2009

Annual Report to the California State Legislature

REPORT ON FUNDS ALLOCATED FOR NATIONAL PRIORITIES LIST (NPL) AND STATE ORPHAN SITES

California Environmental Protection Agency
Department of Toxic Substances Control

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Executive Summary

The Department of Toxic Substances Control (DTSC) is responsible for protecting the health and safety of Californians. DTSC achieves this goal by controlling exposure of Californians to hazardous materials present in soil, water, and air. Hazardous materials are either treated or removed from commercial and residential properties, military facilities, school sites or industrial parcels.

This report provides information about sites where the parties responsible for releasing hazardous materials are not identifiable, not financially capable, or not willing to pay for the treatment and/or removal of hazardous materials that have been determined to present an imminent danger to the public. While obligated to protect the public health and environment, DTSC is required by statute and policy to aggressively pursue cost recovery against parties unwilling to pay or participate in cleanup actions whenever it elects to use state funds to evaluate or remediate hazardous substance release sites.

Introduction

The mission of the Department of Toxic Substances Control (DTSC) is to provide the highest level of safety, and to protect public health and the environment from toxic harm. DTSC is committed to ensuring that the National Priorities List (NPL) and orphan hazardous waste sites (sites where no one is available to conduct the cleanup) are cleaned up to protect the environment and the health of all Californians. In order to fulfill this mission, the Federal Superfund program appropriates funds to clean up NPL sites in the State of California where no viable responsible party exists. The State must also contribute at least 10 percent of the costs associated with remedial actions, and up to 100 percent of all future maintenance costs; this represents the State match.

The NPL is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. Superfund is the federal government's program to clean up the nation's uncontrolled hazardous waste sites.

DTSC projects that during the next five fiscal years (FYs) (2009/2010 through 2013/2014) over $10,000,000 will be expended to fund DTSC's 10 percent match for Federal Superfund site remedial actions. In addition, during the same period, over $12,000,000 is projected for DTSC's Operation and Maintenance costs at these sites. Table 1 summarizes DTSC's total cost obligations for NPL sites by regional office and fiscal year. These are estimates only and are dependent on many factors including discretionary decisions by the United States Environmental Protection Agency (U.S. EPA) and the availability of federal monies.

State orphan sites are sites that are not on the NPL, but where hazardous substances contamination still poses an environmental or public health threat and the parties responsible for the contamination are unknown, unwilling, or unable to pay for a

cleanup. DTSC routinely pursues enforcement actions and seeks cost recovery against responsible parties unwilling to pay for, cooperate, or otherwise contribute to necessary cleanup of releases for which they are liable.

This report describes DTSC's accomplishments, challenges, and various activities conducted in State FY 2008/09 using funds appropriated for the cleanup of NPL and State orphan sites. The sites activities section of the report consists of newly added sites as well as sites from FY 2008/09 where work will continue into FY 2009/10.

How Funds Were Used - Net Program Costs

The Budget Act of 2008 appropriated $9,597,000 to DTSC's Site Remediation Account. DTSC's pro rata share for the fund was $853,520. The remaining balance of $8,743,480 provided the required State match funding at NPL sites, and allocated for site investigation and cleanup actions at State Orphan sites. This funding makes it possible for DTSC to protect public health and the environment from the harmful effects of releases and threatened releases of hazardous substances when the party responsible for releasing hazardous materials is not identifiable or financially capable of paying for the cleanup of hazardous materials. During FY 2008/09, DTSC encumbered and spent approximately $11,404,662 for contracts to perform site work. This includes funding appropriated in FY 2008/09 as well as funding appropriated in previous years that were not fully expended.

Table 1. Regional NPL Match and O&M Cost Projections (In 1,000s) By Fiscal Year

Regional Office	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14	TOTAL
Berkeley	$0	$0	$0	$0	$3,500	$3,500
Cypress	$250	$400	$450	$450	$450	$2,000
Chatsworth	$1,500	$350	$350	$350	$350	$2,900
Sacramento	$740	$1,910	$2,057	$4,445	$5,175	$14,327
TOTAL	$2,490	$2,660	$2,857	$5,245	$9,475	$22,727

Description of Activities

National Priorities List and State Orphan Sites

NORTHERN CALIFORNIA - BERKELEY

Site Name: Cal-Tech Metal Finishers
Location: 841, 829 and 825 31st Street, Oakland, Alameda County, Assembly District 16, Senate District 9

DTSC completed the installation of an interim soil vapor extraction system. DTSC will conduct additional sampling of soil on adjacent residential properties, install monitoring wells and conduct pilot tests to address ground water contamination.

Description of Site Activities: Lane Metal Finishers and Caltech Metal Finishers operated at the site from 1947 to 2000. Cal-Tech operations included polishing, electroplating, anodizing, and plating of metal parts. Chemicals historically used at the site include caustic liquids, sodium hydroxide, hydrochloric acid, nitric acid, sulfuric acid, chromic acid, chromic trioxide, sodium cyanide, cadmium, copper cyanide, potassium cyanide, silver cyanide, and plating solutions containing a variety of metals. In FY 2006/07 soil, soil-gas, and ground water sample results confirmed the presence of solvents in soil, soil-gas, and the underlying ground water. In FY 2007/08, DTSC conducted additional sampling and was able to document that neighbors in the immediate vicinity (approximately 225 people) were not exposed to significant concentrations of solvents (including trichloroethylene) in indoor air. Drinking or breathing high levels of trichloroethylene may cause nervous system effects, liver and lung damage, abnormal heartbeat, coma, and possibly death. DTSC staff also worked with the property owner to demolish the buildings at the site. In FY 2008/09 DTSC completed the installation of an interim soil vapor extraction system. In FY 2009/2010 DTSC will conduct additional sampling of soil on adjacent residential properties, install monitoring wells, and conduct pilot tests to address ground water contamination.

Site Name: Chemical & Pigment Company
Location: 600 Nichols Road, Bay Point, Contra Costa County, Assembly District 11, Senate District 7

Description of Site Activities: This site was used to recover zinc from galvanizing waste. Operations at the site included treatment and disposal of hazardous wastes. There is zinc and lead contamination in the ground water. Exposure to large amounts of zinc can be harmful. It can cause stomach cramps, anemia, and changes in cholesterol levels. Lead is a very dangerous neurotoxin that leads to learning disabilities in children. In FY 2008/09, the Feasibility Study (FS) and draft Remedial Action Plan (RAP) were completed and storm water was collected, treated, and discharged to a local waste water treatment plant. In FY 2009/2010, remedial design and permitting will be started and storm water will continue to be collected, treated, and discharged to a local wastewater treatment plant.

Site Name: Cook Battery Site
Location: 139 Hill Avenue, Oakley,Contra Costa County,
Assembly District 15, Senate District 7

Description of Site Activities: The site was a residential property that recycled lead-acid batteries in the 1950s and 60s. The site is surrounded by other residential properties. Site soils are contaminated with lead up to approximately 120,000 parts-per-million (ppm), but there is an asphalt cap that effectively controls direct contact, inhalation of lead contaminated dust and the leaching of lead to the ground water. In addition, there is a chain link fence surrounding the property to prevent unauthorized access. There is up to approximately 26,000 cubic yards of lead contaminated soil under the asphalt cap. The lot is approximately 1.5 acres, with soil contamination above the residential standard up to 10 feet deep.

The funds designated in FY 2008/2009 were for repair of the damaged fence and removal of the vegetation and debris to ensure that the cap does not deteriorate. This work was completed in September 2009. No additional funds are currently needed.

Site Name: Former Hard Chrome Engineering Site
Location: 750 107th Street, Oakland, Alameda County, Assembly District 16, Senate District 9

Description of Site Activities: Hard Chrome Engineering (Hard Chrome) operated at the Site from 1972 to 2005. Hard Chrome operations included machining, electroplating, and chemical cleaning (acidic and caustic baths) of metal parts. Chemicals historically used at the Site included hydrochloric acid, sulfuric acid, chromic acid, chromic oxide flakes, sodium nitrate, potassium chromate, triethylamine, solvents, and kerosene. The waste generated at the Site included aqueous waste containing hexavalent chromium and sludges containing metals. Elevated concentrations of hexavalent chromium were detected in soil and ground water. Ground water monitoring conducted between 1991 and 2005 found that the hexavalent chromium in ground water extends as deep as 80 feet below ground. Treatability studies for both chemical and biological treatment of hexavalent chromium for reduction to trivalent chromium have been conducted. Ferrous sulfate was found to be most effective at reducing hexavalent chromium to trivalent chromium however that method may not be suitable since it caused significant lowering of pH. Other chemicals of concern (COCs) include kerosene, diesel, and volatile organic compounds (VOCs) in soil and shallow ground water, and elevated concentrations of benzene in soil.

Work to be conducted in FY 2009/2010, includes installation of additional ground water monitoring wells to further define the lateral and vertical extent of contamination; Treatability testing to evaluate alternatives; and a Feasibility Study.

Site Name: Harris Dry Cleaners
Location: 2801-2821 Martin Luther King Jr. Way, Oakland, Alameda County, Assembly District 16, Senate District 9

Description of Site Activities: A two-story residential fourplex and three-story commercial and residential building are located on-site, along with a cinder block garage used for parking. The buildings have been vacant and not maintained since about 1996. The dry cleaning facility was located on the ground floor of the three-story structure, which had up to three ground floor units for commercial uses and residential apartments on the upper two floors. The City of Oakland has identified this property as a blighted property. Harris Dry Cleaners began operations sometime after 1951 in the commercial unit at the corner of 28th Street and Martin Luther King Jr. Way. In 1983, Harris ceased operations and was replaced by Telegraph Cleaners. Telegraph Cleaners moved to another location in 1996. The investigations indicated that soil, ground water and soil gas are contaminated with PCE. In FY 2009/2010, DTSC completed remedial investigations.

Site Name: K & L Plating – 89th Avenue
Location: 981, 989, and 995 - 89th Avenue, Oakland, Alameda County, Assembly District 6, Senate District 9

Description of Site Activities: This is the site of a former electroplating company. Poor management practices allowed contamination of the soil and building structures with acids, caustics, and metals. Chlorinated solvents (including tetrachloroethylene and trichloroethylene) from a historical auto repair facility have affected the underlying ground water. Exposure to very high concentrations of tetrachloroethylene can cause dizziness, headaches, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death. Drinking or breathing high levels of trichloroethylene may cause nervous system effects, liver and lung damage, abnormal heartbeat, coma, and possibly death. Ground water monitoring conducted in FY 2008/09. In FY 2009/2010, ground water will continue to be monitored.

Site Name: Former Lane Metal Finishers
Location: 2942, 2926 San Pablo Avenue and 887 30th Street, Oakland, Alameda County,
Assembly District 16, Senate District 9

Description of Site Activities: Lane Metal Finishers and Cal-Tech Metal Finishers (Cal-Tech) have operated at the Site from 1963-1989. Cal-Tech operations included polishing, electroplating, anodizing and plating of metal parts. Chemicals historically used at the Site include caustic liquids, sodium, hydroxide, hydrochloric acid, nitric acid, sulfuric acid, chromic acid, chromic trioxide, sodium cyanide, cadmium, copper cyanide, potassium cyanide, silver cyanide and plating solutions containing variety of metals. Chemicals detected in soil, ground water and soil gas include trichloroethylene (TCE), cis-1,2,-dichloroethylene (Cis-DCE), and vinyl chloride (VC). The nearest residences are immediately adjacent to the property. The nearest school, child-care center and places of worship are approximately 1000 feet of the site. U.S. EPA tested indoor air in the neighboring homes and the auto body shop since soil gas concentrations were extremely high at the Site. U.S. EPA indoor air sampling indicated that the indoor air in downstairs of the home adjacent to the site slightly exceeds the California Human Health Screening Levels (CHHSLs) for TCE. The auto body shop also exceeds the CHHSLs for VC. In FY 2009/2010, DTSC conducted a soil vapor extraction pilot study and removed an underground waste oil tank. In FY 2009/2010 DTSC will install an interim soil vapor extraction system and conduct additional remedial investigations.

