



Linda S. Adams  
Secretary for  
Environmental Protection

# State Water Resources Control Board



Arnold Schwarzenegger  
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## Division of Financial Assistance

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## EXHIBIT 4 UST Case Closure Summary

This Underground Storage Tank (UST) Case Closure Summary has been prepared in support of a recommendation by the Petroleum Underground Storage Tank Cleanup Fund (Fund) to the State Water Resources Control Board (State Water Board) for closure of the UST case at 8897 Greenback Lane in Orangevale, CA (Site).

### Agency Information

Agency Name: Sacramento County Environmental Management Department (SCEMD)	Address: 10590 Armstrong Avenue, Suite A, Mather, CA 95655
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### Case Information

LOP Case No: B598	Global ID: T0606700567
Site Name: Pac Tel Cellular (Former Shell Station)	Site Address: 8897 Greenback Lane, Orangevale, CA 95662
Responsible Party: John Ralich	USTCF Expenditures to Date: \$325,069
USTCF Claim No.: 10943	Number of Years Open: 18 years

### Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active?	Date
1	?	Gasoline	Removed	Prior to 1992
2	?	Gasoline	Removed	Prior to 1992
3	?	Gasoline	Removed	Prior to 1992
4	250	Waste Oil	Removed	December 1992

### Release Information

- Source of Release: UST System
- Date of Release: Release reported on October 19, 1992
- Affected Media: Soil and Groundwater

### Site Information

- GW Basin: Sacramento Valley Basin
- Beneficial Uses: Municipal and Domestic Water Supply (MUN), Agricultural Supply (AGR), Industrial Service Supply (IND), and Industrial Process Supply (PRO)
- Land Use Designation: The Site is zoned commercial.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no public supply wells within ½ mile of the Site.
- Minimum Groundwater Depth: 45.06 feet below ground surface (bgs) in MW-1
- Maximum Groundwater Depth: 48.19 feet bgs at MW-1

- Groundwater Flow Direction: Based on data from the Service Cleaners Site located approximately 400 feet north of the Site, groundwater flow direction is southwest at a gradient of 0.0064 feet/foot.
- Soil Types: Soils beneath the Site consist of loosely to moderately compacted sand, silt, and gravel deposited in alluvial fans.

**Monitoring Well Information**

Well Designation	Date Installed	Screen Interval (feet bgs)	Most Recent Depth to Groundwater (feet bgs) (March 2010 )
MW-1	Oct 94	?-60	48.48

**Petroleum Hydrocarbon Constituent Concentrations**

Contaminant	Soil (mg/kg)		Water(ug/L)		WQOs (µg/L)
	Maximum	Latest (10/5/94)	Maximum	Latest (3/26/10)	
TPHg	54	54	NA	NA	5
TPHd	8,200	8	NA	NA	56
TPHr	1,100	530	NA	NA	NA
GRO	3.2	NA	67*	ND<50	NA
DRO	670	NA	ND<500	ND<50	NA
MORO	NA	NA	ND<1000	ND<100	NA
Oil & Grease	3,800	NA	NA	NA	NA
Benzene	0.058	ND<0.005	ND<5	ND<0.50	0.15
Toluene	0.140	ND<0.005	ND<5	ND<0.50	42
Ethylbenzene	0.65	0.65	ND<5	ND<0.50	29
Xylenes	1.80	ND<0.005	ND<5	ND<1.0	17
MTBE	NA	NA	ND<2	ND<1 (4/21/09)	5
PCE	NA	NA	9	2.2	0.06

mg/kg: milligram per kilogram, parts per million

ug/L: micrograms per liter, parts per billion

NA: Not Analyzed, Not Applicable, or Data Not Available

WQOs: Water Quality Objectives

TPHg: Total Petroleum Hydrocarbons as Gasoline

TPHd: Total Petroleum Hydrocarbons as Diesel

TPHr: Total Petroleum Hydrocarbons Recoverable

GRO: Gasoline Recoverable Organics

DRO: Diesel Recoverable Organics

MORO: Motor Oil Recoverable Organics

PCE: Tetrachloroethene

\* - Laboratory Note: The sample chromatogram does not match the standard gasoline chromatogram.

