



SAN FERNANDO VALLEY SUPERFUND SITES UPDATE

U.S. ENVIRONMENTAL PROTECTION AGENCY • REGION 9 • SAN FRANCISCO, CA • NOVEMBER 1999

EPA Announces Well Sampling Event

The United States Environmental Protection Agency (EPA) continues its effort to clean up the San Fernando Valley Superfund Sites. The purpose of this fact sheet is to announce the upcoming annual monitoring well sampling event and to provide an update on the cleanup effort at the site. Terms that appear in **bold** are in a glossary on page 6.

The San Fernando Valley Superfund Sites are in the eastern portion of the San Fernando Valley between the Santa Monica and San Gabriel Mountains. The San Fernando Groundwater basin is an important source of drinking water for the Los Angeles metropolitan area, the Cities of Glendale, Burbank, and San Fernando, and the unincorporated area of La Crescenta. In the early 1980s, **trichloroethylene** (TCE) and **perchloroethylene** (PCE) were detected in numerous drinking water wells above the maximum safe level of five parts per billion (ppb). As a result of the widespread contamination, state and local agencies acted to provide

alternative drinking water supplies, primarily by purchasing water from the Metropolitan Water District. In 1986, the EPA included the sites in the San Fernando Valley on the National Priority List, and began coordinating efforts to investigate and cleanup the regional groundwater contamination (see Figure 1).

Two of the four site areas are divided into one or more operable units (OUs). An OU is a focused study area that allows EPA to take each action as part of an overall, basinwide site cleanup. The four areas are: North Hollywood-Area 1, which includes North Hollywood and Burbank OUs; Crystal Springs-Area 2, which includes Glendale North and South OUs; and the Verdugo (Area 3) and Pollock (Area 4) study areas. Each San Fernando Valley OU has a selected interim remedy that will be incorporated into the final basinwide remedy. Currently, EPA is carrying out the interim remedies at the OUs while a basinwide groundwater investigation is being conducted.

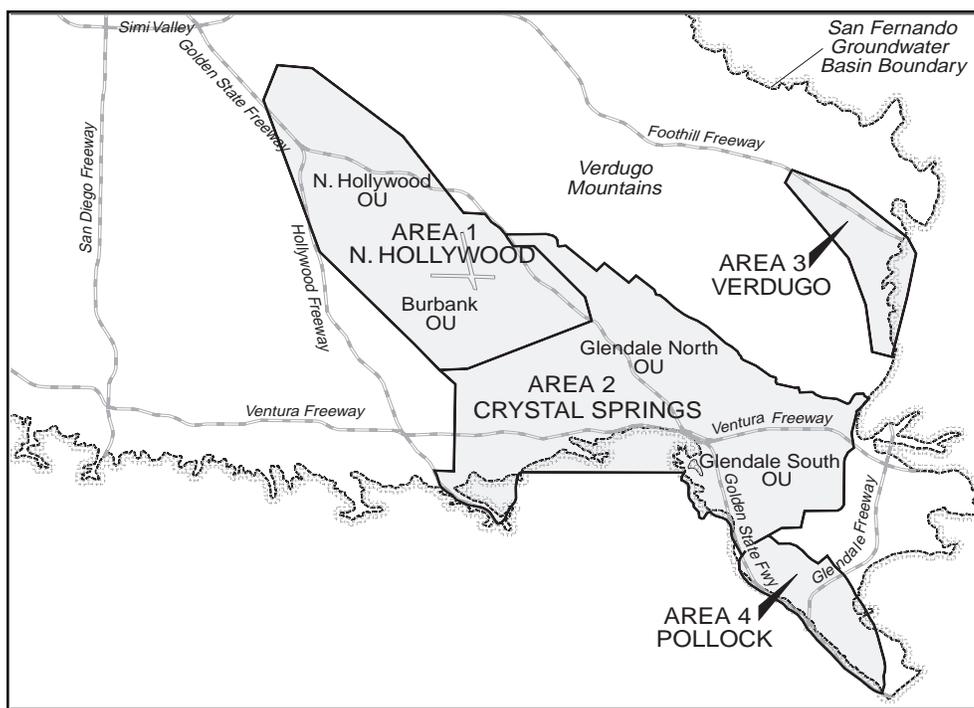


Figure 1: San Fernando Valley Superfund site

Since 1992, EPA has monitored groundwater contamination through its Basinwide Monitoring Program. The program consists of annual and quarterly monitoring events. EPA installed a total of 81 **monitoring wells** and in the

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past has tested annually for **volatile organic compounds** (VOCs) including TCE and PCE, dissolved metals (including total dissolved chromium), nitrates and **general chemistry**. At each quarterly sampling event, 49 of these wells are sampled for VOCs and nitrates. In addition to this routine sampling program, EPA may also add sampling events that focus on either new contaminants or contaminants that have been detected at lower levels.

