

Phoenix-Goodyear Airport North [EPA National Priorities List](#) (NPL) Site

Boundaries:

The [Phoenix-Goodyear Airport](#) (PGA) Superfund site is located approximately 17 miles west of Phoenix in Goodyear, Ariz. The PGA Superfund site is divided into a northern portion called [PGA North](#) (PGAN) and a southern portion called [PGA South](#) (PGAS) and the contamination from these two areas is not contiguous. PGAN consists of the former [Unidynamics](#) Phoenix Incorporated property, consisting of the main dry well source area (MDWSA) and groundwater contamination originating from the property. The PGAN site lies almost entirely within the City of Goodyear. The plume boundary varies and extends beyond the MDWSA but remains part of the site.

Site Status Update:

As of 2013, the PGAN site consists of five groundwater treatment systems, 10 injection wells and a Soil Vapor Extraction (SVE) system. More than 120 wells are part of the groundwater monitoring network to track groundwater flows, contaminant concentrations, and groundwater elevations.



Main Treatment System

The northern boundaries of the [trichloroethene](#) (TCE)

plume (north of Interstate 10) are close to being contained. In 2011, early results showed the new extraction and injection systems on the northeast boundary of the plume were performing as designed, which is to stop plume migration to the east towards City of Avondale drinking water wells. An analysis finalized in 2013 indicates that there is complete capture of the Subunit A (upper portion of aquifer) TCE plume in the east/northeast region of PGAN. The northwest boundary had new Subunit A monitoring wells installed, a new extraction well EA-08 brought online in 2011, and an injection system in the northwest area is planned to be operational in the first half of 2014.

Optimization of the Main Treatment System (MTS) air stripper was conducted in 2013. This work was conducted to maximize its performance and to ensure treatment capacity at the MTS for the additional groundwater from the new Subunit A extraction well EA-09. In 2011, the Source Area Remedial Focus Feasibility Study (SARFFS) was initiated. The goal was to evaluate remedial technologies that may assist in expediting the clean up of PGAN. The SARFFS was completed in October 2013. After reviewing the technologies evaluated in the SARFFS and weighing the advantages and disadvantages of each against the remedial action goals set for the project, EPA wrote the proposed plan for the MDWSA Area. EPA will release the proposed plan for public comment in early 2014. The proposed plan states EPA's preferred technology, or combination of technologies, for remediating the MDWSA. After addressing all public and stakeholder comments on the proposed plan, EPA will select the remedial alternative and document this decision in an amendment to the record of decision (ROD Amendment).

Community Involvement Activities:

A [community advisory group](#) (CAG) was formed in January 2001 in conjunction with PGAS and [Western Avenue WQARF](#) sites and meets on a regular basis. CAG members are selected from applications that are received. Meeting [agendas and minutes](#) can be viewed on the ADEQ web site and the meetings are open to the public. EPA publishes [fact sheets](#) that are sent to the community involvement area regarding PGAN progress, and the [latest fact sheet](#) can be viewed on the ADEQ website. An updated Community Involvement Plan was completed in July 2013. A public meeting will be held in early 2014 in conjunction with the release of the proposed plan.

Site History:

1963-1981: Unidynamics operated a research, design and manufacturing facility for ordnance and related equipment from 1963 to 1993. Several different chemicals, including [solvents](#) such as [TCE](#), [acetone](#) and [methyl-ethyl-ketone](#), were used in manufacturing devices and were reportedly disposed of in [drywells](#) at PGAN. The [Arizona Department of Health Services](#) discovered the groundwater contamination in 1981.

1983: EPA added PGAN to the NPL in [September](#).

1984: EPA began an Remedial Investigation (RI) of the area now known as the PGA to characterize the site, discover the extent of the contamination, and identify possible sources. From this study, the entire site was divided at Yuma Road into a north and a south portion.

1990: In September, EPA issued an Administrative Order directing Unidynamics to proceed with soil and groundwater remediation as described in EPA's 1989 [Record of Decision](#). The groundwater portion of the remediation program involves extracting the groundwater, removing the contaminants by [air stripping](#) with emissions control, and reinjecting the treated water into the same aquifer [upgradient](#) of the plume or discharging the treated water to the Roosevelt Irrigation Canal.



SVE System on UPI Site

1994: For treatment of soil contamination, an SVE system began operation and included a thermal oxidation unit equipped with an exhaust scrubber to reduce emissions.

1998: [Perchlorate](#) contamination was discovered and began to be included in the current groundwater monitoring regime.

2002-2003: The Phase II groundwater investigation conducted by EPA, yielded valuable data; however, additional investigation was needed to further characterize the nature and extent of the groundwater contamination and the soils at the Unidynamics facility.

2004-2006: EPA and ADEQ worked with Crane Co. to finalize a subsurface soil gas investigation to better understand the facility; re-started the SVE system with carbon treatment to address soil gas contamination; continued to investigate the nature and extent of TCE and perchlorate contamination; and continued to study the effectiveness of treating perchlorate-contaminated groundwater at the City of Goodyear's wastewater treatment plant, Crane Co. ultimately decided to install an ion-exchange system to



Well 33A Treatment System

treat perchlorate rather than treating perchlorate-contaminated groundwater at the City's wastewater treatment plant. EPA and Crane Co. concluded negotiations and entered into a CD that commits Crane Co. to repay EPA for past expenses and directs Crane Co. to continue investigation and clean up of the site.