**Site Description**

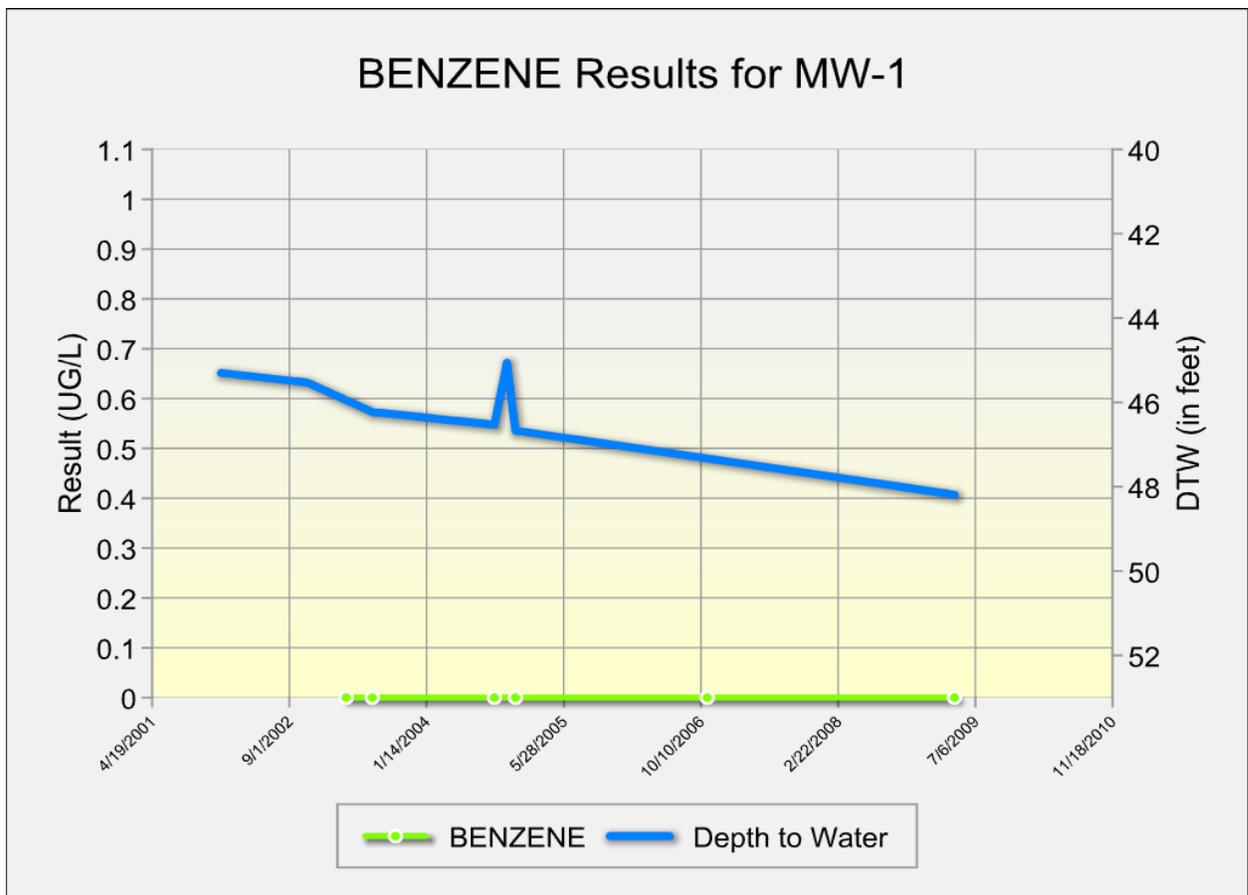
The Site is located on the northwest corner of the intersection of Greenback Lane and Hazel Avenue in Orangevale, California. The Site was formerly a Shell Service Station which ceased operation prior to 1992. In 1994, the current owner of the property renovated the building and a retail business, Wireless Toys Store, and a cellular tower currently occupy the property. An ongoing dry cleaner investigation/remediation project is occurring at Service Cleaners approximately 400 feet north (cross gradient) of the Site.

