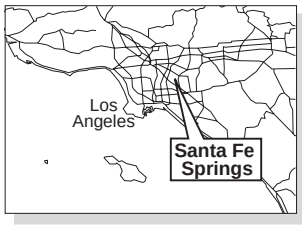
EPA Waste Disposal, Inc. (WDI) Superfund Site



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 9 • SAN FRANCISCO, CALIFORNIA • FEBRUARY 1999

GROUNDWATER ANALYSIS COMPLETED

Santa Fe Springs, California

This fact sheet provides an update on the results of the groundwater investigation conducted by the U.S. Environmental Protection Agency (EPA) and the Waste Disposal, Inc. Group (WDIG) at the Waste Disposal, Inc. (WDI) Superfund site. The investigation included a review of groundwater data and site information, including general site hydrogeology, groundwater sampling for contaminants, soil and soil gas samples, and potential site contaminant migration. Although sampled groundwater was found to contain some contaminants, as discussed below, these appear primarily to be part of the existing regional groundwater condition, and not significantly a result of contaminants in WDI wastes migrating into the groundwater. However, the potential for WDI waste to migrate into groundwater exists. The soil borings, which provide data on where wastes are buried both within and outside of the reservoir, better define the extent of waste at the WDI site. Defining the extent of buried wastes allows for accurate groundwater monitoring should the aquifer be affected by the wastes. Figure 1 shows the known limits of the buried wastes at the site. A brief summary of the soils investigation is provided below. Additional fact sheets summarizing other aspects of the recent site investigations are planned for the near future.

INVESTIGATION FINDINGS: SOILS AND SOIL GAS

Soil and soil gas information is included here because the extent of waste onsite has the potential to affect groundwater by infiltrating rainwater migrating to the aquifer. Also, because liquid wastes were disposed of at the site, the liquids also could affect groundwater, as discussed under heading of "Other Contaminant Results."

Soil Boring Results

Soil samples were taken at the WDI site in 1988 during the Remedial Investigation (RI) and in 1997 during the Remedial Design (RD) investigation studies. In 1988, 100 soil borings were drilled; soil samples collected from 21 of these borings provided evidence of the presence of buried wastes containing solvents, petroleum-related chemicals and other hazardous substances. In 1997, approximately 150 borings were drilled to about 35 feet below ground surface (bgs), reflecting the observed depth of the waste materials at the site. Based on the findings from these two investigations, we have now a better picture of the vertical and lateral extent of the waste materials deposited at the WDI site.

Figure 1 includes the known limits of the buried wastes related to containment areas or sumps used for disposal of drilling muds and other industrial wastes. The extent of buried waste was determined by extending the borings into areas with no visual evidence of drilling muds or petroleum-chemical stained soils. Based on the boring results, all of the shaded area within the dashed lines shown on Figure 1 appear to contain buried waste materials.

Cont'd. on pg. 2

At a Glance...

- **At this time, buried wastes do not appear to be contributing to groundwater contamination at the WDI site.**
- **Because the water table is only 22 feet below the buried waste, EPA will continue groundwater monitoring to detect if waste migrates into the groundwater.**
- **The aquifer beneath the WDI site is not used for drinking water.**

