

Kelly



San Antonio
Air Logistics Center
Kelly AFB, Texas

Facts

Environmental Management Directorate
307 Tinker Dr., Bldg. 306 Kelly AFB, TX 78241 (210)925-3100

Site S-1

December 23,
1997

Site S-1 is located on the base's north side, east of 36th Street and just south of Growden Drive.

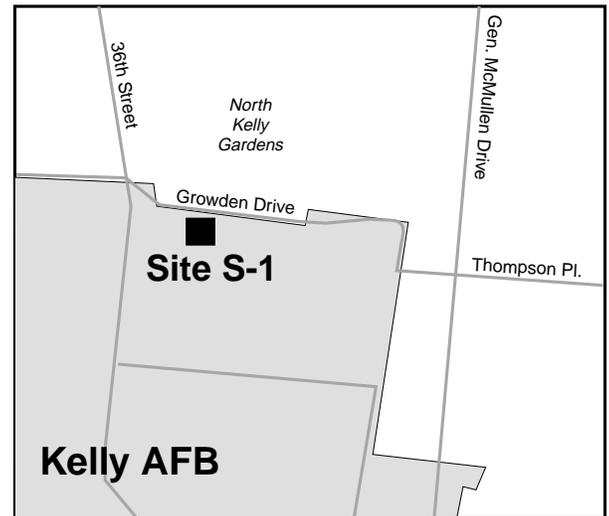
S-1 is the site of a former chemical storage area. During its operation, spills occurred that contaminated the soil and the shallow groundwater, some of which has since moved off base.

The Air Force has installed a series of six groundwater extraction wells along the north side of the site. These wells extract and treat the contaminated shallow groundwater.

Site History

The storage area operated from the early 1960s until 1973. What is now a large open area, used to be a temporary storage area for waste oils and solvents. These chemicals were brought to the area in drums, and then transferred to larger tanks. Later the chemicals were transported off base for recycling or disposal.

During the process, oil and solvents spilled on



the ground. These accidents mostly occurred while chemicals were being transferred from drums to larger above-ground tanks. The spilled chemicals flowed into a small depression near the tanks on the east side of the site. Today, that depression is the main source of soil and groundwater contamination.

In short

Site S-1, located on the base's north side, is the site of a former waste oil and solvent storage area. Kelly AFB has installed controls to pump and treat the contaminated shallow groundwater. The soil and shallow groundwater are contaminated primarily with chlorobenzene.

Cleanup history

Preliminary investigations began with an analysis of old aerial photographs. A records search and field investigation, including small-scale soil and groundwater sampling, confirmed contamination at the site. Later, the Air Force began a more thorough investigation of the site. This included installing seven monitoring wells.

In 1989, a Remedial Investi-

Site S-1



gation began at Site S-1. Its purpose was to investigate in detail the extent of contamination in the area, including what was in the soil and groundwater, how much was there and if it was moving.

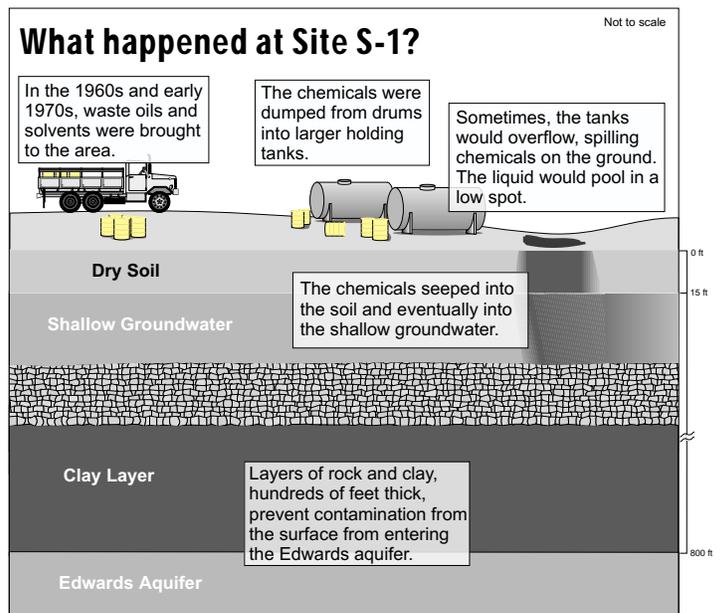
The investigations discovered both soil and shallow groundwater contamination at Site S-1. The primary contaminant of concern found was chlorobenzene, a chemical used to remove grease from aircraft parts. Smaller amounts of other chemicals were also found at the site, including trichloroethylene (TCE), perchloroethylene (PCE) and benzene. Other chemicals found, but below federal and state levels of concern, include chromium, arsenic, nickel and barium.