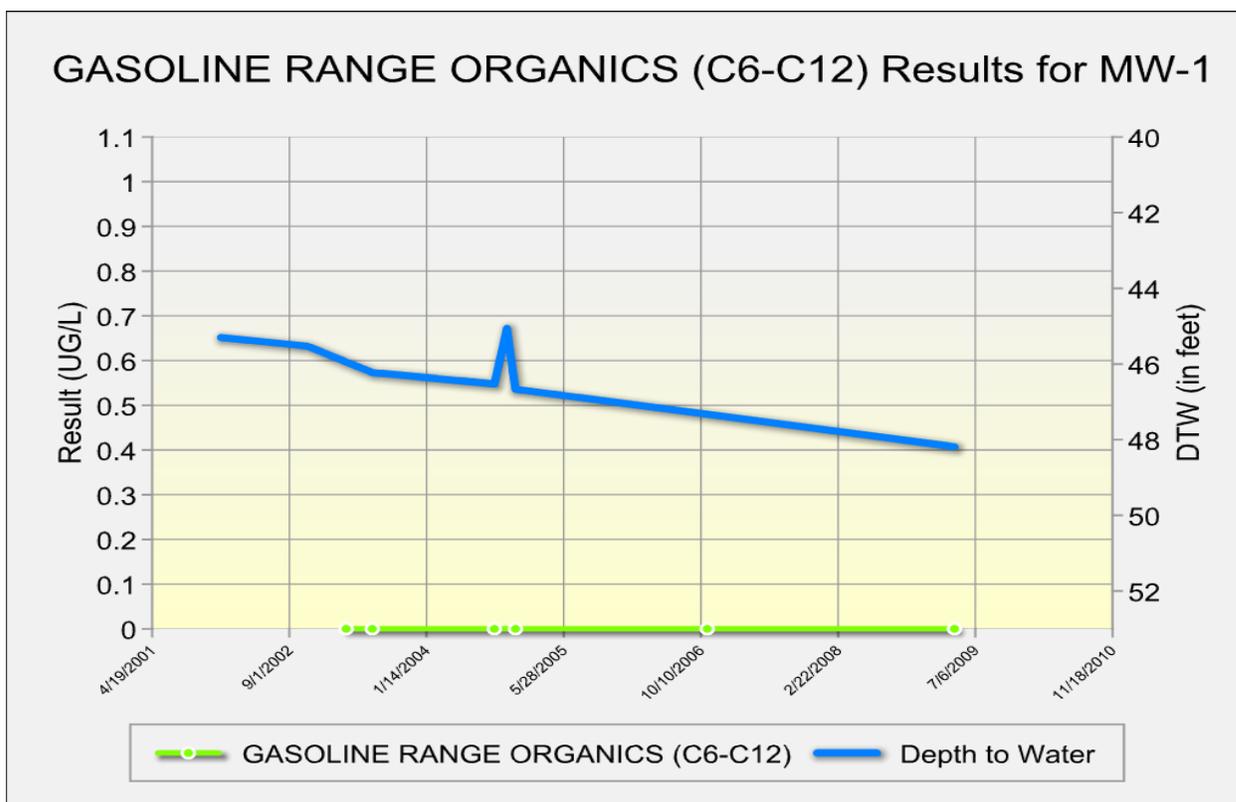
### Remediation Summary

- Free product: no free product was detected throughout the life of this case.
- Soil excavation: May/June 1993 - approximately 1,870 tons of contaminated soil was excavated, transported and disposed.
- December 1993 – additional contaminated soil, extending beyond the property boundary, was excavated upon the removal of an adjacent off-site building. Approximately 122 tons was excavated, transported and disposed.
- In-situ soil remediation: none identified
- Groundwater Remediation: None Identified

