

NEWS LETTER



DEFENSE FUEL SUPPLY CENTER

Spring 1992

Information for DFSP Norwalk Neighbors

DFSP NORWALK PROJECT UPDATE

Recent investigations are trying to find out how far fuel compounds extend and move off the western and southern boundaries of the tank farm. This information will be combined with extensive data from earlier studies to develop soil and groundwater cleanup systems.

Off-Site Investigation West of Norwalk Boulevard

DFSC is conducting an off-site investigation west of Norwalk Boulevard. This work included installing three monitoring wells in the "semi-perched" or shallow water-bearing zone along Ihex Avenue and six wells along Norwalk Boulevard from Barnwall Street to north of Excelsior Drive. To help select locations for the monitoring wells, 101 soil gas probes have been installed (see photo at right).



Petroleum hydrocarbons have not been found west of Norwalk Boulevard. However, the soil gas survey and wells are being used to look at how compounds are moving to the west. Levels of volatile organic compounds (VOCs) are expected to be low.

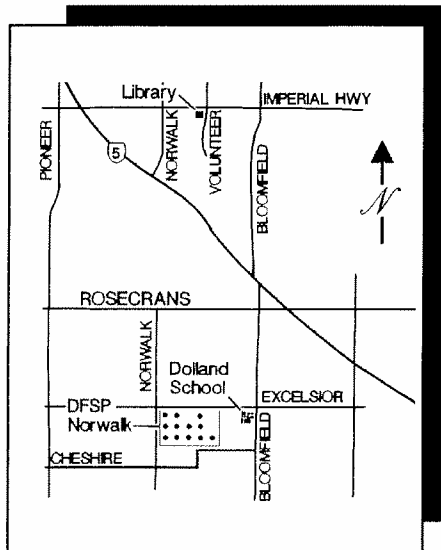
A deep (130 feet) well was also drilled at the east edge of the site, through the Bellflower Aquitard and into the Exposition Aquifer (see glossary and cross section). Data are being collected to figure out how groundwater moves through the Bellflower Aquitard. These data can then be used in groundwater models that help simulate vertical groundwater movement.

Off-Site Investigation South of the Tank Farm

An off-site investigation is also being conducted immediately south of the tank farm. Free fuel was detected floating in four wells previously drilled south of the DFSP Norwalk site in 1991. Thirteen additional groundwater monitoring wells have been installed south of the tank farm. Air and vapor surveys are also in progress.

DFSC has already installed a recovery system to skim out fuel from on-site wells at the tank farm.

An update on the environmental investigation will be presented in the next Community Meeting planned for early summer 1992.

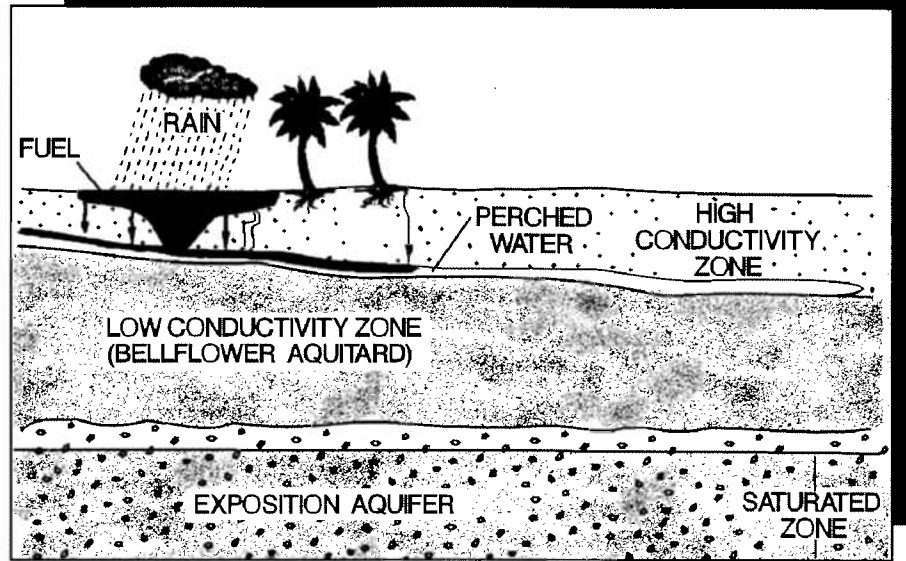


HOW CHEMICALS MOVE UNDERGROUND

Movement of petroleum hydrocarbons and other chemical compounds in the subsurface, or underground, is complex because the subsurface is made up of geologic formations that are not uniform. When chemicals are released into the ground, they generally can move in three phases: (1) as free fuel, undissolved in its normal form; (2) as solution, dissolved in naturally occurring water (groundwater); and (3) as a vapor or soil gas.