Site Name: MacDonald-San Pablo-Wall-45th Plume
Location: Area bounded by MacDonald Avenue, San Pablo Avenue, Wall Avenue and 45th Street, El Cerrito and Richmond, Contra Costa County,
Assembly District 11, Senate District 7

Description of Site Activities: DTSC focused attention on this area because volatile organic compounds (VOCs), including tetrachloroethylene and trichloroethylene, were found during investigations of the former Endo, Oishi, and Sakai properties, where three family-owned plant nurseries previously operated. Exposure to very high concentrations of tetrachloroethylene can cause dizziness, headaches, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death. Drinking or breathing high levels of trichloroethylene may cause nervous system effects, liver and lung damage, abnormal heartbeat, coma, and possibly death. The chlorinated VOCs are attributed to an up-gradient source since no on-site sources were identified. A report was completed in FY 2007/08 for the ground water investigation that was implemented near the end of FY 2006/07. No State-funded activities were conducted in FY 2008/09. No State-funded investigation and cleanup activities are planned for FY 2009/10. The next planned step is for DTSC staff to perform site screenings for properties identified as potential ground water contamination sources.

Site Name: Former McNamara and Peepe Lumber Mill
Location: 1619 Glendale Drive, Arcata, Humboldt County, Assembly District 1, Senate District 2

Description of Site Activities: Several owners have operated a lumber mill at this site. Wood anti-stain solutions containing PCP and tetrachlorophenol (TCP) were applied to the lumber. Exposure to high levels of PCP can cause increases in body temperature, liver effects, damage to the immune system, reproductive effects, and developmental effects. The current site owner declared bankruptcy and has ceased operations. The final RAP called for consolidation of contaminated soils and construction of a reinforced concrete cap over PCP-contaminated soil. During routine ground water monitoring, high concentrations of PCP and TCP were detected in the capped area. In FY 2009/10, additional ground water sampling will be performed and additional monitoring wells will be installed. A bench-scale treatability study and pilot study will also be performed to determine the effectiveness of in-situ ground water treatment. The community has also recently raised concerns that the plume may be releasing to the Mad River.

Site Name: Pacific Hard Chrome
Location: 1390 South 49th Street, Richmond, Contra Costa County, Assembly District 14, Senate District 9

Description of Site Activities: The former Pacific Hard Chrome Site (Site) is located within the industrial Harbor Front Tract Area of Richmond. The Site is to the south of the Zeneca/Former Stauffer Chemical Site. Pacific Hard Chrome conducted hard (functional) chrome plating of small parts as required by customers. Plating operations were active in 1984 and ceased prior to August 2005. In FY 2008/09 DTSC's contractor conducted a site investigation that included metals analysis of shallow grab ground water sampling and soil sampling down to 16 feet below ground surface. A grab ground water sample located near the former capture/wash down tank found 240 ug/l hexavalent chromium, exceeding the Maximum Contaminant Level of 50 ug/l. Based on the data collected, a ground water pilot study will be conducted in FY 2009/10 to determine whether in-situ treatment can create a reactive zone to lower hexavalent chromium concentrations. The pilot study will include pre-design sampling, injections, and performance monitoring.

Site Name: Peter Pan Cleaners
Location: 2231 Mendocino Avenue, Santa Rosa, Sonoma County, Assembly District 7, Senate District 2

Description of Site Activities: The site is an active dry cleaner, which has operated since 1966. Currently, petroleum-based dry cleaning chemicals are currently being used at the site; however, in the past, tetrachloroethene (PCE) was used. Chemicals detected in soil, ground water and surface water and soil gas include PCE, trichloroethylene (TCE), cis-1,2,-dichloroethylene (Cis-DCE), and vinyl chloride (VC). Ground water impacts at the site extent more than 1000 feet downgradient to a residential area and Steele Lane Elementary School. The area affected includes a residential neighborhood, a commercial area, a neighborhood park and an elementary school.

In 2008, U.S. EPA tested indoor air in the dry cleaner, commercial businesses nearby, neighboring residential houses and at Steele Lane Elementary School. U.S. EPA indoor air sampling indicated that the indoor air at the dry cleaner and several houses in the neighborhood exceeded the California Human Health Screening Levels (CHHSLs) for PCE. U.S. EPA is planning to install additional remedial measures at several residential units. In FY 2009/2010 DTSC will install an interim soil vapor extraction system, conduct additional remedial investigations to delineate the ground water plume, and conduct pilot tests to address ground water contamination.

Site Name: Technichem Site
Location: 4245 Halleck Street, Emeryville, Alameda County, Assembly District 14, Senate District 9

Description of Site Activities: The site is a 0.35 acre property covered by a 15,266 square foot building. Technichem operated from the building from 1987 to 2005. The building is divided into three suites, with two of the suite formerly occupied by Technichem. Currently, the Technichem suites are vacant. Technichem researched and developed a methodology for removing residual perchloroethylene (PCE) from spent dry cleaning filter cartridges. Their process provided a way to recycle the PCE so that the cartridges could be disposed of or recycled and most of the used PCE, reclaimed for resale. In 2003, limited soil and ground water sampling was conducted by the City of Emeryville adjacent to the site, within the Halleck Street right-of-way. PCE, TCE, cis-1,2-DCE, and VC were detected above the Maximum Contaminant Levels (MCLs). PCE, a chemical used in dry cleaning operations, is a hazardous substance that can pose a risk to human health via direct contact, inhalation or ingestion. PCE is listed as a known carcinogen under Proposition 65. The investigations indicated that PCE contamination is present in the soil under and adjacent to the former Technichem facility. Based on the threat to human health and the environment from the known contamination existing at the site, a removal action is to be conducted at the site. The removal action will consist of removing all the contaminated soil beneath the former Technichem PCE processing room and distillation unit.

In FY 2009/10, DTSC will conduct a removal action, which will consist of excavating approximately 4000 square feet of the building floor to approximately four feet below the ground surface. Soil gas and indoor air sampling would be conducted to evaluate the effectiveness of the removal action, once it is completed.

NORTHERN CALIFORNIA - CLOVIS

Site Name: Fresno Battery Exchange
Location: 1403 East Jensen Avenue, Fresno, Fresno County, Assembly District 29, Senate District 14

Completion of remediation activities at this former battery recycler and lead recovery operation now allows the site to be utilized for unrestricted use.

Description of Site Activities: The Fresno Battery Exchange site was a former battery recycler and lead recovery operation. A portion of the 8.87-acre parcel is contaminated with high levels of lead, a very dangerous neurotoxin that leads to learning disabilities in children, in the surface soils. In FY 2007/08, the remediation activities were completed, allowing the site to be utilized for unrestricted use. In FY 2009/10, the remediation completion report is due from the consultant for DTSC review and approval prior to completion of the certification package and implementation of cost recovery activities.

Site Name: Osage Industries, 15th Street West
Location: 2001 15th Street West, Rosamond, Kern County, Assembly District 34, Senate District 18

Scrap metal and other substances have been stored on the Osage 15th Street site. A large slag pile containing high levels of lead was also formerly stored on the property.

Description of Site Activities: The 2.3-acre site stored mining related materials, aerospace equipment, and miscellaneous salvaged equipment. Some of the equipment stored on the site included surplus material purchased from nearby Edwards Air Force Base. Chemicals of concern identified in near surface site soils include the following: antimony, arsenic, cadmium, lead, and dioxin. Breathing high levels of antimony for a long time can irritate the eyes and lungs, and can cause problems with the lungs, heart, and stomach. Lead is a very dangerous neurotoxin that leads to learning disabilities in children. Dioxins may cause cancer in people. In FY 2006/07, soil sampling was conducted on and off-site. DTSC in correspondence dated June 12, 2008 approved a document dated May 2, 2008 and titled "Remedial Investigation, Feasibility Study, and Risk Assessment Report." In September 2009, DTSC staff prepared a draft Removal Action Workplan (RAW). The draft RAW was released for public review and comment and was finalized in November 2009. The final RAW includes plans for the removal of contaminated soil from on-site and off-site locations. This contaminated soil will be disposed of at properly permitted landfills. The estimated cost to implement the RAW is $365,000.

Site Name: **Osage Industries, 60th Street West**
Location: 60th Street West, Rosamond, Kern County,
Assembly District 34, Senate District 18

Description of Site Activities: The site is a former ore milling and metal recovery business. The site is comprised of 80 acres of rural industrial land and is surrounded by open desert. Approximately 400 people live within a half mile. Surface soil at the site is contaminated with elevated concentrations of cadmium, lead, dioxins, and furans. Cadmium damages the lungs, can cause kidney disease, and may irritate the digestive tract. Lead is a very dangerous neurotoxin that leads to learning disabilities in children. Dioxins may cause cancer in people. The contamination occurs as hotspots within areas of waste storage. A RAW has been prepared, and additional waste streams having hazardous concentrations of lead were identified. The waste streams have been segregated and disposed of at a Class 1 Disposal Facility. During the course of the removal action, an additional 40 cubic yards of soil, ash and debris contaminated with high concentrations of dioxin and furans was consolidated into two containers. Additionally, approximately 100 gallons of water mixed with motor oil was discovered. In FY 2008/09, DTSC disposed of the dioxin/lead waste in the two bins and recycled the waste motor oil. DTSC will also record a lien on the properties addressed in the cleanup. DTSC will require the owners of the site to record a Land Use Covenant (LUC) restricting the site to industrial and/or commercial use.

Site Name: South Fresno Ground Water Plume
Location: Church and Golden State Boulevard, Fresno, Fresno County
Assembly District 31, Senate District 16

In South Fresno, a PCE ground water plume has been detected. Ground water in the Fresno area is the main source of drinking water.

Description of Site Activities: DTSC is overseeing assessment and remediation work at several sites in the south Fresno area. PCE has been detected in ground water samples that have been collected at various locations in the south Fresno area and that is near these other sites. Until recently, the source of this PCE had not been located. The area of south Fresno is highly industrialized. Older residences are also present. Many facilities have been operating since World War II and some have operated since the very early 1900s. The City of Fresno utilizes ground water for drinking water purposes. Municipal supply wells are near the PCE plume.

During FY 2008/2009, DTSC utilized previously allocated orphan funds for assessing the location of the PCE in soil and in ground water, and for determining its source. The work was conducted in three phases. Phase I consisted of a passive soil gas survey. Phase II consisted of an active soil gas survey, and soil gas samples were analyzed in a mobile lab. At some locations elevated concentrations of PCE were detected, and exceeded “shallow soil gas human health screening levels”. Phase III consisted of the collection of depth discrete ground water samples and elevated concentrations of PCE were detected. As a result of this work a source area has been identified. PCE was collected in the soil gas samples at concentrations up to 5,440 ug/l. The California Human Health Screening level for vapor intrusion in an unrestricted land use setting is 0.180 ug/l. PCE was detected in the ground water samples at concentrations up to 1,200 ug/l. The Maximum Contaminant Level for PCE in drinking water is 5 ug/l.n. The results show that additional work is needed, including the need for collection of indoor air samples and additional soil gas samples.

Site Name: S. R. Kilby
Location: 2021 15th Street West, Rosamond, Kern County, Assembly District 34, Senate District 18

S. R. Kilby site formerly stored automobile and scrap airplane components. Upon completion of the removal action report, the site will be certified by DTSC for industrial use.

