead of HVAC Mod.
4. SSV assumes piping laid in trenches inside building.
5. SSV system includes fan and carbon adsorbers as vapor control system.
6. SSV O&M includes periodic monitoring of vapor control system.
7. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D2.8-3
EAPC 11 - REMEDIAL ALTERNATIVE 4
CAPPING (As) + SVE/BV (OS) + HVAC MOD/SSV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 48,000	\$ 48,000
3	Site preparation/Geophysical Survey	16,500	sf	\$ 0.80	\$ 14,000
4	Site Setup, Equipment Mobilization/Demobilization	16,500	sf	\$ 1.25	\$ 21,000
5	Asphalt pavement Slurry Seal Cover (nVOCs)	2,000	sf	\$ 5	\$ 10,000
6	Install Subslab Venting System under building	10,000	sf	\$ 5	\$ 50,000
7	Install Vapor Monitoring Points inside building	100	ea	\$ 500	\$ 50,000
8	SVE Vertical Wells (V-SVE)	8	ea	\$ 5,000	\$ 40,000
9	Install Well Headworks/Vault	8	ea	\$ 1,500	\$ 12,000
10	Install Outdoor Vapor Monitoring Points	2	ea	\$ 2,000	\$ 4,000
11	Trenching, Piping, Backfill, Resurfacing	400	lf	\$ 30	\$ 12,000
12	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
13	Control and Instrumentation	1	ls	\$ 4,000	\$ 4,000
14	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 10,000	\$ 10,000
15	SVE System Installation and Startup	1	ea	\$ 30,000	\$ 30,000
16	SVE Emissions Treatment System (Thermal/Cat Ox), 100 cfm	1	ea	\$ 50,000	\$ 50,000
17	Soil Confirmation Sampling and Analyses	15	samples	\$ 750	\$ 11,000
18	Air Monitoring/Sampling	6	days	\$ 2,500	\$ 15,000
19	Remediation Documentation/Reporting	1	ea	\$ 25,000	\$ 25,000
20	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
21	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 20,000	\$ 20,000
Direct Capital Total					\$ 540,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	12%	of	\$ 540,000	\$ 65,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 540,000	\$ 33,000
3	Construction Management	8%	of	\$ 540,000	\$ 44,000
Indirect Capital Total					\$ 142,000
Direct + Indirect Capital Total					\$ 682,000
Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
3	SVE periodic monitoring, operation, maintenance	12	mths	\$ 4,000	\$ 48,000
4	Fuel	12	mths	\$ 3,000	\$ 36,000
5	Electricity	12	mths	\$ 1,300	\$ 16,000
6	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 1,000	\$ 12,000
7	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 1,500	\$ 18,000
8	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 4,000	\$ 48,000
9	Waste/Water Disposal	12	mths	\$ 1,000	\$ 12,000
10	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
11	Cap Maintenance and Repair	1	year	\$ 3,000	\$ 3,000
SVE Annual Operation and Maintenance Subtotal					\$ 226,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 616,000
ICs, Cap, and SSV Annual Operation and Maintenance Subtotal					\$ 18,775
Present Worth of ICs + SSV + Cap (5%, 100 Years) O&M Costs					\$ 373,000
Contingency (20% of total project cost)					\$ 334,000
Total Capital and O&M Cost					\$ 2,005,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. Benzene SVE (OS) system: Uses 8 V-SVE wells, 5-15 feet bgs screens.
4. Benzene SVE uses thermal oxidizer, 100 scfm, positive displacement (PD) blower.
5. Assume SVE operation for 3 years.
6. SSV assumed for this alternative instead of HVAC Mod.
7. SSV assumes piping laid in trenches inside building.
8. SSV system includes fan and carbon adsorbers as vapor control system.
9. SSV O&M includes periodic monitoring of vapor control system.
10. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D2.8-4
EAPC 11 - REMEDIAL ALTERNATIVE 5
CAPPING (As) + SVE/BV (OS) + SVE/BV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 48,000	\$ 48,000
3	Site preparation/Geophysical Survey	16,500	sf	\$ 0.80	\$ 14,000
4	Site Setup, Equipment Mobilization/Demobilization	16,500	sf	\$ 1.25	\$ 21,000
5	Asphalt pavement Slurry Seal Cover (OS)	6,500	sf	\$ 5	\$ 33,000
6	SVE Vertical Wells (V-SVE)	8	ea	\$ 5,000	\$ 40,000
7	SVE Horizontal Wells (H-SVE)	4	ea	\$ 25,000	\$ 100,000
8	Install Well Headworks/Vault	12	ea	\$ 1,500	\$ 18,000
9	Install Outdoor Vapor Monitoring Points	2	ea	\$ 2,000	\$ 4,000
10	Trenching, Piping, Backfill, Resurfacing	100	lf	\$ 30	\$ 3,000
11	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
12	Control and Instrumentation	1	ls	\$ 6,000	\$ 6,000
13	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 12,000	\$ 12,000
14	SVE System Installation and Startup	1	ea	\$ 50,000	\$ 50,000
15	SVE Emissions Treatment System (Thermal/Cat Ox) 500 cfm	1	ea	\$ 80,000	\$ 80,000
16	Soil Confirmation Sampling and Analyses	20	samples	\$ 800	\$ 16,000
17	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 60,000	\$ 60,000
18	Air Monitoring/Sampling	10	days	\$ 2,500	\$ 25,000
19	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
20	Site Closure, decommissioning, well abandonment	1	ls	\$ 25,000	\$ 25,000
21	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 704,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	12%	of	\$ 704,000	\$ 85,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 704,000	\$ 43,000
3	Construction Management	8%	of	\$ 704,000	\$ 57,000
Indirect Capital Total					\$ 185,000
Direct + Indirect Capital Total					\$ 889,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 6,000	\$ 72,000
3	Fuel	12	mths	\$ 9,000	\$ 108,000
4	Electricity	12	mths	\$ 3,200	\$ 38,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 2,000	\$ 24,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 3,500	\$ 42,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 6,000	\$ 72,000
8	Waste/Water Disposal	12	mths	\$ 1,500	\$ 18,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 4,000	\$ 48,000
10	Cap Maintenance and Repair	1	Year	\$ 11,000	\$ 11,000
11	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 422,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 1,150,000
ICs + SSV + Cap Annual O&M Subtotal					\$ 26,775
Present Worth of ICs + Cap + SSV (5%, 100 Years)					\$ 532,000
Contingency (20% of total project cost)					\$ 514,000
Total Capital and O&M Cost					\$ 3,085,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. Benzene SVE (OS+UB) system: Uses 8 V-SVE wells with 5-15 feet bgs screens and 4 H-SVE wells with average 100 feet screens installed @ 10 feet bgs.
4. Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
5. Benzene SVE uses thermal oxidizer, 500 scfm, positive displacement (PD) blower.
6. Assume SVE operation for 3 years. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
7. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

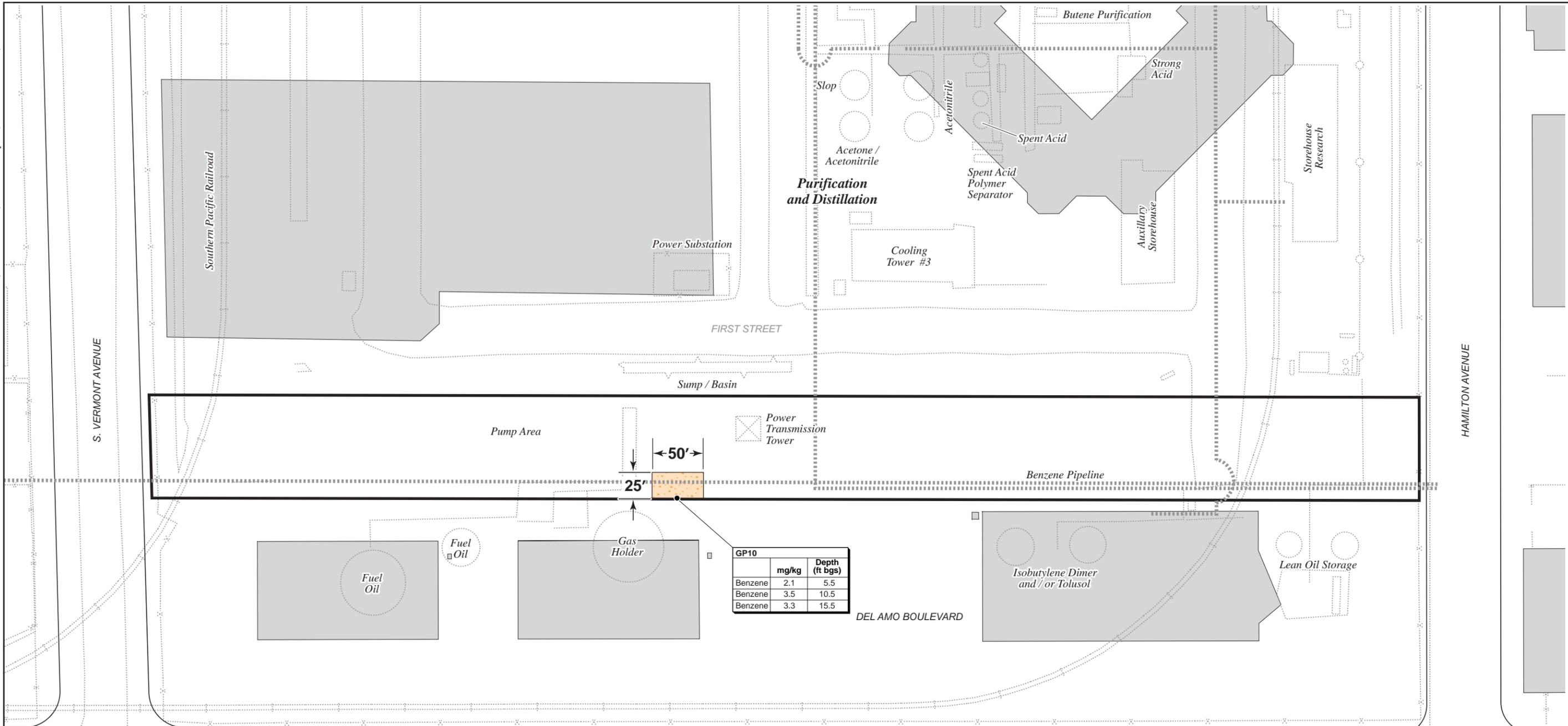
TABLE D2.8-5
EAPC 11 - REMEDIAL ALTERNATIVE 6
EXCAVATION (Benzene, As) + SVE/BV (UB) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 102,500	\$ 103,000
3	Site preparation/Geophysical Survey	16,500	sf	\$ 0.80	\$ 14,000
4	Site Setup, Equipment Mobilization/Demobilization	16,500	sf	\$ 1.25	\$ 21,000
5	Shoring design and installation	1,500	sf	\$ 65	\$ 98,000
6	Excavation and Stockpile (< 15 feet bgs)	2,870	yd3	\$ 12	\$ 34,000
7	Clean overburden excavation for slope stabilization	375	yd3	\$ 12	\$ 5,000
8	Truck Load-out	2,870	yd3	\$ 2	\$ 6,000
9	Backfill and Compaction	3,157	yd ³	\$ 35	\$ 110,000
10	Asphalt pavement restoration	6,500	sf	\$ 10	\$ 65,000
11	SVE Horizontal Wells (H-SVE)	4	ea	\$ 25,000	\$ 100,000
12	Install Well Headworks/Vault	4	ea	\$ 1,500	\$ 6,000
13	Trenching, Piping, Backfill, Resurfacing	150	lf	\$ 30	\$ 4,000
14	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 75,000	\$ 75,000
15	Control and Instrumentation	1	ls	\$ 50,000	\$ 50,000
16	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 10,500	\$ 10,000
17	SVE System Installation and Startup	1	ea	\$ 50,000	\$ 50,000
18	SVE Emissions Treatment System (Thermal/Cat Ox) 400 cfm	1	ea	\$ 80,000	\$ 80,000
19	Transportation and Off-Site Disposal	4,306	ton	\$ 100	\$ 431,000
20	Soil Confirmation Sampling and Analyses	50	samples	\$ 500	\$ 25,000
21	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 60,000	\$ 60,000
22	Air Monitoring/Sampling	20	days	\$ 2,500	\$ 50,000
23	Remediation Documentation/Reporting	1	ea	\$ 30,000	\$ 30,000
24	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
25	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 25,000	\$ 25,000
Direct Capital Total					\$ 1,506,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	12%	of	\$ 1,506,000	\$ 181,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 1,506,000	\$ 91,000
3	Construction Management	8%	of	\$ 1,506,000	\$ 121,000
Indirect Capital Total					\$ 393,000
Direct + Indirect Capital Total					\$ 1,899,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 5,000	\$ 60,000
3	Fuel	12	mths	\$ 8,000	\$ 96,000
4	Electricity	12	mths	\$ 2,700	\$ 32,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 1,500	\$ 18,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 2,500	\$ 30,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 5,000	\$ 60,000
8	Waste/Water Disposal	12	mths	\$ 1,500	\$ 18,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
10	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 350,000
SVE Present Worth of Operation and Maintenance Costs (5%, 3 Years)					\$ 953,000
ICs + SSV Annual O&M Subtotal					\$ 15,275
Present Worth of ICs + SSV (5%, 100 Years)					\$ 304,000
Contingency (25% of total project cost)					\$ 789,000
Total Capital and O&M Cost					\$ 3,945,000

NOTES/ASSUMPTIONS

- Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
- Assume 100 linear feet of soldier pile shoring is needed.
- Assume excavated soil is 33% RCRA haz, 33% Cal haz, and 33% non haz sent to a permitted facility.
- Benzene SVE (UB) system: Uses 4 H-SVE wells with average 100 feet screens installed @ 10 feet bgs.
- Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
- Benzene SVE uses thermal oxidizer, 400 scfm, positive displacement (PD) blower.
- Assume SVE operation for 3 years. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
- ICs include IC layers 1, 2, 3, 4A and 5.

EAPC 15

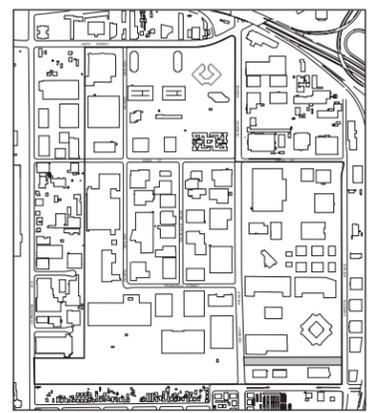


GP10	mg/kg	Depth (ft bgs)
Benzene	2.1	5.5
Benzene	3.5	10.5
Benzene	3.3	15.5

Legend

- Parcel boundary
- Outlines of historical features with use/contents indicated
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Soil boring location with contaminant concentration and depth of sample for locations where screening levels were exceeded

GP10	mg/kg	Depth (ft bgs)
Benzene	2.1	5.5
Benzene	3.5	10.5
Benzene	3.5	10.5



Area shown in this map

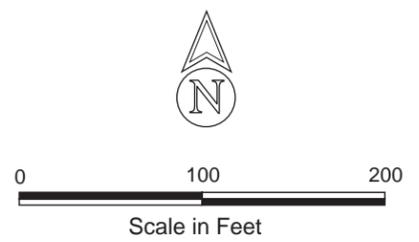


FIGURE 8.3-7
ASSUMED EXTENT OF IMPACTED SOIL
Parcel No. 7351-033-900
 EAPC 15
 Del Amo Soil + NAPL FS