2006: Crane Co. installed nine monitor wells, one groundwater [extraction well](#) and one groundwater re-injection well.

2007: An extraction well (EA-06) and treatment system located at the [Goodyear Community Park](#) was installed in December to address expansion of the northeast portion of the plume.

2008: An extraction well (EA-05) and treatment system located on [Maricopa Flood Control District](#) lands north of I-10 near Litchfield Road was operational at the end of March. This extraction and treatment system was designed to further address the eastern migration of the contaminant plume. EPA issued an Action Memorandum addressing perchlorate clean up levels for PGAN to be 14 micrograms per liter ($\mu\text{g/l}$).

2009: Demolition of the buildings at the Unidynamics facility began in March and was completed in July. All wells were installed per the approved work plan and installation of the next phase of wells began in summer 2009. Crane Co. also focused on an expansion of the MTS located on the Unidynamics site.

2010: The northeast treatment system expansion project was completed and brought on line in September. The MTS was expanded to include an additional air stripper and converted well MW-29 into an extraction well. The 2010 Five Year Review (FYR) was completed and signed by ADEQ and EPA in September. Two piezometers, seventeen monitoring wells, one extraction well and three injection wells were installed during the year.

2011: New Subunit A and Subunit C wells continue to be installed along with continued groundwater investigations. EA-08 was completed in November. [Operations and Maintenance](#) (O & M) improvements on extraction and treatment systems continue. Ground water sampling results have shown that the East-Northeast movement of the Subunit A plume has decreased.

2012: Beneficial reuse of treated water at the St. Thomas Aquinas Church for the HVAC system was completed. New Subunit A and Subunit C wells (13 total) continue to be installed along with continued groundwater investigations. O & M improvements on extraction and treatment systems continue; including the pipeline separation of extraction wells EA-02 and MW-29 to improve pumping and hydraulic control.

2013: Three Subunit B monitoring wells were installed to achieve a better understanding of vertical migration of the contamination. The final draft of SARFFS was submitted for agency review and finalized. EA-09 extraction well began operating in October. Several O & M improvements were made on the 5 treatment systems. Numerous additional Subunit A and Subunit C groundwater monitor wells installed as part of the ongoing groundwater investigation. Northwest injection system is under construction with a completion date expected in early 2014. SVE Phase I optimization which began in 2012 was completed and a work plan for Phase II optimization was submitted.

Contaminants:

The current contaminants of concern at PGAN include [chlorinated solvents](#), mainly [TCE](#), and [perchlorate](#). TCE is present in the subsurface soils located within the Unidynamics property, as well as in the groundwater. Perchlorate was discovered in the groundwater in August 1998. Contaminants of concern at PGAN may change as new data become available.

Public Health Impact:

Potential health risks may exist for individuals who ingest the contaminated groundwater. The [City of Goodyear](#), [City of Avondale](#), Liberty Utilities (formerly [Litchfield Park Service Company](#)) and other entities regularly monitor their drinking water supply wells, as required by law. Annual reports regarding the quality of the drinking water supplies can be found at the following web links:

City of Goodyear: <http://www.goodyearaz.gov/DocumentCenter/Home/View/1187>
City of Avondale: <http://www.avondale.org/index.aspx?NID=1301>
Liberty Utilities: <http://libertywater.com/?q=WaterQualityReports>

Site Hydrogeology:

PGAN lies within the basin and range physiographic province, consisting of [alluvial](#) basins interspersed by mountain ranges. The alluvial deposits of the western Salt River Valley consist of the Upper Alluvial Unit (UAU), the Middle Fine-grained Unit, or Middle Alluvial Unit (MAU) and the Lower Conglomerate Unit, or Lower Alluvial Unit (LAU). The UAU is approximately divided into three subunits: Subunit A, Subunit B, and Subunit C. Subunit A contains the bulk of the groundwater contamination beneath this site. Groundwater contained within Subunit C is pumped for use as drinking water and for agricultural purposes.

Groundwater flow direction is largely influenced by pumping as there are multiple domestic, municipal, irrigation, and [remediation](#) (extraction and injection) wells in the vicinity of PGAN.

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*In Arizona, but outside the Phoenix area, call toll-free at (800) 234-5677.

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

Information Repository:

Interested parties can review select site documents at the City of Goodyear Library, 250 N. Litchfield Road, Suite 185, Goodyear, AZ 85338, (602)-652-3000.

NOTE: It is anticipated that the City of Goodyear Library will be re-locating in early 2014. Please call prior to visiting to confirm location.

Site files are also located at the ADEQ Main Office located at 1110 W. Washington Street, Phoenix, AZ 85007. Please contact (602) 771-4380 or (800) 234-5677 to schedule an appointment with 24-hour notice to review these documents. 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 Center, 1110 W. Washington Street in Phoenix, AZ 85007.

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.