Description of Site Activities: This site consists of 7.4-acres that stored automobile and scrap airplane components. Sample results from an investigation of illegally deposited slag waste documented hazardous levels of lead and arsenic in soil next to the slag pile waste. Lead is a very dangerous neurotoxin that leads to learning disabilities in children. In FY 2006/07, a Remedial Design report addressed the consolidation and capping of contaminated materials. The removal action for the site was completed in December 2007. Approximately 7,500 cubic yards of lead contaminated soils were placed in an on-site waste management unit and capped with a two foot depth of clean soil and a bentonite mat. DTSC contracted with Envirocon, Inc. to complete a removal action completion report for this site. The report has been completed and the site has been certified by DTSC for industrial use.

NORTHERN CALIFORNIA - SACRAMENTO

Site Name: Orphan Abandoned Mine Lands
Locations:

1) Davis Mill/Hoge Mine, Nevada City, Nevada County, Assembly District 3, Senate District 1 and 4
2) Pond Mine, Foresthill, Placer County, Assembly District 3 and 4, Senate District 1
3) Calico Mine, Calico Ghost Town, San Bernardino County, Assembly District 34, Senate District 18

Site visit to Davis Mill, Nevada County. Participants included: Department of Toxic Substances Control, State Water Resources Control Board, Bureau of Land Management, U.S Geological Survey, U.S. Forest Service, Rep. Tom McClintock, staff and Rep. Jim Costa staff. (11/ 24 2009).

Description of Site Activities: Since the beginning of the California Gold Rush in 1849, historical mining practices, ore processing methods, disposal practices, closure practices, have resulted in the generation and disposal of millions of tons mine wastes, including mine waste rock and mine tailings; mine drainage water; processing chemicals; and other wastes to the land and waters of the state. California has an estimated 47,000 Abandoned Mine Lands (AML) sites. The interaction of natural processes such as climate, hydrology, geochemistry, sediment transport, and weathering of these wastes have resulted in the release of hazardous substances (chemical hazards) that may pose threats to human health, the environment (ecosystems), and water quality. Arsenic, lead, and mercury are typical chemicals of concern (COCs) found in mine waste rock, mine tailings and site soil/sediment from former gold mining activities. The type and concentration of COCs varies depending on the site mineralogy, the mineral being mined (e.g., gold, copper, mercury, zinc, etc) and the mining/milling processes. Surface water and ground water can also be impacted

from COCs depending on the solubility of the COCs and other factors including the presence of sulfides, which can generate acid rock drainage (ARD).

DTSC is coordinating with the Bureau of Land Management (BLM) to address AML contamination on private property that is either upstream, downstream, or adjacent to BLM property that have common sources of AML contamination. For the locations referenced (e.g., Davis Mill/.Hoge Mine, Pond Mine, and Calico Mine) BLM has conducted site investigations on federally managed property. BLM was allocated American Recovery and Reinvestment Act funds for implementing a cleanup action at the Davis Mill scheduled to begin in 2010. BLM is planning cleanup actions at the Pond Mine and Calico Mine pending DTSC's investigations on private property.

The $500,000 in State Orphan funding for this project in FY 2008/09 is being used to prepare an Investigation Workplan, implement field sampling, prepare an Investigation Report, and prepare a Health Based Risk Assessment for private land at these locations. Information gathered by DTSC on, upstream, downstream, and adjacent private property will be used with existing BLM data to assess AML contamination on both BLM and private land at the respective locations. This approach will provide for comprehensive assessments leading to more efficient and cost effective remedies at these locations.

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Site Name: Argonaut Mine Tailings
Location: Along Argonaut Lane, Jackson, Amador County, Assembly District 10, Senate District 1

This former mine tailings processing site contains high levels of arsenic and high soil Ph. The site is a total of 64 acres, but the focus of this investigation and remediation is concentrated on the above 5-acre section. The soil is corrosive enough to eat through chain link fence posts and is devoid of plant life. DTSC has conducted an investigation and a Removal Action Work Plan will be completed in 2010.

Description of Site Activities: This site consists of arsenic-laden mine tailings. Arsenic exposure is known to have a damaging effect on the function of vital organs. These tailings are a result of mining activities at Argonaut Mine from 1850 -1942. The site was fenced at State expense in 1995. An inspection in 2007 showed high levels of arsenic on the surface and indications that arsenic is moving off-site. An Imminent and Substantial Endangerment Order was issued in 2007. In FY 2007/08, DTSC allocated $900,000 for investigation and remediation. In FY 2008/09, DTSC collected soil and water samples, which showed that arsenic is elevated throughout the 64 acres. In FY 2009/2010, DTSC will complete a Removal Action Work Plan and implement the remedy selected. This site is located between a residential area and a school. Remediation will stop exposure to trespassers and further migration of contamination.

Site Name: Benham & Johnson
Location: 340 Daniels Lane, Bakersfield, Kern County,
Assembly District 30, Senate District 18

Description of Site Activities: This site is comprised of a six-acre property in the City of Bakersfield that operated since the 1950's for industrial purposes, including the sale and distribution of pesticides and fertilizers, and the salvaging of metals. Lead, arsenic and pesticides, including DDT and DDE, and poly-chlorinated biphenyls (PCBs) were detected in soil samples collected at the site property. Lead is a leading cause of learning disabilities among children, and arsenic negatively impacts organ function. PCB exposure can cause skin cancer, and has the potential to inhibit proper fetal development. In March 2007, DTSC issued an Imminent or Substantial Endangerment Determination for the site and initiated remedial investigation (RI) activities. State funding was allocated for the RI Work Plan, fieldwork, RI Report and fence repair around the perimeter of the site property. During FY 2007/2008, approximately $116,000 was allocated to complete the RI Work Plan and subsequent field sampling and analysis required to characterize the risk posed by the site. DTSC approved the Final RI Report in October 2009. Additional work planned for the site during 2009/2010, includes the preparation of a Supplemental RI Report to address subsurface soil data gaps identified in the Final RI Report, a baseline risk assessment, and a cleanup plan. Although the site is located within a commercial/industrial area, several homes are located within 50 feet of the site's northern boundary.

Site Name: Brown & Bryant - Arvin Facility
Location: 600 South Derby Road, Arvin, Kern County,
Assembly District 30, Senate District 16

Description of Site Activities: This 4.7-acre site was used for storage and sale of liquid fertilizer, insecticides, herbicides, fumigants, and defoliants. The soil is contaminated with dinoseb and other pesticides including trichloropropane, dichloropropane, dichloropropene, and dibromochloropropane. These compounds may cause cancer. In FY 2009/10, DTSC will continue to provide ten percent matching funds for O&M activities for the site cap (Operable Unit 1). In 2009, an U. S. Supreme Court decision placed a potential long-term operation and maintenance obligation on the State.

Site Name: Central Valley Fertilizer
Location: 7657 Azusa Road, Dos Palos, Merced County, Assembly District 17, Senate District 12

The southern portion of this site contains high levels of residual pesticides (primarily toxaphene that is poison if swallowed) in the surface soils. Information obtained from the Feasibility Study will allow DTSC to identify a cost effective cleanup that is acceptable to and protects the surrounding community.

Description of Site Activities: The Central Valley Fertilizer (site) is a 4.3-acre former pesticide storage and retail outlet, and fertilizer manufacturing facility. The site is located adjacent to single-family residences that rely upon private wells for potable water. Ground water in the area is very shallow and fluctuates seasonally. The southern portion of the site contains residual pesticides (primarily toxaphene) in the surface soils. Toxaphene is a poison if swallowed, inhaled, or absorbed by the skin. To date, DTSC has expended approximately $191,513,000 on the project. During FY 2007/08, DTSC finalized the Feasibility Study for the site. DTSC conducted an additional soil investigation in FY 2008/09 to evaluate the vertical and lateral extent of contamination and determine the volume of impacted soils at the site. The Soil Investigation Report was submitted to DTSC in October 2009. DTSC is currently in the process of identifying a cost effective cleanup that is acceptable to and protective of the surrounding community. A cleanup plan and design document for the site will be prepared in FY 2010/2011.

Site Name: Frontier Fertilizer
Location: 2nd Street between Mace and Pena Blvd., Davis, Yolo County, Assembly District 8, Senate District 5

Description of Site Activities: Historic pesticide and fertilizer operations at this site resulted in soil and ground water pesticide contamination. Dibromoethane, dichloropropane, carbon tetrachloride, trichloropropane, and dibromochloropropane were the primary compounds found during investigations. Exposure to these compounds may cause cancer. A ground water pump and treat system has operated at the site since 1995. A Record of Decision for soil and ground water contamination, quarterly ground water monitoring reports, and initial phase of a biological pilot study for nitrate have been completed. In September 2007, DTSC completed two State Superfund Contracts for remedial design (RD) of in-situ thermal remediation of soil and ground water treatment. The first State Superfund Contract is for $1,014,300. This is a 10 percent cost share for use in removing the source area in soil and ground water designed to shorten the time frame for reaching cleanup goals. The second State Superfund Contract is for $155,000 to fund the State's share of plant operations and maintenance. The plant's operation capacity is 85 gallons per minute using granular activated carbon. The treated effluent enters the City of Davis' sewer system under permit. U. S. EPA received $2.5 million dollars in new funding through ARRA in May 2009 to complete cleanup. An amendment to the State Superfund Contract to cover the additional funding may become necessary. 111 boreholes for electrodes and 19 boreholes for temperature monitoring into the subsurface have been installed for eventual heating of contaminants under the ground. The Mace Ranch neighborhood immediately north of the site remains protected from potential indoor air exposure. The ground water extracted from deeper depths by the City of Davis remains safe for the Davis Community to use.

Site Name: Ken's Buff and Plating
Location: 1816 21st Street, Sacramento, Sacramento County, Assembly District 9, Senate District 6

Description of Site Activities: Ken's Buffing & Plating operated a chrome, copper, brass, nickel and gold electroplating operation at this location from 1993 through 2005. The building encompasses all areas where manufacturing and storage occurred. The site is located in a mixed commercial residential district of the City of Sacramento. Previous investigations confirmed that past hazardous substance/waste management practices have resulted in a release to the environment. Cadmium, chromium, copper, zinc, nickel, lead, and cyanide compounds were present in samples collected. Exposure to these compounds may damage organ function. Lead may lead to learning disabilities among children. Based on these findings, DTSC initiated a Remedial Investigation at the site. The Remedial Investigation is complete, presents a conceptual model of the extent of contamination, and estimates the volume of contaminated soil/material contaminated by plating operations. Despite orders from DTSC, the facility owners have not taken any action at this site. As a result, DTSC has elected to use state funds to complete investigation and proceed with cleanup. DTSC has placed a lien on the property for $178,966.84, which is the portion of staff and contractor costs billed to the responsible parties. This amount remains unpaid. During FY 2008/09, DTSC planned to prepare a Removal Action Work plan (RAW) to address contamination attributed to the site. There has been a delay in work directed towards the RAW is delayed due to contractor issues and lack of staff time. The remedy will include building demolition, removal of contaminated soil, protection of the ground water, and return of the property to beneficial use. DTSC should record a second lien to protect the State's interest in recovering the additional site expenditures.

Site Name: Lava Cap Mine
Location: Five miles east of Nevada City, Nevada County, Assembly District 3, Senate District 4

Several decades of arsenic-laden mine-tailing discharges have traveled several miles to a lake historically used as a surface impoundment. There has been construction of mine Operable Unit (OU) remedies and investigation of ground water contamination.

Description of Site Activities: This site consists of arsenic-laden mine tailings that have discharged into a creek over several decades and have traveled several miles to a lake historically used as a surface impoundment. Arsenic exposure is known to have a damaging effect on organ function. Water in flooded mineshaft tunnels continues to seep out to the surface, contributing to arsenic in the creek. There has been construction of mine Operable Unit (OU) remedies and investigation of ground water contamination. In FY 2007/08, a Remedial Investigation/Feasibility Study (RI/FS) for OU2 was completed. In September 2008, a Record of Decision for the drinking water component of OU2 was completed with an eventual 10 percent state fund-matching obligation. Impacted residents will received public supply water when a pipeline is designed and constructed.

