

# NORTH HOLLYWOOD-BURBANK GROUNDWATER CLEANUP

# BACK-GROUNDER

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SFUND RECORDS CTR  
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As part of a program to remove contaminants from the San Fernando Valley Groundwater Basin, the Los Angeles Department of Water and Power plans to construct a \$2.2 million aeration facility in the North Hollywood-Burbank area. Construction of the facility is the first step toward cleaning up the groundwater basin and protecting it from the further spread of contaminants.

The San Fernando Valley Groundwater Basin provides 15 percent of Los Angeles' water supply, enough to serve 500,000 people. Substantial amounts of water from this basin also are used by the cities of Glendale, Burbank, La Crescenta and San Fernando.

The basin also acts as a huge underground storage reservoir with enough capacity to supply a million people during a drought. The groundwater basin is replenished during years of abundant water supplies.

In 1980, when newly available sensitive monitoring equipment was applied to water analyses, traces of trichloroethylene (TCE) were found in about half of the 90 wells tested in the San Fernando Valley Basin. Perchloroethylene (PCE) and other industrial chemicals also were found in about 15 percent of the wells. These industrial solvents have been widely used for degreasing machinery, dry cleaning and metal plating. The use of TCE has been virtually eliminated since 1966 when restrictions were placed on its use.

Presently, contaminants are located primarily in the upper zone of the groundwater basin; however, evidence shows that contamination is spreading. Prompt implementation of this project will stop the spread of contaminants and reduce the need for a larger scale project in the future.

## Project Description

Project plans include the construction of a 48-foot high aeration tower and the drilling of eight shallow, low-capacity wells which will supply 2,000 gallons per

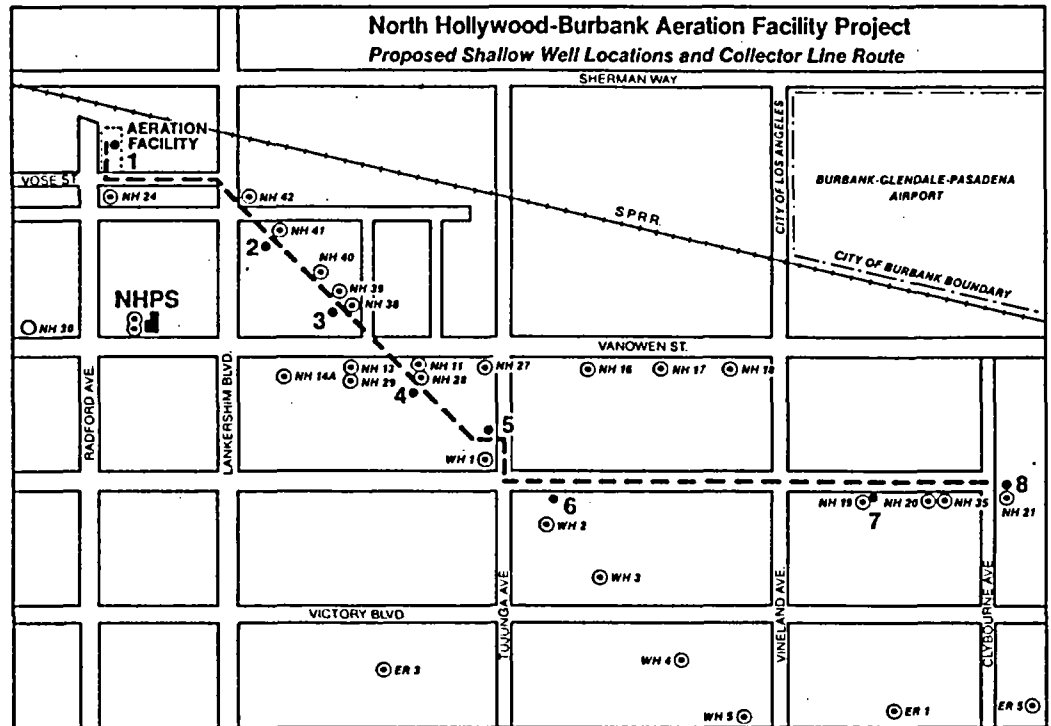
minute of groundwater to the tower. Pumping units and more than 12,000 feet of pipeline from the wells to the tower also will be installed.

The proposed wells and pipeline will be installed on DWP property or in city streets.

