

Airport Property Project Area

[Part of the Tucson International Airport Area (TIAA) [EPA](#) CERCLA Site]

Boundaries:

The [Airport Property Project Area](#) (Airport Property) is located in the central portion of the Tucson International Airport Area (TIAA) [Comprehensive Environmental Response, Compensation and Liability Act](#) (CERCLA) Site. The site is on the [National Priorities List](#) (NPL) which is periodically updated by the [U.S. Environmental Protection Agency](#) (EPA). The Airport Property includes several source areas which contribute to contamination in the regional [aquifer](#) [[Tucson Airport Remediation Project](#) (TARP) plume] and to a shallow groundwater zone (SGZ). It is bounded approximately by Los Reales Road to the south and Elvira Road to the north in Tucson, Arizona. The Tucson International Airport lies just east of this project area.

Site Status Update:

As required by an EPA [consent decree](#) (CD) for the Airport Property, a groundwater and [soil vapor extraction](#) (SVE) treatment plant was installed in January, 2008. It has removed approximately 1,396 pounds of [trichloroethene](#) (TCE) from the groundwater and approximately 3,583 pounds of [volatile organic compounds](#) (VOCs) from the soil since startup. The system produced approximately 51.4 million gallons of treated groundwater from January 2008 through February 2011. This treatment system is particularly important for TIAA because it addresses the last major known source area for the main plume.



The Groundwater and SVE Treatment Plant at the Airport Property TIAA CERCLA Site

The Settling Defendants, which include [General Dynamics Corporation](#), [McDonnell Douglas Corporation](#), the [City of Tucson](#) (COT), and the [Tucson Airport Authority](#) (TAA), continued with the [polychlorinated biphenyl](#) (PCB) remedy clean-up after encountering additional areas inside the Three Hangars that need further remediation.

The final design for the TAA landfill specifies a [Resource Conservation and Recovery Act](#) (RCRA) Subtitle D landfill cap. The Settling Defendants have begun construction of this cap.

Community Involvement Activities:

To provide community members with an opportunity to learn about the cleanup process and to obtain local perspective for decisions concerning the cleanup, a [Unified Community Advisory Board](#) (UCAB) was formed in 1995. The UCAB meets the third Wednesday of January, April,

July, and October. These meetings occur at 6:00 p.m. at the El Pueblo Activity Center located at 101 W. Irvington Rd. in Tucson and are open to the public.

The EPA periodically distributes [fact sheets](#) for the site, and the U.S. Air Force publishes a semi-annual progress report for activities at [Air Force Plant 44](#) (AFP-44) which is [upgradient](#) (south) of the Airport Property.

Site History:

1950-1970: Historic industrial and defense related activities resulted in the release of hazardous wastes into the groundwater leading to extensive contamination of the regional aquifer. The Airport Property is a source of groundwater contamination to the TARP plume which lies just to the northwest.

1983: TIAA was placed on the NPL on [September 8](#).

1995-1997: In 1995, a preliminary feasibility evaluation was completed. In 1996, a [remedial investigation](#) (RI) was completed; the RI characterized the extent and concentration of contaminants in the soil and SGZ at the Airport Property project area. In 1997, a [Feasibility Study](#) (FS) report was completed and EPA issued a [Record of Decision](#) (ROD) for the soils and SGZ of the Airport Property. From March to May 1997, excavation of PCB-contaminated soils in the [El Vado Residential Neighborhood](#) and at the Three Hangars area of the Airport Property was completed. The excavated soils in the residential areas were replaced with clean fill dirt and new landscaping.

1999: A CD was negotiated and signed. This CD formalized agreements between EPA and the Settling Defendants, which included General Dynamics Corporation, McDonnell Douglas Corporation, the COT, and the TAA. The CD provided for the cleanup of a highly contaminated portion of the Airport Property near the Three Hangars area. The CD specified that the Settling Defendants will design, build and fund remediation systems in accordance with the [ROD](#) and reimburse EPA for past costs. The CD also provided for resolution of other claims between EPA and the Settling Defendants.