Site Name: McCormick & Baxter Creosoting Company Superfund Site
Location: 1214 W. Washington Street, Stockton, San Joaquin County, Assembly District 17, Senate District 5

Description of Site Activities: This site is a 29-acre former wood-preserving facility located in an industrial area near the Port of Stockton. Soil and ground water contaminated with polycyclic aromatic hydrocarbons (PAHs), polychlorinated dibenzodioxins (PCDDs), furans, and arsenic requires remediation. Exposure to PAHs, dioxin, and furan may cause cancer. Arsenic exposure can damage human organ function. A sediment cap constructed in the Old Mormon slough, an adjacent surface water body minimizes the migration of site contaminants into the Sacramento Delta System and is protective of the aquatic and benthic ecosystems. Protection of the Sacramento Delta is necessary as a source of drinking water and habitat for more than 70 fish and bird species. In FY 2008/09, an O&M plan for the sediment cap was to be prepared, however U.S. EPA did not complete this task. Work scheduled for FY 2009/10 includes the completion of the sediment cap O&M plan, collection of performance samples and assumption of responsibility of this remedy by DTSC. As the result of a court settlement, DTSC and U.S. EPA are overseeing the work performed by the Union Pacific Railroad (UPRR) who agreed to construct the soil remedy that will remove impediments to redeveloping 13.25 acres of the site. A Land Use Covenant (LUC) is in place for an eight-acre UPRR parcel and a LUC is under review for a five-acre parcel owned by McCormick & Baxter. The soil remedy construction began in June 2009 and should be complete in the summer of 2010. DTSC is monitoring the progress of U.S. EPA in completing of the ground water remedy evaluation. There is an estimated one to two million gallons of contaminated ground water beneath the site. Protection and restoration of ground water is necessary. The local water purveyor discontinued extraction of drinking water from nearby wells to prevent public exposure to site contaminants.

Site Name: Orchard Supply Company
Location: 1731 17th Street, Sacramento, Sacramento County, Assembly District 9, Senate District 6

DTSC continues to monitor and evaluate the contaminated ground water at this former agricultural chemical retail and wholesale outlet facility. This site is bordered by commercial properties and a residential neighborhood. Remediation of ground water will restore the resources for potential use.

Description of Site Activities: This site is a former agricultural chemical retail and wholesale outlet facility. Soil and ground water are contaminated with metals, pesticides, petroleum hydrocarbons, and VOCs. Among these, arsenic may result in damage to organ function; lead is a neurotoxin that may lead to learning disabilities in children; chlordane is toxic if inhaled or through skin contact. Lab studies indicate that chlordane is also a carcinogen and potent toxin to the central nervous system. 1,2 dichloroethane impacts eyes and respiratory function; carbon tetrachloride exposure affects the central nervous system, liver, and kidneys; 1, 2 dichloropropene may also result in degeneration of various organs.

The site is bordered by light rail tracks and an alley on the north, 18th Street on the east, R Street on the south, and 17th Street on the west. A residential neighborhood is located north of the site. Commercial properties are located east, south, and west of the site. DTSC conducted additional ground water investigation using a cone penetrometer test/hydropunch sampler and installed several monitoring wells. In addition, a bench test and pilot study were conducted to determine the effectiveness of in-situ treatment of the ground water with an emulsified oil substrate (EOS). In FY 2008/09, DTSC conducted performance monitoring to determine the effectiveness of the emulsified oil substrate and continue to monitor ground water quality. In FY 2009/10, DTSC plans to conduct another pilot study (batch extraction) to determine

the effectiveness of this technology in addressing the volatile organic compounds ground water contamination and to prepare a RAW to evaluate and plan a ground water contamination remedy; continue semi-annual ground water monitoring; and evaluate the performance of the pilot study. The information from the pilot study will be used to develop a removal action to address the ground water contamination. Remediation of ground water will restore the resources for potential use.

Site Name: Orland Dry Cleaners
Location: 726 Fifth Street, Orland, Glenn County,
Assembly District 2, Senate District 4

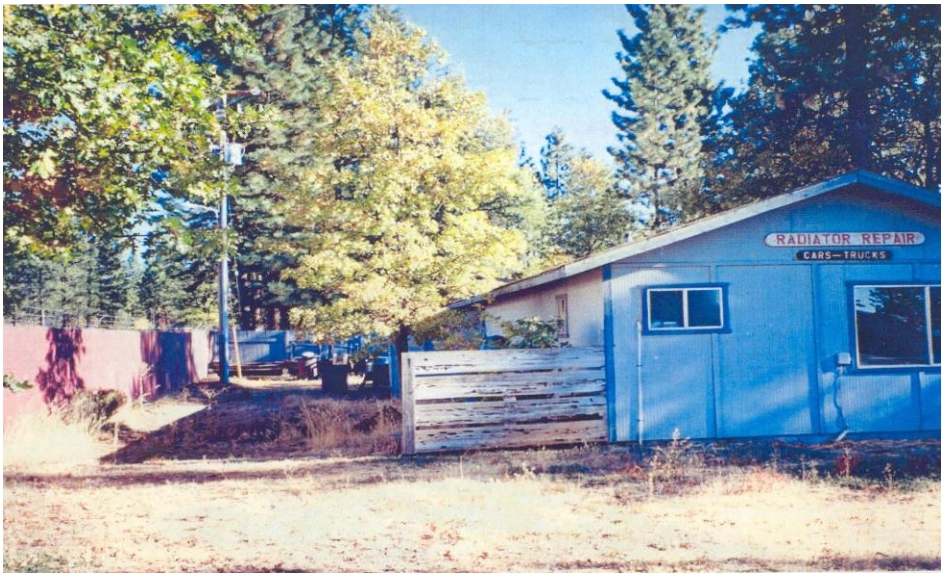
Description of Site Activities: The site is approximately two and a half miles long and is contaminated with PCE. DTSC has completed a Removal Action Work plan (RAW) to address the ground water contamination, recommending in-situ reductive dechlorination (enhanced biodegradation) as the treatment method. In FY 2008/09, DTSC conducted additional investigation using cone penetrometer test/hydropunch to determine the treatment area inside the plume and installed new monitoring wells to monitor the treatment of contaminated ground water. During FY 2009/10, DTSC will continue semi-annual ground water monitoring at 32 wells and conduct full injection of EOS to enhance biological treatment of ground water. The City of Orland has production wells within 0.5 miles of the estimated contamination plume boundary. These wells supply drinking water to more than 5,000 people. In addition, several private wells are located inside the plume.

Site Name: Sacramento Plating
Location: 2809 S Street, Sacramento, Sacramento County, Assembly District 9, Senate District 6

Shallow ground water emanating from the site is contaminated with hexavalent chromium and trichloroethylene (TCE) which is known to cause respiratory disease. Bench scale studies will tell whether one or more of the Feasibility Study identified in-situ remedies will work with site water and biological community conditions.

Description of Site Activities: The site is a former electroplating facility surrounded by mixed residential/commercial land use. Shallow ground water emanating from the site is contaminated with hexavalent chromium and trichloroethylene (TCE). Hexavalent chromium is a known cause of respiratory disease. Extended exposure to TCE ingested from contaminated ground water may cause cancer. In FY 2007/08, a focused ground water feasibility study (FS) and Treatability Study Work plan (TSW) were completed and implementation of treatability bench studies began. During FY 2007/08, DTSC spent the final $24,295.92 of the $75,000 encumbered in February 2006 and $16,605.87 of the $100,000 encumbered in February 2008. Bench scale studies will tell whether one or more of the Feasibility Study identified in-situ remedies will work with site water and biological community conditions. During FY 2008/09, DTSC spent $41,594.37 of the $100,000 encumbered in February 2008 to complete treatability bench scale studies and to produce a site specific Health and Safety Plan and Pilot Injection Plan. Site work is currently on hold due to lack of funding. DTSC will implement an on-site pilot study for ground water treatment when additional funds become available.

Site Name: Sellars Brothers Radiator Shop
Location: 38312 Main Street, Burney, Shasta County, Assembly District 4, Senate District 2



Sellars Brothers Radiator Shop is a former automobile radiator repair facility with soils impacted by lead, a substance known for leading to learning disabilities in children. During FY 2009/10, DTSC will characterize the soil contamination both on and off the property.

Description of Site Activities: The site is a former automobile radiator repair facility. Soil at the site is impacted by lead, a substances known for leading to learning disabilities in children. DTSC approved an Imminent and Substantial Endangerment (ISE) Order. In FY 2007/08, DTSC conducted an investigation to determine the lateral and vertical extent of the lead contamination. In FY 2007/08, $200,000 was encumbered to complete the soil and ground water investigation. The investigation calculated the risk and determined if the ground water had been impacted. The soil contamination has not adversely affected the ground water. During FY 2008/09, DTSC completed a Removal Action Work Plan (RAW), which proposed to excavate the impacted soil and transport it to a permitted facility and record a Land Use Covenant to restrict the site's land use to industrial/commercial. In May 2008, DTSC staff discovered additional soil contamination on the property using a portable device. During the FY 2009/10, DTSC will collect additional soil samples and complete the soil investigation.

Site Name: Selma Treating Company Superfund Site
Location: 1735 Dockery Avenue, Selma, Fresno County, Assembly District 31, Senate District 14

Description of Site Activities: The site is a 14-acre former wood preserving treatment facility. The soil and ground water contaminated with polychlorinated dibenzodioxins (PCDDs) and furans, VOCs, chromium, arsenic, and copper are associated with the site. Dioxins, furans, and hexavalent chromium may cause cancer. Arsenic and copper exposures may cause damage to organ function. The soil remedy, composed of a Resource Conservation and Recovery Act (RCRA) Cap and Soil Impoundment Cell (SIC), is located at the site The first three phases of the In-Situ Bioremediation (ISB) plan have been implemented. A system to extract, amend with a molasses substrate, and inject ground water is operating to reduce the concentration of chromium in ground water. The site originally encompassed 40 acres. Because of the remedial investigation and removal actions, 14 acres have returned to productive use. DTSC assumed the role of CERCLA lead agency for the entire site and all associated remedies on October 1, 2009. Current projections estimate that the ground water remedy will need to operate for more for more than five, but less than 10 years. DTSC has procured a one-year contract for the operation, maintenance and monitoring of the ISB system. Procurement of a contract extension or new contract will occur in FY 2009/10.

Site Name: Valley Plating
Location: 3920 El Cajon Avenue, Central Valley, Shasta County, Assembly District 2, Senate District 4

This former electroplating facility contains high levels of contaminated ground water with hexavalent chromium, known to cause kidney, lung, and respiratory damage. DTSC will continue conducting annual ground water monitoring and will record an updated lien on the property to secure DTSC payments for past cost recovery.

Description of Site Activities: The site is a 1.5-acre former electroplating facility that contaminated ground water with hexavalent chromium, which damages the kidneys and lungs, and zinc, which can be corrosive to the respiratory system. The contaminant plume extends approximately 150-feet off-site to an adjacent industrial property. The closest residents are living approximately one-half mile down gradient from the site and no impacts have been detected to the private domestic wells. In FY 2008/09, DTSC encumbered $6,000 to continue implementing the monitored natural attenuation remedy and sampled the monitoring wells to ensure the contamination in ground water plumes continues to decrease. The $6,000 spent determined that the ground water plume is decreasing and that threats to nearby drinking water wells are controlled. DTSC will continue conducting annual ground water monitoring in FY 2009/10 and will record an updated lien on the property to secure DTSC payments for past expenses.