TABLE D2.9-1
EAPC 15 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D2.9-2
EAPC 15 - REMEDIAL ALTERNATIVE 3
CAPPING (Benzene) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 12,000	\$ 12,000
3	Site preparation	1,250	sf	\$ 0.40	\$ 1,000
4	Site Setup, Equipment Mobilization	1,250	sf	\$ 0.75	\$ 1,000
5	Slurry Seal over Existing Asphalt Pavement	1,250	sf	\$ 5	\$ 7,000
6	Parcel Cleanup/Demobilization	1	ls	\$ 3,000	\$ 3,000
7	Remedial Action Monitoring	1	day	\$ 2,000	\$ 2,000
8	Remediation Documentation/Reporting	1	ls	\$ 10,000	\$ 10,000
9	Health and Safety, ODCs	1	ls	\$ 5,000	\$ 5,000
Direct Capital Total					\$ 85,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 85,000	\$ 13,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 85,000	\$ 7,000
3	Construction Management	10%	of	\$ 85,000	\$ 9,000
Indirect Capital Subtotal					\$ 29,000
Total Direct + Indirect Capital Cost					\$ 114,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	Cap Maintenance and Repair	1	year	\$ 2,000	\$ 2,000
Cap + ICs Annual Operation and Maintenance Subtotal					\$ 5,775
Present Worth of ICs + Cap (5%, 100 Years) O&M Costs					\$ 115,000
Contingency (20% of total project cost)					\$ 46,000
Total Capital and Cap + ICs O&M Cost					\$ 275,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D2.9-3
EAPC 15 - REMEDIAL ALTERNATIVE 4
SVE/BV (OS) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 18,000	\$ 18,000
3	Site preparation/Geophysical Survey	1,250	sf	\$ 0.80	\$ 1,000
4	Site Setup, Equipment Mobilization/Demobilization	1,250	sf	\$ 1.25	\$ 2,000
5	SVE Vertical Wells (V-SVE)	4	ea	\$ 5,000	\$ 20,000
6	Install Well Headworks/Vault	4	ea	\$ 1,500	\$ 6,000
7	Install Outdoor Vapor Monitoring Points	2	ea	\$ 2,000	\$ 4,000
8	Trenching, Piping, Backfill, Resurfacing	100	lf	\$ 30	\$ 3,000
9	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 30,000	\$ 30,000
10	Control and Instrumentation	1	ls	\$ 4,000	\$ 4,000
11	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 3,000	\$ 3,000
12	SVE System Installation and Startup	1	ea	\$ 30,000	\$ 30,000
13	SVE Emissions Treatment System (Thermal/Cat Ox), 100 cfm	1	ea	\$ 50,000	\$ 50,000
14	Soil Confirmation Sampling and Analyses	11	samples	\$ 1,400	\$ 16,000
15	Air Monitoring/Sampling	6	days	\$ 2,500	\$ 15,000
16	Remediation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
17	Site Closure, decommissioning, well abandonment	1	ls	\$ 15,000	\$ 15,000
18	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 10,000	\$ 10,000
Direct Capital Total					\$ 281,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 281,000	\$ 43,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 281,000	\$ 23,000
3	Construction Management	10%	of	\$ 281,000	\$ 29,000
Indirect Capital Total					\$ 95,000
Direct + Indirect Capital Total					\$ 376,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 2,000	\$ 24,000
3	Fuel	12	mths	\$ 3,000	\$ 36,000
4	Electricity	12	mths	\$ 1,300	\$ 16,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 750	\$ 9,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 2,000	\$ 24,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 2,000	\$ 24,000
8	Waste/Water Disposal	12	mths	\$ 500	\$ 6,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 years)					\$ 66,000
SVE Annual Operation and Maintenance Subtotal					\$ 175,000
SVE Present Worth of Operation and Maintenance Costs (5%, 2 Years)					\$ 326,000
Contingency (20%) of total project cost					\$ 154,000
Total Capital and O&M Cost					\$ 922,000

NOTES/ASSUMPTIONS

1. Benzene SVE (OS) system: Uses 4 V-SVE wells, 5-15 feet bgs screens.
2. Benzene SVE uses thermal oxidizer, 100 scfm, positive displacement (PD) blower.
3. Assume SVE operation for 2 years.
4. ICs include IC layers 1, 2, 3, 4A and 5.

TABLE D2.9-4
EAPC 15 - REMEDIAL ALTERNATIVE 5
EXCAVATION (Benzene) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 18,000	\$ 18,000
3	Site preparation/Geophysical Survey	1,250	sf	\$ 0.80	\$ 1,000
4	Site Setup, Equipment Mobilization/Demobilization	1,250	sf	\$ 1.25	\$ 2,000
5	Excavation and Stockpile (<5 feet bgs)	700	yd3	\$ 12	\$ 8,000
6	Clean overburden excavation for slope stabilization	417	yd3	\$ 12	\$ 5,000
7	Truck Load-out	700	yd3	\$ 2	\$ 1,000
8	Backfill and Compaction	770	yd ³	\$ 35	\$ 27,000
9	Asphalt pavement restoration	1,250	sf	\$ 10	\$ 13,000
10	Transportation and Off-Site Disposal	1,050	ton	\$ 100	\$ 105,000
11	Soil Confirmation Sampling and Analyses	20	samples	\$ 500	\$ 10,000
12	Air Monitoring/Sampling	3	days	\$ 2,500	\$ 8,000
13	Remediation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
14	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 20,000	\$ 20,000
Direct Capital Total					\$ 272,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 272,000	\$ 41,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 272,000	\$ 22,000
3	Construction Management	10%	of	\$ 272,000	\$ 28,000
Indirect Capital Total					\$ 91,000
Direct + Indirect Capital Total					\$ 363,000
Item No.	ICs Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 66,000
Contingency (30% of total project cost)					\$ 129,000
Total Capital and ICs O&M Costs					\$ 558,000

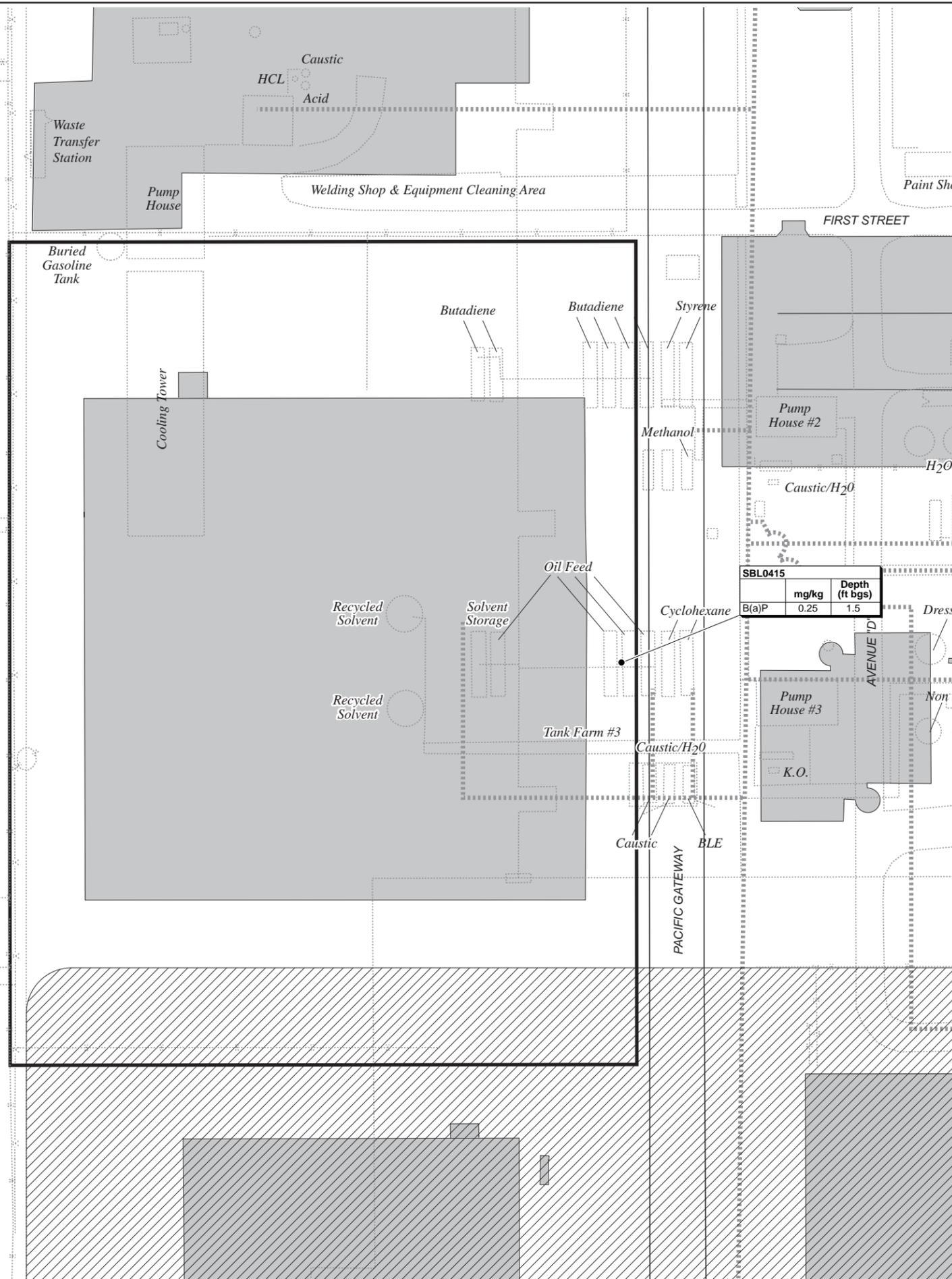
NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. No shoring is needed.
3. Assume excavated soil is 33% RCRA haz, 33% Cal haz, and 33% non haz sent to a permitted facility.
4. ICs include IC layers 1, 2, 3, 4A and 5.

GROUP 3A EAPCs

- **EAPC 4**
- **EAPC 30**
- **EAPC 36**
- **EAPC 3**
- **EAPC 12**
- **EAPC 13**

EAPC 4



Legend

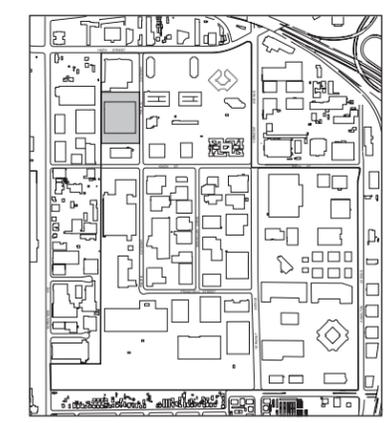
- Parcel boundary
- Cooling Tower #3
- Outlines of historical features with use/contents indicated
- Acetone / Acetonitrile
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Approximate former location of persistent soil staining
- Soil boring location with contaminant concentration and depth of sample for locations where sampling levels for risk driving chemicals were exceeded

SBL0415		
	mg/kg	Depth (ft bgs)
B(a)P	0.25	1.5

SBL0415		
	mg/kg	Depth (ft bgs)
B(a)P	0.25	1.5

Acronym

B(a)P Benzo(a)Pyrene



Area shown in this map

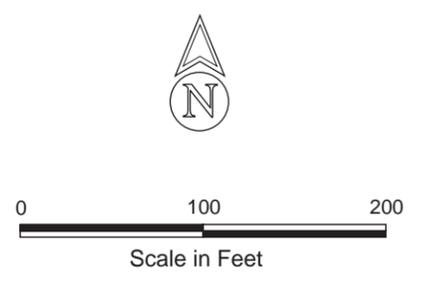


FIGURE 8.3-8
ASSUMED EXTENT OF IMPACTED SOIL
 Parcel No. 7351-031-007
 EAPC 4
 Del Amo Soil + NAPL FS

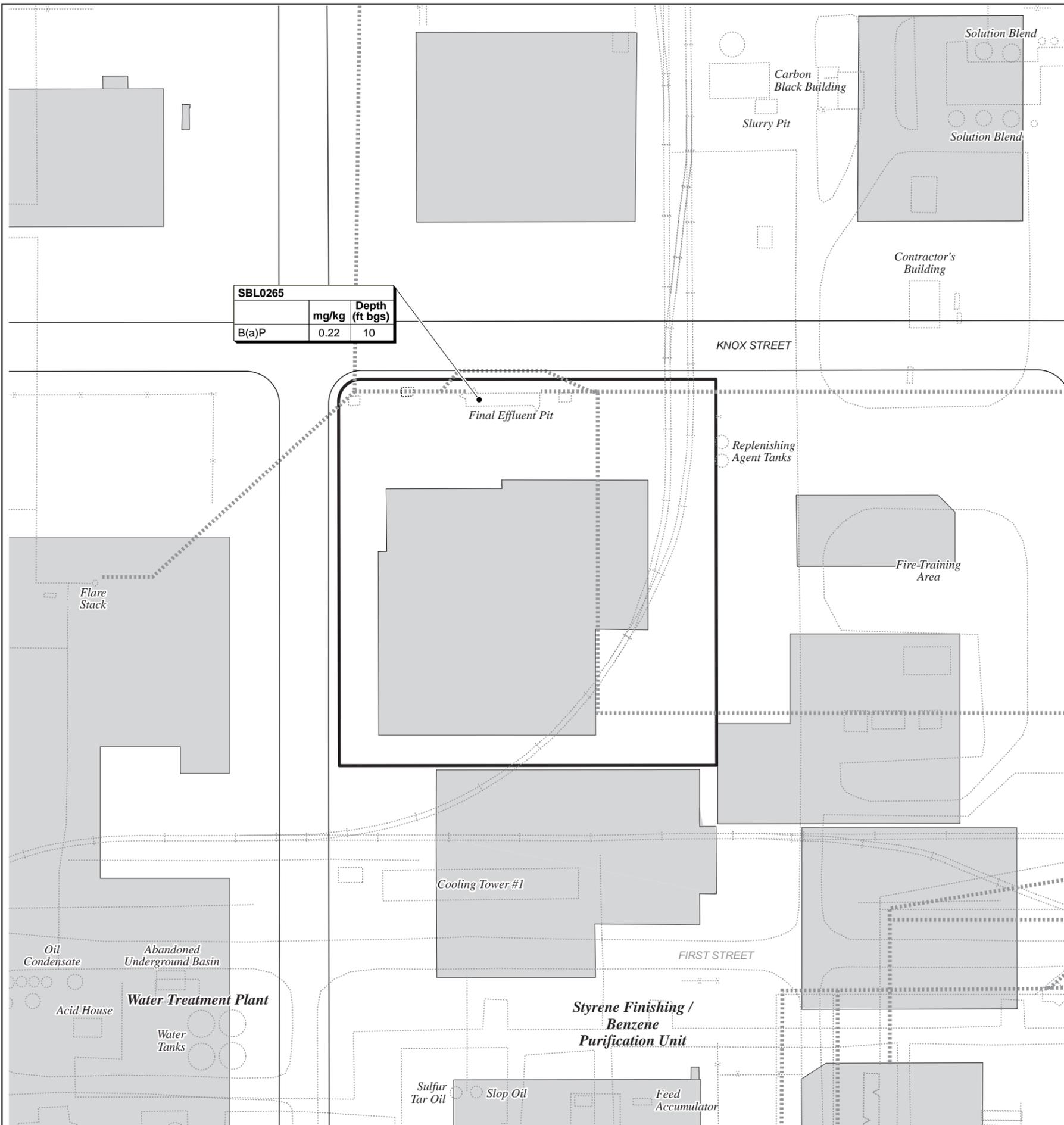
TABLE D2.10-1
EAPC 4 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

EAPC 30



SBL0265		
	mg/kg	Depth (ft bgs)
B(a)P	0.22	10

SBL0265		
	ppmv	Depth (ft bgs)
B(a)P	0.22	10

Legend

- Parcel boundary
- Outlines of historical features with use/contents indicated
- Acetone / Acetonitrile
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Soil boring location with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded

Acronym

B(a)P Benzo(a)Pyrene



Area shown in this map

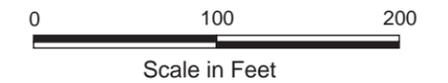


FIGURE 8.3-9

**ASSUMED EXTENT
OF IMPACTED SOIL**
Parcel No. 7351-034-072
EAPC 30
Del Amo Soil + NAPL FS



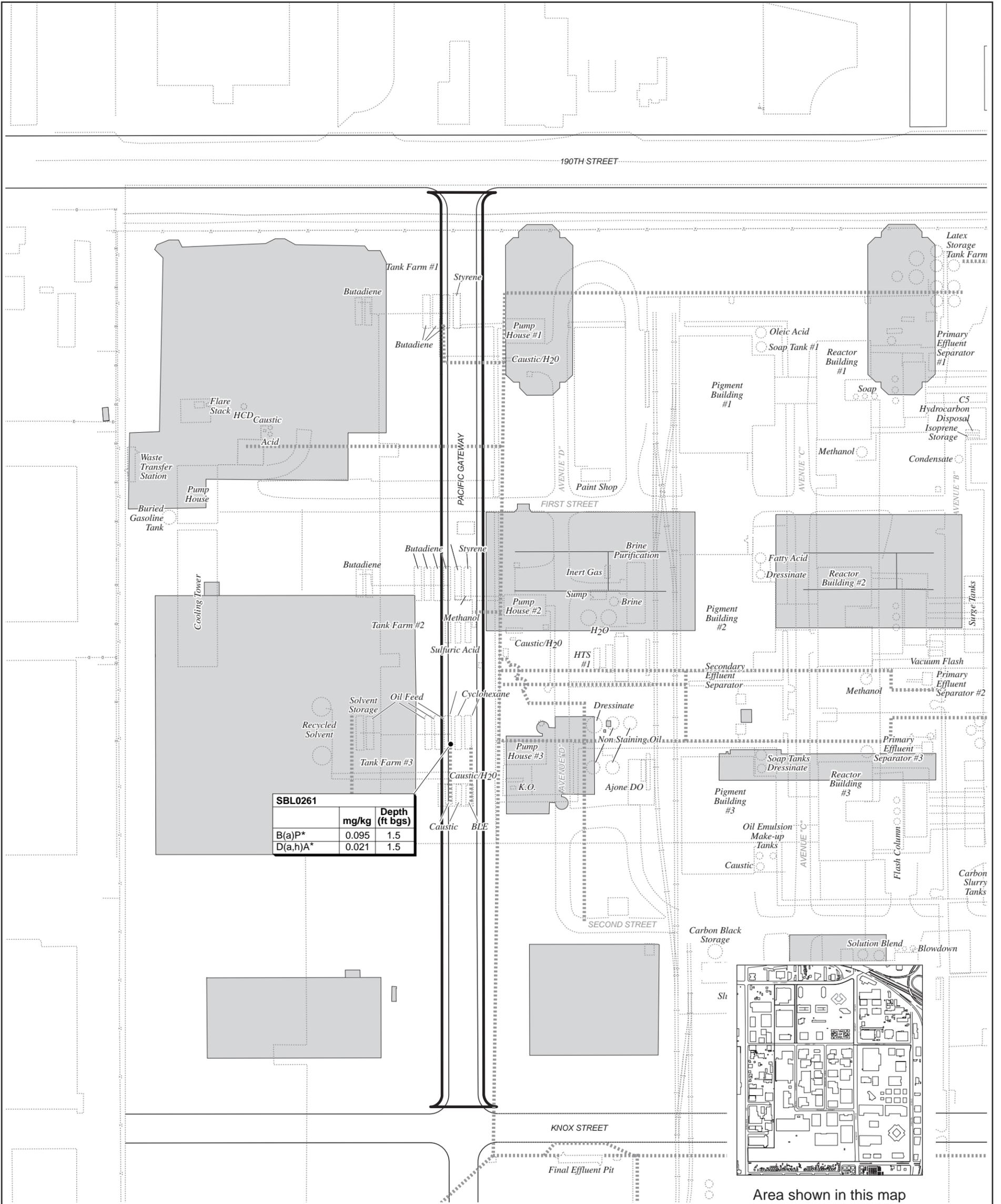
TABLE D2.11-1
EAPC 30 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 24,110	\$ 24,110
Direct Capital Total					\$ 24,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 24,000	\$ 2,400
Indirect Capital Subtotal					\$ 2,400
Total Direct + Indirect Capital Cost					\$ 26,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,775	\$ 2,775
ICs Annual Operation and Maintenance Subtotal					\$ 2,775
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 55,000
Contingency (20% of total project cost)					\$ 16,000
Total Capital and ICs O&M Cost					\$ 98,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3 and 4A.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