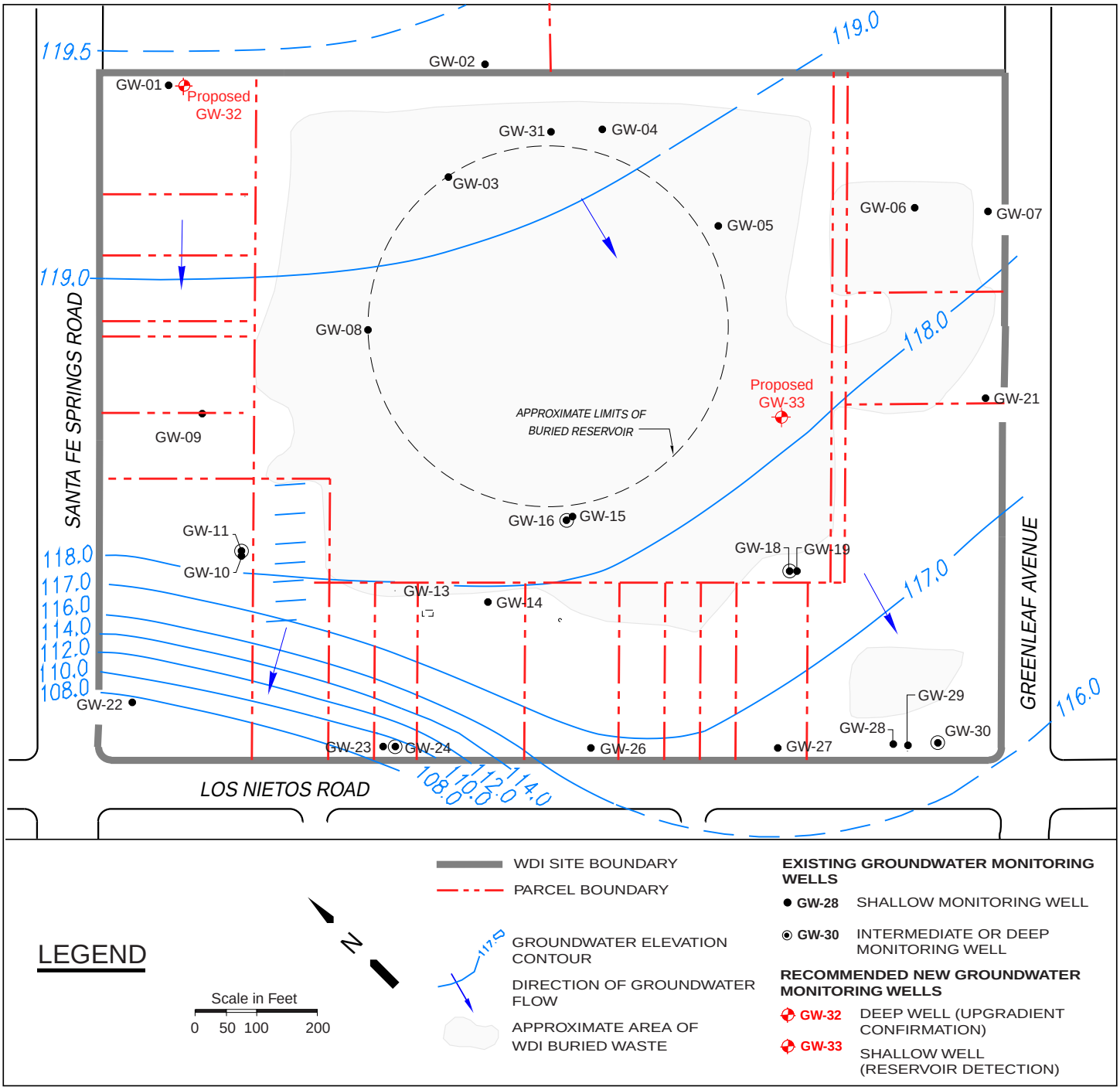


Figure 1: *Extent of buried waste*

Soil Gas Results

During the 1988 Remedial Investigation, 26 soil vapor monitoring wells were installed at the WDI site. Volatile organic compounds (VOCs), including benzene, toluene, ethylbenzene, xylene (BTEX), trichloroethene (TCE), tetrachloro-ethene (PCE), and vinyl chloride, were detected in samples collected from a number of these wells. Methane also was detected in a number of these wells. In 1997, these wells were resampled and similar chemicals were identified at concentrations comparable to those reported during the 1988 Remedial Investigation.

Also during 1997, 190 locations throughout the site were subject to a shallow subsurface gas investigation using temporary soil gas probes. VOCs and methane were reported for many locations, including some areas outside of the reservoir.

Further discussion of the investigation findings for soils and soil gas will be the topic of a future fact sheet.

REGIONAL GROUNDWATER INFORMATION

Hydrology Background

Water level monitoring indicates groundwater is present at depths ranging from 30 feet to 48 feet below ground surface (approximately 22 feet below the bottom of the buried concrete reservoir). The upper water-bearing zone (estimated to be 100 feet or greater in thickness) consists primarily of interbedded and interconnected sandy alluvial deposits. The overall direction of groundwater flow is towards the south-southeast with an estimated velocity of 6 to 60 feet per year.