Site Name: Visalia Dry Cleaner Investigation (New)
Location: City of Visalia, North of Walnut Avenue, Tulare County, Assembly District 34, Senate District 18

Description of Site Activities: The investigation area encompasses approximately 33 square miles in the City of Visalia. During FY 2007/08, DTSC conducted a Phase 1 Remedial Investigation (RI) utilizing approximately $285,000 in State Orphan Site Funding. The objective of the RI was to identify potential source release areas for perchloroethylene (PCE) detections identified in 25 of 77 public drinking water supply wells in the City of Visalia. Seven of the PCE impacted wells have PCE concentrations in water exceeding the State Maximum Contaminant Level (MCL) of 5.0 micrograms per liter (ug/l). These wells serve a population of approximately 88,000 people. PCE is a compound used by dry cleaners and other commercial and industrial operations. Exposure to PCE can cause cancer and, under the right conditions, can enter structures through foundation cracks. As part of the RI, DTSC identified 30 former or current dry cleaner locations in the Visalia area. Soil gas and grab ground water samples were collected in public right of ways (ROW) in proximity to the drycleaner locations to identify whether the dry cleaners are potential sources for the PCE detected in the public wells, and whether the potential for vapor intrusion of PCE into buildings exists. During FY 2008/09, a Phase 2 RI will be conducted utilizing approximately $178,000 in State Orphan Site Funding. The Phase 2 RI will include additional active soil gas sampling and grab ground water sampling at 13 former or current dry cleaner properties suspected of being source release areas for PCE to assist in identification of Potentially Responsible Parties. The Phase 2 RI will also include sampling of 15 existing wells. The primary project deliverables will be a Phase 2 RI Work Plan (WP); implementation of the WP; and, a report, which summarizes the environmental data obtained, provides conclusions about potential health risks and the potential of the identified dry cleaners to be sources of PCE releases to the environment, and recommendations for future action.

Site Name: Wickes Forest Industries
Location: Holdener and A Streets, Elmira, Solano County, Assembly District 8, Senate District 5

Ground water monitoring activities completed by DTSC at this former wood-preserving facility resulted in the continued protection of the citizens of the Vacaville/Elmira region from toxic substances detected in the ground water. Ongoing efforts conducted by DTSC will help to reclaim the affected aquifer as a reliable supply of drinking water in the Vacaville/Elmira region.

Description of Site Activities: This site, a former wood-preserving facility, ceased operating in the early 1980s. Hazardous levels of arsenic and chromium were discovered on the site. Arsenic poisoning can cause severe skin ulceration and damage to the kidneys, lungs, and nervous systems. Hexavalent chromium exposure is known to cause respiratory disease. A ground water extraction and treatment system and a seven-acre asphalt cap were previously installed to protect the aquifer and clean up contaminated ground water. DTSC determined that restarting and operating the treatment system was not viable and took steps to determine actions are necessary to complete restoration of ground water. In FY 2008/09 DTSC completed an investigation of soils in the source area, oversaw maintenance of the cap, performed required ground water monitoring and began work on evaluating alternative remedies for the source area to reduce ground water contamination. Remedial activities completed by DTSC resulted in the continued protection of the citizens of Elmira from toxic substances and were necessary steps in the ongoing effort to reclaim the affected aquifer as a reliable supply of drinking water in the Vacaville/Elmira region. Expenditures for FY 2008/09 were approximately $91,000. During FY 2009/10 DTSC will continue to monitor ground water, maintain the cap, and complete a removal action work plan to treat existing ground water contamination and protect ground water quality.

Site Name: World Radiator and Air Conditioning Shop
Location: 8336 Skyway, Paradise, Butte County,
Assembly District 3, Senate District 4

World Radiator and Air Conditioning Shop is the site of a former automobile and radiator air conditioner repair facility with soil contamination impacted by lead, antimony, and arsenic. DTSC will certify the site as acceptable for restricted use upon completion of ground water monitoring and recordation of a land use covenant.

Description of Site Activities: The site is a former automobile radiator and air conditioner repair facility. Soils at the site are impacted by lead, a substance known for leading to learning disabilities in children; antimony, which produces skin lesions and degenerates lung capacity; and arsenic, known to damage organ function. In FY 2006/07, DTSC implemented the removal action that consisted of excavation and disposal of contaminated soil and materials. The site is in an area zoned for residential and commercial properties. Residential properties are located adjacent to the site on the north and on the east. During FY 2009/10, DTSC will complete an evaluation of the ground water monitoring and the effectiveness of the soil remedy to protect ground water quality. Upon completion of ground water monitoring and recordation of a land use covenant, DTSC will certify the site as acceptable for restricted use.

SOUTHERN CALIFORNIA - CHATSWORTH

Site Name: 4022 Gage Avenue & Vicinity
Location: Bell, California, 90201, Los Angeles County,
Assembly District 46, 50, Senate District 30

The site is located in the vicinity of 4022 Gage Avenue, Bell CA 90201, in the County of Los Angeles, approximately 0.5 miles east of the intersection of Gage Avenue and Atlantic Boulevard. The 4022 Gage Avenue property was the subject of a Phase1 Environmental Site Assessment (ESA) in March 2008. The 4022 Gage Avenue property is located approximately 166 feet east southeast of the intersection of Gage Avenue and Corona Avenue. It includes two Assessor Parcel Numbers (APNs): 6325-002-901 and -902. The City of Bell was planning to lease the undeveloped property for construction of a school. Based on data collected during the ESA, a single-family dwelling occupied the site's northwestern portion up to approximately 1922. This dwelling was replaced with a commercial building in 1923, and a commercial building was also built in the site's northeastern portion in the early 1920s. The southern portions of the site have been paved and primarily used as parking areas since before 1938. Relatively small office and storage structures have periodically occupied this paved area since this time. The building within the site's northwestern portion used the formal addresses of 4014, 4016, 4018, 4018 and 4020 Gage Avenue. The on-site buildings were demolished in mid-2004. Following the removal of the concrete foundations, the site was leveled and immediately paved with asphalt. The site has primarily been vacant since 2004.

Approximately $36,000 were spent to conduct a soil gas survey in FY 2008/2009. Based on the VOC data collected DTSC determined that the source of the contamination originated from the former dry cleaners located at 4033 Gage Avenue. Additional characterization and cleanup will be conducted a separate project. No further action will be taken in the 4022 Gage Avenue project.

Site Name: AAD Distribution and Dry Cleaning Services
Location: 2306 East 38th Street, Vernon, Los Angeles County, Assembly District 22, Senate District 46

AAD Distribution and Dry Cleaning Services was a former permitted dry cleaning solvent Recycler. The risk from exposure to indoor air vapors was assessed and identified to be a significant risk to potential on-site workers from existing vapors in the subslab beneath the site. The site requires a continued ground water and on-site soil vapor extraction operation and maintenance monitoring program .

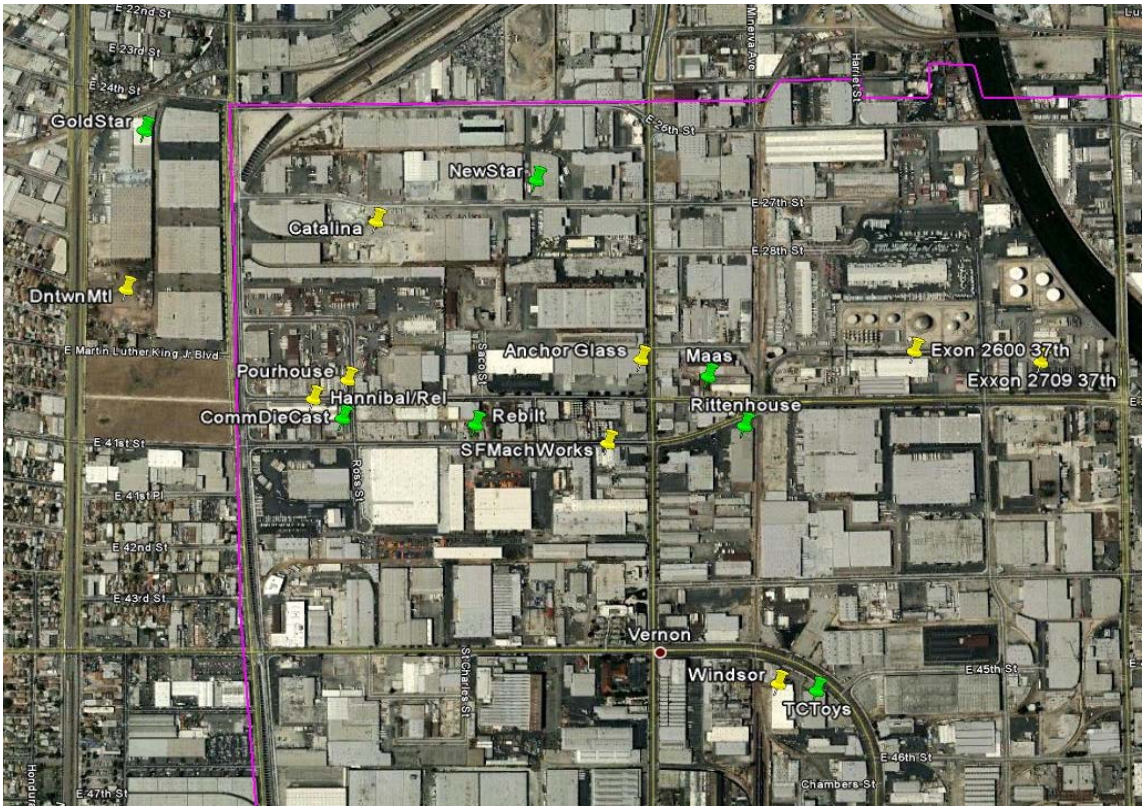
Description of Site Activities: This former permitted dry cleaning solvent recycler, located in an industrial area, had a release of tetrachloroethylene (PCE) at the site. PCE is a known carcinogen and exposure to this chemical also causes irritation to the respiratory system and liver damage. Using closure funds, DTSC investigated vapor, soil, and ground water at and around the site. Elevated levels of VOCs were detected and remedial actions to remove PCE from the soil and soil vapor began using closure funds. Ground water was detected at over 250 feet below ground surface and was impacted with volatile organic compounds. DTSC has determined ground water contamination a regional problem. With the closure funds nearly depleted, orphan money was allocated to the site to evaluate the risk from remaining solvents. The assessed risk from exposure to indoor air vapors is significant to potential on-site workers from existing vapors in the sub slab beneath the site. The facility shares a common wall and utility corridors with a neighboring business, which employs more than 20 employees. DTSC conducted a time critical soil removal and installed shallow sub-slab vapor probes to extract shallow sub-slab vapor probes to extract shallow vapors and creating a depressurization zone between the facility and the neighboring businesses. Ground water and on-site soil vapor extraction operation and maintenance monitoring activities continue. DTSC has currently contracted $140,000 expenditure at the site.

Site Name: Alco Pacific
Location: 16914 South Broadway, Carson,
Assembly District 48, Senate District 55

Alco Pacific is the site of a former lead acid battery recycler. A ground water monitoring program requires continued sampling of the ground water through FY 2008/09.