## Summary

- At present, contaminants are located primarily in the upper zone of the San Fernando Valley Groundwater Basin. However, evidence shows that contamination is spreading, threatening 15 percent of the Los Angeles water supply.
- The proposed \$2.2 million project in the North Hollywood area will remove trace levels of industrial solvents from the San Fernando Valley Groundwater Basin.
- The facility will be constructed in an industrial-zoned area.
- Prompt implementation of this project will stop the spread of contaminants and reduce the need for a larger scale project in the future.
- Emissions from the facility will not exceed 0.1 parts per billion. This amount is 250,000 times less than the allowable concentration in the workplace for trichloroethylene, the primary industrial solvent being removed from the groundwater supply.
- Based on current scientific evidence, the minute emissions from the aeration facility will not create a health hazard.
- A permit to construct and operate the facility will be issued by AQMD only if it determines, together with DOHS, that the facility will not present a health hazard.

The proposed aeration facility will be located in a DWP storage yard at 11845 Vose St., in an industrial zoned area of North Hollywood. In addition, eight shallow, low-capacity wells, which will pump groundwater to the tower, will be drilled along an existing electric transmission line right-of-way and on DWP property located along Kittridge Avenue.



- LEGEND**
- ⊙ EXISTING PRODUCTION WELL
  - PROPOSED SHALLOW PUMPING WELL SITES
  - ER ERWIN WELL
  - NH NORTH HOLLYWOOD WELL
  - WH WHITNALL WELL
  - - COLLECTOR LINE ROUTE

## Location

The proposed facility will be located in a DWP storage yard at 11845 Vose St., North Hollywood.

Initially, the facility was sited in a residentially-zoned area at the DWP's North Hollywood Pumping Station, 11803 Vanowen St.

However, the project site was changed to its present proposed location in an industrial area so the height of the tower structure would be architecturally compatible with surrounding facilities. Another factor which determined the relocation of the project site is the low noise level from the facility, which might be objectionable during quiet night hours to nearby residents.

## Facility Process

In the aeration process, TCE and PCE are removed from the groundwater. Wells extract water from a zone above a shallow clay layer in the groundwater basin where TCE and PCE contaminants are presently highest in concentration. The contaminated water, pumped from 300 feet beneath the ground, will flow into a collector line to the top of a tower. As the water falls by gravity through the tower and through a packing material, an upward air stream is passed through the water. The water is aerated, causing minute quantities of TCE and PCE to separate and evaporate into the air. The treated water is then transferred to the North Hollywood Pumping Station forebay, and blended with other well or aqueduct water before going into the distribution system and served to customers.

The tower is designed to emit a maximum of 18.4 pounds per day (ppd) of industrial solvents. Based on this emission level, the maximum concentration of contaminants in the air in the vicinity of the tower will not exceed 0.1 parts per billion (ppb). This is a fraction of PCE levels presently being emitted in the area by solvent-using industries, such as dry cleaning establishments. Some local PCE users emit up to 2000 pounds of the industrial solvent per day.

The tower height will allow emissions to disperse over a large area, keeping the concentration of emissions in the vicinity of the facility at extremely low levels.

## Air Emissions Evaluation

After evaluating all available scientific evidence, DWP has concluded that the small amount of TCE emitted by the aeration facility will not present a health hazard. Based on this evaluation, the DWP has applied to the South Coast Air Quality Management District (AQMD) for a permit to construct and operate the facility. The AQMD and the California Department of Health Services (DOHS) must conduct an independent investigation into the safety of the emissions.

A permit will only be issued if AQMD and DOHS find that the facility will not present a health hazard. The concern about TCE stems from animal studies which showed that a particular strain of laboratory mice developed tumors if fed extremely high levels of TCE — over a million times the level found in the environment.

The DWP conclusion that the facility does not present a health hazard is based on the fact that essen-

tially all available scientific evidence indicate that TCE does not cause cancer in any animal tested at low or moderate levels. In this case, "low or moderate" still means levels tens of thousand of times higher than the maximum level present in the vicinity of the facility.

For example, a number of scientific studies have been conducted on workers who are exposed to TCE in the workplace. It is estimated that about 3.5 million workers in the United States are regularly exposed to TCE; about 100,000 of these workers have been exposed at levels at or near the Occupational Health and Safety Administration's (OSHA) allowed level. The California OSHA-allowed level is about 250,000 higher than the maximum level which would be found in the vicinity of the aeration facility, with federal OSHA allowable levels at 1 million times higher.

While the studies on these workers have been limited, data indicate that there is no increased risk of death, no increased cancer rates and no increased rate of birth defects among the workers.