Basinwide Groundwater Monitoring to Occur November/December 1999

EPA will begin the next annual groundwater monitoring event at the end of November and it will take approximately three weeks to complete. EPA will then analyze groundwater samples and validate the data. The data collected during this sampling event will be available on the San Fernando Valley Superfund Site web site by approximately Summer 2000 (Web Address: <http://yosemite.epa.gov/r9/sfund/overview.nsf>)

How is a Groundwater Sample Collected from a Monitoring Well?

Monitoring wells are used extensively in the San Fernando Valley to obtain groundwater samples to test chemical levels and evaluate water quality. A monitoring well is a type of well that is specifically constructed to collect groundwater samples for testing and is not used to supply drinking water.

Groundwater samples are collected from monitoring wells by using either a *bailer* or a *pump*. A *bailer* is a simple, reliable device that is typically used to monitor shallow wells. Using bailers at the San Fernando Valley deep monitoring wells would be a very slow process. As a result, EPA uses *pumps*, which allow for continuous and more rapid withdrawal of water from the deep monitoring wells.

Each EPA monitoring well has an individual pump that is permanently installed in the well casing below the water table. These dedicated pumps simplify the required sampling and decontamination procedures required at each well and speed the sampling process. Before sampling a well, it is purged to remove stag-

nant water from the well casing to insure that the sample collected represents the actual groundwater in the aquifer. When the basic groundwater quality parameters (i.e., temperature, pH and electrical conductivity) have been stabilized in the well, a groundwater sample is collected by diverting the pumped water into an appropriate sample container. All purged water is collected and stored in tanks on a vacuum truck until the water can properly be disposed.

What Happens to the Sampling Data that is Collected?

The well data from this event will be combined with previous data collected from approximately 520 other basinwide wells, including both monitoring wells and production wells, to produce updated plume maps that will show the approximate extent of site contamination in the basin.

In addition to the ongoing sampling for VOCs this year, EPA will also add hexavalent chromium, methyl tertiary butyl ether (MTBE), and perchlorate to the list of chemicals sampled. EPA and other state and local agencies are interested in learning if these contaminants are in groundwater in the basin. This sampling event, and future sampling events will allow EPA to determine if these contaminants are of concern in the San Fernando Valley basin and whether or not cleanup action will be necessary. Below is a general description of the contaminants that will be added to the annual sampling event.

HEXAVALENT CHROMIUM

Chromium occurs naturally in the environment as Chromium (III), the trivalent form, and rarely as the Chromium (VI), the hexavalent form. Chromium (III) is an essential nutrient in our diet. Exposure to Chromium happens mostly from breathing it in workplace air, or ingesting water or food. The Chromium (VI) compounds are considered carcinogenic (cancer causing) based on increased incidences of lung cancer in industrial workers (inhalation exposure). The carcinogenic potential of hexavalent chromium has also been verified by animal studies. The upcoming November/December annual groundwater sampling event will include testing for both total dissolved chromium and hexavalent chromium.

Chromium (VI) is used in a number of commercial processes, including electroplating, leather tanning, pulp production, ore refining, and wood preservation. In addition to testing groundwater for chromium, EPA is also seeking potential industrial sources of chromium contamination in the San Fernando Valley basin and evaluating the possibility that these sources may have impacted groundwater quality or may have the potential to impact groundwater quality in the future. Under a cooperative agreement with EPA, the Los Angeles Regional Water Quality Control Board (LARWQCB) is investigating potential chromium sources in the basin. To date 58 industrial sites have been identified as having the potential for soil and/or groundwater chromium contamination. This source investigation will continue while additional studies will be initiated at potentially contaminated sites to determine if a discharge has occurred. Depending on the results of this work, EPA will proceed with enforcement action to remediate the contamination.