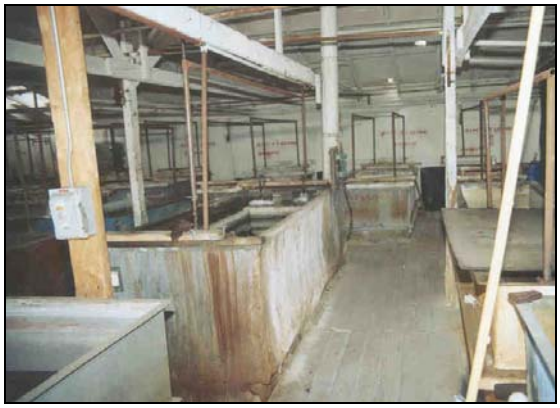
Description of Site Activities: This former lead acid battery recycler, located in an industrial commercial setting had a release of heavy metals and acid in and around an injection well used for on-site disposal while the facility was operating. Lead is a neurotoxin and exposure to this metal can result in damage to the central nervous system. Sensitive receptors are especially affected and exposure to lead in children is known to be responsible for some learning disabilities in children. In FY 2005/06 DTSC conducted a removal action of approximately 5,000 tons of contaminated soil from the site. While the removal resulted in the soils meeting the unrestricted cleanup goals, for soil, contaminants in ground water above action levels require an on-going ground water monitoring program. An additional installed well was sampled in FY 2008/09 under contract for $44,000 expenditure at the site. Results indicate continued monitoring is required. Cost recovery actions resulted in a negotiation settlement for $1,800,000 in FY 2008/2009. Upon Site Certification, the five parcels encompassing the site can be developed into a business per parcel.

Site Name: City of Vernon Discovery Project
Location: Various locations within the city boundaries of Vernon
Assembly District 46, Senate District 22



Description of Site Activities: DTSC's involvement with another orphan site, AAD Dry Cleaning Services and the surrounding Vernon ground water data indicated that the City of Vernon appears to have a regional ground water contamination. The Vernon Discovery Project was created to locate facilities that may have released hazardous materials or waste to the surface soil and/or the ground water. Based on historical/ current uses, and review of hazardous waste databases and sanborn maps, DTSC identified 15 properties in Vernon that were suspected to have released hazardous chemicals into the soil. Soil and soil vapor sampling were performed for volatile organic compounds and metals in these properties. From the data obtained, the properties were assessed to determine whether the chemicals found at the properties were a threat to human health or the environment. The majority of properties evaluated did not show significant levels of contamination. During the FY 2009/2010, DTSC plans to perform additional sampling in properties where the data indicated there is significant contamination present and where access into the property was previously not possible. Using additional orphan funds, DTSC will also evaluate properties from the nearby cities: Huntington Park, Maywood and Commerce to identify properties that have released hazardous chemicals into the soil.

Site Name: Former Dynamic Plating Company Site
Location: 1102 West Isabel Street, Burbank, Los Angeles County, Assembly District 46, Senate District 22



Description of Site Activities: The Former Dynamic Plating Company Site (Site) is located in the City of Burbank, in Los Angeles County. The neighborhood is mixed light industrial, commercial, and residential.

Historic records indicate that a metal plating shop operated between 1959 and 1990 at the site. The plating shop was closed by local authorities (Burbank Public Works revoked the facility Industrial Waste Discharge Permit and the facility business license) in January of 1990 due to improper wastewater discharge. The analytical results of soil sampling indicate that significant levels of cyanide (maximum value 1,760 mg/kg), cadmium (maximum value 2,480 mg/kg), total chromium (1,070 mg/kg), and hexavalent chromium (chromium VI) (maximum value 4.3 mg/kg) were present.

The following activities were completed in FY 2007/2008: preparation of a Site Characterization Workplan that shall include the collection of soil samples; installation of soil vapor probes; monitoring the soil vapor probes; and the drafting of a Site Characterization Report and Baseline Health Risk Assessment. In FY 2008/09 additional soil samples were collected to complete characterization of the site. Based on the laboratory results of the samples no additional characterization is needed.

Site Name: Hard Chrome Products
Location: 617 East 56th Street, City of Los Angeles, Los Angeles County, Assembly District 52, Senate District 22

The former Hard Chrome Plating facility following excavation, backfill and capping

Description of Site Activities: This site is a former quarter acre plating facility and is located directly across from the Los Angeles Academy, formerly known as the Jefferson New Middle School. The site also has residential structures adjacent to the east and the north. During FY 2008/09, the full-scale vadose zone soil remedy was implemented which involved the injection of approximately 44,000 gallons of Calcium Polysulfide (CPS) solution into contaminated soils on-site to treat hexavalent chromium. The on-site ground water remedy was also implemented and during this time approximately 104,000 gallons of CPS solution was injected into the nine on-site injections wells. In FY 2009/10, DTSC will complete the on-site treatment of hexavalent chromium in soil and ground water, the Remedial Action Completion Report and one final round of ground water sampling.

Site Name: Lubrication Company of America (LUBCO)
Location: 12500 Lang Station Road, Canyon Country, Los Angeles County, Assembly District 38, Senate District 17

Description of Site Activities: This four-acre site is a former waste oil recycling facility located in a rural area north of Los Angeles. Contaminants included petroleum hydrocarbons, VOCs, SVOCs, lead, and PCBs. An engineered cap was installed in 2003. In FY 2006/07, DTSC installed a soil vapor extraction (SVE) system on-site to remove the VOCs including benzene, vinyl chloride, TCE, and PCE. PCBs, benzene, TCE and vinyl chloride are all known human carcinogens. To date, 8,000 pounds of VOCs have been removed from the soil. The SVE system is expected to operate for another year at which time the concentration of VOCs should be reduced to levels that are protective of human health and the environment. The site is part of a 64-acre parcel of land that is currently for sale.

Site Name: Pemaco Superfund Site
Location: 5050 E. Slauson Avenue, Maywood, Los Angeles County, Assembly District 46, Senate District 22

Pemaco Superfund site was formerly a chemical blending facility. Pemaco Superfund site developed for use as a park.

Description of Site Activities: This NPL fund lead site was a chemical blending facility until 1991, in this residential/ industrial/ commercial neighborhood. Volatile organic compounds (VOCs) were present in the soil and ground water beneath the site. Tetrachloroethylene (PCE) was the primary VOC removed from the soil. PCE is a known carcinogen and exposure to this chemical also causes irritation to the respiratory system and liver damage. DTSC has provided a ten percent match for this site, which totaled $800,000. Remediation of the site consisted of a soil vapor extraction system and a ground water remedy of high-vacuum dual-phase extraction, electrical resistance heating with vapor extraction and vacuum-enhanced pump and treat, flameless thermal oxidation with carbon, and ultraviolet oxidation technologies for the destruction of VOCs. Construction of the remedy began August 1, 2005 and continued through the year. The final design was approved August 21, 2006. The construction was completed in FY 2006/07. In FY 2008/09, DTSC met its contractual obligation for the site with U.S. EPA The determination of Operational and Functional was reached for a portion of proposed remedial action at the site. Soil vapor extraction and ground water pump and treat actions at the site continue. ERH actions were discontinued. Bioremediation is being considered. No contract exists between DTSC and U. S. EPA for this activity and therefore future contribution is undefined. The property is used as a park for the City of Maywood.

Site Name: PMC-CAMEO Site
Location: 6904 E. Slauson Avenue, Commerce, Los Angeles County, Assembly District 30, Senate District 50

PMC-CAMEO site before remediation

PMC-CAMEO site during backfilling with clean soil

Description of Site Activities: A Time Critical Removal Action Work plan (TCRAW) was prepared to address the removal of soils contaminated with Cr^{+6} and Cr at this 2.6-acre site of vacant land (Lot 2). Formerly, the site was approximately 4.9 acres and encompassed two areas known as Lot 1 and Lot 2. DTSC issued a "No Further Action" determination as to Lot 1, which was later sold by PMC. The remediation of the soil was conducted in FY 2007/2008 and also carried over to FY 2008/2009 approximately 2,200 cubic yards of contaminated soil was excavated. Ground water is also impacted by Cr^{+6} and Cr . In FY 2009/2010, DTSC will install new ground water monitoring wells and conduct ground water sampling and monitoring.

Site Name: South Central Discovery (AKA Hard Chrome Discovery Project)
Location: Vicinity of East 56th Street & Avalon Blvd., Los Angeles County, Assembly District 52, Senate District 26

Description of Site Activities: In 2008, DTSC conducted a discovery project in the vicinity of the Hard Chrome site with an intention to locate potential off-site sources contributing to the VOCs & chromium contamination in ground water in the area. As an outcome of the Hard Chrome discovery project, DTSC was successful in discovering a few sites including Standard Nickel Chromium Plating site located at 811 East 62nd street, Los Angeles, CA 90001, in the south central area of Los Angeles. Sampling results indicated the presence of chromium Vl as high as 4800 mg/kg and PCE as high as 1400 ug/l in soil gas samples. It is unknown how extensive these impacts are, however numerous sources appear to be present besides this site contaminating the ground water in south central Los Angeles. To expand the previous efforts with the Hard Chrome discovery project, DTSC aims at investigating the cities of West & East Compton, Watts, Gardena, Lynwood, and Southgate to locate the potential sources contributing to the VOC contamination in ground water in these areas.

A historical search will be conducted in the targeted cities. The search will include drive by visual inspections and a records review at the Los Angeles Fire Department and the Regional Water Quality Control Board.

A soil gas and soil matrix investigation will be conducted at all the facilities identified (approximately 30 sites) to determine if a release of VOCs and chromium has occurred in soil. Shallow soil gas probes will be installed initially to determine if a release of VOCs and chromium has occurred. A report documenting the findings will be prepared and the sites will be ranked.

DTSC will then make an Imminent and Substantial Endangerment Determination and invite the facility owners to enter into a Consent Order to investigate and cleanup the site. DTSC has approved $300,000 expenditure to conduct investigation under this discovery project.

Site Name: Southland Oil
Location: 5619 Randolph Street, City of Commerce, Los Angeles County, Assembly District 50, Senate District 30

Southland Oil was the former site of a waste oil recycling, hauling, and storage. This Soil Vapor Extraction System was put in place to remove VOCs including benzene, vinyl chloride, TCE and PCE. PCBs, benzene, TCE and vinyl chloride are all known human carcinogens. To date, the Soil Vapor Extraction System has extracted and destroyed over 23,000 pounds of VOCs.

Description of Site Activities: This site was used for waste oil recycling, hauling and storage since the 1930s. Contaminants included petroleum hydrocarbons, VOCs, SVOCs, lead, and PCBs. The total area of the site is slightly less than one acre, and is covered by a permanent engineered concrete-asphalt cap. In FY 2006/07, an SVE system was put in place to remove VOCs including benzene, vinyl chloride, TCE and PCE. PCBs, benzene, TCE, and vinyl chloride are all known human carcinogens. To date, the SVE system has extracted and destroyed 25,000 pounds of VOCs. The thermal oxidizer unit has been shut down because vinyl chloride levels have dropped to the point that activated carbon may be used for VOC treatment. VOCs appear to be near cleanup levels. An adjacent property owner, who has recently re-developed the adjacent property with a 50,000 square foot warehouse, is now interested in purchasing the Southland property.

Site Name: Spence Property
Location: 7047-7051 North Figueroa Street, Los Angeles, Los Angeles County, Assembly District 44, Senate District 21

Spence Property was formerly a dry cleaning facility. In fiscal year 2006/07, DTSC conducted a Soil Vapor Investigation and Indoor Air Modeling Evaluation to determine current concentrations of hazardous substances at this site. Significant levels of PCE, a known carcinogen as well as other hazardous substances were detected at this site.

Description: of Site Activities: This former dry cleaning facility, located in a residential/commercial setting, had a release of dry cleaning solvents in and around the former treatment unit and within 50 feet of residences and businesses. In FY 2006/07 DTSC conducted a Soil Vapor Investigation and Indoor Air Modeling Evaluation to determine current concentrations of hazardous substances at this site. Significant levels of PCE were detected in the soil, soil vapor and ground water at the site. PCE is a known carcinogen and exposure to this chemical also causes irritation to the respiratory system and liver damage. In FY 2007/08, I &S E Orders were developed and provided to the former and current property owners. The identified Responsible Parties were non-responsive. DTSC implemented a time critical removal action for the installation and operation of a soil vapor extraction system. Operation of the system will require ongoing on-site monitoring of the vapor plume. In FY 2008/09, continued investigation of the off-site soil vapor and ground water plume and remediation of the on-site vapor plume was conducted. The property is zoned for two residential developments. The property cannot be used as a residential development at this time as the site poses a significant indoor air health risk to on-site and surrounding residential properties. High levels of VOCs detected in the shallow ground water at the site and downgradient present a concern to surface targets. A school site is less than 1/8 mile downgradient. DTSC has approved a $300,000 expenditure for investigation and remedial actions at the site.