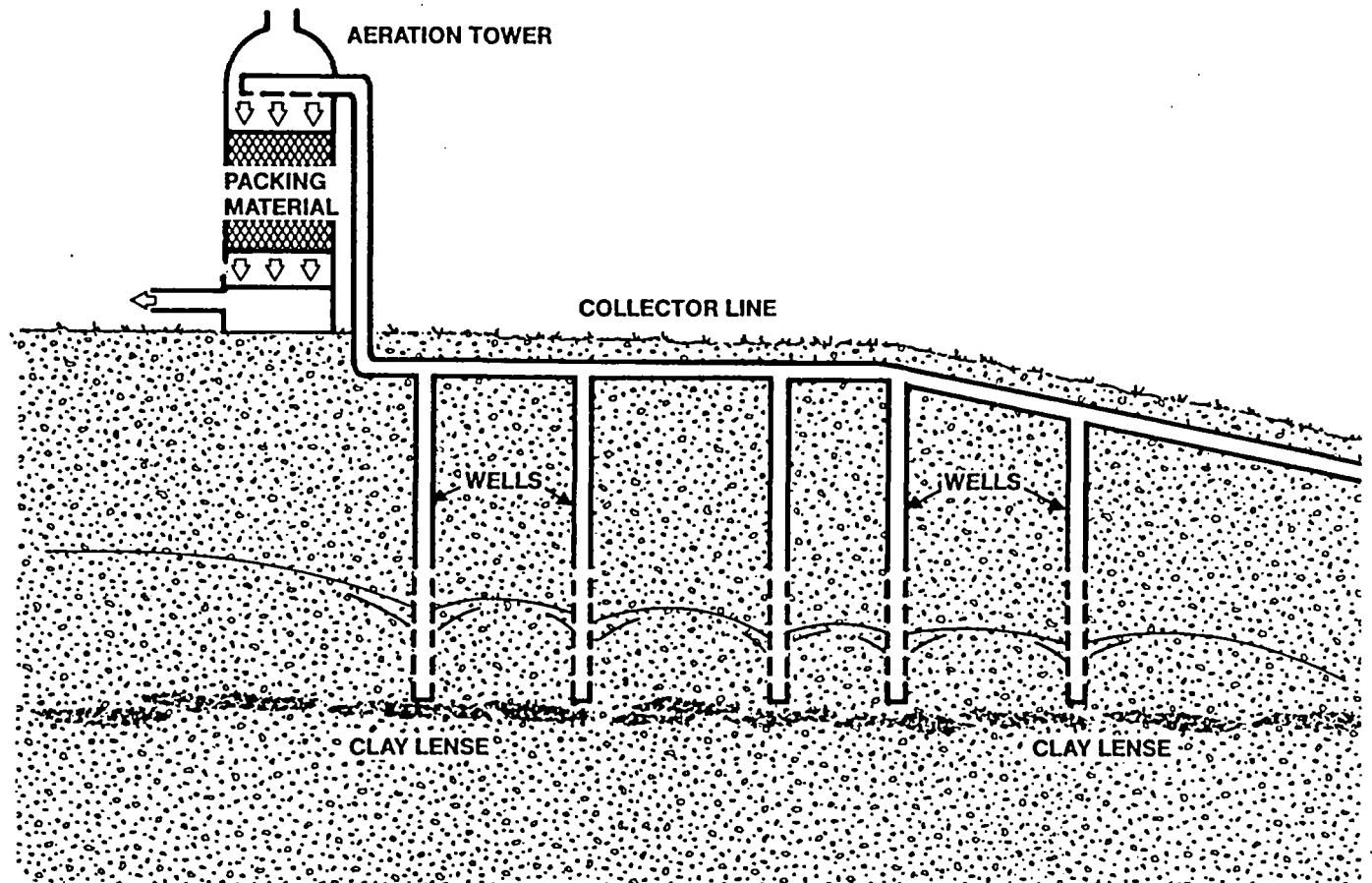
If exposure to trace levels of TCE caused a health hazard, then adverse health effects should be apparent in the highly exposed population of workers,

many of whom have been exposed to the industrial solvent for years.

A December 1985 U.S. Environmental Protection Agency document assessing TCE in the air reports that in essentially every case of the solvent use, 80 to 100 percent is lost to the atmosphere through evaporation. In the atmosphere, TCE decomposes and decreases "in concentration to 37 percent of its original amount in 11 to 15 days."