EAPC 36



Legend

- Parcel boundary
- Outlines of historical features with use/contents indicated
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids

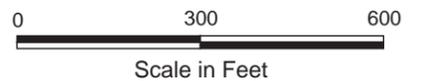
SBL0261		
	mg/kg	Depth (ft bgs)
B(a)P*	0.095	1.5
D(a,h)A*	0.021	1.5

• Soil boring location with contaminant concentration and depth of sample

* Chemical detected but does not exceed the criteria

Acronyms

- B(a)P Benzo(a) Pyrene
- D(a,h)A Dibenzo(a,h) Anthracene



Area shown in this map

FIGURE 8.3-10

ASSUMED EXTENT OF IMPACTED SOIL Pacific Gateway (North)

EAPC 36
Del Amo Soil + NAPL FS



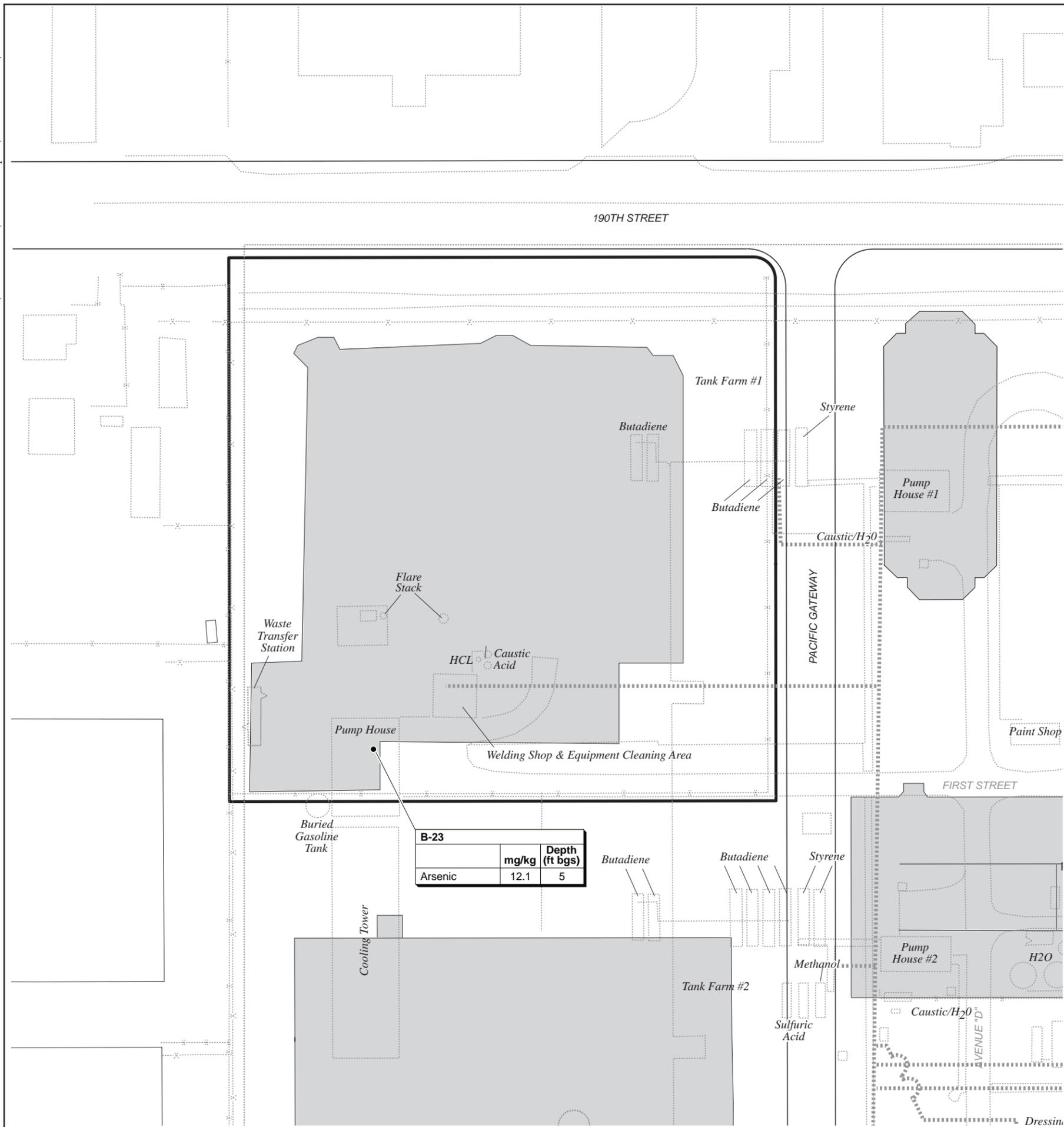
TABLE D2.12-1
EAPC 36 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 24,110	\$ 24,110
Direct Capital Total					\$ 24,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 24,000	\$ 2,400
Indirect Capital Subtotal					\$ 2,400
Total Direct + Indirect Capital Cost					\$ 26,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,775	\$ 2,775
ICs Annual Operation and Maintenance Subtotal					\$ 2,775
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 55,000
Contingency (20% of total project cost)					\$ 16,000
Total Capital and ICs O&M Cost					\$ 98,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3 and 4A.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

EAPC 3

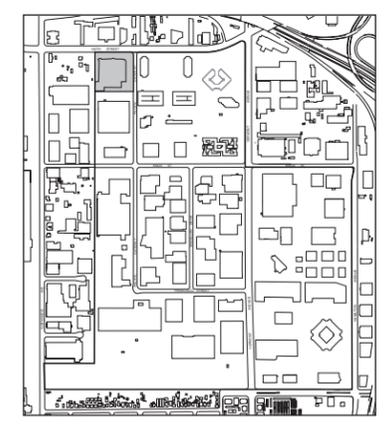


B-23		
	mg/kg	Depth (ft bgs)
Arsenic	12.1	5

Legend

- Parcel boundary
- Cooling Tower #3
- Outlines of historical features with use/contents indicated
- Acetone / Acetonitrile
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Soil boring location with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded

B-23		
	mg/kg	Depth (ft bgs)
Arsenic	12.1	5



Area shown in this map

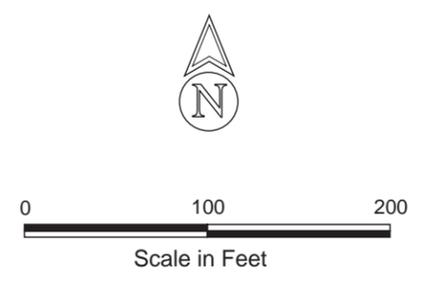


FIGURE 8.3-11

ASSUMED EXTENT OF IMPACTED SOIL
Parcel No. 7351-031-031
 EAPC 3
 Del Amo Soil + NAPL FS

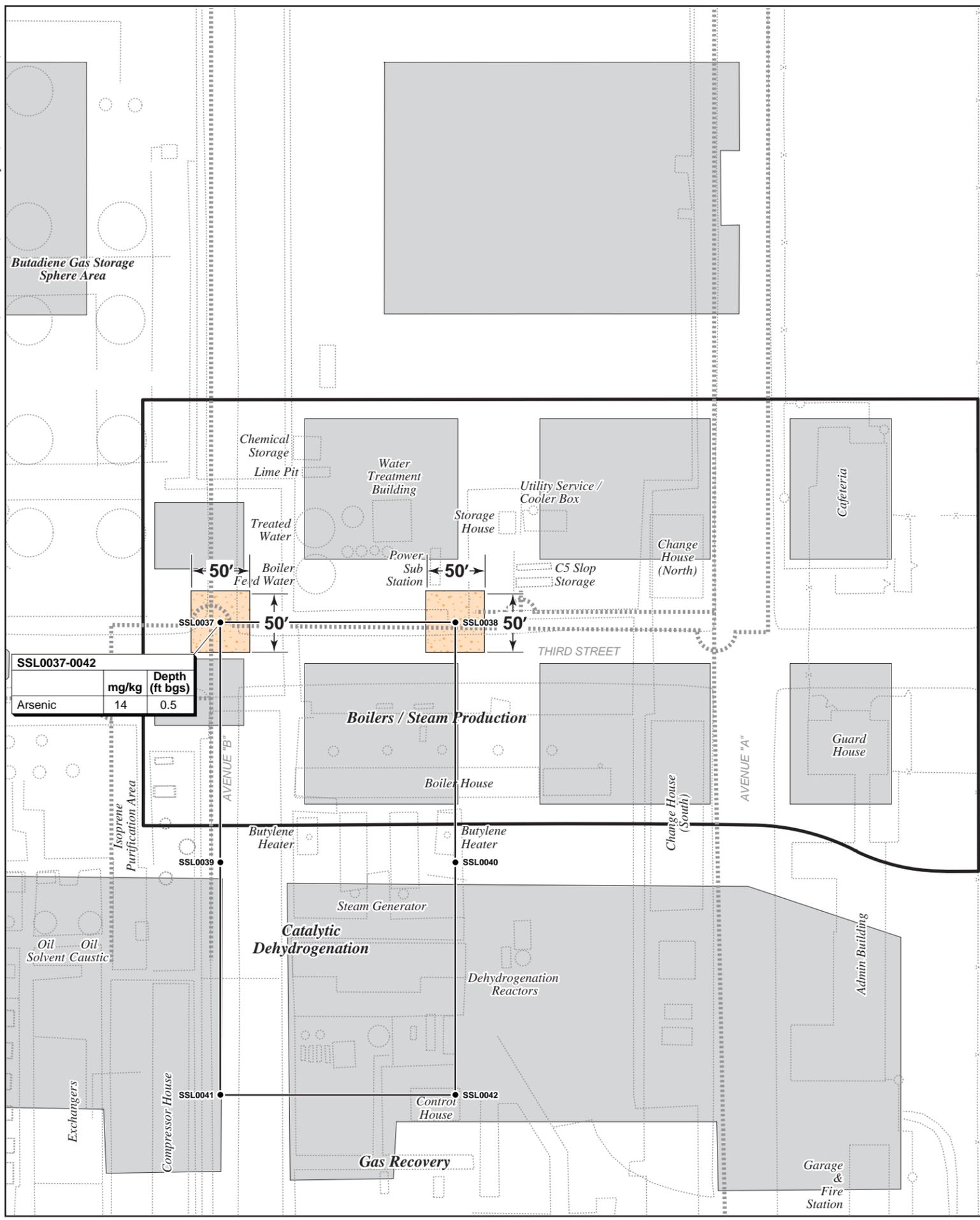
TABLE D2.13-1
EAPC 3 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 24,110	\$ 24,110
Direct Capital Total					\$ 24,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 24,000	\$ 2,400
Indirect Capital Subtotal					\$ 2,400
Total Direct + Indirect Capital Cost					\$ 26,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,775	\$ 2,775
ICs Annual Operation and Maintenance Subtotal					\$ 2,775
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 55,000
Contingency (20% of total project cost)					\$ 16,000
Total Capital and ICs O&M Cost					\$ 98,000

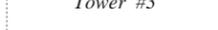
NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3 and 4A.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

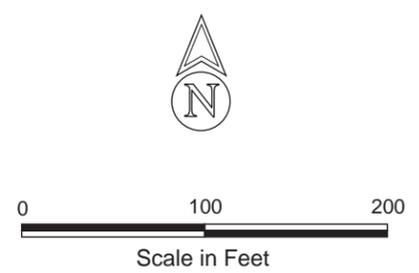
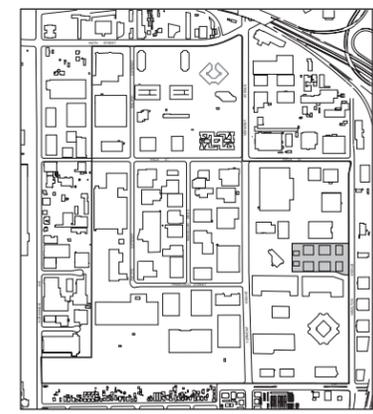
EAPC 12



Legend

-  Parcel boundary
-  Outlines of historical features with use/contents indicated
-  Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
-  Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
-  Composite shallow soil sampling locations with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded

SSL0037-0042		
Contaminant	mg/kg	Depth (ft bgs)
Arsenic	14	0.5



Area shown in this map

FIGURE 8.3-12
ASSUMED EXTENT OF IMPACTED SOIL
 Parcel No. 7351-033-040
 EAPC 12
 Del Amo Soil + NAPL FS



TABLE D2.14-1
EAPC 12 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 24,110	\$ 24,110
Direct Capital Total					\$ 24,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 24,000	\$ 2,400
Indirect Capital Subtotal					\$ 2,400
Total Direct + Indirect Capital Cost					\$ 26,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,775	\$ 2,775
ICs Annual Operation and Maintenance Subtotal					\$ 2,775
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 55,000
Contingency (20% of total project cost)					\$ 16,000
Total Capital and ICs O&M Cost					\$ 98,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3 and 4A.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D2.14-2
EAPC 12 - REMEDIAL ALTERNATIVE 3
CAPPING (As) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 15,000	\$ 15,000
3	Site preparation	5,000	sf	\$ 0.40	\$ 2,000
4	Site Setup, Equipment Mobilization	5,000	sf	\$ 0.75	\$ 4,000
5	Slurry Seal over Existing Asphalt Pavement	5,000	sf	\$ 5	\$ 25,000
6	Parcel Cleanup/Demobilization	1	ls	\$ 3,000	\$ 3,000
7	Remedial Action Monitoring	1	day	\$ 2,000	\$ 2,000
8	Remediation Documentation/Reporting	1	ls	\$ 10,000	\$ 10,000
9	Health and Safety, ODCs	1	ls	\$ 5,000	\$ 5,000
Direct Capital Total					\$ 100,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 100,000	\$ 15,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 100,000	\$ 8,000
3	Construction Management	10%	of	\$ 100,000	\$ 10,000
Indirect Capital Subtotal					\$ 33,000
Total Direct + Indirect Capital Cost					\$ 133,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	Cap Maintenance and Repair	1	year	\$ 9,000	\$ 9,000
Cap + ICs Annual Operation and Maintenance Subtotal					\$ 12,275
Present Worth of ICs + Cap (5%, 100 Years) O&M Costs					\$ 244,000
Contingency (20% of total project cost)					\$ 75,000
Total Capital and Cap + ICs O&M Cost					\$ 452,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. ICs include IC layers 1, 2, 3, 4A and 4B.