Compounds beneath the tank farm penetrate to the subsurface through the most permeable paths and then spread. Denser clayey soils can slow down compounds, while looser sandy soils allow the compounds to move through more quickly.

Because petroleum hydrocarbons are lighter than water, they

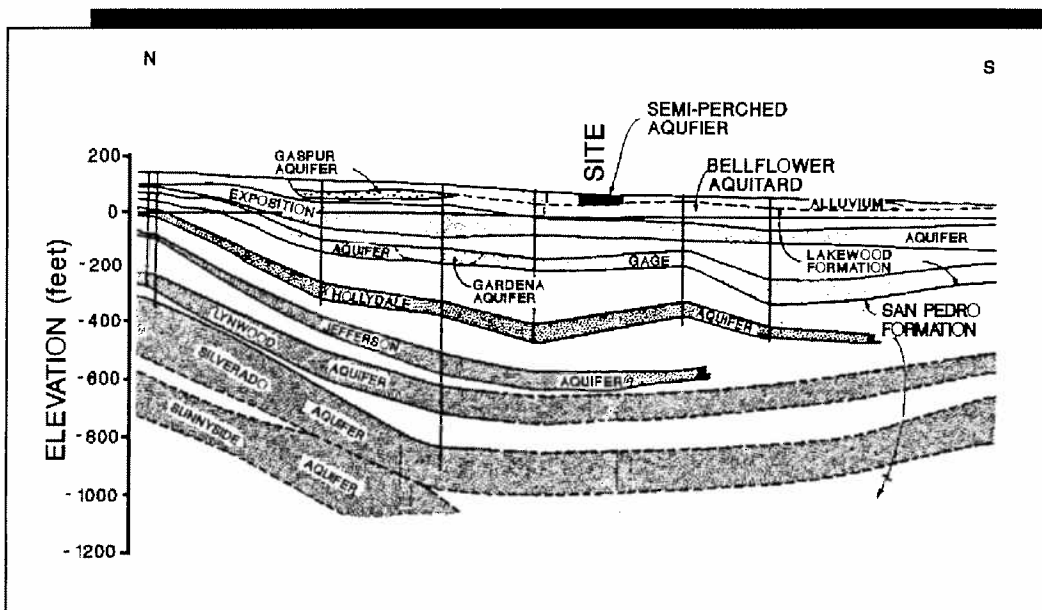


In this simple picture, fuel from a spill moves down through the shallow zone, aided by rain. Lighter than water, the free fuel pools and forms a floating "plume" on top of the first groundwater zone.

"float" on top of the groundwater found between the soil particle crevices, forming a slow-moving plume. When volatile organic compounds (VOCs) reach groundwater, they dissolve and form plumes as well. Depending on the direction and rate at which groundwater flows, these plumes can move along with the groundwater. Organic or naturally

occurring carbon in the subsurface may also adsorb VOCs, slowing their movement through groundwater.

To help "see" what is going on in the subsurface, monitoring wells are installed. Data from the wells aid in defining a plume's shape and size, and can help track plume movement; these data can then be used to develop groundwater treatment programs.



What's underneath the tank farm and surrounding areas is shown in the geologic cross section to the left. Drinking water comes from aquifers found deep below the ground surface. Water supply wells in the tank farm area are not known to have been affected.

WHO'S WHO IN THE REGULATORY ENVIRONMENT

Often figuring out who's who in the maze of regulating agencies is a tough task for interested community members. Many agencies, at the federal, state, and local levels, are involved in projects such as the Norwalk tank farm.

The following list introduces agencies involved at the site.