Water Supply Wells

According to state and local agency records, there are only two municipal drinking water supply wells located within two miles of the WDI site. These wells are owned by the city of Santa Fe Springs. Only one of these wells is in active use at this time. It is upgradient approximately one mile to the northeast of the site at Dice and Burke Streets. This well is tested regularly to make sure its water meets all state and federal drinking water standards. Drinking water supplies for Santa Fe Springs and the Whittier area are regulated under the Clean Water Act and are tested regularly to assure they meet the federal Safe Drinking Water Act and related state laws.

INVESTIGATION FINDINGS: GROUNDWATER

The groundwater at the WDI site has been sampled periodically from 1989 to the present. During this most recent investigation, wells were sampled for the presence of VOCs, semi-volatile organic compounds (SVOCs), polychlorinated bi-phenyls (PCBs), pesticides, and metals.

Volatile Organic Compounds (VOCs) Results

Groundwater sampling detected the VOCs tetrachloroethene (PCE) and tricholorethene (TCE) in some samples above the maximum contaminant levels (MCL) of 5 parts per billion (ppb) for drinking water. MCLs represent a concentration of a chemical in a drinking water supply that health studies indicate is safe for the general public to consume. PCE and TCE are present in samples collected from wells along the western portion of the site, particularly upgradient wells GW-01 and GW-22, and the deep wells GW-11 and GW-24 (see Figure 3). The presence of PCE and TCE in upgradient wells, coupled with the groundwater flow conditions and the highest concentrations being observed in the deeper wells, implies that the PCE and TCE are coming from off-site sources. Further investigation identified over 20 sites within a 1.25 mile radius of WDI that have documented chemical/solvent releases (including PCE and TCE) and groundwater contamination. Although we cannot rule out that the WDI site is also contributing to the presence of PCE and TCE in the groundwater, it is more likely that the source(s) of these VOCs are off-site. Future groundwater monitoring will continue to pay particular attention to these two contaminants.

Toluene, another VOC, is detected consistently in sampling across the site, however, only at levels below its MCL of 200 ppb. No other VOC has been detected consistently in groundwater across the site.

SITE BACKGROUND

The WDI Superfund site is located in the City of Santa Fe Springs, Los Angeles County, California, on approximately 40 acres of land divided into multiple parcels. The site is surrounded by commercial and industrial areas to the north, west and south, residential areas to the east, and a school athletic field along the northeastern corner. At its center, the WDI site contains a buried 42-million gallon capacity concrete reservoir originally constructed for crude petroleum storage. The reservoir was decommissioned in the late 1920s, but was used until the mid-1960s for disposal of a variety of hazardous substances including both liquid and solid wastes. Wastes disposed of at the site include petroleum-related chemicals, solvents, sludges, construction debris, drilling muds, and other waste materials. Historical aerial photographs show that liquids were discharged to the reservoir and into bermed areas surrounding the reservoir. The reservoir and portions of the site area were covered with soil during the 1960s. Soil borings indicate that the reservoir is covered by 5 to 10 feet of fill soil.