Interim Actions

When investigators determined the location of the primary source of the contamination, steps were taken to control contamination movement.

The first action was a pilot study conducted in 1993 and 1994 to test a new technology known as Radio Frequency Heating. This technique uses high frequency radio waves to heat contaminated soil.

Researchers believed that heating the soil would release contaminants, like the



chemicals found at S-1. As they were released, the contaminants would be captured and treated. The technology was not effective at removing the contaminants from the soil and is no longer being used.

Another type of interim cleanup system was installed in 1995. A series of six groundwater extraction wells were installed along the northern boundary of the site to prevent contaminated shallow groundwater from leaving the site (see above graphic). Each well is about 40 feet deep and designed to pump more than 17,000 gallons of

water per day. The water is treated using an air stripper. The treated water is piped to the on-base Environmental Process Control Facility for final treatment, and then discharged into Leon Creek. This cleanup action is successfully operating today. System improvements are currently being developed that will increase efficiency and speed up the on-base and off-base cleanups.



Site S-1 doesn't look like much today. At the back of the site, a large tank holds water treated by the on-site air stripper (hidden behind the tank). The water is removed by a series of six extraction wells (lower right). The control box (top left) monitors and controls the air stripper and monitoring wells.

What's the risk?

Determining risk is a very complicated and often difficult to explain. When we talk about risk,

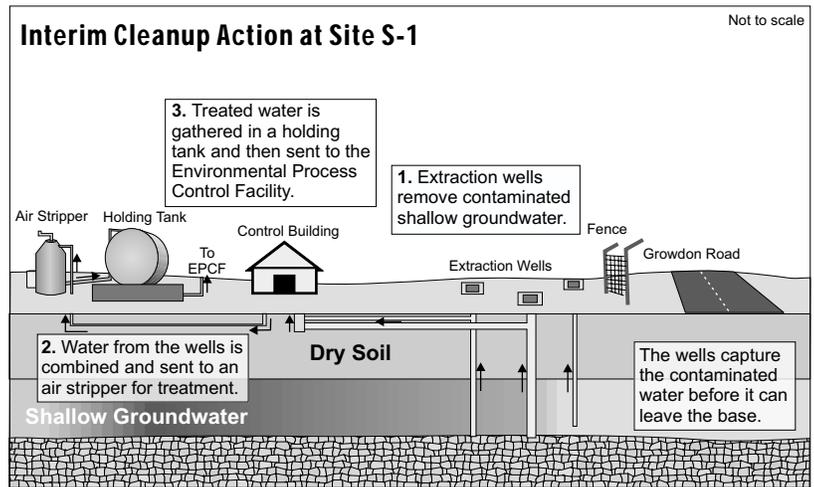
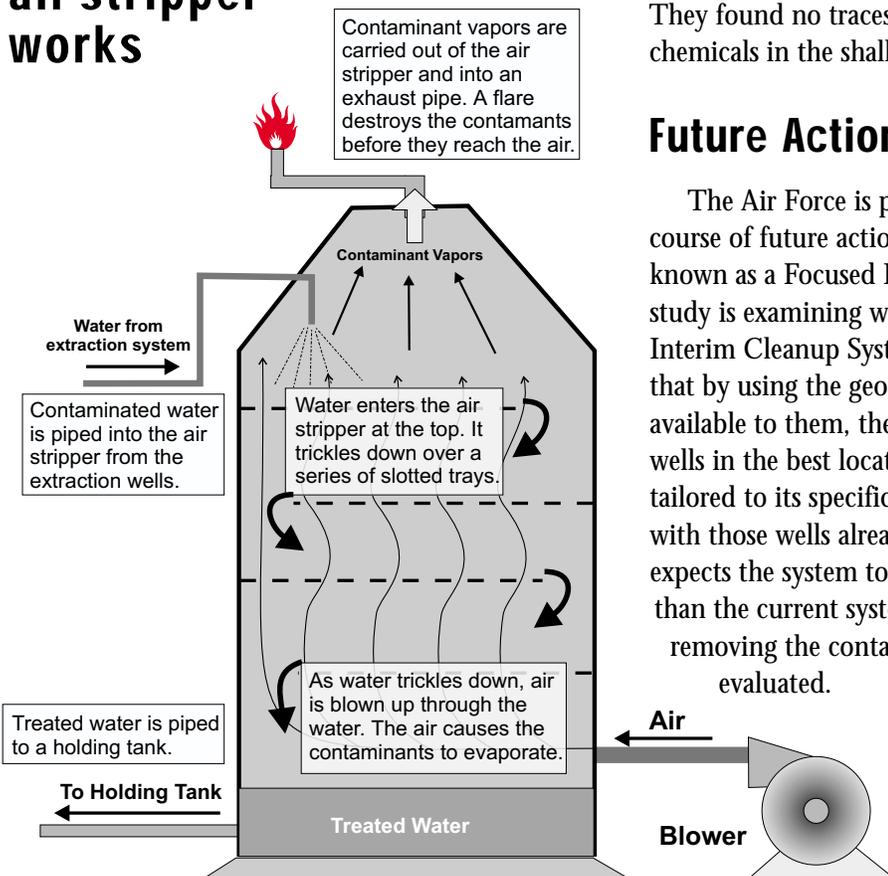
we have to ask what is the worst thing that can happen. If people were using the shallow groundwater for everyday use, there is a chance you might develop health problems.