TABLE D2.14-3
EAPC 12 - REMEDIAL ALTERNATIVE 4
EXCAVATION (As) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

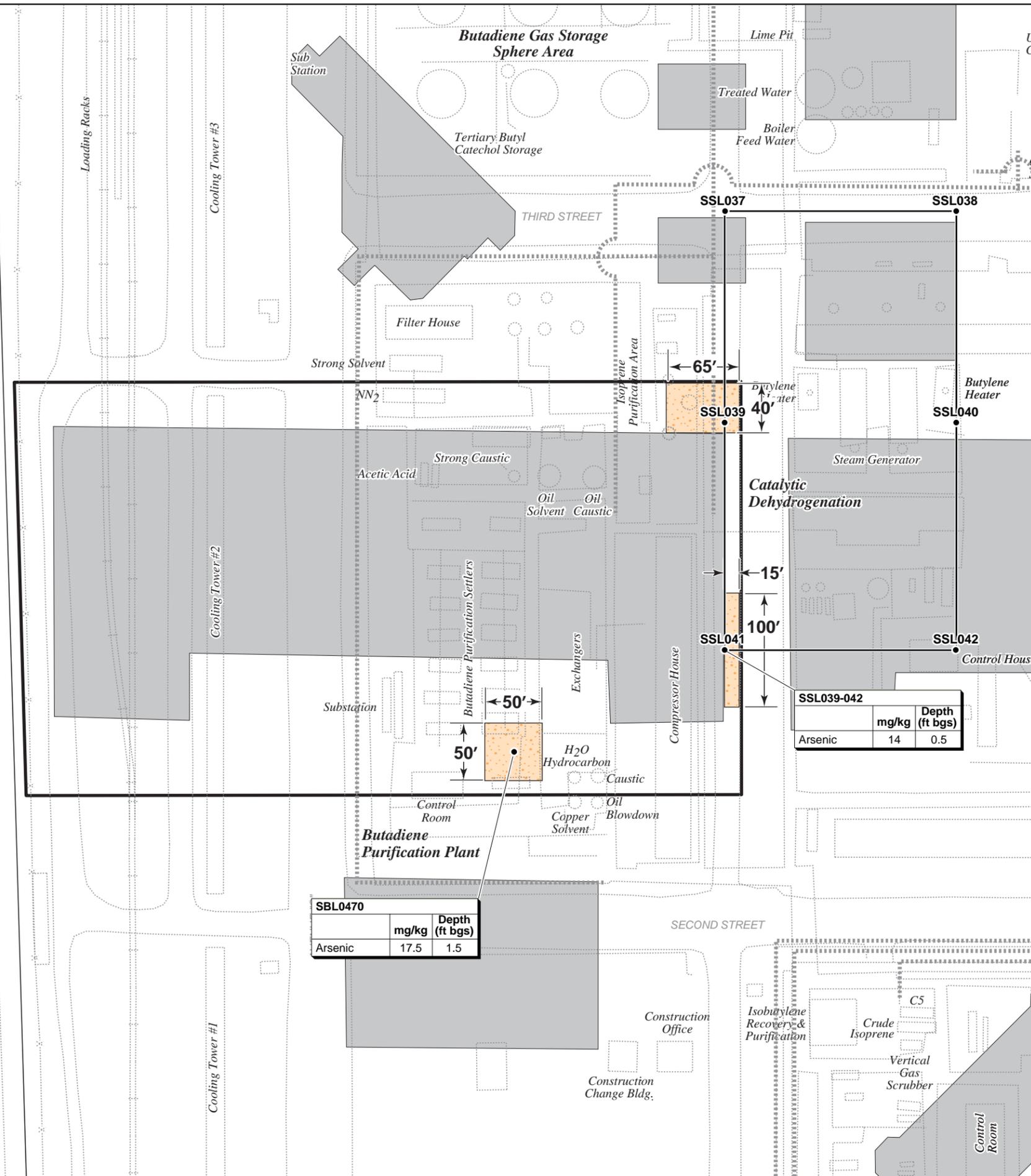
Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 5,110	\$ 5,110
2	Site Investigation/Delineation	1	ls	\$ 20,000	\$ 20,000
3	Site preparation/Geophysical Survey	5,000	sf	\$ 0.80	\$ 4,000
4	Equipment Mobilization	5,000	sf	\$ 1.25	\$ 7,000
5	Excavation and Stockpile (<5 feet bgs)	925	yd3	\$ 12	\$ 12,000
6	Clean overburden excavation for slope stabilization	185	yd3	\$ 12	\$ 3,000
7	Truck Load-out	925	yd3	\$ 2	\$ 2,000
8	Backfill and Compaction	1,018	yd ³	\$ 35	\$ 36,000
9	Asphalt pavement restoration	5,000	sf	\$ 10	\$ 50,000
10	Transportation and Off-Site Disposal	1,388	ton	\$ 50	\$ 69,000
11	Soil Confirmation Sampling and Analyses	20	samples	\$ 250	\$ 5,000
12	Air Monitoring/Sampling	6	days	\$ 2,500	\$ 15,000
13	Remediation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
14	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 20,000	\$ 20,000
Direct Capital Total					\$ 268,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 268,000	\$ 41,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 268,000	\$ 22,000
3	Construction Management	10%	of	\$ 268,000	\$ 27,000
Indirect Capital Total					\$ 90,000
Direct + Indirect Capital Total					\$ 358,000
Item No.	ICs Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,175	\$ 2,175
ICs Annual Operation and Maintenance Subtotal					\$ 2,175
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 44,000
Contingency (30% of total project cost)					\$ 121,000
Total Capital Cost					\$ 523,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. No shoring is needed.
3. Assume excavated soil is 100% non haz sent to a permitted facility.
4. ICs include IC layers 1 and 2.

EAPC 13

S. VERMONT AVENUE



SBL0470	mg/kg	Depth (ft bgs)
Arsenic	17.5	1.5

SSL039-042	mg/kg	Depth (ft bgs)
Arsenic	14	0.5

SBL0249	mg/kg	Depth (ft bgs)
TCE	0.19	15

SSL037-042	ppmv	Depth (ft bgs)
Arsenic	14	0.5

Legend

- Parcel boundary
- Outlines of historical features with use/contents indicated
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Assumed extent of arsenic-impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Soil boring location with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded
- Composite shallow soil sampling locations with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded



Area shown in this map

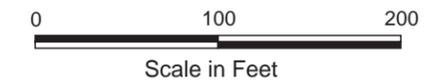


FIGURE 8.3-13

ASSUMED EXTENT OF IMPACTED SHALLOW SOIL Parcel No. 7351-033-045

EAPC 13
Del Amo Soil + NAPL FS



TABLE D2.15-1
EAPC 13 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 24,110	\$ 24,110
Direct Capital Total					\$ 24,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 24,000	\$ 2,400
Indirect Capital Subtotal					\$ 2,400
Total Direct + Indirect Capital Cost					\$ 26,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,775	\$ 2,775
ICs Annual Operation and Maintenance Subtotal					\$ 2,775
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 55,000
Contingency (20% of total project cost)					\$ 16,000
Total Capital and ICs O&M Cost					\$ 98,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3 and 4A.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D2.15-2
EAPC 13 - REMEDIAL ALTERNATIVE 3
CAPPING (As) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 17,000	\$ 17,000
3	Site preparation	6,600	sf	\$ 0.40	\$ 3,000
4	Site Setup, Equipment Mobilization	6,600	sf	\$ 0.75	\$ 5,000
5	Slurry Seal over Existing Asphalt Pavement	6,600	sf	\$ 5	\$ 33,000
6	Parcel Cleanup/Demobilization	1	ls	\$ 3,000	\$ 3,000
7	Remedial Action Monitoring	1	day	\$ 2,000	\$ 2,000
8	Remediation Documentation/Reporting	1	ls	\$ 10,000	\$ 10,000
9	Health and Safety, ODCs	1	ls	\$ 5,000	\$ 5,000
Direct Capital Total					\$ 112,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 112,000	\$ 17,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 112,000	\$ 9,000
3	Construction Management	10%	of	\$ 112,000	\$ 11,000
Indirect Capital Subtotal					\$ 37,000
Total Direct + Indirect Capital Cost					\$ 149,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	Cap Maintenance and Repair	1	year	\$ 11,000	\$ 11,000
Cap + ICs Annual Operation and Maintenance Subtotal					\$ 14,275
Present Worth of ICs + Cap (5%, 100 Years) O&M Costs					\$ 284,000
Contingency (20% of total project cost)					\$ 86,000
Total Capital and Cap + ICs O&M Cost					\$ 519,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. ICs include IC layers 1, 2, 3, 4A and 4B.

TABLE D2.15-3
EAPC 13 - REMEDIAL ALTERNATIVE 4
EXCAVATION (As) + ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 5,110	\$ 5,110
2	Site Investigation/Delineation	1	ls	\$ 23,000	\$ 23,000
3	Site preparation/Geophysical Survey	6,600	sf	\$ 0.80	\$ 6,000
4	Equipment Mobilization	6,600	sf	\$ 1.25	\$ 9,000
5	Excavation and Stockpile (<5 feet bgs)	1,222	yd3	\$ 12	\$ 15,000
6	Clean overburden excavation for slope stabilization	296	yd3	\$ 12	\$ 4,000
7	Truck Load-out	1,222	yd3	\$ 2	\$ 3,000
8	Backfill and Compaction	1,344	yd ³	\$ 35	\$ 48,000
9	Asphalt pavement restoration	6,600	sf	\$ 10	\$ 66,000
10	Transportation and Off-Site Disposal	1,833	ton	\$ 50	\$ 92,000
11	Soil Confirmation Sampling and Analyses	33	samples	\$ 250	\$ 8,000
12	Air Monitoring/Sampling	8	days	\$ 2,500	\$ 20,000
13	Remediation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
14	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 20,000	\$ 20,000
Direct Capital Total					\$ 339,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 339,000	\$ 51,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 339,000	\$ 28,000
3	Construction Management	10%	of	\$ 339,000	\$ 34,000
Indirect Capital Total					\$ 113,000
Direct + Indirect Capital Total					\$ 452,000
Item No.	ICs Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,175	\$ 2,175
ICs Annual Operation and Maintenance Subtotal					\$ 2,175
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 44,000
Contingency (30% of total project cost)					\$ 149,000
Total Capital Cost					\$ 645,000

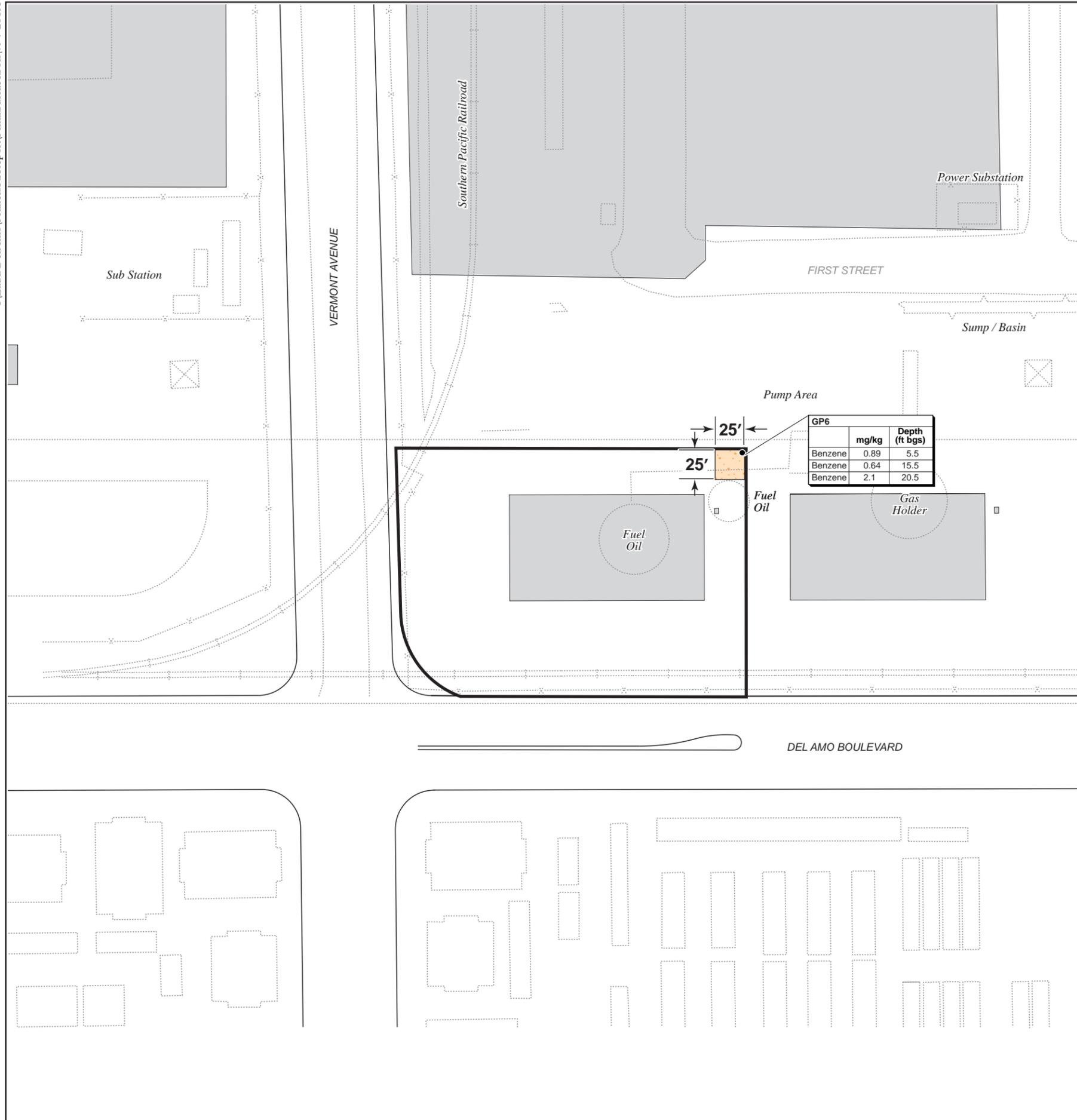
NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. No shoring is needed.
3. Assume excavated soil is 100% non haz sent to a permitted facility.
4. ICs include IC layers 1 and 2.

GROUP 3B EAPCs

- **EAPC 8**
- **EAPC 17**
- **EAPC 20**
- **EAPC 24**
- **EAPC 19**
- **EAPC 22**
- **EAPC 33**

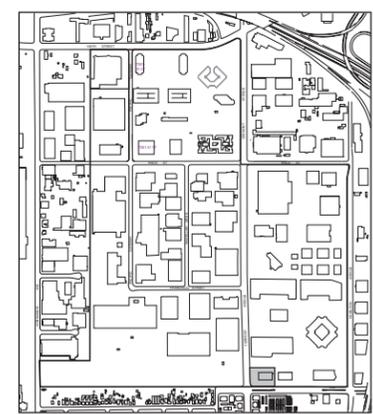
EAPC 8



Legend

- Parcel boundary
- Cooling Tower #3
- Acetone / Acetonitrile
- Outlines of historical features with use/contents indicated
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Soil boring location with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded

GP6		
	mg/kg	Depth (ft bgs)
Benzene	0.89	5.5
Benzene	0.64	15.5
Benzene	2.1	20.5



Area shown in this map

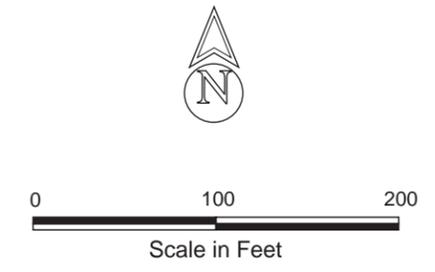


FIGURE 8.3-16
ASSUMED EXTENT OF IMPACTED SOIL
Parcel No. 7351-033-026
 EAPC 8
 Del Amo Soil + NAPL FS