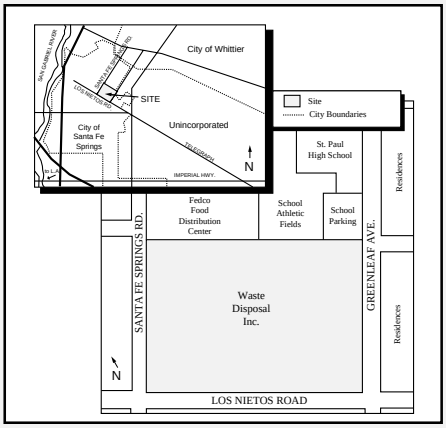


Figure 2: *Location of WDI, Inc. Superfund site*

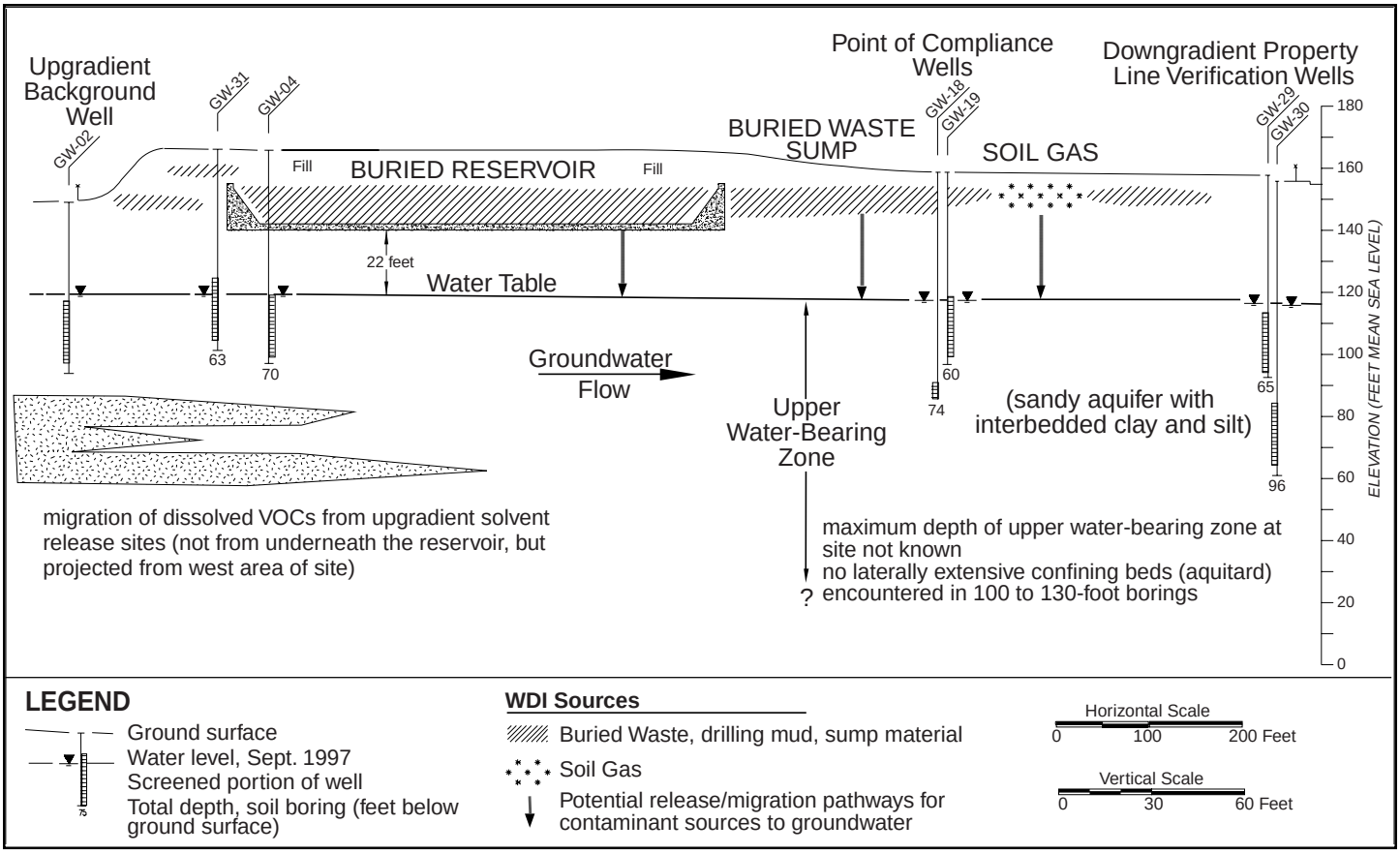


Figure 3: *Location of the buried reservoir and other waste material, the depth to groundwater under the site, and the direction of groundwater flow. The WDI site is located in the Whittier area of the Los Angeles Central Groundwater Basin.*

Metal Results

Metals are naturally occurring in soil and geological material and therefore are expected to be present at "background" concentrations. Arsenic, chromium, copper, iron, and lead were the most common metals detected at concentrations above background during the 1988 soil sampling. In 1997, chromium, copper and lead were detected in waste at concentrations significantly above background in soil samples. These metals are not very soluble and are not expected to migrate any significant distance through soils toward groundwater.

Groundwater analyses have shown elevated concentrations of arsenic and chromium for the upgradient monitoring well GW-01, but not consistently for wells across the site. Groundwater metals analyses have shown elevated concentrations of aluminum, iron, manganese, and selenium at concentrations above MCLs for drinking water standards. However, the consistency and distribution of these metals suggest that the elevated concentrations represent a regional groundwater quality condition and appear to be unrelated to migration from WDI buried wastes.

