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RECORD OF DECISION

Southern California Edison, Visalia Pole Yard Superfund Site
Visalia, California

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PART I - DECLARATION

Statement of Basis and Purpose

This Record of Decision (ROD) presents the selected remedial action for the Southern California Edison, Visalia Pole Yard, Superfund Site (the Site) in Visalia, California. This document was developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980, (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 U.S.C. §§9601 et seq., and, to the extent practicable, in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300, and the laws of the State of California. This decision is based on the Administrative Record for the Site. The administrative record index identifies the documents upon which the selection of the remedial action is based.

The State of California Department of Toxic Substances Control (DTSC) is the lead agency which has been responsible for overseeing the Remedial Investigation and Feasibility Study (RI/FS) for this Site. The State has finalized its selection of a remedial action for the Site in its Remedial Action Plan (RAP). With this Record of Decision, EPA selects and concurs with the remedy chosen in the State's RAP.

SYMBOL	H-6-2	H-6-2	H-6	RC-3-2	RC32	ORC
SURNAME	PROCUNIER	[illegible]	[illegible]	Maldonado	[illegible]	W. K for CRC
DATE	5/11/94	5/12/94	5/13/94	6-1-94	6.6.94	6/7/94

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SYMBOL	RC	H-1	H-1			
SURNAME	[illegible]	JL	[illegible]	JW		
DATE	6/8/94	6-8	6/10	6.10		

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Description of the Remedy

The Southern California Edison (SCE), Visalia Pole Yard (VPY) site is located at 432 North Ben Maddox Way in northeastern Visalia, Tulare County, California. The facility was used for utility pole treatment operations from 1925 until 1980. Between 1925 and 1968, creosote was used as a wood preservative and was delivered to the site in railroad tank cars. A series of four inch underground product lines transferred the creosote from the rail cars to the 100,000 gallon above ground cold storage tank. When poles needed to be treated, the creosote was heated by steam lines underlying the tank. The heated creosote was then pumped to the treatment tanks. After treatment was completed, the hot creosote was pumped to one of two 16,000-gallon above-ground insulated hot storage tanks. In 1968, the treating fluid was changed from creosote to a 5 percent by weight solution of pentachlorophenol dissolved in a diesel oil carrier fluid. Diesel fuel was stored in underground storage tanks located west of the VPY office, operations continued until June 1980 when the VPY site was closed.

During 1980 and 1981, SCE contracted to demolish the former pole treating facilities. Once destroyed, these structures were disposed of at the Class I facility in Kettleman Hills, California. The sources of chemical release of creosote and pentachlorophenol (PCP) were primarily in the piping between the storage tanks and the treatment tanks, and failures in the treatment tanks. Groundwater remediation activities have been in operation at the site since 1975.

Regulatory actions related to the VPY began in 1976, when the California Regional Water Quality Control Board, Central Valley Region (RWQCB) issued a Cleanup and Abatement Order requiring SCE to: 1) "discontinue discharge of chemicals related to pole treatment operations"; 2) "extract and treat contaminated groundwater"; and 3) "contain contamination on site". SCE complied with these provisions by installing groundwater extraction wells and constructing a slurry wall keyed into the shallow aquitard beneath the VPY site. In September 1986, the RWQCB adopted Water Discharge Requirements (WDRs) and approved a National Pollutant Discharge Elimination System (NPDES) permit for discharge from a pretreatment plant which was installed.

The interim response actions addressed the principal threats at the Site. The final remedy addresses threats remaining after the interim measures. Estimated potential risks under current conditions include both occupational and off-site residential exposure scenarios. The major components of the selected remedy include:

- in-situ bioremediation
- property access restrictions
- deed restrictions

and may include if necessary:

- soil capping

Statutory Determinations

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate ("ARARs") to the remedial action, and is cost effective. The selected remedy uses engineering controls to address remaining low levels of hazardous substances at the Site. Concentrated wastes which may have presented principal threats at the Site were addressed by interim remedial measures prior to the enactment of SARA and the CERCLA §121 preference for treatment. Because this remedy will result in hazardous substances remaining on-site, a review will be conducted within five years after the commencement of remedial action, and every five years thereafter, to ensure that the remedy continues to provide adequate protection of human health and the environment.