The CD calls for four separate remedies for the Three Hangars area: 1) a [soil vapor recovery](#) system (SVE) to remove TCE from the soils; 2) a groundwater [pump and treat](#) remediation system to contain (and if possible, remediate) TCE contamination in the SGZ; 3) excavation and off-site disposal of PCBs and metals-contaminated soils and sediments; and 4) [capping](#) and monitoring of an abandoned landfill. Part of the SGZ is included in an area of technical impracticability, meaning there is no known technology that can provide complete remediation. However, this area will be hydraulically contained and closely monitored to ensure that contamination does not spread, and new technologies will be evaluated as they become available.

2002: The Settling Defendants performed a series of geophysical surveys to guide exploratory drilling in an effort to locate highly transmissive gravel subunits within the SGZ west of the Three Hangars area. Five [extraction wells](#) were installed in gravel subunits to cut off the SGZ from the TARP plume. Pumping rates for the five extraction wells were lower than expected.

In August, an SGZ remedy and SVE remedy technical memorandum was completed. This document, also known as the 30% Design Report, specified that a pump and treat system will be installed to capture and remediate SGZ contamination and prevent this contamination from spreading into the regional aquifer. It also called for SVE treatment of contaminated soils on the Airport Property. Low levels [approximately 3.0 parts per billion (ppb)] of 1,4-[dioxane](#) was detected in the upper zone of the regional aquifer, but it is thought to have originated from the AFP-44 Site.

2004: The contaminant 1,4-dioxane was detected at up to 36 ppb.

2005: In July, the contractor for the site submitted a proposal to conduct additional investigations to more fully characterize the SGZ at the west end of Runway 3. In this area, [carbon tetrachloride](#)-contaminated groundwater was of limited aerial extent, but was not completely characterized.

2006: In March, the contractor for the site submitted the PCB Soils Field Investigation Summary report which detailed the sampling and analysis activities completed as part of the PCB Soils Field Investigation and characterization of the Canale System at the site. In October, the contractors submitted the PCB Soils Design Report/Remedial Action Work Plan, which presented the final design and remedial action work plan for the PCB Remedy for the Airport Property. Also, the Settling Defendants began a pilot test of [in-situ oxidation](#) using [potassium permanganate](#) to reduce [1,1-dichloroethene](#) (1,1-DCE) concentrations in groundwater at the Samsonite Building Area.

2007: Construction was completed on the groundwater and SVE treatment plant for the Airport Property. Based on the construction inspection report, EPA determined that the treatment plant was operational and functional. On November 5, EPA, ADEQ, and the TAA hosted a dedication ceremony for the new groundwater and SVE treatment plant. Over 90 people attended the event which included speeches from high level officials and a tour of the treatment plant.

The contractor for the Settling Defendants submitted a work plan for additional investigations to delineate the SGZ at the west end of Runway 3. The work plan included [borehole](#) drilling, depth specific groundwater sampling, and installation of one or more wells. The purpose of these investigations was to better understand the complex [hydrogeology](#) at the Site and to delineate the [carbon tetrachloride](#) groundwater plume to the west of the Airport Property.

The Settling Defendants continued to monitor groundwater for the reduction of 1,1-DCE at the Samsonite Building Area, where potassium permanganate was previously injected at a series of wells, as part of an in-situ oxidation pilot study. Potassium permanganate was still present in many wells and it appeared that reduction of 1,1-DCE continued.

The Settling Defendants elected to construct a landfill cap in one area of the site that will function as a parking lot. The landfill cap was designed using a model that determines the infiltration rate through the asphalt cover.

2008: The Settling Defendants continued semi-annual water quality sampling and quarterly water level monitoring at the Samsonite Building Area. At the beginning of year, potassium permanganate (which is being used to oxidize 1,1-DCE contamination) was still present in over ten of the wells within the Samsonite Building Area. The Settling Defendants elected not to use an asphalt cover on the Tucson Airport Authority landfill and are instead proceeding with a standard RCRA Subtitle D landfill cap design.

2009: The Settling Defendants continued negotiating property access agreements with the [Tohono O’odham Nation](#) for a [monitor well](#) installation on tribal property. The well will be used to further delineate the carbon tetrachloride groundwater plume near the west end of Runway 3 at the Tucson Airport. The Settling Defendants also submitted a final design for the TAA landfill.