SOUTHERN CALIFORNIA - CYPRESS

Site Name: Brawley Radiator Shop
Location: 556 E Street, Brawley, Imperial County,
Assembly District 80, Senate District 40

Brawley Radiator Shop is located in a mixed-use area. Several heavy metals were detected in the soil, soil-gas, and ground water samples collected at the site. In FY 2008/09, the removal action is planned to address the heavy metal soil contamination.

Description of Site Activities: DTSC conducted a site investigation to determine the extent of hazardous substances released at the site. The site is located in a mixed-use area with commercial, industrial, and residential housing. Two schools are located approximately 700 hundred feet north and northwest of the site. Soil, soil-gas, and ground water samples were collected from the site. Several metals (lead, copper, and arsenic) were detected at higher levels than previously reported. Lead is a neurotoxin and exposure to this metal can result in damage to the central nervous system. Sensitive receptors are especially affected and exposure to lead in children is known to be responsible for some learning disabilities. Once the removal action takes place it is expected to reduce or limit exposure to harmful toxins for approximately 400 people in residences close by, approximately 1,470 students in the schools nearby, as well as 10 employees working at the site.

In FY 2007/08, the site was further investigated. A removal action work plan, a factsheet, and a public notice have been prepared and approved. In addition, DTSC prepared all the environmental documents to comply with California Environmental Quality Act (CEQA). The removal action is planned for January 2010 to address the heavy metal soil contamination.

Site Name: Former Charles Caine Company
Location: 8325 Hindry Avenue, Los Angeles, Los Angeles County, Assembly District 51, Senate District 25

The Charles Caine Company, Inc. site is a former spray painting facility that operated from approximately 1950 to 1999, when the company ceased its operations after filing for bankruptcy. Prior to becoming a spray painting facility, the site was utilized as a machine shop and a die-casting facility. The site has soil that has been impacted by volatile organic compounds (VOCs) and total recoverable petroleum hydrocarbons (TRPH). In FY 2008/09, DTSC completed a Removal Action Workplan (RAW) and associated CEQA documents. The site was prepared for the implementation of the removal action, the building was surveyed for lead and asbestos and demolished,and building debris were recycled and/or disposed off.

Description of Site Activities: The site was a former spray-painting facility that contained three spray-painting booths and a three-stage clarifier, which was used for wastewater treatment. The environmental consultant company, Glenfos, recommended that additional investigation be performed to evaluate whether soil had been impacted by hazardous substances used on-site. DTSC has conducted several investigations at the Site.

Site Name: Former Chrome Crankshaft Company
Location: 6845 East Florence Place, Bell Gardens, Los Angeles County, Assembly District 50, Senate District 30

The Former Chrome Crankshaft Company is a former chrome plating facility that is immediately surrounded by single-family homes and adjacent to an elementary school. The site has heavy metal subsurface soil and ground water contamination, including hexavalent chromium. In FY 2007/2008 DTSC implemented the approved Operable Unit 1 (OU 1), soil remediation, Remedial Action Plan (RAP), which called for the excavation and off-site disposal of nearly 7,500 cubic yards (nearly 9,000 tons) of contaminated soil. In FY 08/09 the site was restored using nearly 10,500 tons of clean base material.

Description of Site Activities: This site is a former chrome plating facility located in the City of Bell Gardens. Site soil was contaminated with hexavalent chromium and other metals. Hexavalent chromium is a poison by ingestion, intraperitoneal and subcutaneous routes. It is a human carcinogen by inhalation (nasal and lung tumors). Ground water beneath the site was also found to contain the same constituents at a lesser concentration. The site is immediately surrounded by a population of nearly 3,000 people including nearly 50 single-family homes to the south, large commercial/industrial properties to the north and east, the former J & S Chrome Plating site to the east, and Suva Elementary and Intermediate Schools, with a total population of nearly 2,000 students and staff members to the west.

During FY 2007/08, DTSC implemented the approved Operable Unit 1 (OU1), soil remediation, Remedial Action Plan (RAP) that called for the excavation and off-site disposal of nearly 7,500 cubic yards (nearly 9,000 tons) of contaminated soil at a cost of nearly $1.7 million, nearly $800,000 below budget.

During FY 2008/09, DTSC restored the site using nearly 10,500 tons of clean base material thereby completing the OU1 RAP implementation. DTSC finalized the Operable Unit 2 (OU 2), ground water remediation, RAP and initiated implementation of the OU2 RAP. During FY 2009/10, DTSC will complete the Remedial Design of the remediation system based on the pilot test and will initiate the construction of the remediation system.

Site Name: Crown City Plating
Location: 4350 Temple City Boulevard, El Monte, Los Angeles County, Assembly District 49, Senate District 24

Crown City Plating Company (Site) is comprised of approximately 13 acres and is located in the industrial area of the City of El Monte in San Gabriel Valley, Los Angeles County, California. The facility had been engaged in metal and plastic plating of automotive, hardware, and decorative parts since 1956. The Site has had an average of approximately 1,000 tons of hazardous waste generated during the last ten years of operation. Volatile organic compounds (VOCs) were detected in the ground water at the Site at levels exceeding the Maximum Contaminant Levels (MCLs) and hexavalent chromium was detected at 55.6 mg/Kg which exceeds the California Human Health Screening Levels (CHHSLs) of !6 mg/Kg). In FY 2008/09, DTSC determined that there may be an imminent or substantial endangerment to the public health welfare at the site and that response action is necessary at the facility.

Description of Site Activities: Crown City Plating was first authorized to treat hazardous waste under Permit by Rule on July 8, 1993, and submitted a Phase I Assessment Checklist (Phase I) on October 1, 1998 indicating that no further action was necessary. On March 14, 2005, DTSC conducted a site inspection at the site to verify the information on the Phase I. Based on the inspection and the review of files, are available at the local Certified Unified Program Agency and the Los Angeles Regional Water Quality Control Board, DTSC determined that further investigation is required at the site to fully characterize the nature and extent of the releases at the site. On January 5, 2006, DTSC and the site entered into a Corrective Action Consent Agreement (Consent Agreement) to oversee the further investigation at the site. To date, the responsible party (RP) has not complied with the terms of the Consent Agreement despite the fact that DTSC has contacted and has sent noncompliance letters to the RP.

In the summer of 2008, U.S. EPA requested a time-critical removal action and fenced the property because of potential exposure to hazardous substances at the site to nearby population. DTSC concurred on the determination of imminent and substantial endangerment and removal action for this site. Following the submittal of a Request for a Time-Critical Removal Action at the site, U.S. EPA conducted a surface removal action of remaining hazardous substances at the site.

In the Fall of 2008, DTSC also prepared a report and a cost estimate to request for the site to become a State Orphan Site. In September 2009, DTSC determined that there may be an imminent and or substantial endangerment to the public health welfare or to the environment because of the release and/or threatened release of the hazardous substances at the site and response action is necessary at the facility (I and SE Determination dated September 2, 2009). During FY 2009/2010 an investigation will commence to fully characterize the nature and extent of the releases.

Site Name: J & S Chrome Plating Company
Location: 6863 Florence Place, Bell Gardens, Los Angeles County, Assembly District 30, Senate District 50

J&S Chrome Plating is a former chrome plating facility that is immediately surrounded by single-family homes and is adjacent to an elementary school. The site has heavy metal subsurface soil and ground water contamination, including hexavalent chromium. In FY 2007/2008 DTSC implemented the approved Operable Unit 1 (OU 1), soil remediation, Remedial Action Plan (RAP), which called for the excavation and off-site disposal of nearly 9,000 cubic yards (nearly 11,500 tons) of contaminated soil. In FY 08/09, the site was restored using nearly 13,000 tons of clean base material.

Description of Site Activities: This site is a former chrome plating facility located in the City of Bell Gardens. Site soil and ground water were contaminated with hexavalent chromium and other metals. The site is immediately surrounded by a population of nearly 3,000 people including nearly 50 single-family homes to the south, large commercial/industrial properties to the north and east, and the former Chrome Crankshaft site and Suva Elementary and Intermediate Schools, with a total population of nearly 2,000 students and staff members to the west.

During FY 2007/08, to ensure the health and safety of students, teachers, and the nearby residents, DTSC implemented the approved Operable Unit 1 (OU 1), soil remediation, Remedial Action Plan (RAP), which called for the excavation and off-site disposal of nearly 9,000 cubic yards (nearly 11,500 tons) of contaminated soil. The cost of this project was approximately $2.3 million, nearly $1.3 million below budget. In

addition, an abandoned structure used by transients was demolished and removed from the site.

During FY 2008/09, DTSC restored the site using nearly 13,000 tons of clean base material thereby completing the OU1 RAP implementation. DTSC finalized the Operable Unit 2 (OU 2), ground water remediation, RAP and initiated implementation of the OU2 RAP.

During FY 2009/10, DTSC will complete the Remedial Design of the remediation system based on the pilot test and will initiate the construction of the remediation system.

Site Name: Renu Plating Company, Incorporated
Location: 1531 East 32nd Street, Los Angeles, Los Angeles County, Assembly District 46, Senate District 22

Renu Plating Co., Inc. is a former brass plating facility that borders an elementary school. The site has heavy metal subsurface soil contamination, including hexavalent chromium, a known carcinogen, and lead that leads to learning disabilities in children.

Description of Site Activities: This site is a former brass plating facility that borders the Nevin Avenue Elementary School. The subsurface soils are contaminated with heavy metals, including hexavalent chromium and lead. Hexavalent chromium is a poison by ingestion, intraperitoneal and subcutaneous routes; it is a human carcinogen by inhalation (nasal and lung tumors). Lead is a very dangerous neurotoxin that leads to learning disabilities in children.

All of the fieldwork was completed in FY 2007/2008. The RI/FS and RAP were started in FY 2007/08 and removal action was completed in FY 2009/2010. Approximately, 500 cubic yards of contaminated soils were transported to Kettlemen Hills for disposal. The site was backfilled, compacted, and a chip-seal hardcover was placed over the backfilled area. Currently, DTSC is awaiting the Removal Action Completion Report for review and approval and the site will be certified with no further action.

Site Name: Whittier Narrows Operable Unit - San Gabriel Valley Superfund Site
Location: 331 North Durfee Avenue, South El Monte, Los Angeles County, Assembly District 58, Senate District 30

Volatile organic compounds (VOCs) were discovered in the Baldwin Park area. The primary public health concern associated with chronic low-level exposures to VOCs is the probability of cancer via ingestion of contaminated drinking water. The Whittier Narrows Extraction and Treatment System shown above, is designed to extract and treat 11,000 gallons of contaminated ground water per minute. This water serves as drinking water supply for approximately 48,000 residents of the City of Whittier.

Description of Site Activities:
The Whittier Narrows Operable Unit (OU) encompasses approximately four square miles and is located in the southern portion of the San Gabriel Basin. Ground water in the Whittier Narrows and immediately down gradient in the Central Basin is primarily used for drinking water supply. Whittier Narrows is a 1.5-mile gap in the low-lying hills that separates the San Gabriel Basin and the Central Basin and represents the primary discharge point for ground water and surface water flow exiting the San Gabriel Basin.