John Wise 6.10.94

John Wise
Deputy Regional Administrator

Date

PART II - DECISION SUMMARY

Southern California Edison, Visalia Pole Yard Superfund Site
Visalia, California

A detailed analysis of the selected remedial action for the Southern California Edison (SCE), Visalia Pole Yard (VPY), Superfund site is contained in the Remedial Action Plan (RAP), prepared by DTSC in October, 1993. The site information summarized below is discussed fully in the RAP. After considering public comments, the State adopted the draft RAP, with minor changes, as the final RAP. EPA's Record of Decision concurs with the State's action, and selects the remedial action alternative proposed in the draft RAP without change.

1. Site Name, Location, and Description.

The Southern California Edison, Visalia Pole Yard, Superfund site is located at 432 North Ben Maddox Way in northeastern Visalia, Tulare County, California. The site is bounded on the North by East Goshen Avenue and on the West by North Ben Maddox Way. Visalia is approximately midway between Fresno and Bakersfield in the Central Valley of California, and is a growing metropolitan area with a population of approximately 75,000. Agriculture is the dominant industry in the region and walnuts, olives, and citrus are the primary crops.

The VPY site is divided into three distinct areas: 1) The southwest corner of the site was the main pole treatment operation area and is referred to as the Pole Treatment Area (PT Area); 2) The eastern portion of the site where newly arriving poles were stored for seasoning. This area is referred to as the Pole Storage Area (PS Area);and 3) The northwestern corner of the site acted as a hub for electric transmissions, work distribution area, and automotive maintenance garage. This area is known as the Visalia Service Center (VSC Area). The western half of the property known as the VSC Area and the PT Area currently contains offices, a warehouse, other buildings, and the groundwater treatment plant. The former pole treating equipment and structures have been removed from PT Area.

The PS Area consists mostly of open land where mostly untreated poles were stored. In the southern portion of the PS Area some remnants remain of the buffing and incising facility and tracks used in the processing of poles prior to treatment.

2. Site History and Enforcement Activities.

The facility was used for pole treatment operations from 1925 until 1980. The PT Area and the PS Area combined, comprise the Visalia Pole Yard Wood Treatment Operation. The PT Area was the main pole treatment operation area and is the main focal point for remediation of the site. The PS Area was where untreated poles were stored for seasoning. The VSC Area acted as a hub for electric transmissions, the work distribution area, and the automotive maintenance garage.

Fresh, debarked, western red cedar was shipped via rail to the PS Area of the site for seasoning and milling into utility poles. Dried wooden poles were shaved and cut to appropriate lengths and then moved to the PT Area for treatment. The PT Area consisted of two butt dip tanks and one full dip tank and supporting tanks and equipment used in the treatment operation.

Between 1925 and 1968, creosote was used as a wood preservative and was delivered to the site in railroad tank cars. A series of four inch underground product lines transferred the creosote from the rail cars to the 100,000 gallon above ground cold storage tank. When poles needed to be treated, the creosote was heated by steam lines underlying the tank. The heated creosote was then pumped to the treatment tanks. After treatment was completed, the hot creosote was pumped to one of two 16,000-gallon above-ground insulated hot storage tanks.

In 1968, the treating fluid was changed from creosote to a 5 percent by weight solution of pentachlorophenol dissolved in a diesel oil carrier fluid. Diesel fuel was stored in underground storage tanks located west of the VPY office. Operations continued until June 1980 when the VPY site was closed.

During 1980 and 1981, SCE contracted to demolish the former pole treating facilities. Once destroyed, these structures were disposed of at the Class I facility in Kettleman Hills, California.