EPA - The Environmental Protection Agency, a federal agency responsible for developing guidelines for and enforcement of federal environmental protection laws.

Cal EPA - Newly formed in 1991, the California Environmental Protection Agency brings many formerly independent departments under one agency management.

DTSC - Formerly the Department of Health Services, the Department of Toxic Substance Control is now under Cal EPA and is responsible for projects involving hazardous materials. It is also coordinating the tank farm health risk assessment.

RWQCB - The Regional Water Quality Control Board is a state agency which controls the regional water basins. The Los Angeles RWQCB is responsible for Norwalk and regulates activities that affect groundwater.

SCAQMD - The South Coast Air Quality Management District regulates any activities that may impact the air quality of the Los Angeles basin. Some remediation actions, such as soil excavation, can result in emissions of VOCs. These actions require SCAQMD review and permits.

The RWQCB is the lead agency responsible for the investigation and remediation actions; it coordinates with other involved agencies as well as

DFR-W and consultant personnel. The City of Norwalk is also actively involved in meetings and review of work plans and investigation results.

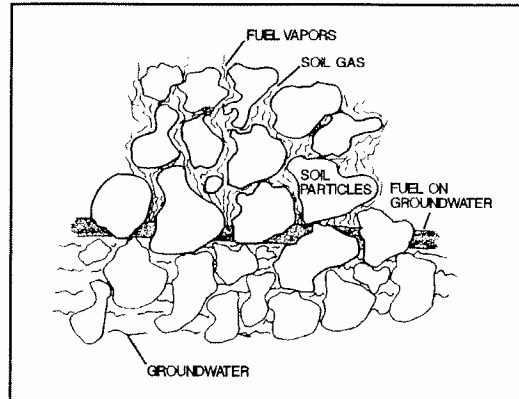
Because California environmental regulations are often more stringent than federal environmental regulations, there is no federal agency involvement in the Norwalk project. In fact, in 1990 the EPA recommended no further action at the Norwalk site. Investigations and remediation efforts currently underway are driven by California regulations and supported by DFSC and the U.S. Army Corps of Engineers.

WHO'S WHO: TANK FARM PROJECT

The Defense Fuel Supply Center (**DFSC**) supplies fuel to U.S. military bases through Defense Fuel Supply Points (**DFSP**). Locally, the **Defense Fuel Region-West (DFR-W)** runs the Norwalk tank farm with the help of **Gatron, Inc.**, the contract operator. Two environmental and engineering consultants also provide services: **Woodward-Clyde Consultants** works for the U.S. Army Corps of Engineers, Huntsville Division, and **Groundwater Technology, Inc.**, works for Gatron.

GLOSSARY

aquitard/aquifer -- An aquitard is a rock or sediment unit that is wet but greatly slows the movement of water. An aquifer is a rock or sediment that is wet and capable of transmitting significant quantities of water. Several aquifers, including the Exposition Aquifer, underlie the Tank Farm (see page 2 cross section).



monitoring well -- A well, 2 to 4 inches in diameter, with a removable cover that is drilled and constructed in a way that allows water samples to be taken and groundwater conditions to be evaluated. While wells are drilled, soil samples of the drill cuttings are often taken and analyzed for chemical compounds.

soil gas -- Air or other gas found in the spaces between underground soil particles.

soil gas survey -- The sampling and analysis of subsurface soil gas for the presence of petroleum hydrocarbons or VOCs, using probes made of common "plumber's pipe" perforated at the tip (see page 1 photo).

GET THE FACTS

Community Meeting on Off-Site Investigation by Groundwater Technology, Inc.

Early Summer 1992

John Dolland Elementary School

Multi-Purpose Room

15021 South Bloomfield Avenue, Norwalk

Information Repository

Norwalk Public Library (Reference Section)

12350 Imperial Highway, Norwalk

Point of Contact

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714/835-6886

Questions? Just Ask...

Norwalk tank farm neighbors and City residents have asked many good questions about tank farm operations over the past several months and at the January 1992 Community Meeting. Personal responses to these questions have been made both by telephone and letter. Your written or telephone questions are welcome at any time. Call Catherine Tice, Woodward-Clyde, at 714/835-6886.