TABLE D2.16-1
EAPC 8 - REMEDIAL ALTERNATIVE 2
INSTITUTIONAL CONTROLS COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D2.16-2
EAPC 8 - REMEDIAL ALTERNATIVE 3
CAPPING (Benzene) COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 11,000	\$ 11,000
3	Site preparation	625	sf	\$ 0.40	\$ 1,000
4	Site Setup, Equipment Mobilization	625	sf	\$ 0.75	\$ 1,000
5	Slurry Seal over Existing Asphalt Pavement	625	sf	\$ 5	\$ 3,000
6	Parcel Cleanup/Demobilization	1	ls	\$ 3,000	\$ 3,000
7	Remedial Action Monitoring	1	day	\$ 2,000	\$ 2,000
8	Remediation Documentation/Reporting	1	ls	\$ 10,000	\$ 10,000
9	Health and Safety, ODCs	1	ls	\$ 5,000	\$ 5,000
Direct Capital Total					\$ 80,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	20%	of	\$ 80,000	\$ 16,000
2	Project Management, Agency Reporting and Coordination	10%	of	\$ 80,000	\$ 8,000
3	Construction Management	15%	of	\$ 80,000	\$ 12,000
Indirect Capital Subtotal					\$ 36,000
Total Direct + Indirect Capital Cost					\$ 116,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	Cap Maintenance and Repair	1	year	\$ 1,000	\$ 1,000
Cap + ICs Annual Operation and Maintenance Subtotal					\$ 4,775
Present Worth of ICs + Cap (5%, 100 Years) O&M Costs					\$ 95,000
Contingency (20% of total project cost)					\$ 42,000
Total Capital and Cap + ICs O&M Cost					\$ 253,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D2.16-3
EAPC 8 - REMEDIAL ALTERNATIVE 4
SVE/BV (OS) COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 15,110	\$ 15,110
2	Site Investigation/Delineation	1	ls	\$ 15,000	\$ 15,000
3	Site preparation/Geophysical Survey	625	sf	\$ 0.80	\$ 1,000
4	Site Setup, Equipment Mobilization/Demobilization	625	sf	\$ 1.25	\$ 1,000
5	SVE Vertical Wells (V-SVE)	2	ea	\$ 5,000	\$ 10,000
6	Install Well Headworks/Vault	2	ea	\$ 1,500	\$ 3,000
7	Install Outdoor Vapor Monitoring Points	2	ea	\$ 2,000	\$ 4,000
8	Trenching, Piping, Backfill, Resurfacing	100	lf	\$ 30	\$ 3,000
9	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 30,000	\$ 30,000
10	Control and Instrumentation	1	ls	\$ 4,000	\$ 4,000
11	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 2,000	\$ 2,000
12	SVE System Installation and Startup	1	ea	\$ 30,000	\$ 30,000
13	SVE Emissions Treatment System (Thermal/Cat Ox), 100 cfm	1	ea	\$ 50,000	\$ 50,000
14	Soil Confirmation Sampling and Analyses	2	boring	\$ 5,000	\$ 10,000
15	Air Monitoring/Sampling	4	days	\$ 2,500	\$ 10,000
16	Remediation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
17	Site Closure, decommissioning, well abandonment	1	ls	\$ 10,000	\$ 10,000
18	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 10,000	\$ 10,000
Direct Capital Total					\$ 228,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 228,000	\$ 35,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 228,000	\$ 19,000
3	Construction Management	10%	of	\$ 228,000	\$ 23,000
Indirect Capital Total					\$ 77,000
Direct + Indirect Capital Total					\$ 305,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,675	\$ 2,675
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 3,000	\$ 36,000
3	Fuel	12	mths	\$ 3,000	\$ 36,000
4	Electricity	12	mths	\$ 1,300	\$ 16,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 500	\$ 6,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 2,000	\$ 24,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 3,000	\$ 36,000
8	Waste/Water Disposal	12	mths	\$ 500	\$ 6,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
ICs Annual Operation and Maintenance Subtotal					\$ 2,675
Present Worth of ICs Operation and Maintenance Costs (5%, 100 years)					\$ 54,000
SVE Annual Operation and Maintenance Subtotal					\$ 196,000
SVE Present Worth of Operation and Maintenance Costs (5%, 2 Years)					\$ 365,000
Contingency (20%) of total project cost					\$ 145,000
Total Capital and O&M Cost					\$ 869,000

NOTES/ASSUMPTIONS

1. Benzene SVE (OS) system: Uses 2 V-SVE wells, 5-15 feet bgs screens.
2. Benzene SVE uses thermal oxidizer, 100 scfm, positive displacement (PD) blower.
3. Assume SVE operation for 2 years.
4. Assume 20% contingency.
5. Site investigation cost is based on an assumed sampling density.
6. ICs include IC layers 1, 2 and 5.

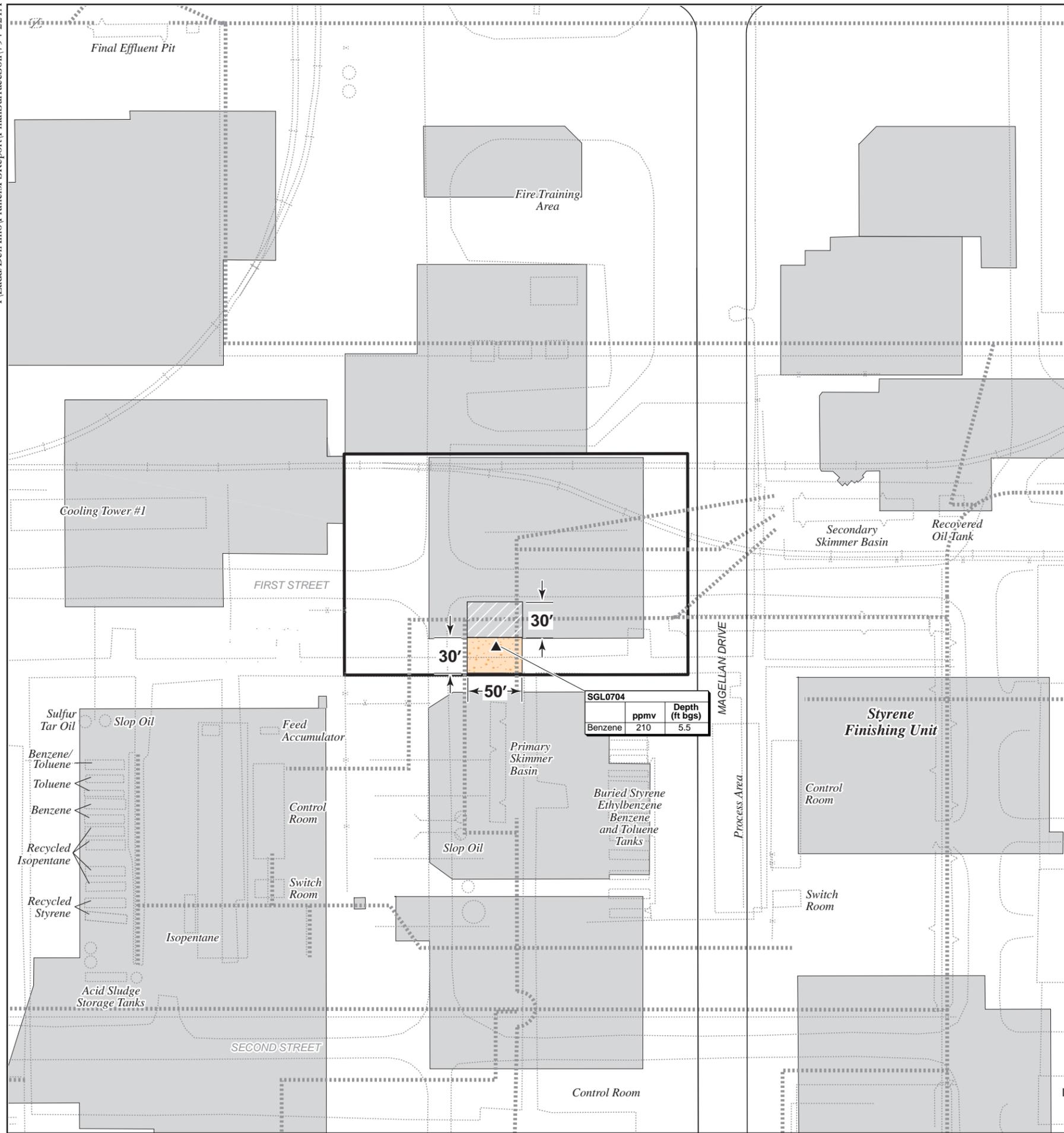
TABLE D2.16-4
EAPC 8 - REMEDIAL ALTERNATIVE 5
EXCAVATION (Benzene) COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 15,110	\$ 15,110
2	Site Investigation/Delineation	1	ls	\$ 15,000	\$ 15,000
3	Site preparation/Geophysical Survey	625	sf	\$ 0.80	\$ 1,000
4	Site Setup, Equipment Mobilization/Demobilization	625	sf	\$ 1.25	\$ 1,000
5	Excavation and Stockpile (<5 feet bgs)	350	yd3	\$ 12	\$ 4,000
6	Clean overburden excavation for slope stabilization	208	yd3	\$ 12	\$ 2,000
7	Truck Load-out	350	yd3	\$ 2	\$ 1,000
8	Backfill and Compaction	385	yd ³	\$ 35	\$ 13,000
9	Asphalt pavement restoration	625	sf	\$ 10	\$ 6,000
10	Transportation and Off-Site Disposal	525	ton	\$ 70	\$ 37,000
11	Soil Confirmation Sampling and Analyses	10	samples	\$ 250	\$ 3,000
12	Air Monitoring/Sampling	2	days	\$ 2,500	\$ 5,000
13	Excavation Documentation/Reporting	1	ea	\$ 20,000	\$ 20,000
14	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 20,000	\$ 20,000
Direct Capital Total					\$ 143,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	15%	of	\$ 143,000	\$ 22,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 143,000	\$ 12,000
3	Construction Management	10%	of	\$ 143,000	\$ 15,000
Indirect Capital Total					\$ 49,000
Direct + Indirect Capital Total					\$ 192,000
ICs Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 2,675	\$ 2,675
ICs Annual Operation and Maintenance Subtotal					\$ 2,675
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 54,000
Contingency (30% of total project cost)					\$ 74,000
Total Capital and ICs O&M Costs					\$ 320,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. No shoring is needed.
3. Assume excavated soil is 50% Cal haz, 50% non haz sent to a permitted facility.
4. Assume 30% contingency for excavation.
5. Site investigation cost is based on an assumed sampling density.
6. ICs include IC layers 1, 2 and 5.

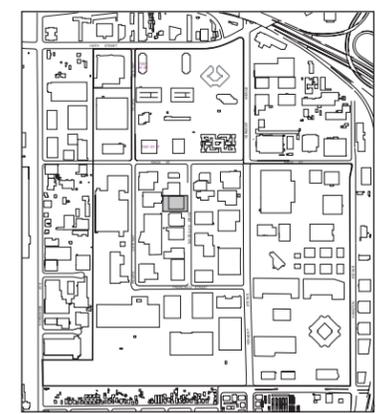
EAPC 17



Legend

- Parcel boundary
- Cooling Tower #3
- Acetone / Acetonitrile
- Outlines of historical features with use/contents indicated
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Assumed extent of impacted outdoor soil based on investigation data (RI Report, URS 2006)
- Assumed extent of VOC-impacted shallow soil below building
- Soil gas sampling point with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded

SGL0704		
	ppmv	Depth (ft bgs)
Benzene	210	0.5



Area shown in this map

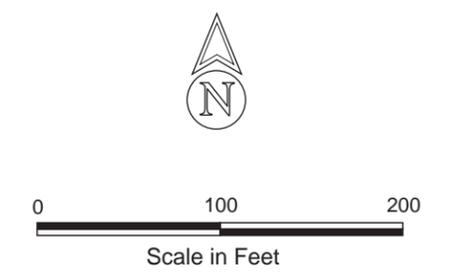


FIGURE 8.3-18
ASSUMED EXTENT OF IMPACTED SOIL
 Parcel No. 7351-034-039
 EAPC 17
 Del Amo Soil + NAPL FS



TABLE D2.17-1
EAPC 17 - REMEDIAL ALTERNATIVE 2
INSTITUTIONAL CONTROLS COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

TABLE D2.17-2
EAPC 17 - REMEDIAL ALTERNATIVE 3
CAPPING (Benzene) AND HVAC MOD/SSV (UB) ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 18,000	\$ 18,000
3	Site preparation	3000	sf	\$ 0.40	\$ 2,000
4	Site Setup, Equipment Mobilization	3000	sf	\$ 0.75	\$ 3,000
5	Slurry Seal over Existing Asphalt Pavement	1,500	sf	\$ 5	\$ 7,000
6	SSV under building (installed)	1,500	sf	\$ 5	\$ 8,000
7	Install Vapor Monitoring Points inside building	3	ea	\$ 500	\$ 2,000
8	Parcel Cleanup/Demobilization	1	ls	\$ 10,000	\$ 10,000
9	Remedial Action Monitoring	5	day	\$ 2,000	\$ 10,000
10	Remediation Documentation/Reporting	1	ls	\$ 20,000	\$ 20,000
11	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 10,000	\$ 10,000
Direct Capital Total					\$ 134,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 134,000	\$ 21,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 134,000	\$ 11,000
3	Construction Management	10%	of	\$ 134,000	\$ 14,000
Indirect Capital Subtotal					\$ 46,000
Total Direct + Indirect Capital Cost					\$ 180,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SSV periodic monitoring, operation, maintenance	1	year	\$ 12,000	\$ 12,000
3	Cap Maintenance and Repair	1	year	\$ 3,000	\$ 3,000
ICs, Cap, and SSV Annual Operation and Maintenance Subtotal					\$ 18,775
Present Worth of ICs + Cap + SSV (5%, 100 Years) O&M Costs					\$ 373,000
Contingency (20% of total project cost)					\$ 111,000
Total Capital and O&M Cost					\$ 664,000

NOTES/ASSUMPTIONS

1. Site is already paved with asphalt over impacted area. Existing pavement with slurry seal treatment assumed to be adequate cap to meet ARARs.
2. Cap maintenance and repair assumes resurfacing with a slurry seal (liquid asphalt) every 10 years starting at year 5 and new 4-inch thick asphalt cover every 10 years starting at year 10.
3. SSV assumed for this alternative instead of HVAC Mod.
4. SSV assumes piping laid in trenches inside building.
5. SSV system includes fan and carbon adsorbers as vapor control system.
6. SSV O&M includes periodic monitoring of vapor control system.
7. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D2.17-3
EAPC 17 - REMEDIAL ALTERNATIVE 4
SVE/BV (OS) AND HVAC MOD/SSV (UB) COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Direct Capital Costs					
Item No.					
1	ICs Design, Documentation, Implementation	1	ls	\$ 44,110	\$ 44,110
2	Site Investigation/Delineation	1	ls	\$ 20,000	\$ 20,000
3	Site preparation/Geophysical Survey	3000	sf	\$ 0.80	\$ 3,000
4	Site Setup, Equipment Mobilization/Demobilization	3000	sf	\$ 1.25	\$ 4,000
5	SVE Vertical Wells (V-SVE)	4	ea	\$ 5,000	\$ 20,000
6	Install Well Headworks/Vault	4	ea	\$ 1,500	\$ 6,000
7	Install Outdoor Vapor Monitoring Points	2	ea	\$ 2,000	\$ 4,000
8	Trenching, Piping, Backfill, Resurfacing	100	lf	\$ 30	\$ 3,000
9	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
10	Control and Instrumentation	1	ls	\$ 4,000	\$ 4,000
11	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 4,000	\$ 4,000
12	SVE System Installation and Startup	1	ea	\$ 30,000	\$ 30,000
13	SVE Emissions Treatment System (Thermal/Cat Ox) 100 cfm	1	ea	\$ 50,000	\$ 50,000
14	Install SSV under building	1,500	sf	\$ 5	\$ 8,000
15	Install Vapor Monitoring Points inside building	3	ea	\$ 500	\$ 2,000
16	Soil Confirmation Sampling and Analyses	8	samples	\$ 800	\$ 6,000
17	Air Monitoring/Sampling	6	days	\$ 2,500	\$ 15,000
18	Remediation Documentation/Reporting	1	ea	\$ 25,000	\$ 25,000
19	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
20	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 20,000	\$ 20,000
Direct Capital Total					\$ 338,000
Indirect Capital Costs					
Item No.					
1	Engineering, Design, and Permitting	15%	of	\$ 338,000	\$ 51,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 338,000	\$ 28,000
3	Construction Management	10%	of	\$ 338,000	\$ 34,000
Indirect Capital Total					\$ 113,000
Direct + Indirect Capital Total					\$ 451,000
Operation and Maintenance Costs					
Item No.					
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,775	\$ 3,775
2	SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
3	SVE periodic monitoring, operation, maintenance	12	mths	\$ 3,000	\$ 36,000
4	Fuel	12	mths	\$ 3,000	\$ 36,000
5	Electricity	12	mths	\$ 1,300	\$ 15,000
6	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 1,000	\$ 12,000
7	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 3,000	\$ 36,000
8	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 4,000	\$ 48,000
9	Waste/Water Disposal	12	mths	\$ 1,500	\$ 18,000
10	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
SVE Annual Operation and Maintenance Subtotal					\$ 237,000
SVE Present Worth of Operation and Maintenance Costs (5%, 2 Years)					\$ 441,000
ICs and SSV Annual Operation and Maintenance Subtotal					\$ 15,775
Present Worth of ICs + SSV (5%, 30 Years) O&M Costs					\$ 314,000
Contingency (20% of total project cost)					\$ 241,000
Total Capital and O&M Cost					\$ 1,447,000

NOTES/ASSUMPTIONS

1. Benzene SVE (OS) system: Uses 4 V-SVE wells, 5-15 feet bgs screens.
2. Benzene SVE uses thermal oxidizer, 100 scfm, positive displacement (PD) blower.
3. Assume SVE operation for 3 years.
4. SSV assumed for this alternative instead of HVAC Mod.
5. SSV assumes piping laid in trenches inside building.
6. SSV system includes fan and carbon adsorbers as vapor control system.
7. SSV O&M includes periodic monitoring of vapor control system.
8. ICs include IC layers 1, 2, 3, 4A, 4B and 5.