Regulatory actions related to the VPY began in 1976, when the California Regional Water Quality Control Board, Central Valley Region (RWQCB) issued a Cleanup and Abatement Order requiring SCE to: 1) "discontinue discharge of chemicals related to pole treatment operations"; 2) "extract and treat contaminated groundwater"; and 3) "contain contamination on site". SCE complied with these provisions by installing groundwater extraction wells and constructing a slurry wall keyed into the shallow aquitard beneath the VPY site.

The RWQCB approved a National Pollutant Discharge Elimination System (NPDES) permit for discharge from the pretreatment plant. This Order became effective in September 1986.

The VPY site was listed on the State Superfund list in June 1985. As a result of this listing, SCE and DTSC signed an Enforceable Agreement, effective December 1987. The Enforceable Agreement was signed to ensure that past releases of hazardous substances to the air, soil, surface water, and groundwater are investigated and appropriate remedial action(s) are taken, to satisfy local, state, and federal requirements.

The VPY site was added to the National Priorities List (NPL) on March 31, 1989. DTSC is the lead agency at this site for both U. S. EPA and State activities associated with CERCLA.

3. Highlights of Community Participation.

In October, 1993, DTSC released a proposed plan and RI/FS for the Site. Site documents were made available at the lead agency offices and a local repository, the public library in Visalia. A public notice was published allowing 30 days for public comment on the RI/FS and draft RAP, which served as the equivalent of a proposed plan, consistent with the requirements of the NCP. A public meeting was held on October 19, 1993 to describe the proposed remedy and receive comments. No members of the public were present at the public meeting. The decision for this Site is based upon the Administrative Record.

4. Scope and Role of Remedial Actions

The remedial actions selected in this Record of Decision will be the final response actions performed at the Site. As described in the Site history above, significant interim remedial measures were performed at the Site in the past. These actions addressed many of the threats at the Site. The selected remedy addresses the contaminants remaining in soils and groundwater at the Site.

5. Site Characteristics.

Site investigations have included sampling and analysis of surface and subsurface soils, groundwater, and surface water.

Three aquifers designated as the shallow, intermediate, and deeper aquifers, have been delineated in the upper 180 feet of the unconsolidated sediment beneath the VPY site. The approximate intervals below ground surface where the units occur are listed below.

Hydrostratigraphic Unit	Approximate Depth (ft)
Shallow Aquifer (presently dry)	30 - 52
Intermediate Aquifer(partial saturated)	75 - 100
Deeper Aquifer	120 - 180 +

The three aquifers are separated by aquitards: the shallow aquitard and the intermediate aquitard. The known points of release of creosote and pentachlorophenol (PCP) in the PT Area were primarily in the piping between the storage tanks and the treatment tanks, and through cracks or failures in the treatment tanks. At the PS Area, the primary potential source of constituents in the surface soils were the pole treating chemicals dripping from poles that were occasionally stored in this area or from pole-handling equipment.

The key chemicals in the soil and groundwater beneath the VPY site are:

- chrysene;
- 2-methylnaphthalene;
- naphthalene;
- phenanthrene;
- diesel;
- OCDD; and
- PCP.

Pole treating chemicals are found in the groundwater as both a dissolved phase and free product phase. The dissolved phase concentrations are generally low because of the low solubility these chemicals have in water, coupled with the long-term remedial pumping SCE has conducted. Free phase contaminants are also described as Non Aqueous Phase Liquids (NAPLs).

Light NAPLs (LNAPLs) at the VPY site consist of diesel oil used with PCP before use in the wood-treatment process. The diesel NAPL has moved downward as the water table declined due to drought conditions. Spilled pole treating chemicals (dissolved, LNAPLs, and dense NAPLs or DNAPLs) entered the soil and migrated vertically through the vadose zone. At approximately 30 ft depth, the chemical front reached the silt layer where lateral spreading occurred. LNAPLs and DNAPLs rested on top of the 30 ft silt layer until enough head pressure was developed to facilitate migration through the 30 ft silt. The chemical front reached the shallow aquifer at the historical water table of approximately 35 ft below land surface. LNAPLs floated on top of the historical water table and spread southwesterly. Dissolved contamination in the shallow aquifer spread laterally by advection and dispersion following groundwater flow.