In 1979, volatile organic compounds (VOCs) were discovered in Baldwin Park region of the San Gabriel Valley. Subsequent testing found that VOC contamination was widely distributed throughout the Basin, and was determined to pose a significant threat to the ground water resources in the area. Contaminants of concern (COCs) originally identified in the San Gabriel Basin included perchloroethylene (PCE), trichloroethylene (TCE), 1, 2 dichlorethane (1, 2 DCA), and carbon tetrachloride (CTC). The primary public health concern associated with chronic low-level exposures to VOCs is the probability of cancer via ingestion of contaminated drinking water. Currently, all drinking water provided meets Federal and State drinking water standards. U.S. EPA believes that the source of this contamination initially stems from an increase in industrial activity during World War II, followed by rapid industrial and residential growth during the post-war period.

In 1997, perchlorate, nitrosodimethylamine (NDMA) and 1, 4-dioxane were also detected and were subsequently added to the list of contaminants of concern for the San Gabriel Basin. Perchlorate is typically associated with the manufacturing of rocket fuel, explosives, fireworks, road flares and air-bag inflation systems. The primary health

concern associated with perchlorate is the reduction of the uptake of iodide, an essential nutrient, by the thyroid gland. While not harmful by itself, inadequate iodide uptake may lead to the harmful disruption of proper thyroid function. 1, 4 - dioxane is used as a solvent for oils, resins, waxes, adhesives, cellulose esters and ethers, and is also used as a stabilizer in chlorinated solvents. Its primary health impacts are associated with potential damage to the liver and kidneys. The acute toxic effects of generally take place through inhalation in animal studies include eye, nose and throat irritation and kidney and liver damages.

NDMA contamination has become more important in California because of its increasing detection in drinking water. It has been associated with the chloramine drinking water disinfection process, and has also been reported to be formed in the chlorination of wastewater used for aquifer recharge. Carcinogenic affects have been observed in animal studies. NDMA is associated with the production of liquid rocket fuel.

U.S. EPA selected a ground water extraction and treatment system as the remedy for the Whittier Narrows Operable Unit (OU). Under California Department of Public Health (formerly DHS) Policy 97-500, for "highly contaminated" aquifers, such as the San Gabriel Basin, such pump and treat remedies must be operated by a licensed water purveyor or municipality. The Whittier Narrows extraction and treatment plant is operated by the City of Whittier under a Cooperative Agreement with U.S. EPA. In 2013, DTSC will be required to take over financial responsibility for 100 percent of the O&M costs for the facility and will have to re-negotiate the Inter-Agency O&M Agreement with the City of Whittier.

The projected design capacity for the Whittier Narrows extraction and treatment system was on the order of 11,000 -12,000 gallons of contaminated ground water per minute. Of this design capacity, approximately 5000-6000 gallons per minute (gpm) from the intermediate zone is being treated for reuse as drinking water supply. Approximately 2000-2500 gpm, representing the output from the shallow zone wells was to be treated and discharged to surface water, to augment water levels in Legg Lake or other nearby surface water features.

However, due to a variety of operational issues and the discovery of problematic concentrations of NDMA in the shallow zone wells, the Whittier Narrows facility has not been operating at full capacity for most of the period since it was first declared operational and functional. From May 2003 through June 2008, approximately 33.14 Acre-feet (AF) of treated ground water was used to augment the City of Whittier's drinking water supply. Production figures for the intermediate zone pumps indicated that the City of Whittier provided 3,174 AF of treated ground water for drinking water supply in 2008 and 4,370 AF from January 2009 through October 2009.

Since the State Superfund Contract (SSC) was first executed on August 28, 2002, DTSC has encumbered $1,540,000 to meet the State's 10 percent cost share requirement for the Whittier Narrows remedy. U. S. EPA currently estimates the annual

O&M cost for the treatment facility to be approximately $1.5 million, making DTSC's estimated annual cost share about $150,000 per year through May 2003. DTSC will be required to take over full financial responsibility for O & M beginning in May 2013. DTSC currently estimates $39 million will be required to fund the VOC remedy through 2033. The treatment system only includes treatment units for VOCs. Should concentrations of perchlorate, NDMA, or 1, 4 – dioxane increase to action levels or above, additional construction and O & M costs will need to be incurred in order to treat these contaminants. Should the upgrades become necessary, this could add an additional $16 to $20 million dollars to the State's costs for the construction, operation and maintenance of the Whittier Narrows Remedy.

ABBREVIATIONS AND ACRONYMS

ARRA	American Recovery and Reinvestment Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQA	California Environmental Quality Act
COCs	Contaminants of Concern
Cr	Chromium
CRD	Catalytic Reductive Dehalogenation Treatment Unit
DSB	Distal Site Boundary
DTSC	Department of Toxic Substances Control
EE/CA	Engineering Evaluation/Cost Analysis
EM	Environmental Management
ER	Environmental Restoration
FFA	Federal Facility Agreement
FS	Feasibility Study
FY	Fiscal Year
GAC	Granular Activated Carbon
gpm	gallons per minute
GSA	General Services Area
GTU	Granular Activated Carbon Treatment Unit
GWETS	Ground Water Extraction and Treatment System
HSU	Hydrostratigraphic Unit
ISB	In-Situ Bioremediation
ISE	Imminent and Substantial Endangerment
LUC	Land Use Covenant
MCL	Maximum Contaminant Level
MTU	Miniature Portable Treatment Unit
NNSA	National Nuclear Security Administration
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OU	Operable Unit
O & M	Operation and Maintenance
PCE	Perchloroethylene or Tetrachloroethylene
PNAs/PAHs	Polynuclear Aromatic Hydrocarbons or Polycyclic Hydrocarbons
PPA	Prospective Purchaser Agreement
PRX	Proximal
PTU	Portable Treatment Unit
RAIP	Remedial Action Implementation Plan
RAP	Remedial Action Plan
RAW	Removal Action Work Plan
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDWP	Remedial Design Work Plan
RDX	Research Department Explosive

RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RP	Responsible Party
RWQCB	Regional Water Quality Control Board
ROD	Record of Decision
RPM	Remedial Project Manager
SIC	Soil Impoundment Cell
SSC	State Superfund Contract
SVE	Soil Vapor Extraction
SVETS	Soil Vapor Extraction and Treatment System
TBOS	Tetrabutyl Orthosilicate
TSW	Treatability Study Work plan
TCE	Trichloroethylene
TCRAW	Time Critical Removal Action Work plan
TSW	Treatability Study Work
UPRR	Union Pacific Railroad
U. S. EPA	United States Environmental Protection Agency
VES	Vapor Extraction System
VOCs	Volatile Organic Compounds

GLOSSARY OF TERMS

Feasibility Study (FS)
An evaluation of the alternatives for the remediation of any identified soil or ground water contamination. Remediation refers to a cleanup method used to remove or contain a toxic spill or hazardous materials, and can include removal, treatment, and encapsulation of wastes.

Ecological and Health Risk/Endangerment Assessment
A health risk assessment is a document that describes the possible adverse health effects that may result from exposure to contaminants. An ecological risk assessment is a document that describes the possible adverse impacts to the surrounding flora and fauna.

Operable Unit (OU)
A term used for each of a number of separate areas undertaken as part of a Superfund cleanup. Typical operable units are soil and ground water. Investigation and ultimate cleanup remedy will be tied specifically to that unit.

Operation and Maintenance (O&M)
These activities must be maintained or monitored after a site has been remediated in order to protect public health/safety or the environment. They include such things as maintaining an asphalt cap or monitoring ground water wells.

Pentachlorophenol (PCP)/Tetrachlorophenol (TCP)
Both are petroleum-based chemicals that are used as a wood preservative that kills fungus and termites.

Perchloroethylene or Tetrachloroethylene (PCE)
Perchloroethylene (tetrachloroethylene or "perc", PCE) is a manufactured chemical compound that is widely used for the dry cleaning of fabrics and for metal-degreasing.

Polynuclear Aromatic Hydrocarbons or Polycyclic Hydrocarbons (PNAs or PAHs)
PNAs or PAHs are natural constituents of crude oil, and may be formed when organic materials such as coal, oil, fuel, wood or even foods are not completely burned. PNAs are also found in lampblack, a by-product of the historic gas manufacturing process. PNAs are found in a wide variety of other materials including diesel exhaust, roofing tars, asphalt, fireplace smoke and soot, cigarettes, petroleum products, some foods, and even some shampoos. PNAs tend to stick to soil, do not easily dissolve in water, and generally do not move in the environment. The test method used to analyze for PNAs detects 17 different compounds, seven of which are suspected of causing cancer.

Record of Decision (ROD)
A public remedy selection document explaining the cleanup methods used at a NPL site, based upon U.S. EPA studies, public comments, and community concerns.

Remedial Action Plan (RAP)
The document summarizes the history of the site, the remedial investigations conducted, feasibility studies prepared, and explains the reasons for selecting a cleanup alternative for a contaminated site. A key element of a RAP is to provide the public with an opportunity to comment on the proposed cleanup remedy. DTSC is required to consider all comments before approving the final RAP. A RAP is required when the estimated cost of the remedy is greater than $ 2 million.

Removal Action Work plan (RAW)
This remedy selection document is prepared in order to carry out a removal action. The RAW is protective of public health, safety, and the environment, and provides an opportunity for public review and comment. A RAW is required when the estimated cost of the removal action is less than $ 2 million.

Remedial Investigation (RI)
This is a series of investigations and studies that identify the types and extent of chemicals of concern at the site. The investigation occurs by collecting soil, soil-gas, ground water, and surface water samples.

Remedial Design (RD)
Remedial Design is the detailed engineering plan to implement the remedial action alternative approved by DTSC.

Remedial Design & Implementation Work plan (RD&IW)
Remedial Design is the detailed engineering plan to implement the remedial action alternative approved by DTSC. The Implementation Work plan is the document that provides timelines, procedures, and protocols to be followed for completing the activities that are established by the Remedial Design.

Site Characterization
A location-specific or area-specific survey conducted to define the physical, chemical, and/or biological attributes of an area; such surveys may be conducted at different times during the course of a project to provide information on how these attributes may change over time.

Soil Vapor Extraction (SVE)
A process that is used to extract chemical vapors from the soil by applying a vacuum to wells that have been placed in the ground. The vapors are then treated.

Trichloroethylene (TCE)
Commonly referred to as TCE, this is a colorless liquid, which is used as a solvent for cleaning metal parts.

Volatile Organic Compounds (VOCs)
These are organic chemicals, including many common solvents, that readily evaporate at temperatures normally found at ground surface and at shallow depths. They take part in atmospheric photochemical (sun-driven) reactions to produce smog.

Appendix

Data Tables

Site Name	Quantity of Soil Removed/Contained (Cubic Yards)
Fresno Battery	2,500
Lava Cap Mine	1,100
Osage Industries (60th)	150
SR Kilby	7,500
Total	**11,250**

Site Name	Quantity of Water Treated (Gallons)
Chemical and Pigment	144,000
Chico Ground water – Central	1,543,512,000
Frontier Fertilizer	32,000,000
Modesto Ground water	840,000
Selma Pressure Treating Company	91,250,000
Total	**1,667,746,000**

Site Name	Acres Made Available
Brown & Bryant –Arvin	4.7
Fresno Battery	9
Lava Cap Mine	30
Modesto Ground water	2.5
Orchard Supply	23
Orland Dry Cleaners	25
Osage Industries (60th)	80
SR Kilby	7.4
Selma Pressure Treating	14
Wickes Forest Ind.	7
World Radiator	.3
Total	**202.9**

Site Name	People Protected
CalTech	225
Chico GW Central	15,000
Chico GW Southwest	10,000
Fresno Battery	200
Frontier Fertilizer	5,800
Harbor Front	250
Lava Cap Mine	100
Orchard Supply	1,600
Orland Dry Cleaners	5,000
Osage Industries (60th)	400
SR Kilby	100
Visalia Dry Cleaners	97,000
Wickes Forest Ind.	50
World Radiator	50
Total	**135,775**