### General Site Conditions

- Geology: The Site is underlain by alluvial fan deposits consisting of loosely to moderately compacted sand, silt and gravel.
- Groundwater Trends: Groundwater has been monitored intermittently since 1994. Only PCE and chloroform, which are thought to be associated with a nearby dry cleaners investigation, located approximately 400 feet north of the Site have been detected in groundwater. The graphs below present historic concentrations of benzene and gasoline range organics in MW-1.





- Estimate of Remaining Mass: Based on the analytical results from confirmation soil samples collected from the bottom and sidewalls during the two excavation events, and groundwater data (presented in the graphs above), it is estimated that 95 percent of the mass has been removed and that the remaining mass does not pose a threat to groundwater.
- Time to Meet Water Quality Objectives: Water Quality Objectives for all petroleum hydrocarbons have already been met with the possible exception of benzene. Benzene was not detected above the reporting limit of 0.5 ug/L. The WQO for benzene of 0.15 ug/L will be met within a reasonable period of time even if it is not currently met.
- The only compounds of concern remaining in groundwater are PCE and chloroform. These are not petroleum hydrocarbons and are believed to have migrated from a nearby dry cleaner that is being regulated by the Central Valley Regional Water Board, Site Cleanup Unit.

#### **Sensitive Receptor Survey**

One supply well was identified to have been drilled approximately 600 feet west of the Site. However, it was abandoned shortly after testing. Another Water District well was identified approximately 4,000 feet downgradient of the Site. This well is only used to monitor water quality and is not a production well.

### **Risk Evaluation**

Little or no risk from an unauthorized release of petroleum remains at this Site. Petroleum hydrocarbon contamination appears to have been limited to the near surface soils and was removed during the 1993 excavations. Only non-petroleum contaminants are detected in the groundwater. These contaminants appear to have migrated from a neighboring dry cleaner Site being overseen by the Central Valley Regional Water Board. The entire area is provided water service by the Orangevale Water District.

### **Closure**

**Will corrective action performed ensure the protection of human health, safety and the environment?** Yes.

**Is corrective action and UST case closure consistent with State Water Board Resolution 92-49?** Yes.

**Is achieving background water quality feasible?** No.

To remove all traces of residual petroleum constituents at the site would require significant effort and cost. Removal of all traces of residual petroleum hydrocarbon constituents that contribute to detectable concentrations in shallow groundwater can be accomplished, but would require excavation of additional soil as well as additional remediation of shallow groundwater. The soil excavation could also entail relocation of existing utilities, demolition of existing buildings, temporary closure of existing businesses and road closures. If complete removal of detectable traces of petroleum constituents becomes the standard for UST corrective actions, the statewide technical and economic implications will be enormous. Because of the high costs involved and minimal benefit of attaining further reductions in concentrations of petroleum hydrocarbons at this Site, and the fact that beneficial uses are not threatened, attaining background water quality at this Site is not feasible.

**If achieving background water quality is not feasible:**

**Is the alternative cleanup level consistent with the maximum benefit to the people of the State?** Yes.

It is impossible to determine the precise level of water quality that will be attained given the limited residual petroleum hydrocarbons that remain at the Site. In light of all the factors discussed above, and the fact that the residual petroleum constituents will not unreasonably affect present and anticipated beneficial uses of groundwater, a level of water quality will be attained that is consistent with the maximum benefit to the people of the state.

**Will the alternative cleanup level unreasonably affect present and anticipated beneficial uses of water?** No.

Impacted groundwater is not used as a source of drinking water, or for any other current beneficial use. It is highly unlikely that the impacted groundwater will be used as a source of drinking water or any other beneficial use in the foreseeable future.