Contamination migrated downward to the shallow aquitard, a silty layer at approximately 50 ft depth, and spread out laterally above the shallow aquitard.

The dissolved-phase and DNAPL contamination has moved into the intermediate aquifer. This vertical DNAPL migration has been retarded from reaching the deep aquifer by the intermediate aquitard. DNAPLs have reached the upper boundary of the intermediate aquitard and have spread laterally at an approximate depth of 100 ft.

Groundwater remediation activities have been in operation at the site since 1975. Only four pole treating chemicals were detected in groundwater in the deeper aquifer during the January 1991 sampling round. Subsequent ongoing monitoring has not detected the presence of the chemicals in the deeper aquifer.

6. Summary of Site Risks.

A baseline Public Health Evaluation (PHE) was performed in order to evaluate the potential impacts from the site, to provide the basis for selecting remedial action alternatives, and to develop environmental media-specific clean-up goals. The most recent validated data set (1991) from soil and groundwater was used to establish baseline conditions for the site. Based on current U. S. EPA guidance, it was hypothetically assumed that current remediation activities would stop and the site would be uncontrolled. This assumption does not correspond either to the current conditions at the site, or to the current or future plans for the VPY site by SCE. The evaluation of health risks corresponding to these baseline conditions are hypothetical and do not necessarily represent actual or absolute estimates of health risks, but are estimates of relative risk. These assumptions are used for risk comparisons in the risk management process.

Estimated potential risks under current conditions include both occupational and off-site residential exposure scenarios. The on-site occupational exposures are evaluated based on 250 days per year for worker and 350 days per year for off-site residents. The occupational scenario includes both dust inhalation, with an excess lifetime cancer risk of 1.2×10^{-13} and a Hazard Index of 8.6×10^{-11}, and dermal soil contact, with an excess lifetime cancer risk of 1.6×10^{-8} and a Hazard Index of 3.3×10^{-4}.

Risks for future exposure scenarios associated with hypothetical ingestion of groundwater from the intermediate aquifer exceeded the target total potential carcinogenic risk for several potentially exposed populations. The risks were calculated based on the intermediate aquifer groundwater exposures on-site, at the VPY fence line, and for potential groundwater exposures at the water supply well designated CWS-7. The following total site reasonable maximum exposures, (RMEs) exceeded 1×10^{-4}:

- On-site occupational 2.6×10^{-3}
- Off-site occupational (fence line well) 7.4×10^{-2}
- Off-site occupational (CWS-7 well) 5.4×10^{-4}
- Off-site residential adult (fence line well) 2.4×10^{-1}
- Off-site residential adult (CWS-7 well) 1.8×10^{-3}
- Off-site residential children (fence line well) 1.2×10^{-1}
- Off-site residential children (CWS-7 well) 8.4×10^{-4}

The primary contribution to risk for each of these populations is the estimated hypothetical future ingestion of groundwater from the intermediate aquifer. On-site wells are used for groundwater monitoring and treatment extraction purposes only. Thus, groundwater exposures evaluated in this risk assessment are hypothetical. Fence line exposures are likewise hypothetical.

7. Description of Alternatives.

The remedial action objectives for soil at the VPY site are:

- Prevent the migration of pole treating chemicals, present in unsaturated soil, to groundwater.

- Prevent occupational exposure to soil with constituent concentrations exceeding health-based concentrations.

The remedial action objectives for groundwater at the VPY site are presented below.

- Prevent the residential and occupational exposure to groundwater with chemical concentrations above the remediation goals.

- Prevent the dermal occupational exposure to groundwater with contaminant concentrations above the remediation goals.

Alternative technologies and remedial measures were identified and screened. Risk-based remediation goals, based on a 1×10^{-4} through 1×10^{-6} site-wide target risk, have been developed. Groundwater and soil alternatives remaining after initial screening of remedial measures are described in detail in the RAP.