Other Contaminant Results

The groundwater analyses did not produce any consistent patterns for the presence of heavy petroleum related chemicals, pesticides, PCB compounds or light or dense non-aqueous phase liquids (LNAPL/DNAPL) at the site. LNAPLs and DNAPLs refer to the presence of a liquid undiluted by water (e.g., petroleum, solvent, or other industrial liquid, within an aquifer) that can continue to release relatively high concentrations of contaminants into the aquifer. LNAPLs and DNAPLs are sometimes present when only liquid wastes are

released to groundwater. If the liquid is lighter than water, it floats as a separate phase on top of the groundwater (LNAPL); if it is heavier than water, it sinks into the aquifer (DNAPL) until the liquid encounters an impermeable barrier, e.g., bedrock.

The groundwater investigations completed to date indicate that no significant release or impact related to LNAPL or DNAPL currently occurs at the site. However, it is known that oil field and refinery waste liquids were deposited at the site. Free liquids can be observed in the reservoir area wells and in soil borings drilled outside of the reservoir. Therefore, there is a potential in the future for the occurrence of petroleum-based chemicals creating a LNAPL or DNAPL situation in the underlying aquifer because free-phase liquids remain at the site. Groundwater monitoring will need to continue to ensure that this is not occurring.

LONG-TERM MONITORING PROGRAM WILL CONTINUE

New Wells to be Installed

Last year, after reviewing the existing groundwater monitoring well network at the WDI site, the EPA requested that the WDIG install two additional groundwater monitoring wells on the site. The addition of these two wells to the existing network of 27 groundwater monitoring wells will provide a comprehensive network for determining if any contaminants from the site are impacting the groundwater. One well will be upgradient of the site to monitor for groundwater contaminants flowing to the site from other sources. The second well will be downgradient from the reservoir at a location considered to present a gap in the well network. The proposed well locations are shown on Figure 1.

The quarterly groundwater monitoring program, which began in October 1997, will continue. Because the water table is only 22 feet below the buried waste, the monitoring program will be evaluated annually and supplemented, where necessary, to ensure that any potential groundwater contamination, if it should occur, is detected as soon as possible.

WHAT'S NEXT

During 1999, a Supplemental Feasibility Study will be completed by EPA to evaluate proposed design changes to the cleanup alternatives, based on the results of the 1997-1998 investigative activities at the site. EPA plans to seek input from numerous interested parties, including representatives from the surrounding community (i.e., Santa Fe Springs and unincorporated Whittier), regarding proposals for the final design and future land uses for the site. ■

Mailing List Coupon...

If you did not receive this fact sheet in the mail and would like to be included on the mailing list for the Waste Disposal, Inc. (WDI) Superfund Site, please fill out this coupon and return it to the address below.

NAME: _____

ADDRESS: _____

PHONE: _____ FAX: _____ EMAIL: _____

ORGANIZATIONAL AFFILIATION (if applicable): _____

Please return to:

Carmen White
Community Involvement Coordinator
75 Hawthorne Street (SFD-3)
San Francisco, CA 94105-3901

You may also provide the above information via email to: White.Carmen@epamail.epa.gov

For more detailed information...

For more detailed information regarding the site groundwater investigation and analysis, please see the EPA's *Groundwater Data Evaluation Report*, dated January 1999. Copies are available for public review at the WDI Repositories at St. Paul's High School and at the City of Santa Fe Springs Library. If you have any questions or concerns, please contact:

Carmen White (SFD-3)
Community Involvement Coordinator
U.S. EPA
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-2183

Andria Benner (SFD-7-1)
EPA Project Manager
U.S. EPA
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-2361

or leave a message on EPA's TOLL-FREE line:

(800) 231-3075

and we will return the call.

Printed on Recycled/Recyclable Paper

U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (SFD-3)
San Francisco, CA 94105-3901
Attn: Carmen White

Official Business
Penalty for Private Use, $300
Address Correction Requested

PRESORTED
FIRST-CLASS MAIL
POSTAGE & FEES PAID
U.S. EPA
Permit No. G-35