MTBE

Methyl tertiary butyl ether (MTBE) is a gasoline additive (an oxygenate) that boosts the oxygen content in fuel, which reduces the levels of air-polluting carbon monoxides released from vehicle exhaust systems. It has been used as an oxygen booster in the United States since the late 1970s. Unlike other oxygenated additives, MTBE is inexpensive, readily mixes with gas and is not volatile when mixed with groundwater. MTBE moves faster than other gasoline constituents and can reach water supplies more quickly. Federal law requires that reformulated (oxygenated) gasoline be sold throughout the year in regions with high smog levels such as Southern California. The primary source of MTBE contamination in groundwater is from leaking underground storage tanks and pipelines.

Due to the potential for this contaminant in the basin, EPA will include MTBE in the site's groundwater sampling to determine if it is present and, if so, its location and concentration. The State of California is also studying MTBE to determine if a significant risk is associated with its use and, if there is significant risk, will take appropriate action to protect public health and the environment.

PERCHLORATE

Perchlorate is a man-made inorganic salt used as a component in solid rocket fuel, munitions, and pyrotechnics (fireworks). The California Department of Health Services (DHS) has detected perchlorate in certain drinking water wells in the Los Angeles County area. Perchlorate is soluble, mobile and persistent in groundwater. While ammonium perchlorate is used in solid propellant of rockets, missiles, and fireworks, other perchlorate salts have a variety of industrial uses as well.

At this time, the primary human health concern related to perchlorate is its potential to interfere with the thyroid gland's ability to utilize iodine to produce thyroid hormones properly. The EPA and the DHS are working to assess the potential effects of perchlorate on human health and the environment. Currently, there is no federal drinking water standard for perchlorate. However, EPA is conducting a toxicological assessment on this chemical to develop an action level, analytical methods and regulatory requirements for perchlorate. When the assessment is complete, EPA will issue a health advisory. EPA continues to collect information about where and how perchlorate is used from industries, water suppliers, and other agencies. This information is critical to understanding if and where exposures to perchlorate are taking place.

UPDATE ON THE OPERABLE UNITS

AREA 1 - NORTH HOLLYWOOD

• North Hollywood OU

Since 1989, the Los Angeles Department of Water and Power (LADWP), with EPA funding and oversight, has been operating a 2,000 gallons per minute (gpm) groundwater extraction and treatment facility to remove VOCs and prevent the movement of contamination within the North Hollywood OU. The water is treated for VOCs using air stripping and vapor-phase granulated activated carbon and is distributed to the public through LADWP's North Hollywood Pumping Station. EPA has settled with nine potentially responsible parties (PRPs) for most of the costs incurred in

the investigation, construction, and operation of the North Hollywood OU. The funds recovered currently support and are expected to support operating the treatment plant through 2003.

• **Burbank OU**

The Burbank OU treatment plant entered the second phase of operation in December 1998 and is currently pumping and treating groundwater at 9,000 gpm. The Burbank OU treatment plant delivers the treated water to the City of Burbank under an interim drinking water operating permit issued by the DHS.

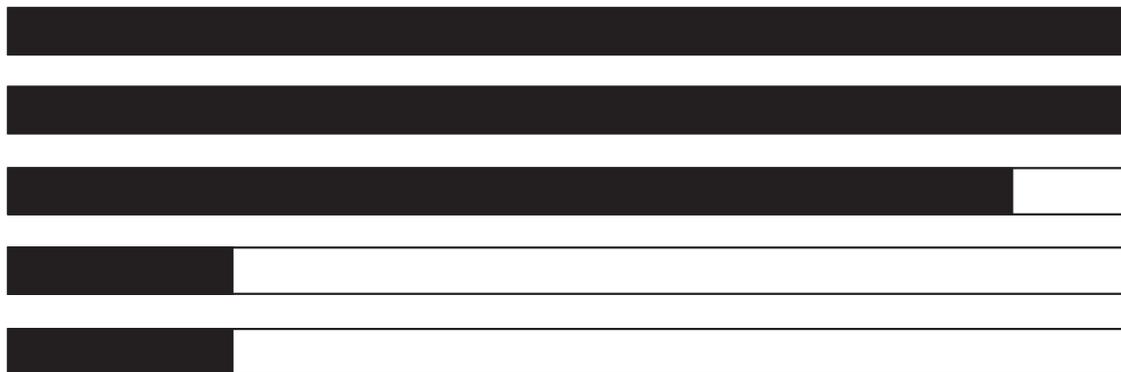
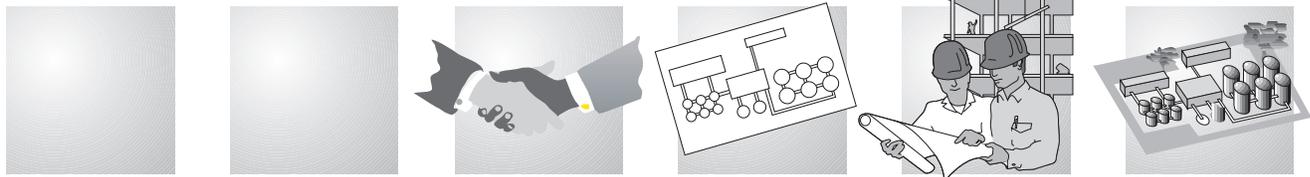
To enter the second phase, the responsible party, Lockheed Martin, repiped the plant to allow the system to increase operation from 6,000 gpm to 9,000 gpm. During this