These selected remedial alternatives that passed initial screening include four for soil and six for groundwater as follows:

Soil

- Soil Remedial Alternative S-1 - No Action.
- Soil Remedial Alternative S-2 - Capping and Deed Restriction.
- Soil Remedial Alternative S-6 - Capping and In-Situ Bioremediation.
- Soil Remedial Alternative S-7 - Capping and In-Situ Stabilization.

Groundwater

- Groundwater Remedial Alternative G-1 - No Action.
- Groundwater Remedial Alternative G-8 - Monitoring, Slurry Wall, and In-Situ Bioremediation.
- Groundwater Remedial Alternative G-10 - Monitoring, Groundwater Extraction and Physical/Chemical Treatment with Surface Water (NPDES) Discharge.
- Groundwater Remedial Alternative G-14 - Monitoring, Groundwater Extraction and Physical/Chemical Treatment with Surface Water Discharge, In-Situ Bioremediation for DNAPLs.
- Groundwater Remedial Alternative G-15 - Monitoring, Groundwater Extraction and Physical/Chemical Treatment with Surface Water Discharge, Enhanced Extraction for DNAPLs.
- Groundwater Remedial Alternative G-16 - Monitoring, Groundwater Extraction and Physical/Chemical Treatment with recharge, In-Situ Bioremediation.

8. Summary of Comparative Analysis of Alternatives.

Each alternative has been analyzed with respect to the NCP's nine criteria. A detailed analysis is presented in the RAP.

The no-action Remedial Alternative, S-1, does not reduce site risks sufficiently to provide adequate protection of human health and the environment. Remedial Alternative S-2 provides protection of human health but does not protect the environment when compared to Remedial Alternatives S-6 and S-7. Remedial Alternative S-6 provides protection of human health and the environment. Remedial Alternative S-7 provides protection of human health and moderate protection of the environment as long as the site cap retains integrity.

Remedial Alternative S-1 is not effective in the short-term or long-term in satisfying the remedial action objectives. The remaining alternatives are effective in the short-term in protecting human health and the environment. There exists the potential for exposure to workers involved in the excavation of the hot spots on the PS Area, and during cap construction, well construction/cap construction and in-situ stabilization during implementation of Remedial Alternatives S-2, S-6 and S-7, respectively.

Remedial Alternative S-1 does not include treatment of contaminants in soil. However, natural attenuation processes will reduce the toxicity, mobility, and volume of the pole treating chemicals. With this alternative, reduction rates of toxicity, mobility, and volume will vary between different chemicals; however the time required to reach safe levels for all contaminants would considerably exceed that for the action alternatives.

The remaining alternatives incorporate a site cap. The cap provides a reduction in chemical mobility by preventing surface water infiltration and subsequent downward migration. Remedial Alternative S-7 includes in-situ soil stabilization, which provides for additional chemical immobilization. However, soil stabilization may not be effective for all of the pole treating chemicals at the site.

There are no chemical-specific applicable or relevant and appropriate requirements (ARARs) for the soil remedial alternatives. The cleanup levels for soil are not based on ARARs but rather are risk-based. The alternatives incorporating a cap would comply with California's hazardous waste facility closure requirements--specifically, Title 22 California Code of Regulations ("CCR") §§66264.310(a) and (b) and 66264.117(d).

Remedial Alternative S-6 is the only alternative that assures treatment of all organic contaminants. Consequently, there would be a reduction in toxicity and volume of chemicals over time. The time required for remediation in this alternative would be considerably less than required for natural bioremediation.

Remedial Alternative S-6 provides long-term effectiveness as it permanently reduces mobility and volume of the pole treating chemicals. Alternative S-7 would reduce the mobility of some, but not all, of these compounds, providing permanence only for those that are stabilized. In general, only alternative S-6 permanently reduces toxicity, mobility, or volume of the chemicals. The Alternatives S-2 and S-7 are generally only effective in the long-term to the extent that the site caps included in these alternatives are adequately maintained.