TABLE D2.17-4
EAPC 17 - REMEDIAL ALTERNATIVE 5
SVE/BV (OS) AND SVE/BV (UB) COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

	Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 20,000	\$ 20,000
3	Site preparation/Geophysical Survey	3000	sf	\$ 0.80	\$ 3,000
4	Site Setup, Equipment Mobilization/Demobilization	3000	sf	\$ 1.25	\$ 4,000
5	SVE Vertical Wells (V-SVE)	4	ea	\$ 5,000	\$ 20,000
6	SVE Horizontal Wells (H-SVE)	2	ea	\$ 25,000	\$ 50,000
7	Install Well Headworks/Vault	6	ea	\$ 1,500	\$ 9,000
8	Trenching, Piping, Backfill, Resurfacing	200	lf	\$ 30	\$ 6,000
9	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
10	Control and Instrumentation	1	ls	\$ 5,000	\$ 5,000
11	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 5,000	\$ 5,000
12	SVE System Installation and Startup	1	ea	\$ 30,000	\$ 30,000
13	SVE Emissions Treatment System (Thermal/Cat Ox) 150 cfm	1	ea	\$ 65,000	\$ 65,000
14	Soil Confirmation Sampling and Analyses	8	samples	\$ 800	\$ 7,000
15	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 3,000	\$ 3,000
16	Air Monitoring/Sampling	6	days	\$ 2,500	\$ 15,000
17	Remediation Documentation/Reporting	1	ea	\$ 25,000	\$ 25,000
18	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
19	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 20,000	\$ 20,000
Direct Capital Total					\$ 391,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	15%	of	\$ 391,000	\$ 59,000
2	Project Management, Agency Reporting and Coordination	8%	of	\$ 391,000	\$ 32,000
3	Construction Management	10%	of	\$ 391,000	\$ 40,000
Indirect Capital Total					\$ 131,000
Direct + Indirect Capital Total					\$ 522,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 4,000	\$ 48,000
3	Fuel	12	mths	\$ 4,000	\$ 48,000
4	Electricity	12	mths	\$ 1,500	\$ 18,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 2,000	\$ 24,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 3,000	\$ 36,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 4,000	\$ 48,000
8	Waste/Water Disposal	12	mths	\$ 1,500	\$ 18,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 4,000	\$ 48,000
10	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 288,000
SVE Present Worth of Operation and Maintenance Costs (5%, 2 Years)					\$ 536,000
ICs + SSV Annual O&M Subtotal					\$ 15,275
Present Worth of ICs + SSV (5%, 100 Years)					\$ 304,000
Contingency (20% of total project cost)					\$ 272,000
Total Capital and O&M Cost					\$ 1,634,000

NOTES/ASSUMPTIONS

1. Benzene SVE (OS+UB) system: Uses 4 V-SVE wells with 5-15 feet bgs screens and 2 H-SVE wells with average 30 feet screens installed @ 5-10 feet bgs
2. Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
3. Benzene SVE uses thermal oxidizer, 150 scfm, positive displacement (PD) blower.
4. Assume SVE operation for 3 years. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
5. ICs include IC layers 1, 2, 3, 4A and 5.

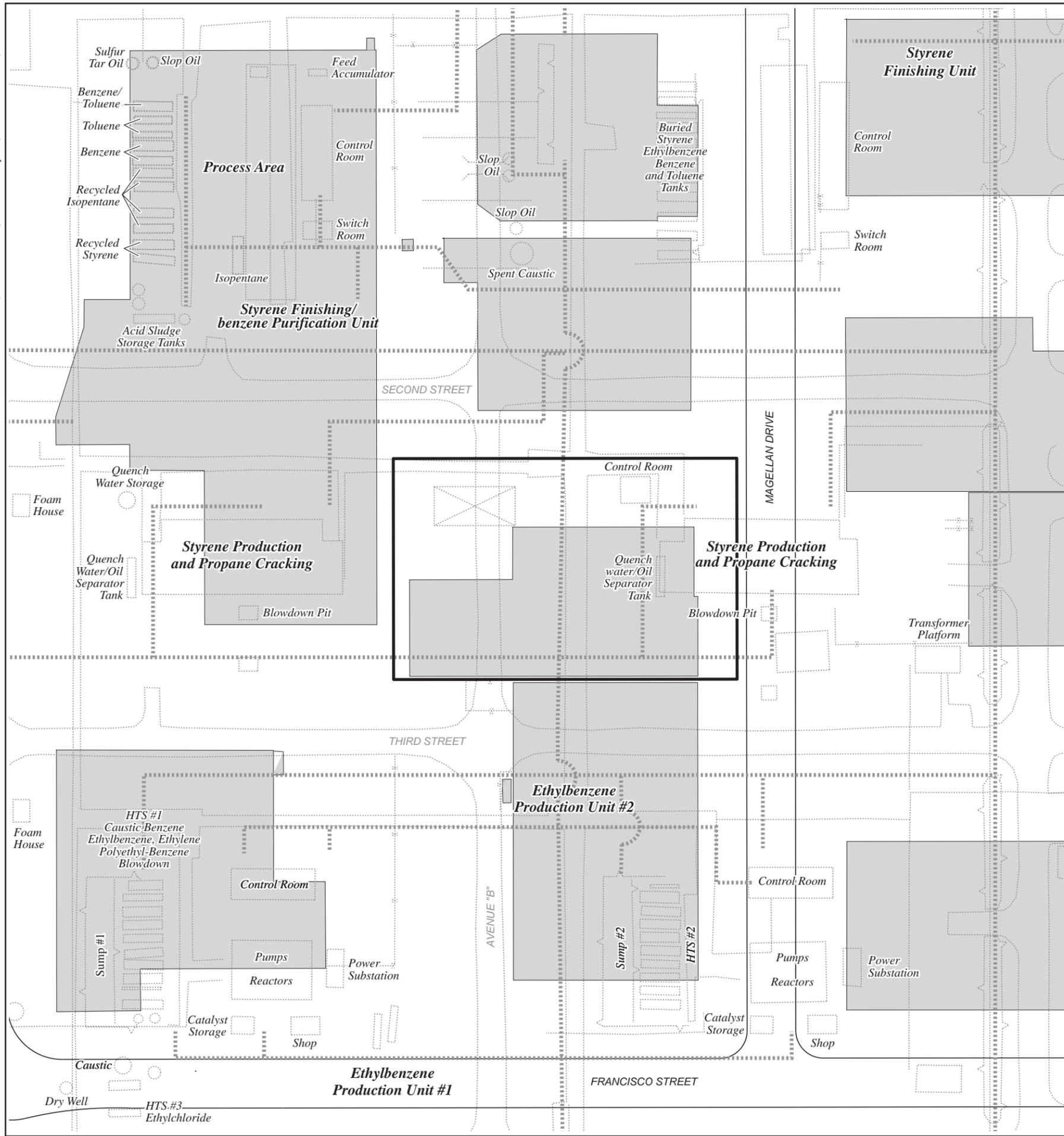
TABLE D2.17-5
EAPC 17 - REMEDIAL ALTERNATIVE 6
EXCAVATION (Benzene) AND SVE/BV (UB) COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
2	Site Investigation/Delineation	1	ls	\$ 20,000	\$ 20,000
3	Site preparation/Geophysical Survey	3000	sf	\$ 0.80	\$ 3,000
4	Site Setup, Equipment Mobilization/Demobilization	3000	sf	\$ 1.25	\$ 4,000
5	Shoring design and installation	750	sf	\$ 65	\$ 49,000
6	Excavation and Stockpile (< 15 feet bgs)	833	yd3	\$ 12	\$ 10,000
7	Clean overburden excavation for slope stabilization	250	yd3	\$ 12	\$ 3,000
8	Truck Load-out	833	yd3	\$ 2	\$ 2,000
9	Backfill and Compaction	916	yd ³	\$ 35	\$ 32,000
10	Asphalt pavement restoration	1,500	sf	\$ 10	\$ 15,000
11	SVE Horizontal Wells (H-SVE)	2	ea	\$ 25,000	\$ 50,000
12	Install Well Headworks/Vault	2	ea	\$ 1,500	\$ 3,000
13	Trenching, Piping, Backfill, Resurfacing	100	lf	\$ 30	\$ 3,000
14	Equipment Pad/Enclosure/Fence/Gas, Electricity Hookup	1	ea	\$ 50,000	\$ 50,000
15	Control and Instrumentation	1	ls	\$ 4,000	\$ 4,000
16	Misc VETS Equipment (fittings, valves, manifold, tanks, pumps etc.)	1	ls	\$ 2,000	\$ 2,000
17	SVE System Installation and Startup	1	ea	\$ 30,000	\$ 30,000
18	SVE Emissions Treatment System (Thermal/Cat Ox) 100 cfm	1	ea	\$ 50,000	\$ 50,000
19	Transportation and Off-Site Disposal	1,250	ton	\$ 70	\$ 87,000
20	Soil Confirmation Sampling and Analyses	15	samples	\$ 800	\$ 12,000
21	Convert H-SVE to SSV after completion of SVE(UB) Treatment	1	ls	\$ 3,000	\$ 3,000
22	Air Monitoring/Sampling	8	days	\$ 2,500	\$ 20,000
23	Remediation Documentation/Reporting	1	ea	\$ 25,000	\$ 25,000
24	Site Closure, decommissioning, well abandonment	1	ls	\$ 20,000	\$ 20,000
25	Health and Safety, Equipment Rentals, ODCs	1	ls	\$ 20,000	\$ 20,000
Direct Capital Total					\$ 551,000
Item No.	Indirect Capital Costs				
1	Engineering, Design, and Permitting	12%	of	\$ 551,000	\$ 67,000
2	Project Management, Agency Reporting and Coordination	6%	of	\$ 551,000	\$ 34,000
3	Construction Management	8%	of	\$ 551,000	\$ 45,000
Indirect Capital Total					\$ 146,000
Direct + Indirect Capital Total					\$ 697,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
2	SVE periodic monitoring, operation, maintenance	12	mths	\$ 3,000	\$ 36,000
3	Fuel	12	mths	\$ 3,000	\$ 36,000
4	Electricity	12	mths	\$ 1,300	\$ 15,000
5	Maintenance (hardware, filters, gauges, blower, etc.)	12	mths	\$ 2,000	\$ 24,000
6	VETS Influent/Effluent Monitoring / Lab Costs	12	mths	\$ 3,000	\$ 36,000
7	Project Management/Consultant support/Quarterly Reports	12	mths	\$ 4,000	\$ 48,000
8	Waste/Water Disposal	12	mths	\$ 1,500	\$ 18,000
9	Misc: Equipment rentals / PID / FID / ODCs	12	mths	\$ 3,000	\$ 36,000
10	Converted SSV periodic monitoring, operation, maintenance	12	mths	\$ 1,000	\$ 12,000
SVE Annual Operation and Maintenance Subtotal					\$ 249,000
SVE Present Worth of Operation and Maintenance Costs (5%, 2 Years)					\$ 463,000
ICs + SSV Annual O&M Subtotal					\$ 15,275
Present Worth of ICs + SSV (5%, 100 Years)					\$ 304,000
Contingency (25% of total project cost)					\$ 366,000
Total Capital and O&M Cost					\$ 1,830,000

NOTES/ASSUMPTIONS

1. Excavation assumes sidewall sloped 1:1 and areas needed for stockpile and load-out are available.
2. Assume 50 linear feet of soldier pile shoring is needed.
3. Assume excavated soil is 50% Cal haz, 50% non haz sent to a permitted facility.
4. Benzene SVE (UB) system: Uses 2 H-SVE wells with average 30 feet screens installed @ 10 feet bgs.
5. Horizontal wells installed at a depth of 10 feet bgs using directional drilling.
6. Benzene SVE uses thermal oxidizer, 100 scfm, positive displacement (PD) blower.
7. Assume SVE operation for 3 years. After SVE/BV (UB) treatment, assume system is converted to SSV (UB) and operated for 100 years .
8. ICs include IC layers 1, 2, 3, 4A and 5.

EAPC 20



Legend

-  Parcel boundary
-  Outlines of historical features with use/contents indicated
-  Acetone / Acetonitrile
-  Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids



Area shown in this map

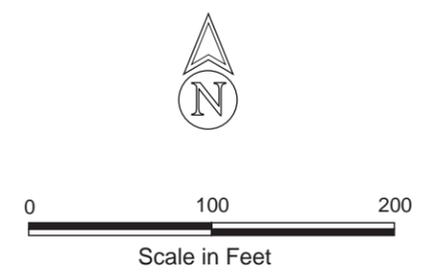


FIGURE 8.3-19
ASSUMED EXTENT
OF IMPACTED SOIL
Parcel No. 7351-034-045
 EAPC 20
 Del Amo Soil + NAPL FS



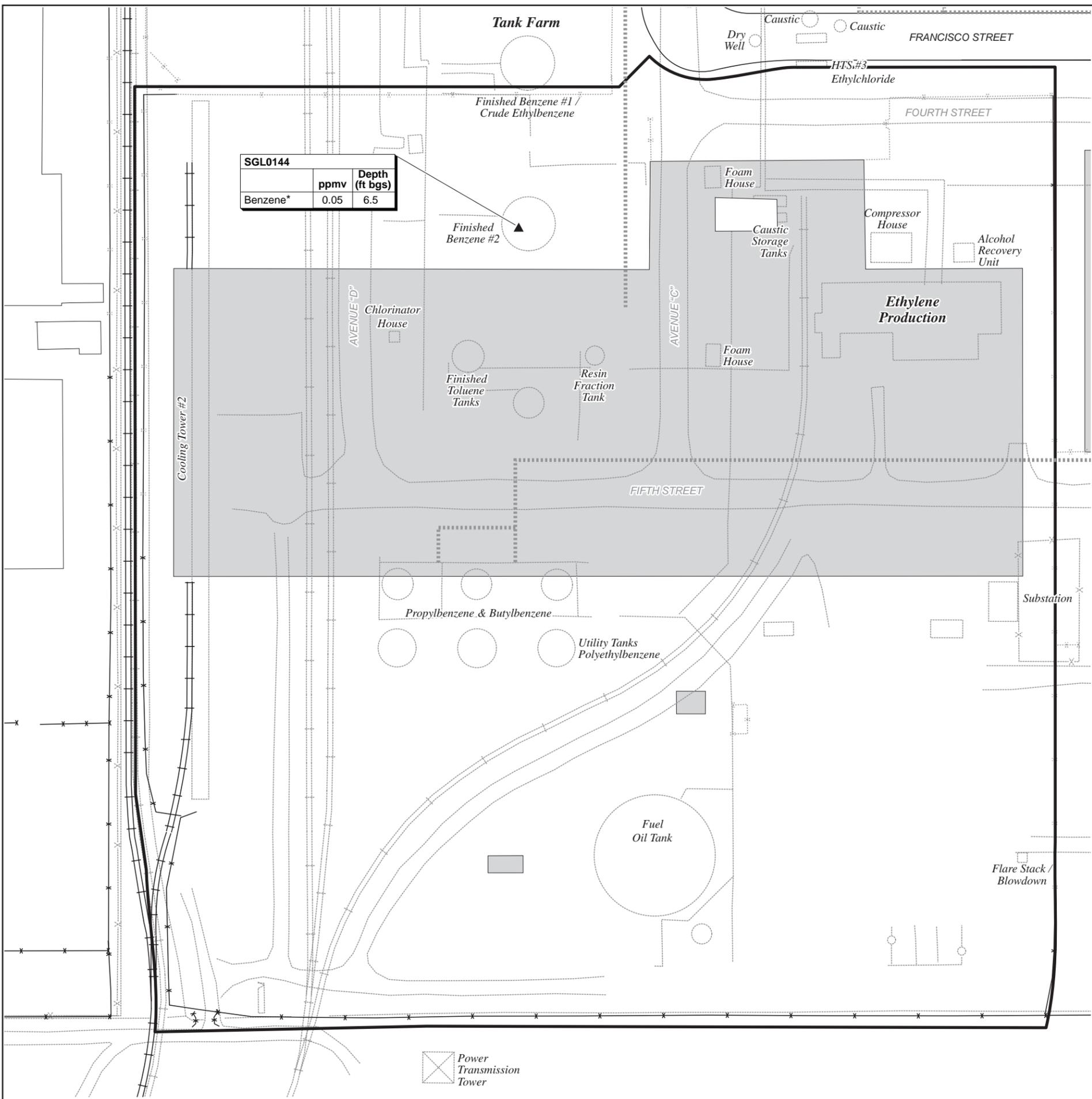
TABLE D2.18-1
EAPC 20 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

EAPC 24

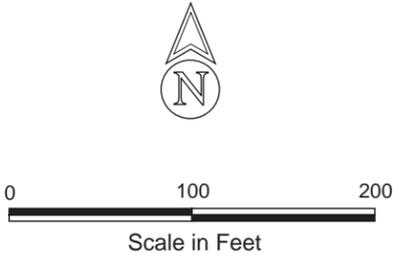
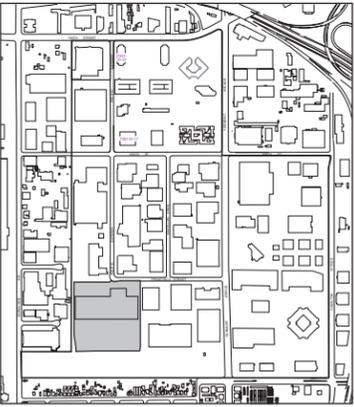