effort, EPA and DHS requested that Lockheed Martin make additional piping changes to the system that provide additional safeguards within the system and make the system more consistent with the design of other similar treatment plants. As a result, Lockheed Martin reconfigured the piping to change the flow of the treated water from flowing up through carbon beds of the treatment system to flowing down through the carbon beds. This change did not affect the treatment of the groundwater, but made the system similar to traditional drinking water facilities. Lockheed Martin also diverted several minor treatment plant water **slipstreams** from a general collection tank that had been recirculated into the treatment plant to an independent carbon

treatment and then to the storm drain. The City's DHS permit was amended to account for these changes in the plant configuration.

Currently, EPA, the City of Burbank, and Lockheed Martin are working with DHS to obtain a final operating permit for the facility. During the next calendar year, the City of Burbank will begin to move actively into the role of being the operator of the facility. In accordance with the Consent Decrees that the City of Burbank, Lockheed Martin and other private parties have entered into with EPA, the City will become responsible for the operation and maintenance of the facility and Lockheed Martin will continue to be financially responsible for operating and maintaining the treatment plant.

How Far Along is Each Project in the Superfund Process?



AREA 2 - CRYSTAL SPRINGS

In 1989, EPA found elevated concentrations of VOCs in the groundwater in the Glendale area of the San Fernando Valley. Two contaminated groundwater plumes were discovered and are referred to as the Glendale North and Glendale South OUs. On June 18, 1993, after receiving and considering public comments, EPA signed Records of Decision (RODs) for both Glendale North and South OUs. Under the combined remedy, groundwater will be extracted at a rate of 5,000 gpm and treated for VOCs using air stripping, liquid-phase granulated activated carbon, and vapor phase granulated activated carbon. The treated water will meet all drinking water standards except for nitrates. It will be blended with Metropolitan Water District water to meet the nitrate standard and will be transported to the City of Glendale for distribution through its public water supply system under a DHS permit.

In 1994, EPA signed an Administrative Order on Consent (AOC) with twenty-five PRPs to conduct the remedial design phase of the project. The PRPs completed the remedial design in November 1996. Because EPA was unable to reach agreement for a Consent Decree

with the PRPs to perform the remedial action phase, EPA issued Unilateral Administrative Orders to the twenty-five PRPs who had signed the AOC and to additional PRPs to begin preconstruction activities. EPA recently completed negotiations with these PRPs for a Consent Decree to voluntarily complete the remedial action and perform operation and maintenance at the site. Construction of the groundwater extraction and treatment facility was completed in October 1999. The facility is awaiting issuance of a DHS permit before operation begins.

AREA 3 - VERDUGO STUDY AREA

The Verdugo Study Area includes the groundwater in and around several wellfields located in the Verdugo Basin. To date, PCE has been the only VOC detected at or above its maximum contaminant level of five ppb. EPA continues to monitor the groundwater quality of the Verdugo Basin through its basinwide monitoring. Under a grant from EPA, the LARWQCB is conducting an investigation of potential contaminant sources in the Verdugo Basin. Site inspections will begin this month at facilities that have been identified as possible sources.

AREA 4 - POLLOCK STUDY AREA

The Pollock Study area is located at the southern portion of the San Fernando Valley Basin near LADWP's Pollock Wellfield. In 1994, EPA completed a site assessment of this area and determined that establishing an OU in the Pollock area was not necessary at that time because LADWP planned to conduct a wellhead treatment project in the Pollock Wellfield which would treat groundwater in the Pollock study area.