The no action Remedial Alternative G-1, does not reduce site risks sufficiently to provide adequate protection of human health and the environment. Protection under Remedial Alternative G-8 is uncertain. The remaining alternatives provide protection of human health and the environment. The remaining alternatives retained for detailed analysis, G-10, G-14, G-15, and G-16, provide for plume containment with a series of groundwater recovery wells and ex-situ treatment as the primary remedial technology. Overall protection would be increased in those alternatives that decrease the required remedial time frame (alternatives G-14, G-15, G-16).

The chemical-specific ARARs for the groundwater remedial alternatives are the maximum contaminant levels (MCL) for pentachlorophenol (.001 mg/l), benzopyrene (.0002 mg/l) and dioxin (.00000003 mg/l). The other cleanup levels for groundwater contaminants of concern, which are set forth in the State's RAP, are risk-based. Remedial alternatives G-10, G-14, G-15, and G-16 would comply with ARARs.

Remedial Alternative G-10 is the baseline technology for Remedial Alternatives G-14, G-15, and G-16. Remedial Alternative G-10 may require several hundred years to achieve remedial objectives.

Remedial Alternative G-16 may reduce remediation time. Bioremediation can be phased in while ex-situ groundwater treatment is in operation.

Remedial Alternatives G-14 and G-15 would also reduce the required remedial time, relative to Remedial Alternative G-10, if the DNAPLs remedial technologies prove effective. Hydrocarbons will leach from the DNAPL to the saturated alluvium and the groundwater for an extended period of time. Remedial Alternatives G-14 and G-15 include provisions for the reduction

in DNAPLs volume.

9. Selected Remedy.

Remedial alternatives were evaluated based on the nine criteria established by the NCP.

Remedial Alternative S-6 has been selected to remedy the impacted soil at the VPY site. This alternative consists of implementing bioremediation technologies to remedy the soil contamination, along with asphaltic concrete capping of the soil, if necessary, until bioremediation goals are met. Institutional controls will be instituted to reduce access to the Site throughout the duration of remediation. If necessary, capping will be used as a surface barrier for isolating contaminated soils from direct contact, dust suppression, and infiltration. A more rigorous RCRA cap may be needed if bioremediation is not effective. The cap would be constructed over the entire area of the impacted soil unit. The area to be capped is approximately 20,000 square yards. If an asphaltic concrete cap is installed the layer thickness would be approximately 3-inches. This is adequate based on the assumption that minimal car traffic and no more than an equivalent of one truck per day is expected.

Institutional controls will be instituted to reduce access to the VPY site and the soil unit throughout the duration of the site remediation. Institutional controls are needed to insure protection to public health based on present or future use. Institutional controls will control the following items:

- Property access restrictions, such as fencing, posting and secured site access.
- Signs warning against unauthorized entry onto the site.
- Site-use restrictions to prevent unauthorized borings, earthwork and construction.
- Deed restrictions to limit site activities to commercial or industrial uses only. DTSC approval prior to implementation of any cap destruction or construction activities.

Remedial Alternative G-16 has been selected to remedy the groundwater at this site. This alternative is based primarily on the continued use of the existing physical and chemical treatment system. In-situ bioremediation is included as an additional treatment mechanism. The DNAPL phase is also addressed in this alternative through the application of the in-situ bioremediation technology. Recharge to the vadose zone soils will be incorporated to enhance the soils remediation S-6 above.

The impacted groundwater plume will continue to be hydraulically controlled by a series of extraction wells. Groundwater remediation will be conducted primarily ex-situ, with enhanced in-situ bioremediation incorporated into the overall approach. Treated groundwater will be recharged to the alluvial aquifer on site or recharged to infiltration galleries.

A series of groundwater extraction wells have been constructed at the VPY site based on available site data and groundwater modeling. Groundwater treatment removes PCDDs, PCDFs, and semi-volatile organic compounds. The PCDDs and PCDFs are generally adsorbed onto suspended soil particles. These suspended particles are filtered out of the groundwater. The filter residue is handled as a hazardous waste and disposed of off-site. The remaining organic compounds are removed from groundwater by activated carbon. This carbon is reactivated off site by the carbon vendor.