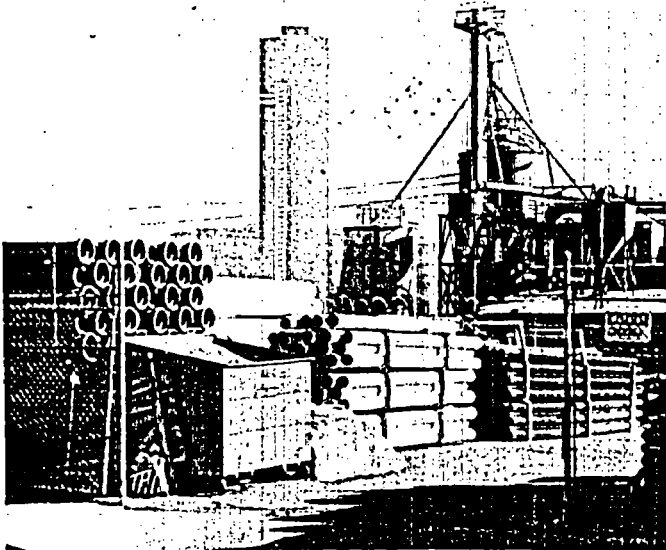
The EPA document also states that "given currently estimated emissions and the half-life of TCE in the atmosphere, public exposure to decomposition products of TCE is likely to be very low. While associated public health risks are difficult to quantify, such risks are also expected to be low. However, because other compounds which also undergo transformation in the atmosphere may contribute to atmospheric concentrations and associated public health risks, the Agency (EPA) will continue to conduct research and examine monitoring information to better define potential public health risks . . ."

In addition, three major scientific organizations have issued recent reports indicating that TCE should not be classified as a carcinogen (cancer-causing substance).



Water is pumped from above a shallow clay layer in the groundwater basin into a collector line which carries it to the top of a tower. As the water falls by gravity through the tower and packing material, an

upward air stream passes through the water. Minute quantities of TCE and PCE evaporate into the air. The treated water is then transferred to a holding reservoir.



An artist's rendering illustrates the aeration facility as viewed from Radford Avenue. The facility will appear as a 48-foot high, cylindrical tower adjacent to a perlite manufacturing plant and a plumbing supply yard.

These are highly respected scientific organizations, composed of members who are involved in cancer research and data evaluation, include the International Agency for Research on Cancer (IARC), the Center for Disease Control (CDC) and the EPA Science Advisory Board. The IARC and CDC reports are available in most large university libraries and are cited below\*.

However, despite reports of these organizations, including EPA's own Science Advisory Board, the EPA has proposed that TCE be regulated as a carcinogen in drinking water.

The EPA will decide whether it will change its classification of TCE as a carcinogen in light of the opinions of these scientific bodies and additional new evidence which supports the views of these scientists that TCE cannot be classified as to its carcinogenicity.

Again, a permit will only be issued if the independent evaluation conducted by AQMD and DOHS determines that the facility will not present a health hazard.

\*Kimbrough, Renate D., et. al. 1985.

Trichloroethylene: an update.

Journal of Toxicology and Environmental Health 15:369-383.

International Agency for Research on Cancer (IARC). 1979. Trichloroethylene. Monogr. Eval. Carcinog. Risk Chem. Hum 20:545-572.

## Permit Process

On May 1, 1984, the DWP applied for a "Permit to Construct and to Operate" from the South Coast Air Quality Management District (AQMD) based upon siting the facility at the DWP's North Hollywood Pumping Station, 11803 Vanowen St., in North Hollywood.

Initially, the North Hollywood Pumping Station site appeared to be the preferred location. An in-depth study of the treatment process, the site and the impact of the facility on the surrounding area was conducted by the AQMD. On Sept. 9, 1984, AQMD issued a permit for the pilot project after it was determined that the tower operation would not pose any health hazard.

However, the proposed project site was changed to a new location in an industrial area so the tower structure would be architecturally compatible with surrounding industrial facilities.

Since the site has been relocated, another permit must be issued by AQMD. On July 29, 1985, an application for an AQMD permit was submitted. The permit is subject to approval of facility emissions by the California Department of Health Services (DOHS) and AQMD. A public hearing regarding the permit has been scheduled in early 1986 by AQMD.

Based on studies, DWP engineers have determined the aeration process to be the most effective cleanup technology available today. Several aeration facilities are currently operating in Southern California to remove contaminants from groundwater sources.

The DWP plans to develop the aeration facility in the North Hollywood-Burbank area and proceed with contaminant cleanup and protection of the groundwater basin.