NPL Site Narrative for Pantex Plant (USDOE)

PANTEX PLANT (USDOE)
Pantex Village, Texas

The Pantex Plant is in Pantex Village, Carson County, Texas, approximately 17 miles northeast of Amarillo. The area is primarily agricultural. The plant is owned by the U.S. Department of Energy (USDOE) and operated under contract by Mason and Hangar-Siles Mason Co. The plant itself covers 9,100 acres. In addition, there is a buffer zone consisting of a 1,077-acre portion of Pantex Lake owned by USDOE and 3,170 acres of land leased by USDOE from Texas Technological University.

The plant began in 1942 as an Army Ordnance Corps facility. Nuclear operations began in 1950. Current operations -- which include fabrication of nuclear weapon ammunition and assembly, testing, and disassembly of nuclear weapons -- involve 141 solid waste management units. Past and present waste practices include burning of chemical wastes in unlined pits, burial of wastes in unlined landfills, and discharging of plant waste waters into on-site surface waters. More than 150 potential contamination sources have resulted from these practices, of which 15 are being evaluated initially.

In 1988, a USDOE contractor detected acetone, toluene, tetrahydrofuran, trichloroethylene (TCE), bromoform, 1,2-dichloroethane, arsenic, barium, chromium, lead, mercury, and silver in waste waters discharged to unlined ditches and surface impoundments on the site. USDOE also detected acetone, TCE, tetrahydrofuran, toluene, 1,2-dichloroethane, 2-butanone, tetrachloroethylene, and 1,1,1-trichloroethane in soil underlying a chemical burn pit used for evaporation and percolation of solvents contaminated with high explosives, and uranium in soil underlying firing grounds FS-4, FS-5, and FS-10.

Toluene is present at 329 feet below the surface in soils underlying the pit. The Ogallala Aquifer occurs at a depth of 390 to 420 feet beneath the site. A zone of low permeability occurs beneath the site at a depth of 350 feet; the thickness varies from 25 to 100 feet. Contamination is documented in this zone. The aquifer serves as the primary source of domestic and municipal water supply. Amarillo has a blended system that provides water to 160,000 customers, approximately 36% of them from a well field within 4 miles of Pantex; 20 domestic wells have been identified within 1 mile. Pumping by the city has created a cone of depression, causing ground water underlying Pantex to flow toward the municipal well field.

Surface water run-off from the facility is directed into on-site playas. While some are used as surface impoundments, others not receiving plant waste water are considered fresh water wetlands. Texas Tech Agricultural Research Station uses surface water from Playa 4 for both irrigation of crops and watering of livestock.

Under the Comprehensive Environmental Assessment and Response Program, USDOE has begun characterizing and cleaning up the most severe environmental problems and has developed an Environmental Restoration and Waste Management 5-Year Plan.

For more information about the hazardous substances identified in this narrative summary, including general information regarding the effects of exposure to these substances on human health, please see

the Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs. ATSDR ToxFAQs can be found on the Internet at ATSDR - ToxFAQs (http://www.atsdr.cdc.gov/toxfaqs/index.asp) or by telephone at 1-888-42-ATSDR or 1-888-422-8737.