Institutional controls will be instituted to reduce access to the site and groundwater throughout the duration of groundwater remediation. Institutional controls, in addition, to the controls described for soil remediation above, will include the following items:

- Property access restrictions, such as fencing and secured site access.
- Signs warning against unauthorized entry onto the site.
- Site-use restrictions to prevent unauthorized borings and well construction.
- Deed restrictions preventing property transfer during groundwater remediation.
- Deed restriction requiring that future buyers of the site be made aware of the site's environmental history.
- Restriction of well installation around the site which may have adverse effect on groundwater remediation.

Overall protection of human health and the environment:
The selected soil and groundwater remedies provide appropriate overall protection of human health and the environment. The bioremediation of the soil will reduce the mass of pole treating chemicals by aerobic bacterial degradation. Institutional controls and, if necessary, capping, will provide further protection. The selected groundwater remedy provides protection through institutional controls, groundwater monitoring, groundwater extraction, ex-situ physical and chemical treatment, on-site recharge of treated groundwater into the alluvium, and enhanced in-situ bioremediation.

Compliance with ARARs: There are no chemical-specific ARARs with respect to the soil. However, action-specific ARARs exist with respect to the cap, if a cap is utilized. The extent of the capping requirements will be dependent on the degree of success achieved by the bioremediation. If the bioremediation is successful, a cap of the kind contemplated by RCRA will not be necessary. On the other hand, if the bioremediation is not successful, a more permanent cap may be required, and in that event certain RCRA requirements would be relevant and appropriate. The closure and post-closure requirements set forth in Title 22 California Code of Regulations §§66264.310(a) and (b) and 66264.117(d) are relevant and appropriate. It should be noted that where RCRA closure is relevant and appropriate (rather than applicable), the National Contingency Plan permits a hybrid closure. Therefore, the RCRA closure requirements could be applied with more flexibility.

The chemical-specific ARARs for the groundwater remedial alternative are the maximum contaminant levels (MCL) for pentachlorophenol (.001 mg/l), benzopyrene (.0002 mg/l), and dioxin (.00000003 mg/l). The selected remedial alternative will comply with those requirements. The other cleanup levels for contaminants of concern, which are set forth in the RAP, are risk-based.

With respect to the action-specific ARARs for the groundwater remedy, the treatment and reinjection of contaminated groundwater at the site may constitute the operation of a Class IV well under the Underground Injection Control Program. See 40 C.F.R. Part 144. Under 40 C.F.R. §144.6(d), Class IV wells include wells used to inject hazardous waste into a formation which contains, within one quarter mile of the well, an underground source of drinking water, pursuant to 40 C.F.R. 144.13(c). Such injection is permissible provided that it is approved by EPA pursuant to provisions for cleanup of releases under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). Accordingly, the injection provided for in the selected remedy will meet this ARAR.

It should be noted that the RCRA land disposal restrictions, set forth at 22 CCR §66268.1 et seq., are not ARARs, notwithstanding that creosote (U051) is a listed waste pursuant to 22 CCR §66268.35 and PCP is a "California list waste" pursuant to 22 CCR §66268.32.

Under EPA's "contained-in policy", a media such as groundwater that contains a hazardous waste must be managed as a hazardous waste as long as the media contains the listed waste. However, each EPA region has authority to determine when a media no longer contains a hazardous waste. If the contaminants from the listed waste are at levels that EPA determines are acceptable, then EPA will no longer consider the media to contain hazardous waste, and the land disposal restrictions will not be triggered. Since the proposed groundwater treatment alternatives at the VPY site will treat the groundwater to levels that EPA and DTSC find acceptable for the contamination, the treated groundwater will not contain a hazardous waste. Accordingly, the selected remedial alternative will not trigger the land disposal restrictions.