SGL0144	ppmv	Depth (ft bgs)
Benzene*	0.05	6.5

Legend

- Parcel boundary
- Outlines of historical features with use/contents indicated
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Soil gas sampling point with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded
- Chemical detected but does not exceed the criteria

SGL0144	ppmv	Depth (ft bgs)
Benzene	0.05	6.5



Area shown in this map

FIGURE 8.3-20
ASSUMED EXTENT OF IMPACTED SOIL
Parcel No. 7351-034-058
 EAPC 24
 Del Amo Soil + NAPL FS
URS

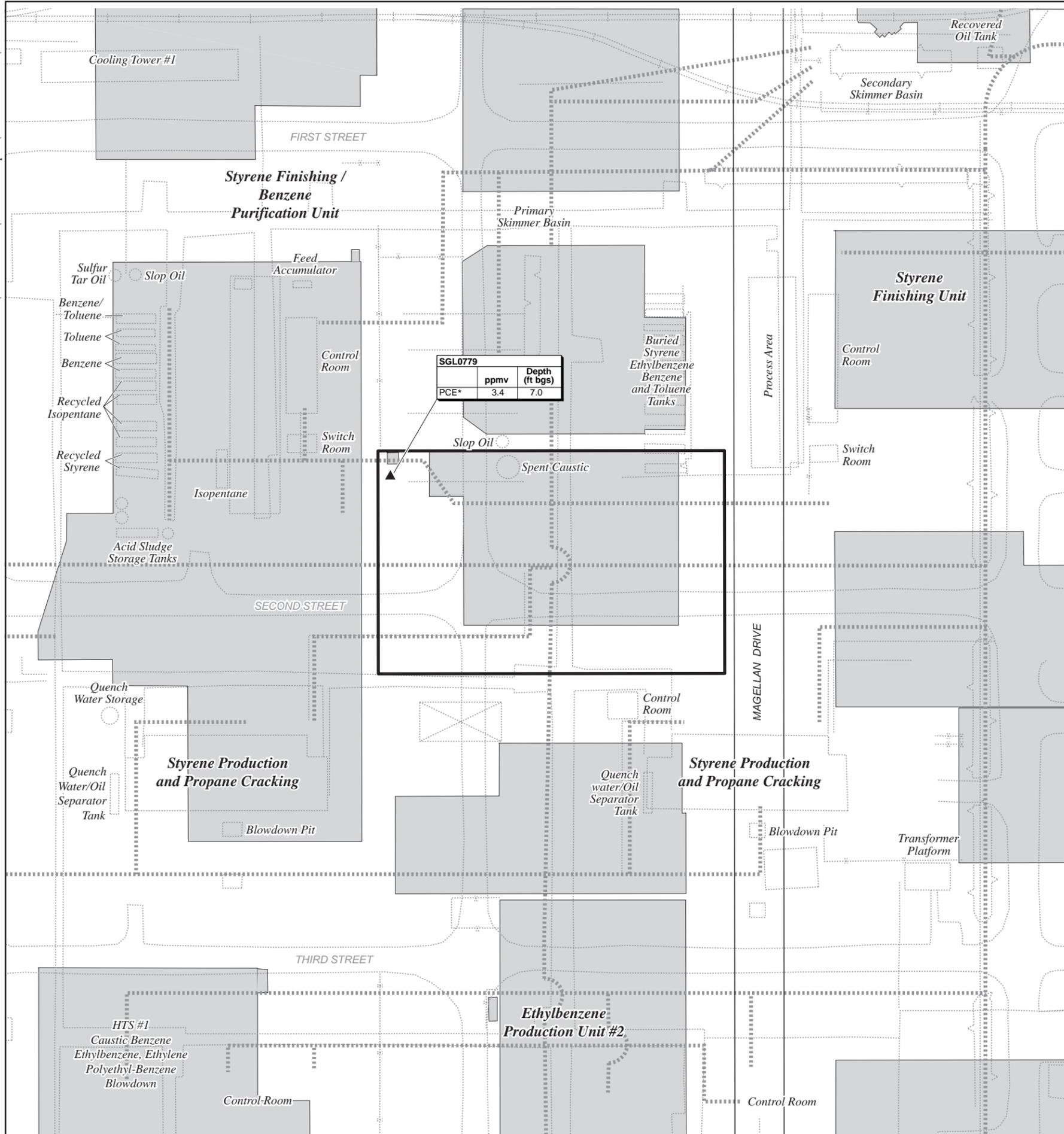
TABLE D2.19-1
EAPC 24 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

EAPC 19



SGL0779		
	ppmv	Depth (ft bgs)
PCE*	3.4	7.0

Legend

- Parcel boundary
- Outlines of historical features with use/contents indicated
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Soil gas sampling point with contaminant concentration and depth of sample
- Chemical detected but does not exceed the criteria

SGL0779		
	ppmv	Depth (ft bgs)
PCE*	3.4	7.0

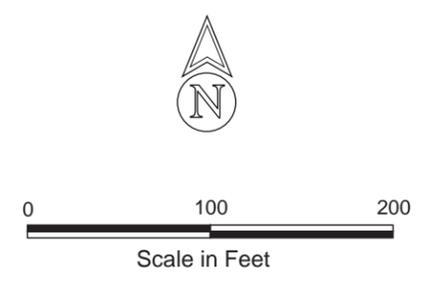
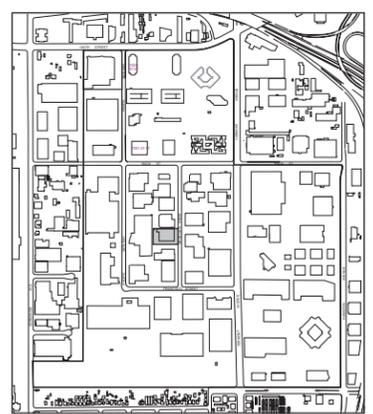


FIGURE 8.3-21
ASSUMED EXTENT OF IMPACTED SOIL
Parcel No. 7351-034-043
 EAPC 19
 Del Amo Soil + NAPL FS

URS

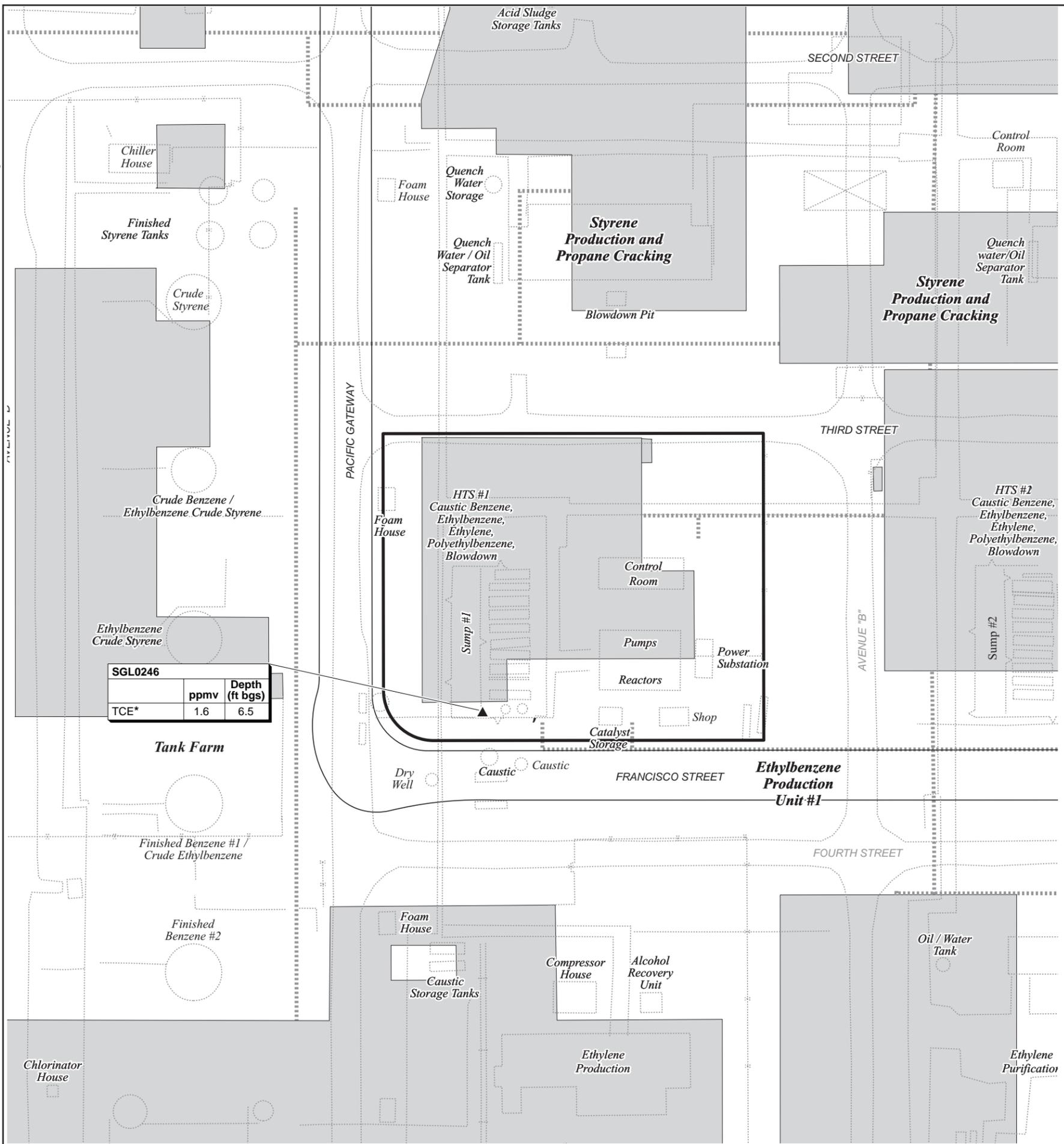
TABLE D2.20-1
EAPC 19 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

EAPC 22

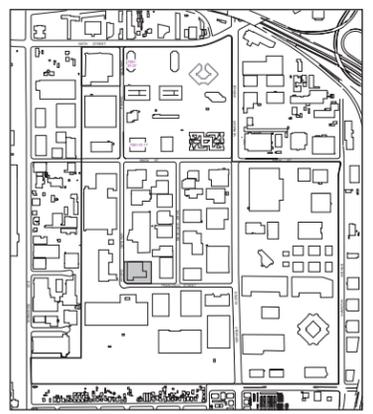


SGL0246		
	ppmv	Depth (ft bgs)
TCE*	1.6	6.5

Legend

- Parcel boundary
- Outlines of historical features with use/contents indicated
- Acetone / Acetonitrile
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids
- Soil gas sampling point with contaminant concentration and depth of sample
- Chemical detected but does not exceed the criteria

SGL0246		
	ppmv	Depth (ft bgs)
TCE*	1.6	6.5



0 100 200
Scale in Feet

Area shown in this map

FIGURE 8.3-22

ASSUMED EXTENT OF IMPACTED SOIL
Parcel No. 7351-034-052
 EAPC 22
 Del Amo Soil + NAPL FS

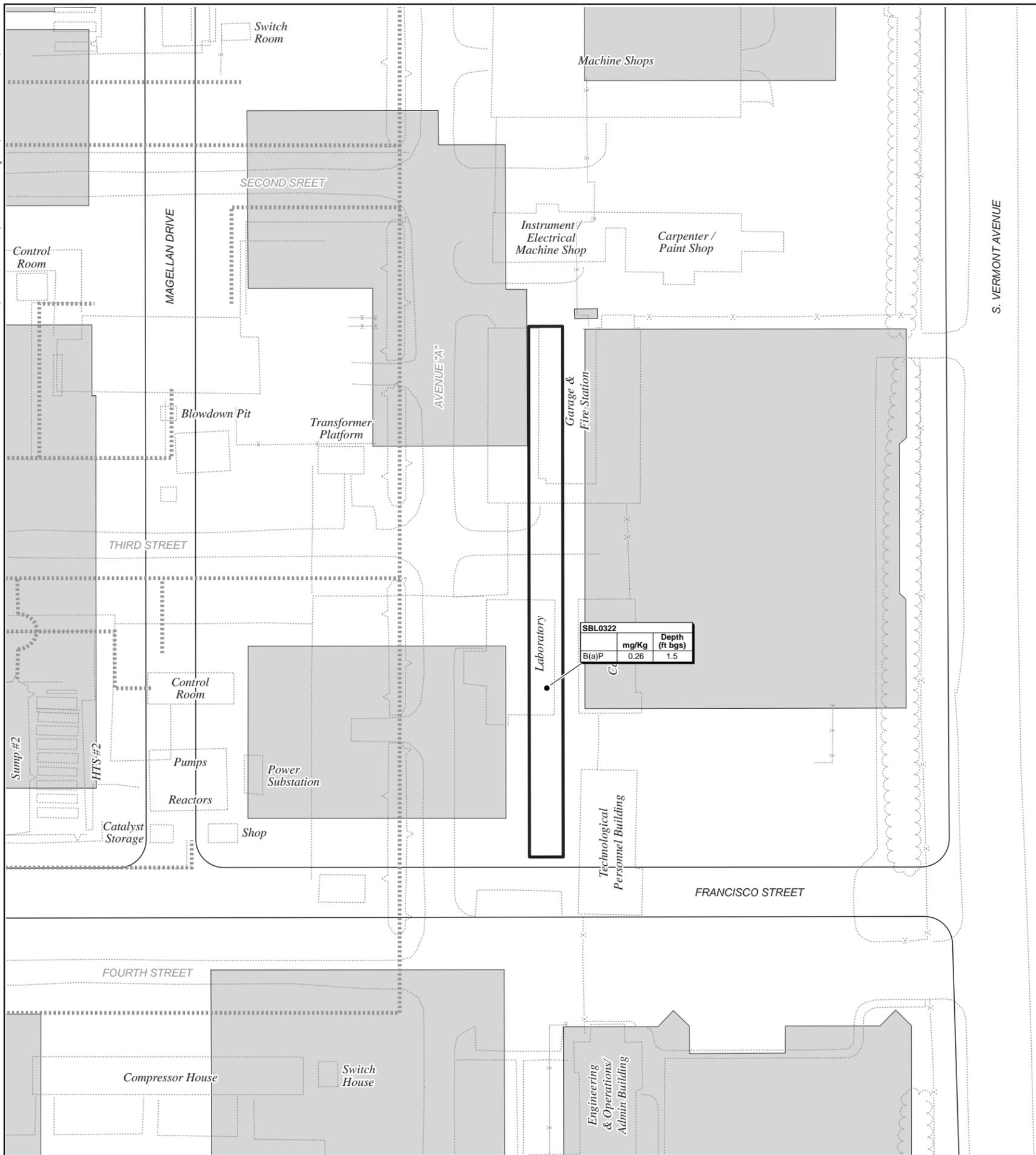
TABLE D2.21-1
EAPC 22 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

EAPC 33



SBL0322	mg/Kg	Depth (ft bgs)
B(a)P	0.26	1.5

Legend

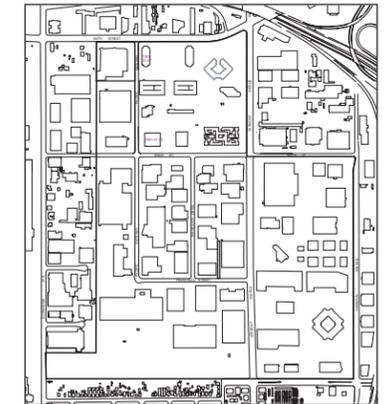
- Parcel boundary
- Outlines of historic features with use/contents indicated
- Approximate location of former underground pipelines with a potential to have transported VOC-containing fluids

SBL0322	mg/kg	Depth (ft bgs)
B(a)P	0.26	1.5

Soil boring location with contaminant concentration and depth of sample for locations where screening levels for risk driving chemicals were exceeded

Acronym

B(a)P Benzo(a)Pyrene



Area shown in this map

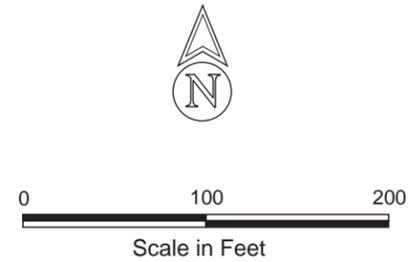


FIGURE 8.3-23
ASSUMED EXTENT OF IMPACTED SOIL
 Parcel No. 7351-034-803
 EAPC 33
 Del Amo Soil + NAPL FS



TABLE D2.22-1
EAPC 33 - REMEDIAL ALTERNATIVE 2
ICs + MONITORING COST ESTIMATE
Soil and NAPL FS
Del Amo Superfund Site

Description		Estimated Quantity	Unit	Unit Cost	Estimated Cost
Item No.	Direct Capital Costs				
1	ICs Design, Documentation, Implementation	1	ls	\$ 34,110	\$ 34,110
Direct Capital Total					\$ 34,000
Item No.	Indirect Capital Costs				
1	Project Management	10%	of	\$ 34,000	\$ 3,400
Indirect Capital Subtotal					\$ 3,400
Total Direct + Indirect Capital Cost					\$ 37,000
Item No.	Operation and Maintenance Costs				
1	Institutional Controls, Inspections, Monitoring	1	year	\$ 3,275	\$ 3,275
ICs Annual Operation and Maintenance Subtotal					\$ 3,275
Present Worth of ICs Operation and Maintenance Costs (5%, 100 Years)					\$ 65,000
Contingency (20% of total project cost)					\$ 20,000
Total Capital and ICs O&M Cost					\$ 123,000

NOTES/ASSUMPTIONS

1. ICs include IC layers 1, 2, 3, 4A and 5.
2. ICs capital and O&M costs are estimated based on applicable IC layers per parcel as shown in Tables D3-1 and D3-2.