**Will the alternative level of water quality exceed water quality prescribed in applicable Basin Plan?** No.

The final step in determining whether cleanup to a level of water quality less stringent than background is appropriate for this Site requires a determination that the alternative level of water quality will not result in water quality less than that prescribed in the relevant basin plan. Pursuant to State Water Board Resolution 92-49, the alternate level of water quality for this Site will not exceed basin plan requirements.

**Have factors contained in Title 23 of the California Code of Regulations, Section 2550.4 been considered?** Yes.

In approving an alternative level of water quality less stringent than background, the State Water Board has considered the factors contained in California Code of Regulations, title 23, section 2550.4, subdivision (d). As discussed earlier, the adverse effect on shallow groundwater will be minimal and localized, and there will be no adverse effect on the groundwater contained in deeper aquifers, given the physical and chemical characteristics of petroleum constituents, the hydrogeological characteristics of the Site and surrounding land, and the quantity of the groundwater and direction of the groundwater flow. In addition, the potential for adverse effects on beneficial uses of groundwater is low, in light of the proximity of the groundwater supply wells, the current and potential future uses of groundwater in the area, the existing quality of groundwater, the potential for health risks caused by human exposure, the potential damage to wildlife, crops, vegetation, and physical structures, and the persistence and permanence of potential effects.

Finally, a level of water quality less stringent than background is unlikely to have any impact on surface water quality, in light of the volume and physical and chemical characteristics of petroleum constituents; the hydrogeological characteristics of the Site and surrounding land; the quantity and quality of groundwater and direction of groundwater flow, the patterns of precipitation in the region, and the proximity of residual petroleum to surface waters.

**Has the requisite level of water quality been met?** Yes, with the possible exception of benzene. Benzene was not detected above the reporting limit of 0.5 ug/L. The WQO for benzene of 0.15 ug/L, and will be met within a reasonable period of time, if it is not currently met.

**Objections to Closure and Response**

The SCEMD objects to UST Site closure for this case because a vapor intrusion survey has not been performed.

The Fund Manger disagrees that a vapor intrusion study is needed because there have been no volatile petroleum hydrocarbons detected in the groundwater in the 17 years of groundwater monitoring and only minor concentrations of volatile petroleum hydrocarbon have been identified in the excavation and investigation soil sampling results. Water Quality Objectives have been achieved for all petroleum constituents with the possible exception of benzene. This constituent was not detected at reporting limits as explained above. The applicable water quality objective for this constituent will be achieved within a reasonable period of time, if it is not already met. The compounds of concern that remain in the groundwater beneath the Site are PCE and chloroform, which are believed to originate from a neighboring dry cleaning operation. That investigation and remediation of the dry cleaner contamination is being overseen by the Central Valley Regional Water Board, Site Cleanup Unit.

The Fund is conducting public notification and the SCEMD has the regulatory responsibility to supervise the abandonment of monitoring wells.

### Summary and Conclusion

The Site operated as a gasoline service station from an unknown date through 1992, when the USTs were removed. To date, \$325,069 in corrective action costs have been reimbursed by the Fund. There have been four Site assessments, two major soil excavations, and one groundwater monitoring well installed. Approximately 1,992 tons of impacted soil have been excavated. Water Quality Objectives at this Site have been achieved, with the possible exception of benzene as explained above. The remaining contaminants of concern detected in the groundwater at this Site are PCE and chloroform, believed to originate from a dry cleaning operation located approximately 400 feet north of the Site. The nearest sensitive receptor is a water quality monitoring well operated by the Orangevale Water District, more than 4,000 feet down gradient of the Site. Any impacted groundwater is not currently being used as a source of drinking water or other beneficial uses. It is highly unlikely that any impacted groundwater will be used as a source of drinking water or other beneficial use in the foreseeable future. Based on available information, any residual petroleum hydrocarbons at the Site do not pose significant risks to human health, safety, and the environment, and the Fund Manager recommends that the case be closed.

*John Russell*

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John Russell PG No. 8396

August 2, 2010

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Date