Long-term effectiveness and permanence: The selected remedial alternative for soils provides long-term effectiveness as it permanently reduces mobility and volume of the pole treating chemicals. A deed restriction prohibiting certain future site development and uses will provide additional assurance of long-term effectiveness. The selected groundwater remedy provides long-term effectiveness as it provides a permanent reduction in the concentration of the pole-treating chemicals.

Reduction of toxicity, mobility, or volume through treatment: The selected remedy incorporates treatment of soil contamination through in-situ bioremediation which will reduce the toxicity, mobility and volume of pole-treating chemicals. The selected groundwater remedy includes ex-situ and in-situ treatment. The ex-situ treatment will remove chlorinated hydrocarbons from extracted groundwater by filtration of suspended solids (certain chlorinated hydrocarbons are adsorbed to the solids). Dissolved hydrocarbons are removed by granular activated carbon (GAC). These activities provide a permanent reduction in contaminant toxicity and volume. In addition, the in-situ bioremediation will provide further reduction of the toxicity and volume of the contaminants.

Short-term effectiveness: The selected soils remedy is effective in the short-term in protecting human health and the environment. The reduction of contaminants in the groundwater will require a substantial period of time. However, the selected remedy, by utilizing an enhanced in-situ bioremediation process in conjunction with ex-situ groundwater treatment, may reduce remediation time in comparison with the other remedial alternatives.

Implementability: The selected remedial alternative can be implemented, although some time will be required because an effective in-situ bioremediation program requires extensive testing prior to full-scale application. The selected groundwater remedy incorporates an existing ex-situ treatment system that has already been successfully implemented during interim remedial activities. Thus that portion of the remedy can be initiated immediately. However, the supplemental technology--specifically, the in-situ bioremediation--will require pilot testing prior to implementation.

Cost: The selected remedy is cost effective. The estimated capital, annual O&M and total present worth cost of each alternative are presented below.

Remedial Alternative	All Costs in $1,000		
	Capital	Annual O&M	Present Worth
S-6	5,847	154	7,300
G-16	720	2,100	37,900

Costs will further be modified at the final design stage to reflect any changes made during design. Annual costs for operation and maintenance of the soil remediation system are expected to be approximately $154,000 per year in 1994 dollars. Costs for maintenance of the infiltration and injection points, and the vapor extraction system will be modified at the final design stages to reflect any changes in costs due to design modifications. Although some of the soils and groundwater remedial alternatives had lower total costs, they did not provide the same level of long-term effectiveness in protecting human health and the environment. The estimated present worth of S-6 and G-16, the selected alternatives combined, is $45,200,000.

State acceptance: DTSC is the lead agency which has been responsible for overseeing the RI/FS for the Site. After considering comments, DTSC finalized its selection of a remedial action for the Site in its RAP. The RAP was issued on April 18, 1994. EPA selects and concurs with the remedy chosen in the State's RAP.

Community acceptance: In October, 1993 DTSC, released a proposed plan and RI/FS for the Site. Site documents were made available at the lead agency offices and a local repository, the public library in Visalia. A public notice was published allowing 30 days for public comment on the RI/FS and Proposed Plan. A public meeting was held on October 19, 1993 to describe the proposed remedy and receive comments. No members of the public were present at the public meeting. The decision for this Site is based upon the Administrative Record.

10. Statutory Determinations

The selected remedy is protective of human health and the environment, complies with ARARs, and is cost effective. Because this remedy will result in hazardous materials remaining on-site, a review will be conducted five years after the commencement of remedial action, and every five years thereafter, to ensure that the remedy continues to provide adequate protection of human health and the environment.

11. Documentation of Significant Changes.

The proposed plan for the Site was released for public comment in October, 1993. The proposed plan identified alternatives S-6 (soil capping and in-situ bioremediation), and G-16 (ex-situ treatment and in-situ bioremediation) together as the preferred alternatives. DTSC reviewed all written comments submitted during the comment period. Upon review of these comments, DTSC determined that no significant changes to the remedy, as it was originally identified in the proposed plan, were necessary. EPA concurs with DTSC's determination.