As long as you're not using the contaminated shallow groundwater for your household water (we know of no one who is), you're not being exposed to the contamination.

Addressing community concerns

The Air Force has community concerns in the S-1 area. For example, an air-quality study performed by the Air Force and a second study performed recently by Southwest Research Institute, show no harmful levels of chemical vapors in the air. Southwest Research Institute did another study in the Quintana Road neighborhood to see if chemical vapors from contaminated shallow groundwater were reaching the surface. No chemical vapors were detected near or above the surface. Armstrong Laboratories at Brooks AFB conducted a study to see if vegetables irrigated with contaminated water

How an air stripper works



were safe to eat. No chemicals were found in the vegetables and they are safe to eat.

Another study was conducted to see if heavy metals like lead were found in harmful levels in the soils north of Kelly AFB. Soil tests showed lead levels to be 10 times lower than what state and federal environmental agencies consider a health hazard.

Most recently, the San Antonio Metropolitan Health District and the Bexar Metropolitan Water District surveyed tap water in more than 60 homes, schools and day care centers around Kelly AFB. They found no traces of contamination from chemicals in the shallow groundwater.

Future Actions

The Air Force is presently evaluating the best course of future action for this site, in what is known as a Focused Feasibility Study (FFS). This study is examining ways to optimize the present Interim Cleanup System. The Air Force believes that by using the geologic information now available to them, they can install new recovery wells in the best locations. Each new well will be tailored to its specific location. Working together with those wells already installed, the Air Force expects the system to work far more efficiently than the current system. The pros and cons of removing the contaminated soil are also being evaluated.

The FFS will be completed in May 1998. If necessary, work on removing the contaminated soil will begin at that time.

Public Involvement

Kelly is committed to keeping the public informed and involved with cleanup activities at the base. Printed materials such as Fact Sheet, Environmental Updates and other information are regularly mailed to local residents. In addition, Kelly hosts InfoFairs—an informal gathering where people can come and discuss issues face-to-face with Kelly environmental experts.

The public is also invited to attend Restoration Advisory Board meetings. The RAB is made up of local residents, government representatives and other interested parties. It's purpose is to advise the Air Force of the community's concerns regarding the cleanup. Community representatives are your voice on the RAB.

Kelly also provides tours of environmental sites to those interested. They will also provide speakers to schools and other organizations. If you have any questions regarding the cleanup program, or if you are interested in participating in any of these programs, please contact Ron Scharven at 925-3100, ext. 226.



Regulatory Agencies

Texas Natural Resource Conservation Commission

Gary Beyer
(512) 239-2361

U.S. Environmental Protection Agency, Region 6

Camille Hueni
(214) 665-2231

Si le gustaría una traducción del texto en Español, por favor llame a Ron Scharven, al teléfono 925-3100, ext. 226.

SA-ALC/EM
307 Tinker Drive, Bldg. 306
Kelly AFB, TX 78241