APPENDIX D-3
SUPPORTING INFORMATION

**TABLE D3-1
INSTITUTIONAL CONTROLS COST SUMMARY
Soil and NAPL FS
Del Amo Superfund Site**

Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost/ Parcel	Estimated Total Cost	Comments
Implementation Costs						
Layer 1 (Applies to all 69 Parcels) ⁽¹⁾						
Federal/State Registries	1	per site	\$ 250	\$ 250	\$ 17,250	Includes listing applicable properties on the FINDS, ICs, and Eng. Controls databases.
Web-Based Information	1	per site	\$ 500	\$ 500	\$ 34,500	Includes development and implementation of a web-based information system.
Private Sector Land Activity Monitoring Alert Services	1	per site	\$ 860	\$ 860	\$ 59,340	Includes \$20,000 for the initial year of monitoring, \$14,500 for coordination of implementation, and \$25,000 for initial year responses.
Private Sector IC Monitoring, Reporting, and Compliance Support	1	per site	\$ 500	\$ 500	\$ 34,500	Includes development of a reporting format, review of the initial year of IC effectiveness, and the initial annual report to agencies.
Implementation Cost Total (Layer 1)				\$ 2,110	\$ 145,590	
Layer 2 (Applies to 43 of the 69 Parcels)						
Building Permits	1	per site	\$ 1,500	\$ 1,500	\$ 64,500	Includes coordination with the City of LA to implement program (\$1,000 per site) and review and support costs associated with 4 sites (\$5,000 per site).
Grading/Excavation Permits	1	per site	\$ 1,500	\$ 1,500	\$ 64,500	Includes coordination with the City of LA to implement program (\$1,000 per site) and review and support costs associated with 4 sites (\$5,000 per site).
Layer 2 Implementation Cost Subtotal				\$ 3,000	\$ 129,000	
Implementation Cost Total (Layers 1 and 2 Combined)				\$ 5,110	\$ 274,590	
Layer 3 (Applies to 29 of the 69 Parcels)						
Zoning Restriction (prohibit residential)	1	per site	\$ 4,000	\$ 4,000	\$ 116,000	Includes coordination with the City of LA to place footnote on identified parcel (\$1,500) and parcel owner legal fees (\$2,500) associated with action.
Implementation Cost Total (Layers 1, 2, and 3 Combined)				\$ 9,110	\$ 390,590	
Layer 4A (Applies to 29 of the 69 Parcels)						
Environmental Covenants (land use sampling)	1	per site	\$ 15,000	\$ 15,000	\$ 435,000	Cost includes technical support and parcel owners legal review/negotiation costs.
Implementation Cost Total (Layers 1, 2, 3, and 4A Combined)				\$ 24,110	\$ 825,590	
Layer 4B (Applies to 19 of the 69 Parcels)						
Restrictive Covenant for Engineering Control (if needed), Cap/HVAC/SSV	1	per site	\$ 10,000	\$ 10,000	\$ 190,000	Cost includes additional support and additional parcel owners legal review/negotiations. The reduced cost is based on the bulk of negotiations being performed during Layer 4 negotiations.
Implementation Cost Total (Layers 1, 2, 3, 4A, and 4B Combined)				\$ 34,110	\$ 1,015,590	
Layer 5 (Applies to 20 of the 69 Parcels)						
Restrictive Covenant for Groundwater	1	per site	\$ 10,000	\$ 10,000	\$ 200,000	Cost includes technical support and parcel owners legal review/negotiation costs.
Implementation Cost Total (Layers 1, 2, 3, 4A, 4B, and 5 Combined)				\$ 44,110	\$ 1,215,590	

**TABLE D3-1
INSTITUTIONAL CONTROLS COST SUMMARY
Soil and NAPL FS
Del Amo Superfund Site**

Description	Estimated Quantity	Unit	Unit Cost	Estimated Cost/ Parcel	Estimated Total Cost	Comments
Operation and Maintenance Annual Costs						
Layer 1 (Applies to all 69 Parcels)						
Federal/State Registries	1	per site	\$ 75	\$ 75	\$ 5,175	Includes obtaining a database for the entire Site and one hour review time to confirm parcel listing status.
Web-Based Information	1	per site	\$ 150	\$ 150	\$ 10,350	Includes a semi-annual database update including a total of approximately \$5,000 per update event.
Private Sector Land Activity Monitoring Alert Services	1	per site	\$ 650	\$ 650	\$ 44,850	Includes an annual Terradex cost of \$20,000 and approximately \$25,000 of support time.
Private Sector IC Monitoring, Reporting, and Compliance Support	1	per site	\$ 300	\$ 300	\$ 20,700	Includes an annual IC review and report to agencies.
O&M Annual Cost Total (Layer 1)				\$ 1,175	\$ 81,075	
Layer 2 (Applies to 43 of the 69 Parcels)						
Building Permits	1	per site	\$ 500	\$ 500	\$ 21,500	Includes interaction with City of LA for an estimated 4 sites with approximately \$5,000 review and support costs associated with each site.
Grading/Excavation Permits	1	per site	\$ 500	\$ 500	\$ 21,500	Includes interaction with City of LA for an estimated 4 sites with approximately \$5,000 review and support costs associated with each site.
Layer 2 O&M Annual Cost Subtotal				\$ 1,000	\$ 43,000	
O&M Annual Cost Total (Layers 1 and 2 Combined)				\$ 2,175	\$ 124,075	
Layer 3 (Applies to 29 of the 69 Parcels)						
Zoning Restriction (prohibit residential)	1	per site	\$ 100	\$ 100	\$ 2,900	Includes an annual zoning restriction confirmation.
O&M Annual Cost Total (Layers 1,2, and 3 Combined)				\$ 2,275	\$ 126,975	
Layer 4A (Applies to 29 of the 69 Parcels)						
Environmental Covenants (land use sampling)	1	per site	\$ 500	\$ 500	\$ 14,500	Includes property owner interaction/response.
O&M Annual Cost Total (Layers 1, 2, 3, and 4A Combined)				\$ 2,775	\$ 141,475	
Layer 4B (Applies to 19 of the 69 Parcels)						
Restrictive Covenant for Engineering Control (if needed), Cap/HVAC/SSV	1	per site	\$ 500	\$ 500	\$ 9,500	Includes property owner interaction/response.
O&M Annual Cost Total (Layers 1, 2, 3, 4A, and 4B Combined)				\$ 3,275	\$ 150,975	
Layer 5 (Applies to 20 of the 69 Parcels)						
Restrictive Covenant for Groundwater	1	per site	\$ 500	\$ 500	\$ 10,000	Includes property owner interaction/response.
O&M Annual Cost Total (Layers 1, 2, 3, 4A, 4B, and 5 Combined)				\$ 3,775	\$ 160,975	

Footnote:

(1) This ICs costing summary lists 69 parcels compared to 71 parcels in the FS because the EAPC 16 property is composed of three parcels with one facility/owner.

**TABLE D3-2
SUMMARY OF IC LAYERS AND COSTS BY EAPC AND REMEDIAL ALTERNATIVES
SOIL AND NAPL FS
DEL AMO SUPERFUND SITE**

Risk Group	EAPC #	Parcel #	Contaminants of Concern (COCs)		Alt #	Remedial Alternative	IC Layers						Mon	IC Implementation Cost	IC Annual O&M Cost	
			Primary	Second			1	2	3	4A	4B	5				
			Implementation				\$2,110	\$3,000	\$4,000	\$15,000	\$10,000	\$10,000				
			O&M				\$1,175	\$1,000	\$100	\$500	\$500	\$500				
5A	2	7351-031-020	PAHs	Arsenic	2	ICs + Monitoring	✓	✓	✓	✓			✓	\$24,110	\$2,775	
					3	Capping (PAHs, As) + ICs + Monitoring	✓	✓	✓	✓	✓		✓	\$34,110	\$3,275	
					4	Capping (As) + Excavation(PAHs) + ICs + Monitoring	✓	✓	✓	✓	✓		✓	\$34,110	\$3,275	
					5	Excavation (PAHs, As) + ICs + Monitoring	✓	✓					✓	\$5,110	\$2,175	
4A	7	7351-033-024	Arsenic	Benzene 1,2,4-TMB 1-PB, 1-PT	2	ICs + Monitoring	✓	✓	✓	✓			✓	\$24,110	\$2,775	
					3	Capping (As, VOCs) + ICs + Monitoring	✓	✓	✓	✓	✓		✓	\$34,110	\$3,275	
					4	Excavation (As) + SVE/BV(VOCs)(OS) + ICs + Monitoring	✓	✓					✓	\$5,110	\$2,175	
					5	Excavation (As, VOCs) + ICs + Monitoring	✓	✓					✓	\$5,110	\$2,175	
	29	7351-034-070	Arsenic	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
					3	Capping (As) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					4	Excavation (As) + ICs + Monitoring	✓	✓				✓	✓	\$15,110	\$2,675	
	34	7351-034-901	Arsenic	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
					3	Capping (As) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					4	Excavation (As) + ICs + Monitoring	✓	✓				✓	✓	\$15,110	\$2,675	
	28	7351-034-069	B(a)P	PCE	2	ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
					3	Capping (B(a)P, PCE) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					4	Excavation (B(a)P) + SVE (PCE) + ICs + Monitoring	✓	✓				✓	✓	\$15,110	\$2,675	
					5	Excavation (B(a)P, PCE) + ICs + Monitoring	✓	✓				✓	✓	\$15,110	\$2,675	
	35	Magellan Dr	PAHs	Benzene	2	ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
					3	Capping (PAHs, Benzene) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					4	Excavation (PAHs) + SVE/BV (Benzene) (OS) + ICs + Monitoring	✓	✓				✓	✓	\$15,110	\$2,675	
					5	Excavation (PAHs, Benzene) + ICs + Monitoring	✓	✓				✓	✓	\$15,110	\$2,675	
	10	7351-033-030	Copper	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$24,110	\$2,775		
	14	7351-033-009	Copper	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$24,110	\$2,775	
					3	Capping (Cu) + ICs + Monitoring	✓	✓	✓	✓	✓		✓	\$34,110	\$3,275	
					4	Excavation (Cu) + ICs + Monitoring	✓	✓				✓	✓	\$5,110	\$2,175	
	4B	16	7351-034-015 7351-034-050 7351-034-056	PCE, TCE	DDT, NDPA	2	ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275
						3	Capping (non-VOC, VOC) + HVAC mod/SSV (UB) ⁽¹⁾ + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775
4						Capping (non-VOC) + SVE (OS) + HVAC mod/SSV (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
5						Capping (non-VOC) + SVE (OS) + SVE (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
6						Excavation (non-VOC, VOC) + SVE (UB) + ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
23		7351-034-057	Benzene	PCE	2	ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
					3	Capping (VOCs) + HVAC mod/SSV (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					4	SVE/BV (OS) + HVAC mod/SSV (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					5	SVE/BV (OS) + SVE/BV(UB) + ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
					6	Excavation (VOCs) + SVE/BV (UB) + ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
5		7351-033-017	Benzene	1,2,4-TMB Cyclohexane	2	ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
					3	Capping (VOCs) + HVAC mod/SSV ⁽²⁾ (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					4	SVE/BV (OS) + HVAC mod/SSV (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					5	SVE/BV (OS) + SVE/BV(UB) + ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
					6	Excavation (VOCs) + SVE/BV (UB) + ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
6		7351-033-022	Benzene	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
					3	Capping (Benzene) + HVAC mod/SSV (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					4	SVE/BV (OS) + HVAC mod/SSV (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					5	SVE/BV (OS) + SVE/BV(UB) + ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
					6	Excavation (Benzene) + SVE/BV (UB) + ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
11		7351-033-034	Benzene	Arsenic	2	ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275	
					3	Capping (Benzene, As) + HVAC mod/SSV (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					4	Capping (As) + SVE/BV (OS) + HVAC mod/SSV (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					5	Capping (As) + SVE/BV (OS) + SVE/BV(UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
	6				Excavation (Benzene, As) + SVE/BV (UB) + ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275		
15	7351-033-900	Benzene	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275		
				3	Capping (Benzene) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775		
				4	SVE/BV (OS) + ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275		
				5	Excavation (Benzene) + ICs + Monitoring	✓	✓	✓	✓		✓	✓	\$34,110	\$3,275		

**TABLE D3-2
SUMMARY OF IC LAYERS AND COSTS BY EAPC AND REMEDIAL ALTERNATIVES
SOIL AND NAPL FS
DEL AMO SUPERFUND SITE**

Risk Group	EAPC #	Parcel #	Contaminants of Concern (COCs)		Alt #	Remedial Alternative	IC Layers						Mon	IC Implementation Cost	IC Annual O&M Cost
			Primary	Second			1	2	3	4A	4B	5			
			Implementation				\$2,110	\$3,000	\$4,000	\$15,000	\$10,000	\$10,000			
			O&M				\$1,175	\$1,000	\$100	\$500	\$500	\$500			
3A	32	7351-034-076	B(a)P	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275	
					3	Capping (B(a)P) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					4	Excavation (B(a)P) + ICs + Monitoring	✓	✓				✓	\$15,110	\$2,675	
	4	7351-031-007	B(a)P	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275	
	30	7351-034-072	B(a)P	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$24,110	\$2,775	
	36	Pacific Gateway N	B(a)P	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$24,110	\$2,775	
	3	7351-031-031	Arsenic	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$24,110	\$2,775	
	12	7351-033-040	Arsenic	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$24,110	\$2,775	
					3	Capping (As) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	\$34,110	\$3,275	
					4	Excavation (As) + ICs + Monitoring	✓	✓				✓	\$5,110	\$2,175	
	13	7351-033-045	Arsenic	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$24,110	\$2,775	
					3	Capping (As) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	\$34,110	\$3,275	
4					Excavation (As) + ICs + Monitoring	✓	✓				✓	\$5,110	\$2,175		
3B	9	7351-033-027	Benzene	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275	
					3	Capping (Benzene) + HVAC mod/SSV (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					4	SVE/BV(OS) + HVAC mod/SSV (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					5	SVE/BV(OS) + SVE/BV(UB) + ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275	
					6	Excavation (Benzene) + SVE/BV (UB) + ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275	
	8	7351-033-026	Benzene	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275	
					3	Capping (Benzene) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					4	SVE/BV (OS) + ICs + Monitoring	✓	✓				✓	\$15,110	\$2,675	
					5	Excavation (Benzene) + ICs + Monitoring	✓	✓				✓	\$15,110	\$2,675	
	17	7351-034-039	Benzene	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275	
					3	Capping (Benzene) + HVAC mod/SSV (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					4	SVE/BV (OS) + HVAC mod/SSV (UB) + ICs + Monitoring	✓	✓	✓	✓	✓	✓	\$44,110	\$3,775	
					5	SVE/BV (OS) + SVE/BV(UB) + ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275	
					6	Excavation (Benzene) + SVE/BV (UB) + ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275	
	20	7351-034-045	Benzene	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275	
	24	7351-034-058	Benzene	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275	
	19	7351-034-043	PCE	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275	
	22	7351-034-052	TCE	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275	
33	7351-034-803	B(a)P	-	2	ICs + Monitoring	✓	✓	✓	✓		✓	\$34,110	\$3,275		

NOTES:

(1) Blue color text indicates that EAPC was a representative exposure area in FS evaluation

(2) Acronyms used

- SVE Soil Vapor Extraction
- OS Outdoor Soil
- UB Under Building
- COCs Contaminants of Concern

(3) Description of Institutional Control Layers

- Layer 1 Informational ICs such as federal and state site registry listings and land activity monitoring
- Layer 2 Permit review (building permits, grading/excavation permits for construction activities)
- Layer 3 Zoning restrictions on residential use
- Layer 4A Restrictive covenants that require sampling during future development or strengthen residential use.
- Layer 4B Restrictive covenants for engineering controls (if any) (soil or indoor air)
- Layer 5 Restrictive covenants for groundwater