In March 1999, LADWP reactivated two wells in the Pollock Wellfield and began operating a 3,000 gpm groundwater treatment plant. The water will be treated to drinking water standards and transferred to LADWP's public water supply. Pumping in the Pollock Wellfield is expected to capture nearly all of the contamination upgradient of the wellfield and prevent movement of any contaminated groundwater into the Los Angeles River. EPA plans to evaluate the effectiveness of the Pollock Wellfield project as part of the Basinwide **Feasibility Study (FS)** and ROD.

BASINWIDE ACTIVITIES

While conducting the OU remedies, EPA continues to conduct a basinwide investigation that ultimately will lead to a basinwide ROD. In 2000, EPA plans to update the basinwide groundwater model by incorporating new information on groundwater management practices in the valley and the most current scientific knowledge of the factors affecting groundwater flow and contamination movement in the basin. The updated groundwater model will be used in the basinwide FS to estimate the effectiveness of the interim remedies in containing and removing the

contaminated mass from the groundwater aquifer system, and to decide what further actions may be needed. Preliminary components of the feasibility study include : 1) an evaluation of the combined effectiveness of the individual interim remedies in the North Hollywood, Burbank, and Glendale North and South OUs, 2) an analysis of additional remedial alternatives, and 3) a review of potential vadose zone (soil above the groundwater table) movement, remedial options, and methods for establishing vadose zone cleanup objectives. Based on these studies EPA will issue a basinwide proposed plan for public comment.

AGENCIES INVOLVED WITH THIS SITE:

CAL-EPA Department of Toxic Substances Control.....	Hamid Saebfar	(818) 551-2876
Los Angeles Department of Water and Power	Ernest Wong	(213) 367-0847
Los Angeles Regional Water Quality Control Board (LARWQCB)	Arthur Heath	(213) 576-6725
City of Burbank.....	Peter Frankel.....	(818) 238-3500
City of Glendale	Don Frolich.....	(818) 548-2137
Upper Los Angeles River Area Watermaster	Mel Blevins	(212) 367-1020

GLOSSARY OF TERMS

Feasibility Study: establishes criteria for cleaning up the site, identifies and screens cleanup alternatives, and analyzes technology considered and its cost

General Chemistry: chloride, sulfate, hardness, total alkalinity, total dissolved solids (TDS) and total organic carbon (TOC)

Monitoring Wells: are wells used to allow sampling of groundwater to determine such things as the direction in which groundwater flows and the types and amounts of contaminants present

Slipstreams: are small volumes of water that are created during the treatment process that are either recirculated through the treatment system or are disposed of off-site. Examples of slipstreams are: water from washing equipment, and water created in the water-contaminant separators

Trichloroethylene and Perchloroethylene: are VOCs widely used in a variety of industries including metal plating, machinery degreasing, and dry cleaning

Volatile Organic Compounds: are organic (carbon-obtaining) compounds that evaporate readily at room temperature

San Fernando Valley Superfund Sites Information Repositories.....

Copies of technical documents relating to the site are available for review at the following site repository locations:

City of Burbank Public Library

110 North Glendale Blvd.
Burbank, CA 91502
(818) 238-5580

City of Glendale Public Library

222 East Harvard Street
Glendale, CA 91205
(818) 548-2021

Los Angeles Department of Water and Power (LADWP) Library

111 North Hope Street, Room 518
Los Angeles, CA 90012
(213) 367-1994

U.S. EPA Superfund Records Center

95 Hawthorne Street, Room 403 South
San Francisco, CA 94105
(415) 536-2000



If you wish to obtain more site information through the INTERNET, documents may be viewed online at EPA's website: <http://yosemite.epa.gov/r9/sfund/overview.nsf>



Mailing List Coupon.....

If you would like to be on our mailing list to receive information about the site, please complete and return this coupon to Jacqueline Lane, Community Involvement Coordinator, U.S. EPA, Region IX, 75 Hawthorne Street (SFD-3), San Francisco, CA 94105, (800) 231-3075 or (415) 744-2267.

Name:

Address:

Telephone:

Affiliation (if any):

For More Information.....

If you have any questions or would like more information about activities at the site or would like to be added to the site mailing address, please fill out the coupon on pg. 7 and return to:

Jackie Lane, Community Involvement Coordinator
U.S. EPA, Region IX
75 Hawthorne Street (SFD-3)
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(415) 744-2267

For specific site cleanup efforts, contact:

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