



Camp Stanley Storage Activity Soil and Groundwater Contamination **FACT SHEET**

No. 2 • August 2001

The purpose of this fact sheet is to inform area residents about specific environmental activities at Camp Stanley Storage Activity (CSSA), including soil and groundwater contamination, and about the Army's investigation and cleanup of contaminated sites.

Contamination History

The U.S. Army has used Camp Stanley Storage Activity (CSSA) since the early 1900s. The many years of military activity have impacted the CSSA environment. Some of the impacts have been minimal while others are of more concern and involve soil and groundwater contamination.

Formal environmental investigations began at CSSA in 1991 after the Texas Department of Health found elevated levels of tetrachloroethene (PCE), trichloroethene (TCE), and other volatile organic compounds (VOCs) in a sample from a CSSA drinking water well (Well 16) in the middle of the installation. Follow-up sampling confirmed VOC contamination was also present in a former agricultural well (Well D) located approximately 300 feet west of Well 16.

Over the years, contamination levels in these wells have been as low as 24 parts per billion (ppb) and as high as 509 ppb for TCE, and as

low as 39 ppb and as high as 200 ppb for PCE. These levels exceed the U.S. Environmental Protection Agency (EPA) and Texas Natural Resource Conservation Commission (TNRCC) drinking water maximum concentration limit (MCL) of 5 ppb. Based on these sampling results, CSSA immediately removed Well 16 from its drinking water distribution system, and began programs to periodically sample all wells on the installation and, with the property owners' approval, selected wells off the installation. In December 1999, CSSA first detected low levels of VOCs in one well off the installation. The VOCs levels detected at that time and since then have remained below 5 ppb, and CSSA has kept the property owner informed of the sampling results.

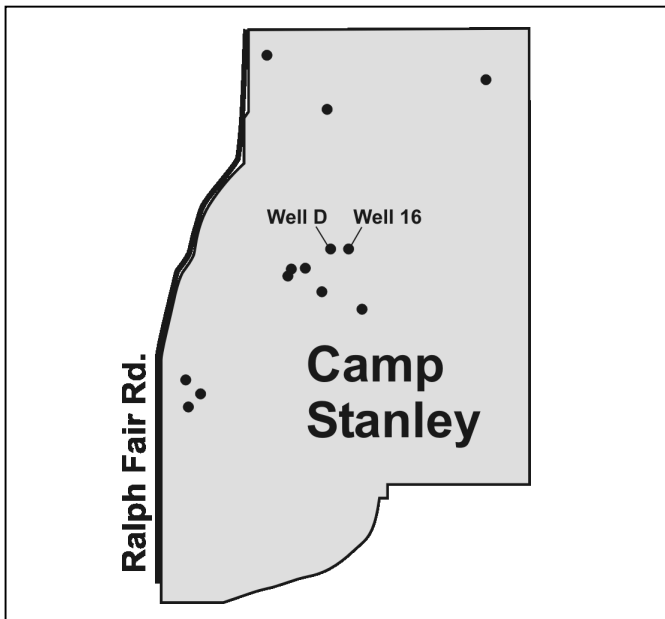
In 1992, CSSA began to identify Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) to determine which sites may be contributing to the groundwater contamination. Two SWMUs, B-3 and O-1 in the middle of the installation, have been identified as potential source areas for the VOCs. A third potential VOC source area, AOC-65, was identified near the southwest corner of the installation in June 2000.

Contamination Sources

VOCs are components of solvents that were commonly used to clean grease and dirt from metal surfaces. At CSSA, solvents were used to degrease ordnance materiel. In 1995, CSSA discontinued the use of VOC solvents and replaced them with citrus-based cleaners.

Until the late 1970s, there were no formal environmental regulations regarding the use or disposal of spent solvent. CSSA, like most other industrial facilities at the time, had no formal solvent disposal procedures. Based on investigations that have been completed to date, CSSA knows that spent solvents were disposed of in SWMUs B-3 and O-1. SWMU B-3 was an on-site landfill where solvents were placed; it was closed in 1992. SWMU O-1 was a vinyl-lined oxidation pond that was used between 1975 and 1985 for the evaporation of spent liquids from ordnance maintenance activities. Another potential VOC source area has been identified near the southwest corner of the facility. This area, designated AOC-65, is located at Building 90 and is the location where solvents were used.

The primary metal contaminant found at CSSA is lead. Lead contamination is found in the soil at firing ranges and ordnance disposal sites. Currently, CSSA has only one active firing range, and disposal of off-specification ordnance on the installation was discontinued in 1987.



The approximate location of water wells on CSSA.

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Questions and Answers

What is a SWMU?

A Solid Waste Management Unit (SWMU) is a regulatory designation for a known area of waste disposal or contamination.

What's an AOC?

An Area of Concern (AOC) is an area of suspected waste activities. If contaminants are found at an AOC, the AOC is re-designated as a SWMU.

What are VOCs?

Volatile Organic Compounds (VOCs) include chemical compounds that are derived from organic- or carbon-based material. The VOCs that are of concern at CSSA are known as chlorinated solvents. Chlorinated solvents are manufactured at chemical refineries by adding chlorine to petroleum-based stock. Chlorinated solvents, unlike natural petroleum products, are heavier than water and in most cases will sink to the lowest level possible.

What is a ppb?

A ppb or part(s) per billion is the most common groundwater contamination measurement and reflects the sample contaminant concentration level.

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Remediation Plans

The SWMUs B-3 and O-1 source areas are currently undergoing varying stages of cleanup/remediation. A soil vapor extraction (SVE) system is being operated at B-3, and the Army excavated and properly disposed of approximately 1,515 cubic yards of contaminated soil from the O-1 site during the fall of 2000.

With regard to metals contamination, CSSA has recently completed pilot studies of four different treatment technologies (electrokinetics, soil washing, stabilization, and phytoremediation). *Electrokinetics* involve the use of electrodes and citric acid to mobilize and remove metals contaminants. *Stabilization* involves binding up the soil contaminants using a mixture of cement and water. *Soil washing* involves rinsing contaminated soil with various surfactants and detergents to remove the chemicals of concern (COCs). *Phytoremediation* involves the use of plants to uptake and remove contaminants. CSSA may select one of these methods or a combination of methods to treat soils on the installation.

Monitoring Program

All of the CSSA groundwater wells are sampled on a quarterly basis. Selected wells off the installation are monitored periodically. CSSA will be initiating more monitoring to determine if VOCs have migrated off the installation. A future fact sheet will explain the strategy and goals of the groundwater monitoring program.

Public Comment

CSSA will distribute additional fact sheets to inform the public about different aspects of its environmental program. The public is welcome to comment on this fact sheet and environmental activities at CSSA by writing to:

Commander, Camp Stanley Storage Activity
25800 Ralph Fair Road
Boerne, Texas 78015-4800

You may also comment by calling:

- CSSA Commander, Lt. Col. Jason D. Shirley, at (210) 295-7416;
- EPA Regional Program Manager, Mr. Greg Lyssy at (214) 665-8317; or
- U.S. Army Corps of Engineers, Fort Worth District Public Affairs Office, Ms. Anita Horky at (817) 978-3395.