2010: The Shallow Groundwater Zone (SGZ) remediation system, which currently includes six groundwater extraction wells pumping groundwater to a treatment facility that uses an Air Stripper to remove VOCs from the extracted groundwater, continues to operate. The treated water is reinjected into the Regional Aquifer. The Air Stripper off-gas is treated by vapor phase granular activated carbon (GAC).

The objectives of the SGZ Remedy are to contain contaminated groundwater within the SGZ, prevent contaminant migration from the SGZ to the Regional Aquifer, and to prevent the contamination of previously uncontaminated groundwater while restoring portions of the SGZ to drinking water standards.

The SVE Remedy also continued to operate. The objectives of the SVE Remedy are to contain the VOC contamination within the TI Zone and the area near well SVE-07.

Contaminants:

The current contaminants of concern in groundwater include [VOCs](#), mainly [trichloroethene](#) (TCE). In addition, 1,4-[dioxane](#) has been discovered at the site. Contaminants of concern in the soils include [polychlorinated biphenyls](#) (PCBs), TCE, 1,1-[dichloroethene](#) (DCE), and [carbon tetrachloride](#). Contaminants of concern at the site may change as new data become available.

Public Health Impact:

The [COT](#) is the main municipal water provider at TIAA. All municipal wells in the area that were contaminated with TCE have been shut down. Most of the domestic wells have either been shut down or converted to irrigation wells. However, a few residents with domestic wells with low levels of TCE and 1,4-dioxane have chosen to continue using their wells. If you are drinking water from a private well within the boundaries of TIAA, please contact the ADEQ Project Manager.

Site Hydrogeology:

The regional aquifer is composed of two hydrostratigraphic units: the upper zone of the regional

[aquifer](#) and the lower zone of the regional aquifer. The upper zone of the regional aquifer is composed mainly of gravelly sand with some clayey sand and sandy clay, and it extends to a depth of about 200 feet below ground surface (bgs). The lower zone of the regional aquifer is composed mainly of relatively finer materials including clayey sand with lenses of gravelly sand and sandy clay, and it extends from about 300 feet bgs to an unknown depth. Separating the upper and lower zones of the regional aquifer is a thick clayey sequence termed the middle [aquitard](#). This unit generally prevents contamination in the upper zone from reaching the lower zone.

At the Airport Property there is also an SGZ that overlies the upper zone of the regional aquifer. The SGZ is composed mainly of fine grained silts and clays. Within the SGZ there are gravel subunits that channel groundwater flow westward and downward into the upper zone of the regional aquifer. The gravel subunits are coarser sediments including fine to coarse-grained sands and gravels.

Depth to groundwater varies from 80 to 240 feet bgs and generally gets deeper in a northward or westward direction. The general groundwater flow direction is toward the north-northwest; however, the gravel subunits within the SGZ channel flow more westward. More detailed descriptions of the hydrogeology of the Airport Property can be found in reports and studies available at the TIAA Information Repository.

Contacts:

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*In Arizona, but outside the Tucson area, call toll-free at (888) 271-9302.

**Call EPA’s toll-free message line at (800) 231-3075.

Information Repository:

Interested parties can review select site documents at the TCE Superfund Information Library located at 101 W. Irvington Road, within the [El Pueblo Branch Library](#) in Tucson, (520) 574-5250. The complete official site file can be reviewed at the EPA Region IX, [Records Center](#), Mail Stop SFD-7C, 95 Hawthorne Street, Room 403, San Francisco, CA 94105, (415) 536-2000.

The ADEQ site file is located in Phoenix at the ADEQ Central Office at 1110 W. Washington Street; however, select documents are also available in Tucson at the Southern Regional Office at 400 W. Congress, Suite 433. Please call (520) 628-6715 or toll-free (888) 271-9302 to arrange a file review appointment at the Southern Regional Office.

To arrange for a time to review the site file at the main ADEQ Phoenix office, please call the ADEQ Records Management Center with 24-hour notice at (602) 771-4380 or (800) 234-5677. Once all documents requested have been collected, you will be contacted for a review Monday through Friday from 8:30 a.m. to 4:30 p.m. at the ADEQ Records Management Center, 1110 W. Washington Street in Phoenix, AZ.