

**Table A49-1c Estimated Cost of Capping and Soil Vapor Extraction**  
**FS Group A49-1 - Remedial Alternative A49-1C (Residential and Commercial Use)**  
**Sites 32D, 34D, 35D, and 38D**  
**Perimeter Groundwater Operable Unit RI/FS**  
**Aerojet Superfund Site**  
**Sacramento County, California**

DESCRIPTION	QUANTITY		COST	
	NUMBER	UNIT	UNIT COST	TOTAL COST
<b>DIRECT CAPITAL COST</b>				
<b>System Construction</b>				
- Pre-Pilot Test Soil Vapor Evaluation	1	LS	\$15,000	\$15,000
- Pilot Testing	1	LS	\$25,000	\$25,000
- Surveying/Site Layout	1	DAY	\$1,500	\$1,500
- SVE Well Installation (34 wells to 35 ft bgs)	1,190	FT	\$42	\$49,980
- Purchase and Placement of Baserock for Asphalt Surface	2,175	CY	\$15.50	\$33,713
- Placement of Asphalt-Concrete Surface over Baserock (2 inches)	26,267	SY	\$6.83	\$179,430
- Install Aboveground Conveyance Piping from Well Field to Treatment Pad	4,300	FT	\$12.00	\$51,600
- Purchase and Install Vacuum Blower (15 hp) and Moisture Knockout Vessel	1	LS	\$17,000	\$17,000
- Purchase and Install Thermal Oxidizer (500 cfm, all electric capacity unit)	1	LS	\$60,000	\$60,000
- Electrical and Controls Connection	1	LS	\$15,000	\$15,000
- Fencing Around Remediation Equipment	2,500	FT	\$15.00	\$37,500
			<b>SUBTOTAL</b>	<b>\$486,000</b>
<b>Miscellaneous Costs</b>				
- AQMD Permit-to-Construct	1	LS	\$3,200	\$3,200
- Baseline Soil Vapor Sample Analysis from each SVE Well	39	EA	\$240	\$9,360
- Regulatory Oversight	1	LS	\$10,000	\$10,000
			<b>SUBTOTAL</b>	<b>\$23,000</b>
			<b>ESTIMATED TOTAL DIRECT CAPITAL COST</b>	<b>\$509,000</b>
<b>INDIRECT CAPITAL COST</b>				
- Engineering Design, Procurement, Administrative, and Legal Costs (10% of Direct Capital Costs)	1	LS	\$50,900	\$50,900
- Construction Management (7% of Direct Capital Costs)	1	LS	\$35,630	\$35,630
- Health and Safety Contingency (2% of Direct Capital Costs)	1	LS	\$10,180	\$10,180
			<b>INDIRECT CAPITAL COST</b>	<b>\$97,000</b>
			<b>TOTAL CAPITAL COST (DIRECT AND INDIRECT)</b>	<b>\$606,000</b>
<b>ANNUAL COST (5-YEAR O&amp;M PROGRAM)</b>				
- Engineering and Technician Labor (12.5% FTE for Engineer-level and 20% FTE for Technician-level) - Includes Progress Reporting to Agencies	1	LS	\$58,500	\$58,500
- Annual AQMD Permit-to-Operate	1	LS	\$1,750	\$1,750
- Monthly System Sampling (for compliance with AQMD permit - system influent and effluent samples each month)	24	EA	\$240	\$5,760
- Annual Soil Vapor Sample Analysis from each SVE Well	39	EA	\$240	\$9,360
- Repair and Replacement of Miscellaneous Equipment and Materials	1	LS	\$5,000	\$5,000
- Electrical Power (assumes 1350 kW-hr/day at 90% operation time)	443,475	kW-hr	\$0.13	\$57,652
- Natural Gas (assumes 1,000,000 BTU/hr at 90% operation time)	78,840	Therm	\$0.00	\$0
			<b>TOTAL ANNUAL COST</b>	<b>\$138,000</b>
			<b>TOTAL O&amp;M PROGRAM COST (5 years)</b>	<b>\$690,000</b>
			<b>TOTAL CAPITAL AND ANNUAL COSTS</b>	<b>\$1,296,000</b>
General Contingency (10% of Capital and Annual Costs)				\$130,000
			<b>TOTAL COST OF ALTERNATIVE</b>	<b>\$1,426,000</b>

**Notes and Key:**

AQMD = Air Quality Management District  
CF = Cubic feet  
CFM = Cubic feet per minute  
CY = Cubic Yard  
EA = Each  
EA = Each  
FT = Foot

FTE = Full Time Employee  
kW-hr = Kilowatt hour  
LS = Lump sum  
MO = Month  
O&M = Operations and Maintenance  
SVE = Soil Vapor Extraction  
SY = Square Yard